



FINAL

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
FOR THE CONSTRUCTION OF COMMERCIAL TRAFFIC LANES
AT THE I-10 BORDER PATROL CHECKPOINT NEAR
LAS CRUCES, NEW MEXICO**

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



October 2009

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ACRONYMS AND ABBREVIATIONS

AOR	area of responsibility
APE	Area of Potential Effect
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practices
CBP	U.S. Customs and Border Protection
CBV	cross border violator
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DHS	Department of Homeland Security
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
FOB	Forward Operating Base
FONSI	Finding of No Significant Impact
FR	Federal Register
GIS	Geographic Information system
GSRC	Gulf South Research Corporation
I-10	Interstate Highway 10
IA	illegal alien
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
INA	Immigration and Nationality Act
INS	Immigration and Naturalization Service
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEAP	Natural Events Action Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMCRIS	New Mexico Cultural Resources Information System
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NO ₂	nitrogen dioxide
NOA	Notice of Availability
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O ₃	ozone
PM-10	particulate matter measuring less than 10 microns
POE	port of entry
ppm	parts per million
ROI	region of influence

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FINDING OF NO SIGNIFICANT IMPACT
FOR THE CONSTRUCTION OF COMMERCIAL TRAFFIC LANES
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LAS CRUCES, NEW MEXICO

PROJECT HISTORY: The United States (U.S.) Customs and Border Protection (CBP) of the U.S. Department of Homeland Security (DHS) has the responsibility to regulate and control immigration into the U.S. The priority mission of the U.S. Border Patrol (USBP) is to strengthen the U.S. borders to prevent the entry of illegal aliens (IAs), terrorist weapons, narcotics, and contraband. IAs include all individuals who attempt to cross the international border between legal Ports-of-Entry (POE), regardless of citizenship. The principle objective of USBP is to apply appropriate levels of personnel, intelligence, technology, and infrastructure resources to increase the level of operational effectiveness sufficient to convey an absolute certainty of detection, apprehension and prosecution. In keeping with the spirit of the mission, USBP operates highway checkpoints to enhance the USBP's capability to gain, maintain and extend control of the border in areas beyond the immediate border.

This Supplemental Environmental Assessment (SEA) was developed to address the impacts, beneficial and adverse, associated with the addition of expanded commercial traffic lanes to the Interstate 10 (I-10) Checkpoint near Las Cruces in Doña Ana County, New Mexico, and alternatives to this action.

The Doña Ana County, New Mexico checkpoint is currently located within the New Mexico Department of Transportation (NMDOT) right-of-way (ROW) for I-10, 12 miles west of Las Cruces. Expansion of the checkpoint was addressed in a SEA and FONSI completed in 2007 by CBP. This SEA updates the 2007 SEA and FONSI, and incorporates by reference information from that decision.

PURPOSE AND NEED: The purpose of the expanded commercial traffic lanes is to provide a safer work environment for USBP agents and increased safety for the general public using the highway adjacent to the checkpoint. The expanded lanes were requested by NMDOT to provide better separation between commercial traffic and general automobile traffic at the checkpoint. The Proposed Action is needed to increase USBP agent safety by accommodating the large volume of traffic and afford sufficient space for USBP agents to conduct vehicle searches safely. Increasing the size of commercial traffic lanes will also allow standing traffic awaiting inspection at the checkpoint to avoid blocking the highway, and thus reduce the possibility of rear-end collisions.

ALTERNATIVES: Two Alternatives were analyzed in detail in this SEA, the No Action Alternative and Proposed Action Alternative. No other alternative was evaluated because all other alternatives failed to meet the purpose and need of the proposed project.

NO ACTION: The No Action Alternative would construct the I-10 Checkpoint as described in the 2007 SEA, but not allow for the expanded commercial traffic lanes. This alternative would not meet the purpose and need for this project.

PROPOSED ACTION: This alternative includes the construction of the new I-10 Checkpoint as described in the 2007 SEA, with the addition of expanded, longer commercial traffic lanes on both sides of the checkpoint. These activities would occur in an area of existing ground disturbance within the existing NMDOT ROW, as well as on adjacent property outside the ROW. A total of approximately 17 additional acres would be acquired and potentially disturbed within and outside of the existing ROW on property owned by the State of New Mexico and the U.S. Bureau of Land Management (BLM).

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ENVIRONMENTAL CONSEQUENCES: The Proposed Action Alternative would require typical construction activities associated with leveling, paving and erecting structures within the project area, most of which has been previously disturbed.

A cultural resources survey of the project area found no cultural resources or artifacts present, and concurrence from the State Historic Preservation Officer (SHPO) for New Mexico has been received for the Proposed Action Alternative, completing the Section 106 process. CBP, in implementing its decision, would employ all practical means to minimize the potential adverse impacts on the local environment. No significant impacts are expected to occur on biological resources, aesthetic resources, air quality, land use, soils, water resources, and noise upon implementation of the Proposed Action Alternative.

ENVIRONMENTAL DESIGN MEASURES: CBP will be responsible for implementation of environmental design measures, as described in the 2007 SEA. These design measures include:

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

All waste oil and solvents generated during construction will be recycled. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in on-site receptacles for eventual collection and disposal by a local contractor.

2. Vehicular traffic associated with the vehicle checkpoint construction activities and operational support activities will remain on established roads when traveling to and from the proposed project area. Erosion control measures will be implemented before, during, and after construction activities. Any excess soils not used during construction of the proposed vehicle checkpoint will be hauled from the site and disposed of properly.

3. All construction equipment, vehicles, electric generators, and portable lights will be required to be kept in good operating condition to minimize engine exhaust emissions.

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4. All bare ground disturbed during construction and not used for facilities or paving will be replanted with approved native vegetation or ground cover. Invasive or non-native species disturbed during construction will be removed from the project site and disposed of in a manner that will not promote the spread of those species.

5. Although no cultural resources are known within the project areas, should any evidence of cultural resources be observed during construction, work will stop in the immediate vicinity, the resource will be protected, and the appropriate state cultural resources agency and BLM will be notified within 24 hours of the discovery. If, in consultation with the New Mexico Department of Cultural Affairs, it is determined that the resource is significant, and cannot be avoided, a mitigation plan will be developed and implemented before construction is resumed.

6. Migratory bird surveys will be conducted during nesting season (March 1 through September 1), and any nests found would be avoided or eggs and chicks moved by a qualified biologist prior to construction. If construction activities would result in the "take" of a migratory bird, then consultation with the U. S. Fish and Wildlife Service (USFWS) and New Mexico Department of Game and Fish (NMDGF) will occur, and applicable permits will be obtained prior to construction or clearing activities.

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



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9.21.09

Date



Gregory L. Giddens
Executive Director
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23 Oct 09

Date

FINAL

**Supplemental Environmental Assessment
for the Construction of Commercial Traffic Lanes
at the I-10 Border Patrol Checkpoint near
Las Cruces, New Mexico**

October 2009

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EXECUTIVE SUMMARY

PROPOSED ACTION: The United States (U.S.) Army Corps of Engineers, on behalf of U.S. Customs and Border Protection (CBP), prepared a Supplemental Environmental Assessment (SEA) in 2007 for the Construction/Renovation of the U.S. Border Patrol (USBP) Checkpoint on Interstate Highway 10 (I-10) west of Las Cruces, New Mexico. The project included renovation of buildings and expansion of secondary inspections lanes at the checkpoint in Doña Ana County, New Mexico, as well as two other checkpoints. Due to public safety and traffic concerns at the expanded I-10 checkpoint, and to improve efficiency and safety for USBP agents at the checkpoint, it was decided to add additional commercial truck lanes to the project. The proposed action would acquire an additional total of approximately 17 acres within and adjacent to the existing highway right of way to expand truck lanes at the checkpoint.

PURPOSE AND NEED FOR THE PROPOSED ACTION: The purpose of the expanded commercial traffic lanes is to provide a safer work environment for USBP agents and increased safety for the general public using the highway adjacent to the checkpoint. The expanded lanes were requested by New Mexico Department of Transportation (NMDOT) to provide better separation between commercial traffic and general automobile traffic at the checkpoint. The Proposed Action is needed to increase USBP agent safety by accommodating the large volume of traffic and afford sufficient space for USBP agents to conduct vehicle searches safely. Increasing the size of commercial traffic lanes would also allow standing traffic awaiting inspection at the checkpoint to avoid blocking the highway, and thus reduce the possibility of rear-end collisions.

PROPOSED ACTION AND ALTERNATIVES: Two alternatives are evaluated in this SEA: the No Action Alternative, and the Proposed Action Alternative. The Proposed Action Alternative includes the construction of additional truck lanes as discussed above. The No Action Alternative would expand the checkpoint facilities as described in the 2007 SEA, but would not expand the truck lanes at the checkpoint, and existing public safety and traffic concerns would remain. This SEA updates the previous 2007 SEA, and the Proposed Action for the 2007 SEA is included as part of the No Action Alternative for this SEA.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVES: The Proposed Action would involve construction activities in a rural area of Doña Ana County. The Proposed Action would result in numerous beneficial effects for USBP personnel and the general public within the Region of Influence. There are no threatened or endangered species and no cultural resources located at the site; and the habitat of the site to be impacted is similar to vast amounts of other habitat in the immediate area.

No significant direct, indirect, short-term or long-term adverse impacts on the physical or biological environment would result from the Proposed Action Alternative. Best management practices would be employed during construction to minimize minor temporary direct impacts.

The No Action Alternative would have no direct adverse impacts; however, significant indirect long-term and cumulative adverse impacts would result from lack of commercial traffic capacity at the expanded checkpoint. The lack of sufficient vehicle capacity at the station would result in continued traffic delays and back-ups on the adjacent highway, and increase the safety risk for USBP personnel operating the checkpoint station and for the general public using I-10.

CONCLUSIONS:

No significant, long-term, adverse impacts are anticipated for any resource analyzed within this document. Therefore, no further analysis or documentation (*i.e.*, Environmental Impact Statement) is warranted. CBP, in implementing this decision, would employ all practical means to minimize the potential adverse impacts on the local environment.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 INTRODUCTION.....	1-1
1.1 PURPOSE AND NEED	1-1
1.2 LOCATION OF PROPOSED ACTION	1-2
1.3 SCOPE OF ENVIRONMENTAL REVIEW.....	1-2
1.4 REGULATORY AUTHORITY	1-6
1.5 FEDERAL, STATE AND LOCAL PERMITS, LICENSES AND FEES	1-7
1.6 RELATED ENVIRONMENTAL DOCUMENTS.....	1-7
2.0 DESCRIPTION OF ALTERNATIVES	2-1
2.1 PROPOSED ACTION	2-1
2.2 NO ACTION ALTERNATIVE	2-1
3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES	3-1
3.1 AIR QUALITY	3-1
3.1.1 Existing Environment.....	3-1
3.1.2 Environmental Consequences.....	3-2
3.1.2.1 Proposed Action.....	3-2
3.1.2.2 No Action Alternative	3-2
3.2 PHYSIOGRAPHY, GEOLOGY AND SOILS.....	3-2
3.2.1 Existing Environment.....	3-2
3.2.2 Environmental Consequences.....	3-3
3.2.2.1 Proposed Action.....	3-3
3.2.2.2 No Action Alternative	3-3
3.3 WATER RESOURCES.....	3-3
3.3.1 Environmental Consequences.....	3-3
3.3.1.1 Proposed Action.....	3-3
3.3.1.2 No Action Alternative	3-4
3.4 BIOLOGICAL RESOURCES	3-4
3.4.1 Native Vegetation	3-4
3.4.2 Common Wildlife Species.....	3-4
3.4.3 Threatened and Endangered Species	3-5
3.4.3.1 Northern Aplomado Falcon	3-5
3.4.4 Environmental Consequences.....	3-6
3.4.4.1 Proposed Action.....	3-6
3.4.4.2 No Action Alternative	3-6
3.5 CULTURAL RESOURCES.....	3-6
3.5.1 Previous and Current Investigations.....	3-6
3.5.2 Environmental Consequences.....	3-7
3.5.2.1 Proposed Action.....	3-7
3.5.2.2 No Action Alternative	3-7
3.6 AESTHETICS AND NOISE	3-7
3.6.1 Environmental Consequences.....	3-8
3.6.1.1 Proposed Action.....	3-8
3.6.1.2 No Action Alternative	3-8
3.7 HUMAN HEALTH AND SAFETY.....	3-8
3.7.1 Environmental Consequences.....	3-8

3.7.1.1	Proposed Action.....	3-8
3.7.1.2	No Action Alternative	3-8
3.8	LAND USE	3-9
3.8.1	Environmental Consequences.....	3-9
3.8.1.1	Proposed Action.....	3-9
3.8.1.2	No Action Alternative	3-9
4.0	ENVIRONMENTAL DESIGN MEASURES.....	4-1
5.0	CUMULATIVE EFFECTS	5-1
5.1	AIR QUALITY	5-3
5.2	GEOLOGY AND SOILS	5-3
5.3	WATER RESOURCES.....	5-3
5.4	BIOLOGICAL RESOURCES	5-4
5.4.1	Vegetative Habitat	5-4
5.4.2	Wildlife Resources	5-4
5.4.3	Threatened and Endangered Species.....	5-5
5.5	CULTURAL RESOURCES.....	5-5
5.6	AESTHETICS AND NOISE	5-5
5.7	HUMAN HEALTH AND SAFETY.....	5-6
5.8	LAND USE	5-6
6.0	PUBLIC INVOLVEMENT	6-1
6.1	PUBLIC REVIEW	6-1
6.2	AGENCY COORDINATION	6-1
7.0	REFERENCES.....	7-1
8.0	LIST OF PREPARERS	8-1

LIST OF FIGURES

Figure 1-1.	Vicinity Map	1-3
Figure 1-2.	Project Location Map.....	1-4
Figure 1-3.	Project Area Map.....	1-5

LIST OF TABLES

Table 2-1.	Summary of Effects for the Proposed Action and No Action Alternative	2-2
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APPENDICES

Appendix A. Coordination and Correspondence

SECTION 1.0
INTRODUCTION



1.0 INTRODUCTION

The United States (U.S.) Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), is mandated to control illegal immigration and smuggling across the U.S. borders between the land ports-of-entry (POE). The U.S. Border Patrol (USBP) uses a variety of measures to satisfy this mission, including operation of vehicle checkpoints at strategic locations away from the border, such as the subject checkpoint discussed in this report on Interstate Highway 10 (I-10). The I-10 Checkpoint is located west of Las Cruces, New Mexico, and is in need of expansion to accommodate increased traffic and to enhance the safety of USBP personnel and the general public.

A Supplemental Environmental Assessment (SEA) and Finding of No Significant Impact (FONSI) were completed in 2007 for the expansion of the checkpoint (CBP 2007). The New Mexico Department of Transportation (NMDOT) has requested that the commercial truck lanes for the checkpoint be extended beyond the size previously approved in the project design to prevent excessive back-up of other traffic on I-10 and possible safety concerns for the general public. The additional expansion areas necessary to accommodate the expanded truck lanes constitute a minor expansion of the area covered by the previous SEA; therefore, the additional acreage involved at the site will be addressed in this SEA. Resource discussions and impacts previously addressed in the 2007 SEA will be incorporated into this SEA, as appropriate.

1.1 PURPOSE AND NEED

The configuration and location of the existing checkpoint, which is the subject of this SEA, is such that there is insufficient capacity to adequately inspect all vehicles entering the checkpoint during periods of high traffic volume. The resulting backlog of traffic on the adjacent highway has resulted in safety concerns on the highway and several related accidents. The bus lanes for the checkpoint are not wide enough to safely allow for passengers to disembark while inspections are underway. This results in safety risks for passengers and USBP personnel. The purpose of the expanded commercial traffic lanes is to provide a safer work environment for USBP agents and increased safety for the general public using the highway adjacent to the checkpoint. The expanded lanes were requested by NMDOT to provide better separation between commercial traffic and general automobile traffic at the checkpoint.

The standard checkpoint configuration adopted for use at highway checkpoints would be implemented at the I-10 site addressed here. The Proposed Action is needed to increase USBP agent safety by accommodating the large volume of traffic and afford sufficient space for USBP agents to conduct vehicle searches safely. Increasing the size of commercial traffic lanes would also allow standing traffic awaiting inspection at the checkpoint to avoid blocking the highway, and thus reduce the possibility of rear-end collisions. The expanded commercial lanes are needed to address safety and traffic congestion concerns identified in the original project design.

1.2 LOCATION OF PROPOSED ACTION

The I-10 Checkpoint is located on a 9.2-acre site 12 miles west of Las Cruces, New Mexico (Figure 1-1), on the north side of I-10 in an existing pull-out on the west-bound lanes of I-10 (Figures 1-2 and 1-3). It is depicted on the Aden Hills and Sleeping Lady Hills (1985) U.S. Geological Survey (USGS) 7.5 minute quadrangle maps. The current structures on the site include an open canopy, a movable modular office structure, a communications tower and support shed. The original project (described in the 2007 SEA) enlarged the checkpoint area by a total of 5.8 acres, including a truck separation lane constructed for 0.5 mile east of the checkpoint within the highway right-of-way (ROW) on the highway shoulder. The Proposed Action would expand that truck separation lane by an additional 0.5 mile, and add a 1-mile long truck lane to the west side of the checkpoint. The added acreage (approximately 17 acres) would be directly within and adjacent to the current I-10 ROW on lands owned by the Bureau of Land Management (BLM) and the State of New Mexico.

1.3 SCOPE OF ENVIRONMENTAL REVIEW

This SEA describes and analyzes the potential environmental impacts of the activities associated with the Proposed Action that meet the stated purpose and need. Consistent with the Council on Environmental Quality (CEQ) regulations, the scope of analysis presented in this SEA is defined by the potential range of environmental impacts that would result from implementation of the Proposed Action. Resources that would not be affected by implementation of any of the alternatives are not addressed. Where applicable, reference is made to the resources discussion presented in the original SEA completed in 2007 (CBP 2007).

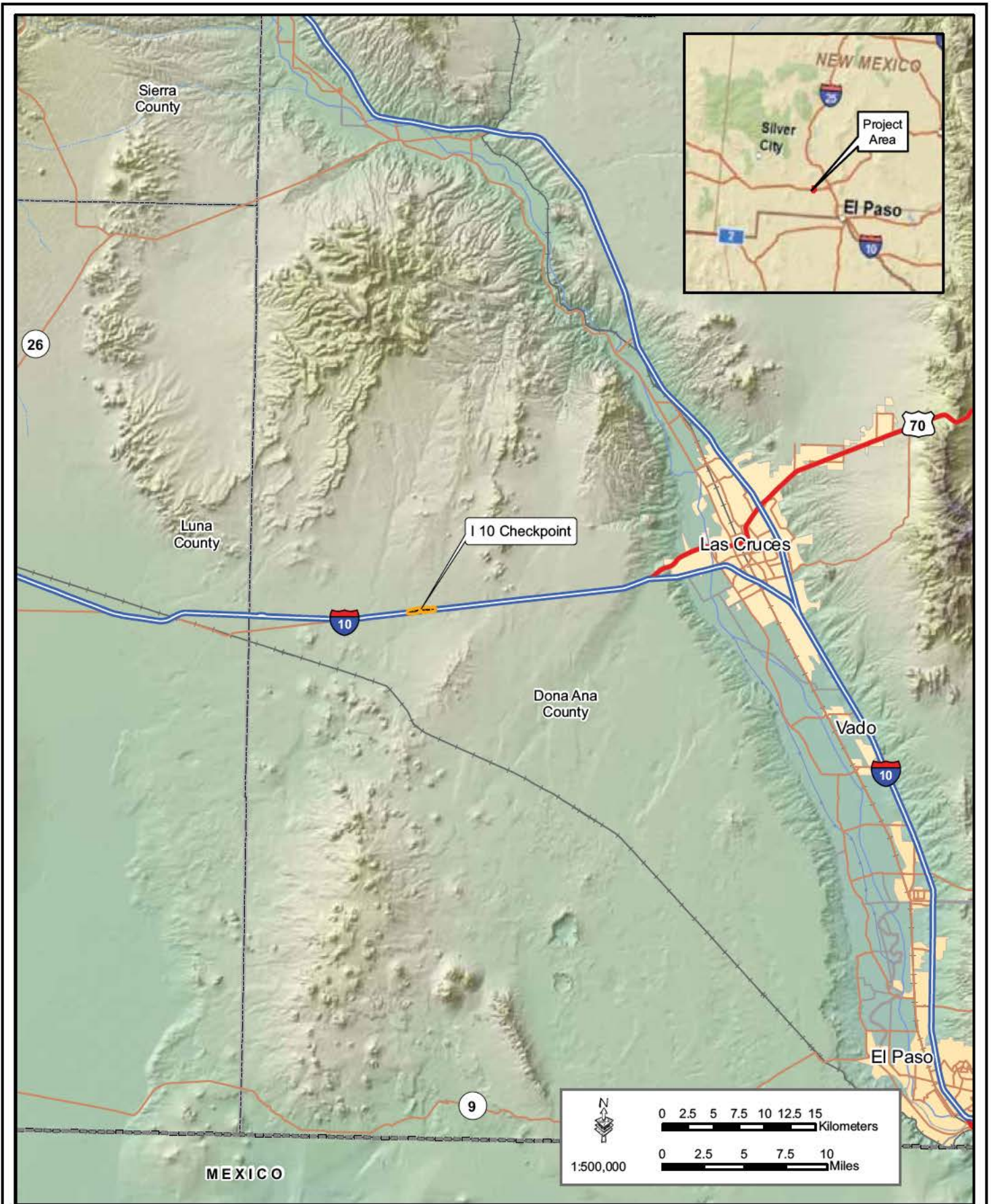


Figure 1-1: Vicinity Map



June 2009

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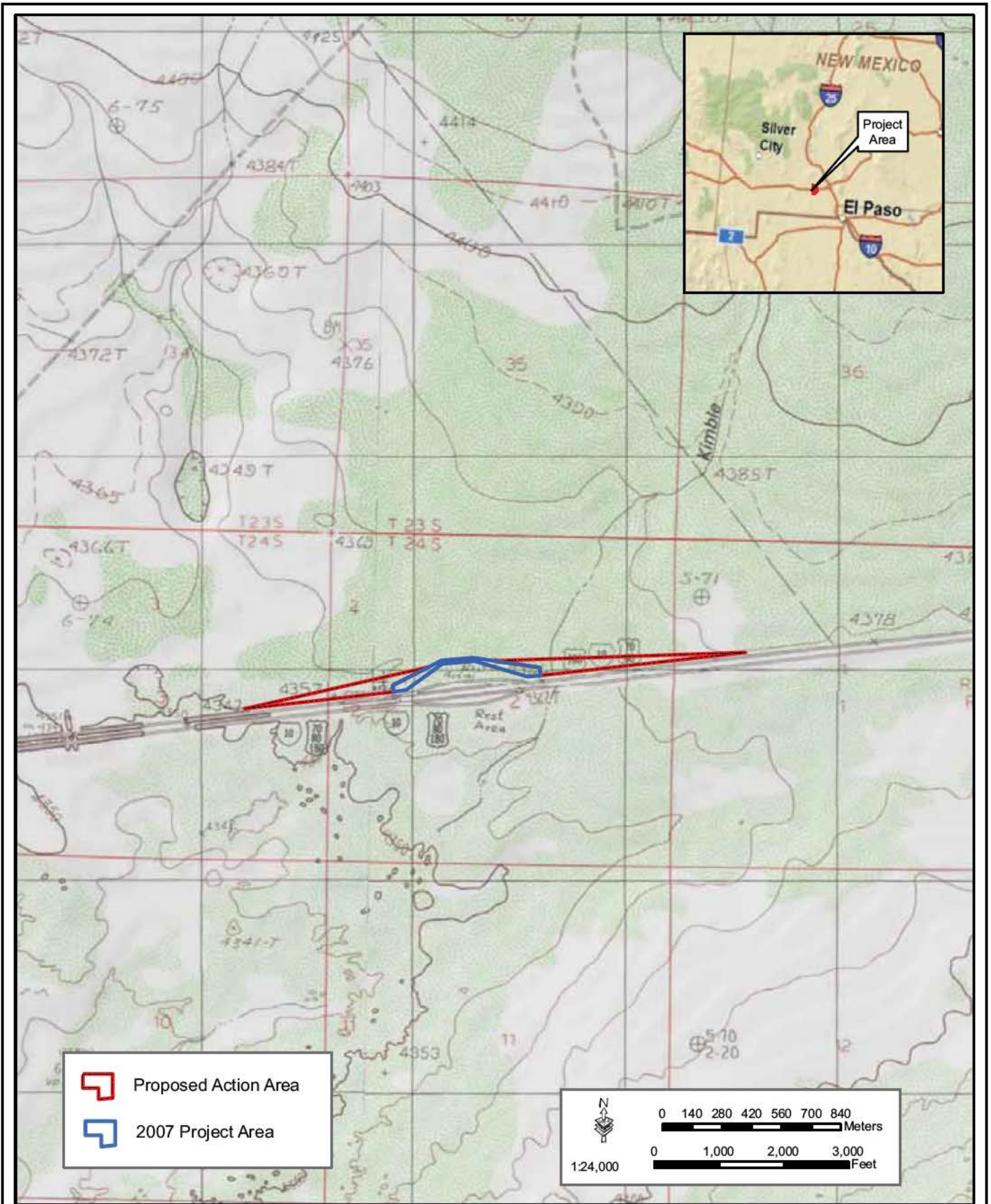


Figure 1-2: Project Location Map



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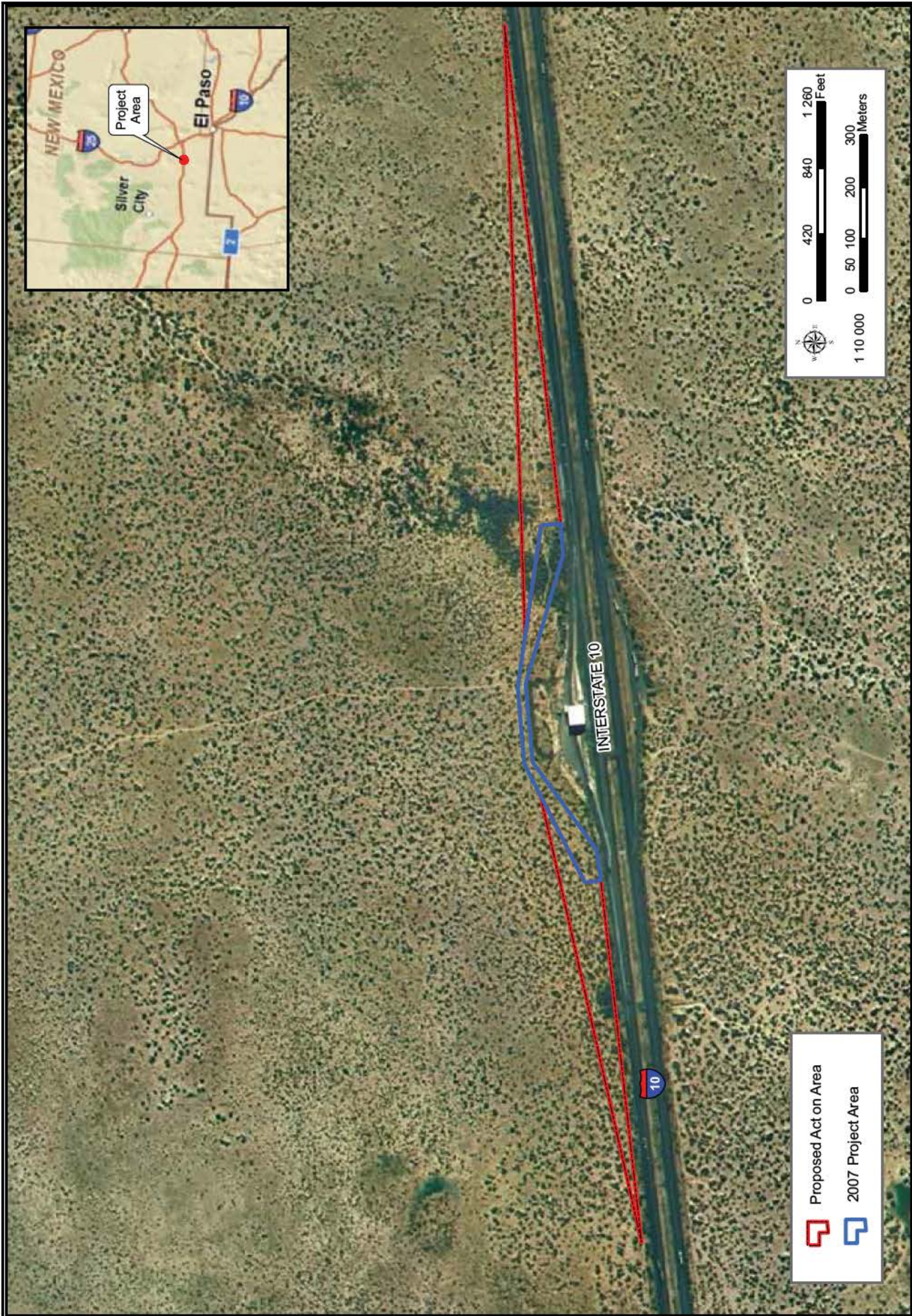


Figure 1-3: Project Area Map

Resources that have a potential for impact were considered in more detail in order to provide the CBP decision maker with sufficient evidence and analysis to determine whether or not additional analysis is required pursuant to 40 Code of Federal Regulations (CFR) Part 1508.9. The resources analyzed in more detail are land use, aesthetics and noise, soils and geology, water resources, air quality, biological resources, cultural resources, and human health and safety. The affected environment and the potential environmental consequences relative to these resources are described in Section 3.0.

1.4 REGULATORY AUTHORITY

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

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

The use of BLM lands would be in accordance with the Federal Land Purchase and Management Act. The Proposed Action is in conformance with the BLM Mimbres Resource Management Plan, which states on p. 2-17 "The remainder of the Resource Area (outside of

avoidance and exclusion areas) is open to the location of ROWs subject to standard stipulations (1,970,180 acres)."

1.5 FEDERAL, STATE AND LOCAL PERMITS, LICENSES AND FEES

Prior to construction, a Storm Water Pollution Prevention Plan (SWPPP) would be developed for the site, and an appropriate storm water construction permit would be acquired from the responsible state or local agency. Prior to construction, a building permit would be obtained from the county building official for the site. A ROW permit would be obtained from BLM.

1.6 RELATED ENVIRONMENTAL DOCUMENTS

EA and FONSI for Construction/Renovations of Border Patrol Checkpoints near Las Cruces and Alamogordo, New Mexico and El Paso, Texas 1998 (USACE 1998): This EA and FONSI were prepared to assess impacts associated with renovation of the two checkpoints in Doña Ana County, New Mexico and the construction of a new checkpoint in Texas.

SEA and FONSI for Construction/Renovations of Border Patrol Checkpoints near Las Cruces, New Mexico and El Paso, Texas March 2007 (CBP 2007). This SEA and FONSI were prepared to assess impacts associated with expansion of the checkpoint footprints addressed in the 1998 EA.

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SECTION 2.0
DESCRIPTION OF ALTERNATIVES

2.0 DESCRIPTION OF ALTERNATIVES

2.1 PROPOSED ACTION

The I-10 Checkpoint expansion addressed in the 2007 SEA would be enlarged by a total of approximately 17 acres. New expanded truck lanes would be added 0.5 mile east and 1 mile west of the I-10 Checkpoint within the current disturbed highway ROW and on land directly adjacent to the ROW, owned by the BLM and the State of New Mexico. The truck lane construction would involve grading, leveling and installation of drainage structures to provide a base for laying of approximately 40 to 50-foot wide asphalt pavement lanes and stabilized road shoulders.

The checkpoint structures would be constructed as defined in the 2007 SEA to conform to the standard USBP checkpoint layout. The construction and modification of the checkpoint would take place on site with standard equipment and techniques typically used for road construction, modular building placement, canopy construction, water well installation, *etc.*

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the I-10 Checkpoint would be constructed and renovated as indicated in the 2007 SEA. Impacts on the physical or biological environment as a result of the No Action Alternative were addressed in the 2007 SEA, and were found to be insignificant. Under the No Action Alternative, the expanded truck separation lanes would not be constructed. This would result in continued unsafe highway conditions in the vicinity of the checkpoint.

Table 2-1. Summary of Effects for the Proposed Action and No Action Alternative

Impacted Resource	Proposed Action	No Action Alternative
Air Quality	Area is rural; effects would be temporary and negligible	No adverse effects
Geology and Soils	No critical geology or soil resources; effects would be temporary and negligible	No adverse effects
Water Resources	No surface waters present; no long term increase in water resources demand; no significant effects	No adverse effects
Native Vegetation	Site already partially impacted, and vegetation would re-colonize; no long-term effects	No adverse effects
Wildlife Species	No quality wildlife habitat; negligible effects	No adverse effects
Threatened/Endangered Species	No suitable habitat present, and no listed species present; no effects	No adverse effects
Cultural Resources	No adverse effects, since no cultural resources are present	No adverse effects
Aesthetics and Noise	Effects would be negligible due to remote site location and lack of noise receptors	No adverse effects
Human Health and Safety	Long-term beneficial effects for USBP and general public	Long-term adverse effects for USBP and general public
Land Use	No significant change in land use; no significant adverse effects	No adverse effects
Cumulative Effects	Minor cumulative effects due to construction of all CBP and other agencies' projects	Long-term adverse cumulative effects on public safety

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 AIR QUALITY

3.1.1 Existing Environment

Doña Ana County borders El Paso, Texas and Ciudad Juarez, Mexico. This area is considered part of the Paso del Norte air shed, which includes El Paso County, Texas and Ciudad Juarez, Mexico. This region of the state has historically had air quality problems, including particulate matter and ozone pollution.

There is presently one nonattainment area for a particulate matter 10 microns or less in size (PM-10) within Doña Ana County in Anthony, New Mexico, which lies on the border of Texas and New Mexico. This area was designated nonattainment for PM-10 by the U.S. Environmental Protection Agency (USEPA) in 1991.

In 1995, USEPA declared a 42 square-mile region in the southeast corner of the County on the border of Texas and Mexico as a marginal nonattainment area for the 1-hour ozone standard. The nonattainment area included the City of Sunland Park, Santa Teresa, and La Union. The 1-hour ozone standard was revoked by USEPA in 2004 with the adoption of the new 8-hour ozone standard. Due to the revocation of the 1-hour ozone standard, Sunland Park was redesignated to a maintenance area for the new 8-hour ozone standard. Due to the lowering of the Federal standard, the governor of New Mexico is recommending that Sunland Park (including the communities of Santa Teresa and La Union) be designated as nonattainment for the new 8-hour ozone standard (New Mexico Air Quality Bureau 2009). The remainder of Doña Ana County is not designated as non-attainment for ozone, including the site evaluated by this SEA.

In response to the PM-10 nonattainment status, Doña Ana County has adopted a dust control ordinance (Ordinance Number 192-2000 Erosion Control Regulations) in support of the Natural Events Action Plan (NEAP) submitted to USEPA. In addition, NMDOT has signed a Memorandum of Agreement (MOA) with the New Mexico Environment Department (NMED) in support of the NEAP.

3.1.2 Environmental Consequences

3.1.2.1 Proposed Action

During construction and renovation of the affected facilities, fugitive dust levels may increase depending on wind speeds and soil moisture. The effects would be short-term and negligible due to the remote location of the site. Dust suppression best management practices (BMPs) would be employed to reduce PM-10 emissions during construction, in compliance with the dust control ordinance for Doña Ana County and the NMDOT MOA in support of the NEAP. Likewise, pollutant exhaust emissions from construction equipment would be short-term and negligible in the vicinity of the affected site due to the remote location of the site and wind dispersion. The Proposed Action would not result in long term increase of ozone emissions of PM-10, and, thus, no long-term adverse effects are anticipated.

3.1.2.2 No Action Alternative

For the No Action Alternative, PM-10 emissions during construction would be controlled with BMPs, as described in the 2007 SEA. The lack of extended commercial traffic lanes would result in long traffic delays at the checkpoint, and exhaust emissions would be increased due to excessive vehicle idling. Due to the remote location of the checkpoint, the increased exhaust emissions would be dispersed to a minimal level, and would not result in a long term increase of ozone emissions.

3.2 PHYSIOGRAPHY, GEOLOGY AND SOILS

3.2.1 Existing Environment

The area of Doña Ana County around Las Cruces is situated in the Mesilla Bolson of the Mexican Highland Section of the Basin and Range Province. The area is characterized as arid to semi-arid continental, with most drainages containing water only after heavy rains. The I-10 Checkpoint is located in a relatively flat range area west of the Doña Ana Mountains.

The Las Cruces area is flanked by the San Andres-Organ mountain range to the east, the Doña Ana Mountains to the north, and the Robledo-Pichaco uplifts to the northwest. These mountains have Precambrian and Tertiary igneous cores, and supplied the alluvial deposits that fill the Mesilla Bolson, or basin. The Mesilla Bolson is a structural basin formed during the Miocene, and deposition is represented by Miocene to middle Pleistocene sedimentary rocks of the Santa Fe Group and Quaternary alluvial fill (King and Hawley 1975).

The soil component around the I-10 checkpoint in Doña Ana County is the Onite-Pintura. This soil consists of well-drained, very gravelly loams that have moderate infiltration rates (NRCS 2009). This soil is not considered prime or unique farmland soil.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Environmental impacts on physiography, geology and soil were discussed in the 2007 SEA, and that discussion is incorporated herein by reference. The Proposed Action would have no impacts on physiography or geology, and the impacts on soils would be slightly greater (17 acres) than described in the 2007 SEA due to the larger project footprint; however, implementation of BMPs to control erosion would still reduce the impacts to less than significant.

3.2.2.2 No Action Alternative

Environmental impacts for the No Action Alternative would be the same as the Proposed Action impacts discussed in the 2007 SEA. No significant impacts would occur.

3.3 WATER RESOURCES

The I-10 Checkpoint site is located in a semi-arid climate with limited water resources. The principal aquifer for the site is the Santa Fe Group, an important aquifer for urban uses, with potable water at depths of over 300 feet below the ground surface (King *et al.* 1971). Total groundwater resources in the Las Cruces Mesilla basin area are approximately 52 million acre-feet (325,853 gallons per acre-foot) and annual water use in Las Cruces is approximately 20,000 acre-feet, with approximately half of that returned as recharge by wastewater discharges and seepage from the Rio Grande (New Mexico Water Resources Research Institute 2007, and *Las Cruces Sun-News* 2007). There are no nearby surface drainage ways or waters of the U.S., and the site is not located within the 100-year floodplain.

3.3.1 Environmental Consequences

3.3.1.1 Proposed Action

The Proposed Action would require the use of ground water resources for dust control, soil compaction, and general road and site construction. Water resources would be trucked to the site for construction use, and would be obtained from nearby commercial sources, probably in Las Cruces. Total water resources required for construction of the truck lanes would be

approximately 2 million gallons. When compared to the ground water resources available in the Mesilla Basin aquifer for the region (approximately 17 trillion gallons), this would be an insignificant, temporary water use impact. Water use for operation of the checkpoint would not change following construction.

The existing drainage culverts under I-10 on the site would be reconstructed and extended to fit under the expanded commercial truck lanes, such that no interruption of existing storm water flows would occur. Storm water runoff from the increased paved area of the truck lanes would be insignificant in comparison to the vast amount of undeveloped open ground area in the region available for surface water percolation. The SWPPP developed for the project would insure minimal impacts on the environment from storm water runoff during construction.

3.3.1.2 No Action Alternative

Water resources impacts resulting from the No Action Alternative were addressed in the 2007 SEA and found to be insignificant, and that analysis is incorporated herein by reference.

3.4 BIOLOGICAL RESOURCES

3.4.1 Native Vegetation

Vegetation species observed at the I-10 site were described in the 2007 SEA, and that description is incorporated herein by reference. During a site visit on April 15, 2009, GSRC personnel surveyed the additional acreage evaluated in this SEA. The vegetation community was a Mesquite Duneland interspersed with Desert Grassland. Species identified during the survey consisted of soaptree yucca (*Yucca elata*), honey mesquite (*Prosopis glandulosa*), tobosa grass (*Hilaria mutica*), four-winged saltbush (*Atriplex canescens*) and broom snakeweed (*Gutierrezia microcephala*). One non-native plant, Russian thistle (*Salsola* sp.) was also abundant in disturbed areas.

3.4.2 Common Wildlife Species

Wildlife species potentially occurring in Doña Ana County were described in the 2007 SEA, and that description is incorporated herein by reference. During the site visit on April 15, 2009, six bird species were identified, including red-winged blackbird (*Agelaius phoeniceus*), yellow warbler (*Dendroica petechia*), chipping sparrow (*Spizella passerina*), Gambel's quail (*Callipepla*

gambelii), Audubon's yellow-rumped warbler (*Dendroica coronata auduboni*) and Chihuahuan raven (*Corvis cryptoleucus*).

Seven mammal species were also identified by sight, scat, or sign. These included kangaroo rat (*Dipodomys* sp.), black-tailed jackrabbit (*Lepus californicus*), wood rat (*Neotoma* sp.), American badger (*Taxidea taxus*), pocket gopher (*Thomomys* sp.), western cottontail (*Sylvilagus auduboni*) and coyote (*Canis latrans*).

Reptile species identified during the same site visit included lesser earless lizard (*Holbrookia maculata*) and little striped whiptail (*Aspidocelis inornata*). No amphibians were observed and there is no fish habitat within the project area.

3.4.3 Threatened and Endangered Species

No changes regarding threatened and endangered species listed at the site have occurred since the 1998 EA and the 2007 SEA were completed. There were no listed species observed at the site during the site survey on April 15, 2009, and the site does not contain habitat suitable for establishment of a listed species.

3.4.3.1 Northern Aplomado Falcon

The northern aplomado falcon (*Falco femoralis septentrionalis*) is listed as endangered by USFWS and NMDGF. The USFWS has worked collaboratively for over 20 years with The Peregrine Fund, private landowners, and State and Federal agencies to recover the northern aplomado falcon in its historic range in southern New Mexico. In 2008, USFWS New Mexico Ecological Services Field Office coordinated with The Peregrine Fund to reintroduce a total of 70 juvenile northern aplomado falcons to three locations in New Mexico as an Experimental Non-essential population. This designation allows for unintentional or incidental take pursuant to legal actions (Zenone 2008).

Young *et. al.* (2005) addressed northern aplomado falcon habitat suitability. Moderately suitable habitat was characterized by homogenous grasslands and grasslands with either a distinct edge or composed of highly interspersed woody vegetation. These sites tended to have low grass cover of mixed species, and low to moderate woody vegetation density and may support prey species such as chestnutcollared longspur (*Calcarius ornatus*), horned lark (*Eremophila alpestris*), and northern mockingbird (*Mimus polyglottos*). Highly suitable habitat was defined as

primarily homogenous grasslands of tobosa or grama with moderate to high percent cover and low woody vegetation density. These habitats may support greater numbers of small bird prey species positively correlated with grass cover.

This site does not contain suitable habitat for nesting or foraging of northern aplomado falcon. The site is primarily desert shrub habitat with very few yucca perches and very little grassland.

3.4.4 Environmental Consequences

3.4.4.1 Proposed Action

The Proposed Action would have similar impacts on biological resources as described in the 2007 SEA, and that description is incorporated herein by reference. Vegetation displaced by construction of the truck lanes is common in the area, and the loss of 17 acres of scattered pockets of native vegetation would not be a significant impact.

Wildlife impacted by construction of the truck lanes is also common to the area, and mobile species would flee the construction area, thereby avoiding direct impacts. A survey for migratory bird nests would be conducted if construction takes place during the migratory bird nesting season (typically March 1 through September 1) in compliance with the Migratory Bird Treaty Act (MBTA), and any nest found would be avoided or eggs and chicks relocated by a qualified biologist to avoid impacts on migratory birds.

No Federal listed threatened or endangered species or habitats are present in the area, so no impacts would occur for those species.

3.4.4.2 No Action Alternative

Biological resource impacts for the No Action Alternative were found to be insignificant in the 2007 SEA, and that discussion is incorporated herein by reference.

3.5 CULTURAL RESOURCES

3.5.1 Previous and Current Investigations

Cultural investigations conducted for the 2007 SEA and FONSI are herein incorporated by reference.

Archaeological surveys were conducted in July 2009 for the checkpoint site area covered by this report. No previously recorded archaeological sites were identified in the project area from a search of the New Mexico Cultural Resources Information System (NMCRIS).

The results of the cultural resources survey at the site were negative, and no cultural resource artifacts were found. The survey report was filed with the appropriate cultural resources agency for New Mexico and BLM. The New Mexico State Historic Preservation Officer (SHPO) has concurred with the no effect finding, and the Section 106 process has been completed for the site. A copy of the SHPO concurrence can be found in Appendix A. No potentially affected cultural resources were indicated by any Native American tribes having interest in the project area.

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Implementation of the Proposed Action would have no effects on historical or cultural resources, since none are present in the project footprint. If any cultural resources are discovered during construction, then work will stop in the area of the discovery, the SHPO or appropriate Tribal Historic Preservation Officer (THPO) and BLM would be contacted, and the resource would be protected until a mitigation plan or other appropriate action can be implemented.

3.5.2.2 No Action Alternative

Cultural resource impacts for the No Action Alternative were found to be insignificant in the 2007 SEA, and that discussion is incorporated herein by reference.

3.6 AESTHETICS AND NOISE

Aesthetics for the site have a principal form of uneven terrain with human-made features such as electric lines, fences, dirt roads, and I-10, as well as existing USBP structures at the checkpoint site in rural Doña Ana County. The colors are typically light brown to pale yellow and green associated with a desert landscape. Sound at the site is associated with natural sources, such as wind and birds, accompanied by human-made sounds of vehicular traffic along I-10, which are predominant. No sensitive noise receptors, such as residences or commercial buildings, are present near the site due to the rural location.

3.6.1 Environmental Consequences

3.6.1.1 Proposed Action

The Proposed Action would not substantially alter the general aesthetic appearance of the project site, since all new construction would be adjacent to the existing I-10 traffic lanes and the existing USBP checkpoint facilities. The expanded truck lanes would be at ground level, and would not obstruct views of the adjacent desert landscape. Due to the absence of any noise receptors, there would be no noise impacts from construction or operation of the Proposed Action facilities.

3.6.1.2 No Action Alternative

Impacts for the No Action Alternative were described in the 2007 SEA, and were found to be insignificant; that description is incorporated herein by reference.

3.7 HUMAN HEALTH AND SAFETY

Police, fire protection, and hospital services would continue to be provided at the current level for the site. Details of human health and safety conditions are found in the 1998 EA and 2007 SEA to which this SEA applies (referenced in Section 1.6 above), and are incorporated by reference. There is currently traffic congestion at the checkpoint during peak traffic times, and this contributes to public safety concerns and traffic accidents.

3.7.1 Environmental Consequences

3.7.1.1 Proposed Action

The expanded commercial traffic lanes would have a beneficial effect on traffic safety at the checkpoint by providing larger lanes for separation of truck traffic from other vehicles on I-10.

3.7.1.2 No Action Alternative

The No Action Alternative impacts were described in the 2007 SEA, and that discussion is incorporated herein by reference. Since the 2007 SEA was completed, additional traffic safety concerns were identified due to insufficient commercial and general traffic separation, and those safety concerns would continue if the expanded truck lanes are not constructed.

3.8 LAND USE

The current land use at the site is maintained highway ROW adjacent to I-10 on BLM lands, and open range land used for grazing beyond the highway ROW on state lands. The existing checkpoint site is used as a developed USBP checkpoint station.

3.8.1 Environmental Consequences

3.8.1.1 Proposed Action

The Proposed Action would convert land currently used for cattle grazing to road ROW and paved road surfaces. Considering the vast amount of adjacent land available for cattle grazing (several million acres), the conversion of up to 17 acres would not be considered a significant impact on land use. The I-10 ROW proposed for the truck lanes is currently used for highway construction and operations, and would remain as the same land use when the truck lanes are constructed.

3.8.1.2 No Action Alternative

The land use impacts for the No Action Alternative were found to be insignificant in the 2007 SEA, and that description is incorporated herein by reference.

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SECTION 4.0
ENVIRONMENTAL DESIGN MEASURES

4.0 ENVIRONMENTAL DESIGN MEASURES

If the Proposed Action is implemented, the following measures will be implemented to further mitigate for possible impacts:

- BMPs will be implemented as standard operating procedures during all construction activities. These BMPs will include proper handling, storage, and disposal of hazardous and regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents will be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of a reportable quantity will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock) will be used to absorb and contain the spill. Any spill of a reportable quantity of a hazardous or regulated substance will be reported immediately to on-site environmental personnel who will notify appropriate Federal and state agencies. A Spill Prevention, Control and Countermeasure Plan will be in place prior to the start of construction, and all personnel will be briefed on the implementation and responsibilities of this plan. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in on-site receptacles for eventual collection and disposal by a local contractor.
- Dust suppression methods will be employed during construction to minimize airborne particulate matter.
- Vehicular traffic associated with the vehicle checkpoint construction activities and operational support activities will remain on established roads when traveling to and from the proposed project area. Construction equipment will be maintained in good operating condition to minimize exhaust emissions and fluid leaks. BMPs will be employed during construction to minimize erosion and soil loss. Prior to construction, a SWPPP will be developed for the site, and an appropriate storm water construction permit will be acquired from the responsible state or local agency.
- Although no cultural resources are known within the project area, should any evidence of cultural resources be observed during construction, work will stop in the immediate

vicinity, the resource will be protected, and the appropriate state or tribal cultural resources agency or BLM will be notified within 24 hours of the discovery. If, in consultation with the New Mexico Department of Cultural Affairs, it is determined that the resource is significant, and cannot be avoided, a mitigation plan will be developed and implemented before construction is resumed.

- All bare ground disturbed during construction and not used for facilities or paving will be replanted with approved native vegetation or ground cover. Invasive or non-native species disturbed during construction will be removed from the project site and disposed of in a manner that will not promote the spread of those species.
- Migratory bird surveys will be conducted during nesting season (March 1 through September 1), and any nests found would be avoided or eggs and chicks moved by a qualified biologist prior to construction. If construction activities would result in the “take” of a migratory bird, then consultation with the USFWS and NMDGF will occur, and applicable permits will be obtained prior to construction or clearing activities.

SECTION 5.0
CUMULATIVE EFFECTS



5.0 CUMULATIVE EFFECTS

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

The cumulative impacts associated with CBP activities such as those addressed by this SEA were previously addressed in a Supplemental Programmatic EIS prepared in 2001 (USACE 2001) and in the 2007 SEA. The Proposed Action qualifies as an action covered by the previous Supplemental EIS. The Proposed Action, associated with the checkpoint construction, has major benefits, including the long-term reduction of flow of illegal drugs and IAs into the U.S. and the concomitant effects upon the Nation’s health and economy, drug-related crimes, community cohesion, property values and traditional family values. A secondary benefit is a reduction in safety concerns for traffic at the checkpoint.

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

With continued funding and implementation of CBP's environmental conservation measures, including use of biological and archaeological monitors, wildlife water systems, and restoration activities, adverse impacts due to future and on-going projects would be avoided or minimized. However, recent, on-going and reasonably foreseeable proposed projects will result in cumulative impacts. CBP is currently planning, conducting, or has completed, several projects in the region.

CBP Projects include:

- Development of a muster site at South Walnut Street in Las Cruces, for the increasing agent force in the Las Cruces Station area of responsibility (AOR);
- Construction of a new USBP Forward Operating Base (FOB) in the Deming Station AOR, Luna County, New Mexico.
- Construction of a new USBP station in the Lordsburg Station AOR, Hidalgo County, New Mexico.
- Construction of a new USBP Las Cruces station in the West Mesa Industrial Park.

No significant municipal, county or state transportation construction projects were identified in the region of influence (ROI) for the checkpoint project in Doña Ana County.

A summary of the anticipated cumulative impacts relative to the Proposed Action Alternative is presented below. These discussions are presented for each of the resources described previously.

The Proposed Action would contribute to the cumulative construction projects and impacts within the ROI for the project area; however, the net effect of all CBP projects would be minor when compared to the overall effect of other construction in the vicinity of Las Cruces, the major populated area in the ROI. Therefore, cumulative impacts from past, present and future developments as a result of the Proposed Action would be negligible.

The No-Action Alternative would have no immediate effect on the existing human environment, but the lack of upgraded commercial truck lanes at the USBP checkpoint would have future cumulative adverse effects due to increased potential public safety problems.

5.1 AIR QUALITY

Impacts on air quality would be considered significant if the action results in a violation of air quality standards, obstructs implementation of an air quality plan, or exposes sensitive receptors to substantial pollutant concentrations. The emissions generated during the construction of the new expanded commercial traffic lanes would be short-term and minor. More efficient traffic flow at the checkpoint would reduce vehicle emissions due to engine idling, and would result in cumulative reduced impacts on the region's airshed. The overall impacts would not be considered significant, even when combined with the other proposed developments in the Las Cruces Metropolitan Area, because of the rural location of the checkpoint would allow for vehicle emissions to dissipate. BMPs implemented to control particulate matter during construction would also result in insignificant cumulative emissions in the area when considered with other construction projects by the city, county and CBP.

5.2 GEOLOGY AND SOILS

A significant impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction and would create a risk to life or property, or if there would be a substantial reduction in agricultural production or loss of prime farmland soils. The Proposed Action and other CBP actions have not reduced prime farmland soils or agricultural production regionally, as much of the land developed by CBP has not been used for agricultural production. Many of the projects under consideration for the Las Cruces Metropolitan Area are planned for developed, urban areas or areas where soils have already been disturbed, such as the runway reconstruction at the Las Cruces International Airport. Pre- and post-construction SWPPP measures would be implemented to control soil erosion. The impact from the construction of the expanded commercial traffic lanes, when combined with past and proposed projects in the region would not be considered a significant cumulative adverse effect.

5.3 WATER RESOURCES

The significance threshold for water resources includes any action that substantially depletes groundwater water supplies or interferes with groundwater recharge, or substantially alters drainage patterns. The significance threshold for surface water includes any action that

substantially depletes surface water supplies, substantially alters drainage patterns, or results in the loss of waters of the U.S. that cannot be compensated.

The Mesilla Bolson aquifer constitutes the main source of groundwater for southern Doña Ana County's population centers. This aquifer is below the maximum capacity of daily use by 12 mgd during summer months, and the proposed projects for the Las Cruces area, including population growth and urban development, do not pose a significant impact on this potable water supply. Drainage patterns of surface water sources would not be impacted by this proposed project or any other proposed project in the vicinity of Las Cruces, as many of the projects under consideration in the Las Cruces Metropolitan Area are planned for developed, urban areas. This Proposed Action, in conjunction with other regionally proposed projects, does not create a substantial cumulative effect on water resources in the region.

5.4 BIOLOGICAL RESOURCES

5.4.1 Vegetative Habitat

The significance threshold for vegetation would include a substantial reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be off-set or otherwise compensated. Many of the projects under consideration for the Las Cruces Metropolitan Area are planned in developed, urban areas or areas where vegetation has already been removed or disturbed. Over 3 million acres of scrub shrub rangeland occur in the region, even with the expanded commercial traffic lanes at the checkpoint and other development projects. Therefore, this proposed project in conjunction with other regionally proposed projects does not create a substantial cumulative effect on vegetative habitat in the region.

5.4.2 Wildlife Resources

The significance threshold for wildlife resources would be the same as for vegetative habitat with regard to the viability of species or populations. As discussed for vegetative habitat, many of the projects under consideration in the Las Cruces Metropolitan Area are planned in developed, urban areas or areas where wildlife habitat has already been removed or disturbed. No particularly sensitive species occur in the vicinity of the proposed project, and the location of the project adjacent to I-10 and the current checkpoint facilities would reduce the potential for wildlife to be present in the project area. Therefore, the proposed project, in conjunction with

other regionally proposed projects, does not create a substantial cumulative effect on wildlife in the region.

5.4.3 Threatened and Endangered Species

A significant impact on threatened and endangered species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. The Proposed Action would not have any effect on protected species, since none are present in the project area, nor would any of the other planned projects in the region; therefore, no cumulative impacts would occur.

5.5 CULTURAL RESOURCES

The Proposed Action would have no effect on cultural resources. As discussed above, many of the projects under consideration in the Las Cruces Metropolitan Area are planned in developed, urban areas or areas where cultural resource have already been avoided or disturbed and mitigated. Therefore, this action, when combined with other existing and proposed projects in the region, would not result in significant cumulative impacts on cultural resources.

5.6 AESTHETICS AND NOISE

Actions would be considered to cause significant impacts if they permanently increase ambient noise levels over 65 dBA. Most of the noise generated by the Proposed Action would occur during construction and, thus, would not contribute to cumulative impacts on ambient noise levels. Operation activities at the checkpoint would create a minor increase in ambient noise levels; however, there are no noise receptors located near the checkpoint, and the ambient noise from traffic on the adjacent I-10 would be greater than any noise generated by operation of the checkpoint. Therefore, there would be no cumulative noise impacts as a result of the Proposed Action.

Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a significant impact. No major impacts on visual resources would occur from constructing the expanded commercial traffic lanes, due in part to the location adjacent to I-10 and the existing USBP checkpoint facilities. No visually intrusive structures are proposed, so there would be no cumulative effect on aesthetics in the area.

5.7 HUMAN HEALTH AND SAFETY

The Proposed Action would provide beneficial effects for human health and safety at the checkpoint, and no adverse impacts have been identified; therefore, when combined with other projects in the area, there would be no cumulative adverse impacts.

5.8 LAND USE

A significant impact would occur if any action is inconsistent with adopted land use plans or an action would substantially alter those resources required for, supporting, or benefiting the current use. The Proposed Action site is located adjacent to and within the existing I-10 ROW, and use of the ROW land would not change. The loss of up to 17 acres of range land and open ROW adjacent to I-10, in combination with other development projects, would not be a cumulative significant impact due to the millions of acres of similar land use in the vicinity. The construction and operation of the expanded commercial traffic lanes would not promote an increase of development, and the area is not currently zoned. Therefore, the Proposed Action would not be expected to result in a significant cumulative adverse effect.

SECTION 6.0
PUBLIC INVOLVEMENT

6.0 PUBLIC INVOLVEMENT

6.1 PUBLIC REVIEW

A Notice of Availability of the Draft FONSI and SEA was published in *The Las Cruces Sun-News* on August 7, 2009. A copy of the Draft FONSI and SEA was available for review in the Las Cruces Public Library: Thomas Brannigan Memorial Library, 200 E. Picacho, Las Cruces, NM 88001. The Draft SEA and Draft FONSI, as well as the 2007 SEA, were also available on the USACE web site at: <http://ecso.swf.usace.army.mil/> under the link for Documents for Public Review/Comment. A copy of the Draft SEA Notice of Availability is found in Appendix A.

6.2 AGENCY COORDINATION

Copies of the Draft SEA and FONSI were distributed to appropriate state and Federal agencies for comment. A distribution list of agencies and personnel consulted and copies of coordination correspondence can be found in Appendix A.

Coordination for Section 106 of the National Historic Preservation Act has been completed with the appropriate cultural resource agency for New Mexico and potentially affected Federally recognized native American tribes. Copies of coordination and concurrence letters can be found in Appendix A.

Exhibit 6-1

NOTICE OF AVAILABILITY

**DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND
DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR THE EXPANSION OF COMMERCIAL TRUCK LANES AT THE U.S. BORDER PATROL
I-10 CHECKPOINT NEAR LAS CRUCES, NEW MEXICO**

The public is hereby notified of the availability of the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for the expansion of commercial truck lanes at the U.S. Border Patrol I-10 Checkpoint near Las Cruces, New Mexico, prepared by U.S. Customs and Border Protection. The checkpoint improvements are needed to remediate public safety concerns and traffic delays at the checkpoint. The project is located on the north side of I-10, approximately 12 miles west of Las Cruces in Doña Ana County, New Mexico. The Draft SEA and Draft FONSI are available for review and downloading from the U.S. Army Corps of Engineers, Fort Worth District's Internet web page at the following url address: <http://ecso.swf.usace.army.mil/> under the link for Documents for Public Review/Comment. Copies of the documents are also available at the Thomas Brannigan Memorial Library, 200 E. Picacho, Las Cruces, NM 88001.

Comments will be accepted on the Draft SEA until September 7, 2009. For additional information, contact Ms. Traci Fambrough, U.S. Army Corps of Engineers, Environmental Resources Branch, 819 Taylor Street, Room 3B09, Fort Worth, Texas 76102.

SECTION 7.0
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7.0 REFERENCES

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SECTION 8.0
LIST OF PREPARERS

8.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this SEA.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Mark Gable	Customs and Border Protection	NEPA/DHS PM and Regional Environmental Officer	25 years Environmental Management and Review	EA review
Nancy Parrish	USACE, Fort Worth District	Archaeology	10 years professional archaeologist/cultural resource manager	Cultural Resources Manager and cultural resources review
Traci Fambrough	USACE, Fort Worth District, ECSO	NEPA	10 years Environmental Management and Review	ECSO Project Manager, EA review and coordination
Garth Rogers	Customs and Border Protection	Tactical Infrastructure	20 years Border Patrol/Project Management	EA Review
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	25 years EAVEIS studies	EA review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	15 years experience in natural resources and NEPA studies	EA technical review
Steve Oivanki	Gulf South Research Corporation	Geology/NEPA	20 years NEPA and natural resources	Project Manager
Michael Stowe	Geo-Marine, Inc.	Archaeology	Professional Archaeologist	Cultural resources survey
Sharon Newman	Gulf South Research Corporation	GIS/graphics	10 years GIS/graphics experience	GIS/graphics

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APPENDIX A
COORDINATION AND CORRESPONDENCE

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

11 August 2009

Lori Allen
Realty Specialist
USDOJ- BLM- Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Dear Ms. Allen:

Enclosed please find two copies of the cultural resources survey completed for the expansion of the US Border Patrol Checkpoint along Interstate 10 on BLM lands west of Las Cruces in Dona Ana County. The results of the survey were negative, and Customs and Border Protection has determined that the proposed project will have no effect on prehistoric or historic cultural resources. The report has been submitted to the New Mexico State Historic Preservation Office for concurrence with that determination.

If you have any questions, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

A handwritten signature in blue ink that reads "Margaret Hartigan".

for
Margaret Hartigan, Director
Dallas Facilities Center

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

11 August 2009

Honorable Jeff Houser, Chairman
Fort Sill Apache Tribe of Oklahoma
Rt. 2, Box 121
Apache, Oklahoma 73006

Dear Chairman Houser:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we are reporting to you that the survey did not locate any prehistoric or historic cultural resources at the site. The report is being sent to the New Mexico State Historic Preservation Office for their concurrence that the project will have no effect on known cultural resources.

CBP respectfully requests any information you may wish to forward indicating the presence of other cultural resources or Traditional Cultural Properties in the immediate vicinity that may be affected by this project. If you have any questions, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

A handwritten signature in blue ink that reads "Margaret Hartigan".

gh
Margaret Hartigan, Director
Dallas Facilities Center

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

Ms. Katherine Slick, Director
Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Ms. Slick:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we have enclosed a copy of the survey report for your review and comment. The survey did not locate any prehistoric or historic cultural resources at the site.

Based on the findings of the survey report, and in accordance with 36 CFR Part 800.4(d)(1), CBP has determined that No Historic Properties will be affected by the proposed undertaking. CBP respectfully requests your concurrence with this finding of no effect. If you have any questions, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

A handwritten signature in blue ink that reads "Margaret Hartigan".

MH
Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

11 August 2009

Honorable Benjamin H. Nuvamsa, Chairman
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

Dear Chairman Nuvamsa:

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Margaret Hartigan, Director
Dallas Facilities Center

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

Honorable Mark Chine, President
ATTN: Ms. Holly Houghton, Cultural Affairs Office
Mescalero Apache Tribe
124 Chiricahua Plaza
Mescalero, New Mexico 88340

Dear President Chine:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we are reporting to you that the survey did not locate any prehistoric or historic cultural resources at the site. The report is being sent to the New Mexico State Historic Preservation Office for their concurrence that the project will have no effect on known cultural resources.

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Margaret Hartigan, Director
Dallas Facilities Center

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

Honorable Ronnie Lupe, Chairman
ATTN: Mr. Mark Altaha, THPO
White Mountain Apache Tribal Council
P.O. Box 700
Whiteriver, AZ 85941

Dear Chairman Lupe:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we are reporting to you that the survey did not locate any prehistoric or historic cultural resources at the site. The report is being sent to the New Mexico State Historic Preservation Office for their concurrence that the project will have no effect on known cultural resources.

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Sincerely,

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MH
Margaret Hartigan, Director
Dallas Facilities Center

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

Honorable Frank Piaz, Governor
Ysleta del Sur Pueblo
Tigua Reservation
119 South Old Pueblo Road
El Paso, Texas 79907

Dear Governor Piaz:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we are reporting to you that the survey did not locate any prehistoric or historic cultural resources at the site. The report is being sent to the New Mexico State Historic Preservation Office for their concurrence that the project will have no effect on known cultural resources.

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Sincerely,

A handwritten signature in blue ink that reads "Margaret Hartigan".

jev
Margaret Hartigan, Director
Dallas Facilities Center

GOVERNOR
Bill Richardson



DIRECTOR AND SECRETARY
TO THE COMMISSION
Tod Stevenson

Robert S. Jenks, Deputy Director

STATE OF NEW MEXICO DEPARTMENT OF GAME & FISH

One Wildlife Way
Post Office Box 25112
Santa Fe, NM 87504
Phone: (505) 476-8101
Fax: (505) 476-8128

Visit our website at www.wildlife.state.nm.us
For information call: 505-476-8000
To order free publications call: 1-800-862-9310

STATE GAME COMMISSION

Jim McClintic, Chairman
Albuquerque, NM

Sandy Buffett, Vice-Chairman
Santa Fe, NM

Dr. Tom Arvas, Commissioner
Albuquerque, NM

Alfredo Montoya, Commissioner
Alcalde, NM

M.H. "Dutch" Salmon, Commissioner
Silver City, NM

Kent A. Salazar, Commissioner
Albuquerque, NM

Leo V. Sims, II, Commissioner
Hobbs, NM

August 4, 2009

Margaret Hartigan
Dallas Facilities Center, CBP
7701 North Stemmons Freeway
Dallas, Texas 75247-4232

Re: Supplemental EA for the USBP I-10 Checkpoint near Las Cruces; NMDGF No. 12817

Dear Ms. Hartigan,

In response to your letter dated June 30, 2009, regarding the above referenced project, the Department of Game and Fish (Department) has the following comment. There is an invasive non-native grass, Lehmann Lovegrass (*Eragrostis lehmanniana*) present at the I-10 Checkpoint. The right of way should be reseeded with native species and monitored for successful establishment. Construction BMP's should be followed to prevent the spread of invasive species. For your information, we have enclosed a list of sensitive, threatened and endangered species that occur in Dona Ana County.

For more information on listed and other species of concern, contact the following sources:

1. BISON-M Species Accounts, Searches, and County lists: <http://www.bison-m.org>
2. Habitat Handbook Project Guidelines: http://wildlife.state.nm.us/conservation/habitat_handbook/index.htm
3. For custom, site-specific database searches on plants and wildlife, go to <http://nhnm.unm.edu>, then go to Data, then to Free On-Line Data, and follow the directions
4. New Mexico State Forestry Division (505-476-3334) or <http://nmrareplants.unm.edu/index.html> for state-listed plants
5. For the most current listing of federally listed species **always** check the U.S. Fish and Wildlife Service at (505-346-2525) or <http://www.fws.gov/southwest/es/NewMexico/SBC.cfm>.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Patrick Mathis, Southwest Area Habitat Specialist at (575) 532-2108 or patrick.mathis@state.nm.us.

Sincerely,

Terra Manasco
Assistant Chief, Conservation Services Division
Technical Guidance Section

TLM/pm

xc: Wally Murphy, Ecological Services Field Supervisor, USFWS
Luis Rios, SW Area Operations Chief, NMDGF
Pat Mathis, SW Area Habitat Specialist, NMDGF

MARK,
PUSA ACTION - PLS
PUT IN PROD POLAR.
RAB
24 AUG 09

NEW MEXICO WILDLIFE OF CONCERN DONA ANA COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at <http://www.fws.gov/ifw2es/NewMexico/SBC.cfm>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information.

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Bleached Earless Lizard	Holbrookia maculata ruthveni	s		
Southwestern Fence Lizard	Sceloporus cowlesi	s		
Little White Whiptail	Aspidoscelis gypsi	s		
Brown Pelican	Pelecanus occidentalis	E		
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Bald Eagle	Haliaeetus leucocephalus	T	T	
Northern Goshawk	Accipiter gentilis	s	SOC	
Common Black-Hawk	Buteogallus anthracinus	T	SOC	
Aplomado Falcon	Falco femoralis	E	Exp	
Peregrine Falcon	Falco peregrinus	T	SOC	
Mountain Plover	Charadrius montanus	s	SOC	
Least Tern	Sterna antillarum	E	E	
Black Tern	Chlidonias niger surinamensis		SOC	
Common Ground-Dove	Columbina passerina	E		
Yellow-billed Cuckoo	Coccyzus americanus	s	C	
Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y
Burrowing Owl	Athene cunicularia		SOC	
Buff-collared Nightjar	Caprimulgus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Costa's Hummingbird	Calypte costae	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Varied Bunting	Passerina versicolor	T		
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Red Bat	Lasiurus blossevillii	s	SOC	
Spotted Bat	Euderma maculatum	T		
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Organ Mountains Colorado Chipmunk	Neotamias quadrivittatus australis	T	SOC	
Desert Pocket Gopher	Geomys arenarius	s	SOC	
Pecos River Muskrat	Ondatra zibethicus ripensis	s	SOC	
Red Fox	Vulpes vulpes	s		

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>critical habitat</u>
Ringtail	Bassariscus astutus	S		
Western Spotted Skunk	Spilogale gracilis	S		
Common Hog-nosed Skunk	Conepatus leuconotus	S		
Desert Bighorn Sheep	Ovis canadensis mexicana	E		
Dona Ana Talussnail	Sonorella todseni	T	SOC	
Fairy Shrimp	Streptocephalus moorei	S		
Anthony Blister Beetle	Lytta mirifica		SOC	
Desert Viceroy Butterfly	Limenitis archippus obsoleta		SOC	

New Mexico Department of Game and Fish
P. O. Box 25112
Santa Fe, NM 87504



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08/10/2009

Mailed From 87507

US POSTAGE

Margaret Hartigan
Dallas Facilities Center, CBP
7701 North Stemmons Freeway
Dallas, Texas 75247-4232

7524734232 0030





THE HOPI TRIBE

P.O. Box 123
Kykotsmovi, Arizona
86039



For
HR

Margaret Hartigan - NOT
Dallas Facilities Gr.
7701 N. Stemmons Freeway
Dallas TX 75247-4232



received
@11/09/09

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

Honorable Benjamin H. Nuvamsa, Chairman
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

RECEIVED
AUG 20 2009
BY: CPO/ks

Dear Chairman Nuvamsa:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we are reporting to you that the survey did not locate any prehistoric or historic cultural resources at the site. The report is being sent to the New Mexico State Historic Preservation Office for their concurrence that the project will have no effect on known cultural resources.

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Sincerely,

Margaret Hartigan
Margaret Hartigan, Director
Dallas Facilities Center

for

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concur

Margaret
for

Kuwakwiskwiz
8-21-09



United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Las Cruces District Office
1800 Marquess
Las Cruces, New Mexico 88005
www.nm.blm.gov



IN REPLY REFER TO:
NMNM 122191
2800 (L0310)

MAR 24 2009

Ms. Cathy Hall
Department of the Army
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza, NE
Albuquerque, NM 87109-3435

Dear Ms. Hall:

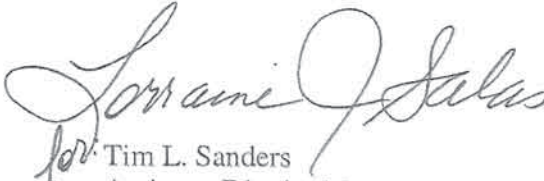
This is in regards to your letter dated March 19, 2007, requesting a right-of-entry for non-ground disturbing environmental surveys on public land in effort to supplement an existing environmental assessment for the proposed expansion of the Las Cruces Border Patrol Checkpoint on I-10. The following are the requested locations on public land:

T. 24 S., R. 3 W.,
secs. 1 and 3.

The Bureau of Land Management has reviewed your request and has determined that environmental surveys on public land are Casual Use, under 43 CFR 2801.5 (b) *with the enclosed restrictions*. Therefore, Albuquerque District, Corps of Engineers may proceed with the stated request.

If you have any additional questions, please contact Lori Allen, Realty Specialist at (575) 525-4454.

Sincerely,


for Tim L. Sanders
Assistant District Manager
Division of Multi-Resources

1 Enclosure

**Conditions for Casual Use of Public Land
in Support of
Las Cruces Border Patrol Station I-10 Checkpoint Expansion Project
Environmental Surveys**

1. Off-road travel is prohibited and vehicle use is limited to existing roads.
2. If damage occurs to a historic property as a result of the aforementioned activities, Albuquerque District, Corps of Engineers will contract with an archaeological contractor (permitted by the Bureau of Land Management (BLM)) to assess the damages, prepare a treatment plan, and conduct mitigation on the property. The treatment plan must be acceptable to both the BLM and New Mexico State Historic Preservation Office.
3. Albuquerque District, Corps of Engineers will furnish the BLM with telephone contacts to handle calls to the BLM that result from the ongoing activities.
4. Albuquerque District, Corps of Engineers will coordinate their activities with Lori Allen, Las Cruces District Office-BLM Realty Specialist (575) 525-4454, prior to beginning their operations.
5. Albuquerque District, Corps of Engineers will coordinate their activities with existing right-of-way holders and grazing permittees within the selected areas prior to beginning their operations.

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

5 August 2009

U.S. Fish and Wildlife Service
New Mexico Ecological Services State Office
ATTN: Wally Murphy
2105 Osuna NE
Albuquerque, NM 87113

Dear Mr. Murphy:

U.S. Customs and Border Protection (CBP) has prepared a draft Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10, approximately 18 miles west of the City of Las Cruces.

Please review the enclosed draft SEA and draft FONSI, and submit any comments or questions to Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; or email at mark.gable@dhs.gov. The draft SEA is also available at <http://ecso.swf.usace.army.mil> under the link for Documents for Public Review/Comment. Comments on the draft SEA must be received by September 7, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read "Margaret Hartigan", with a long horizontal flourish extending to the right.

Margaret Hartigan, Director
Dallas Facilities Center

Enclosures

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

5 August 2009

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Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

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Dallas Facilities Center

Enclosures

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

5 August 2009

Dr. Gedi Cibas
New Mexico Environment Department
Environmental Impact Review Coordinator
1190 St. Francis Drive
Santa Fe, NM 87502

Dear Dr. Cibas:

U.S. Customs and Border Protection (CBP) has prepared a draft Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10, approximately 18 miles west of the City of Las Cruces.

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosures

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

5 August 2009

Lori Allen
Realty Specialist
USDOI- BLM- Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosures

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

5 August 2009

Ms. Lisa Kirkpatrick
Chief, Conservation Services Division
New Mexico Department of Game and Fish
P.O. Box 25112
Santa Fe, NM 87504

Dear Ms. Kirkpatrick:

U.S. Customs and Border Protection (CBP) has prepared a draft Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10, approximately 18 miles west of the City of Las Cruces.

Please review the enclosed draft SEA and draft FONSI, and submit any comments or questions to Mr. Mark Gable, Environmental Planning Specialist, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; or email at mark.gable@dhs.gov. The draft SEA is also available at <http://ecso.swf.usace.army.mil> under the link for Documents for Public Review/Comment. Comments on the draft SEA are due by September 7, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read "Margaret Hartigan", with a long horizontal flourish extending to the right.

Margaret Hartigan, Director
Dallas Facilities Center

Enclosures

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



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

5 August 2009

Thomas Branigan Memorial Library
200 E. Picacho
Las Cruces, NM 88001

Subject: Draft Finding of No Significant Impact and Draft Supplemental Environmental Assessment for the Construction of Commercial Traffic Lanes at the U.S. Border Patrol I-10 Checkpoint near Las Cruces, New Mexico

Dear Sir:

Enclosed please find a copy of a Supplemental Environmental Assessment (SEA) with a Draft Finding of No Significant Impact prepared by the Department of Homeland Security and U. S. Customs and Border Protection (CBP). This SEA addresses the potential impacts of expanded truck lanes construction proposed for the U.S. Border Patrol (USBP) I-10 Checkpoint in Doña Ana County, New Mexico. CBP evaluated the need to construct and improve the checkpoint to enhance their capabilities to apprehend and deter illegal aliens and contraband smuggling in this area and to improve USBP agent and public safety conditions at the checkpoint in a SEA in 2007.

This SEA addresses changes to the original design of the project in response to a request by the New Mexico Department of Transportation for larger truck separation lanes at the checkpoint. The new design includes expanded truck lanes to accommodate higher traffic volumes.

The SEA has been distributed for review and downloading from the U.S. Army Corps of Engineers, Fort Worth District's Internet web page at the following url address <http://ecso.swf.usace.army.mil/>. A copy of the 2007 SEA is also available for review and downloading on the same web page. CBP is soliciting comments on this SEA from Federal and state agencies, organizations, and the general public. Written comments can be sent to Ms. Traci Fambrough, U.S. Army Corps of Engineers, Environmental Resources Branch, 819 Taylor Street, Room 3B09, Fort Worth, Texas 76102. or by fax at (817) 886-6404.

Please make this document available for public review at your facility for a period of 30 days following receipt. The deadline for receipt of comments is September 7, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read 'Margaret Hartigan', with a long horizontal flourish extending to the right.

Margaret Hartigan, Director
Dallas Facilities Center

Enclosures

White Mountain Apache Tribe Heritage Program
PO Box 507 Fort Apache,AZ 85926
1 (928) 338-3033 Fax: (928) 338-6055

To: Mark Gable, Dallas Facilities Center, CBP, Dallas, Texas.
Date: July 14, 2009
Project: U.S. Customs and Border Protection SEA Checkpoint Station, Las Cruces, NM.

.....

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated July 30, 2009 In regards to this, please attend to the checked items below.

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

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

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

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

We have received and reviewed the information regarding United States Customs and Border Protection's proposal to construct, and maintain the expanded commercial traffic lanes at the U.S. Border Patrol I-10 Checkpoint near Las Cruces, Dona Ana County, New Mexico and we've determined the proposed action and/or evaluation **will not have an effect** to the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties. The project may proceed with the understanding that any ground disturbance should be monitored **if** there are reasons to believe that human remains and/or funerary objects are present, if they are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

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

Sincerely,

Mark T. Altaha
White Mountain Apache Tribe
Historic Preservation Officer
Email: markaltaha@wmat.nsn.us

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Ms. Lisa Kirkpatrick
Chief, Conservation Services Division
New Mexico Department of Game and Fish
P.O. Box 25112
Santa Fe, NM 87504

Dear Ms. Kirkpatrick:

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available regarding Federal and state resources of concern potentially occurring within the project area. CBP respectfully requests that your agency provide a list of resources of concern that occur within or near the project site, and a location map for those resources that you believe may be affected by the proposed CBP activities in Doña Ana County, New Mexico.

We intend to provide your agency with a copy of the Draft SEA once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

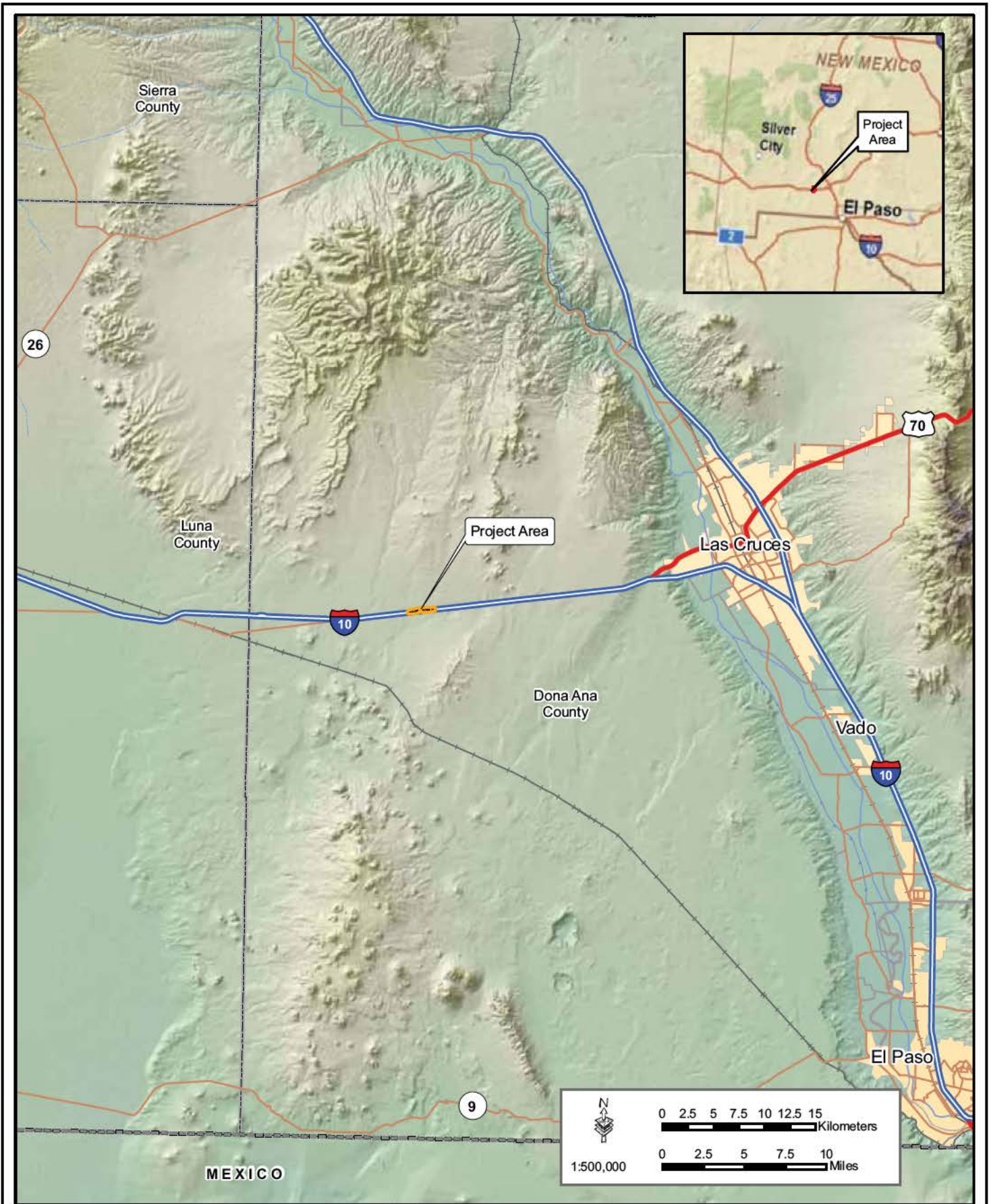
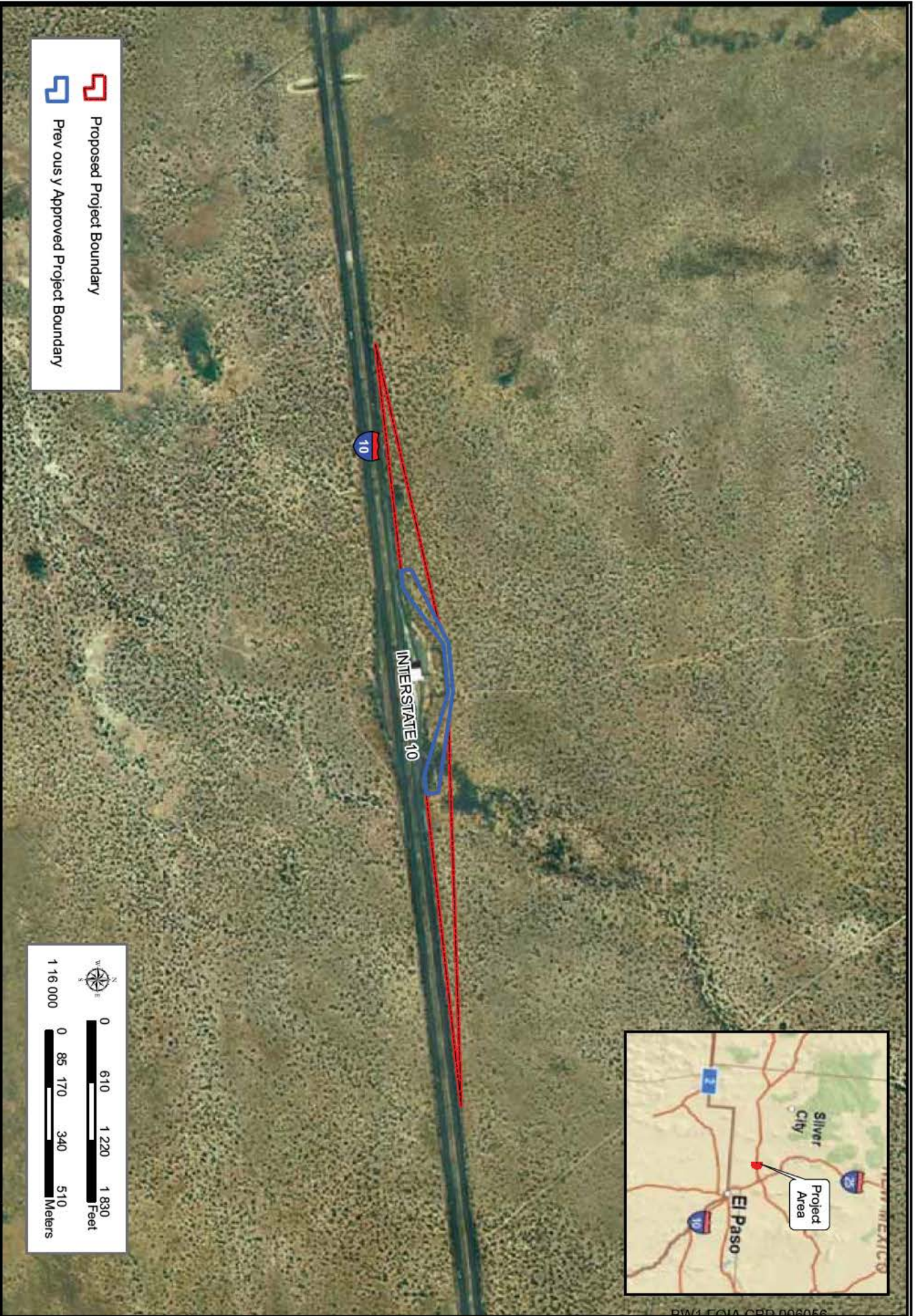


Figure 1: Vicinity Map



June 2009



PW1-EQIA-CFD-006056

Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Honorable Ronnie Lupe, Chairman
ATTN: Mr. Mark Altaha, THPO
White Mountain Apache Tribal Council
P.O. Box 700
Whiteriver, AZ 85941

Dear Chairman Lupe,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that you provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

We intend to provide you with a copy of the Draft SEA for review once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

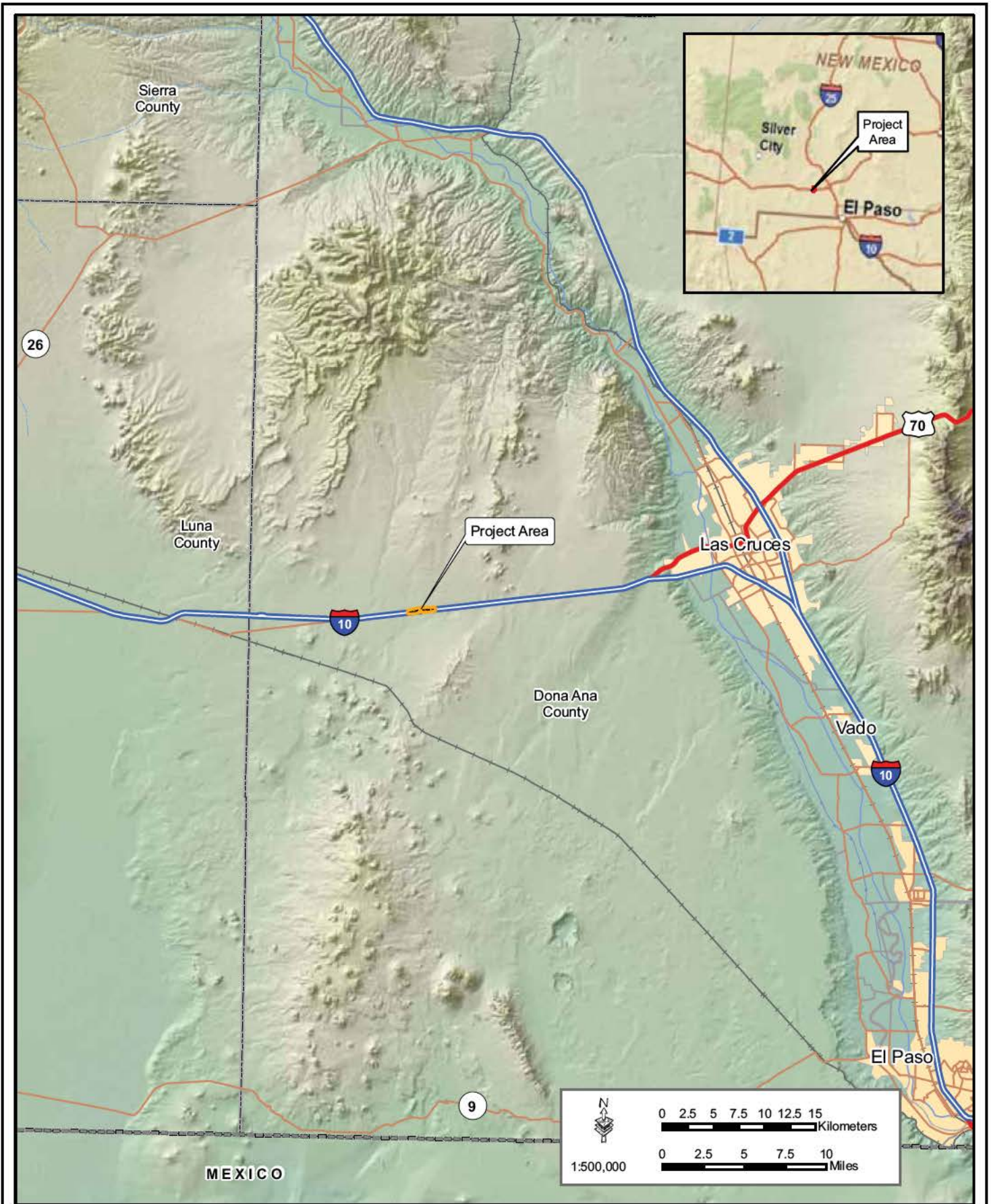
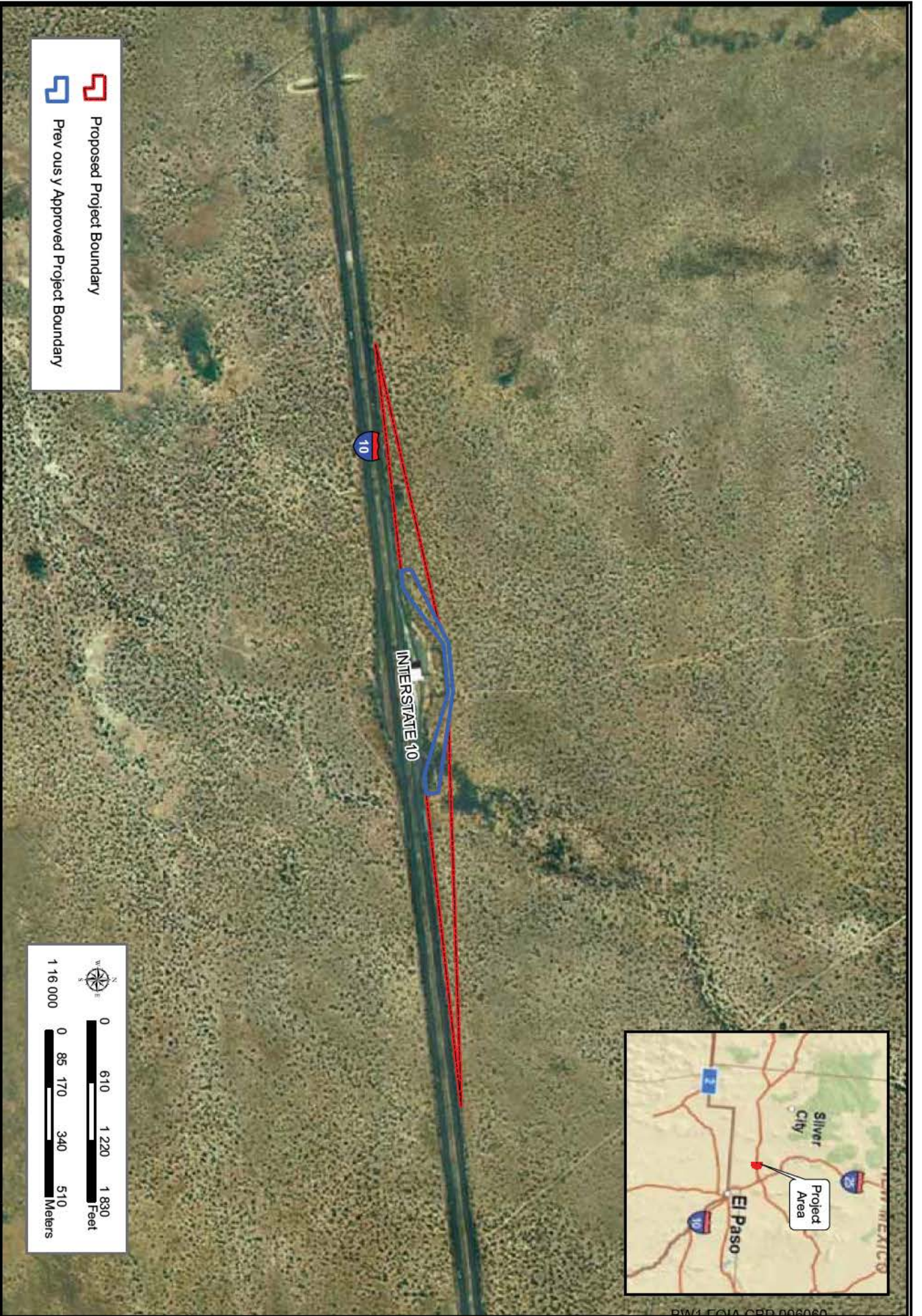


Figure 1: Vicinity Map



June 2009



PW1-EQIA-CFD-006060

Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Honorable Jeff Houser, Chairman
Fort Sill Apache Tribe of Oklahoma
Rt. 2, Box 121
Apache, Oklahoma 73006

Dear Chairman Houser,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that you provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

We intend to provide you with a copy of the Draft SEA for review once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

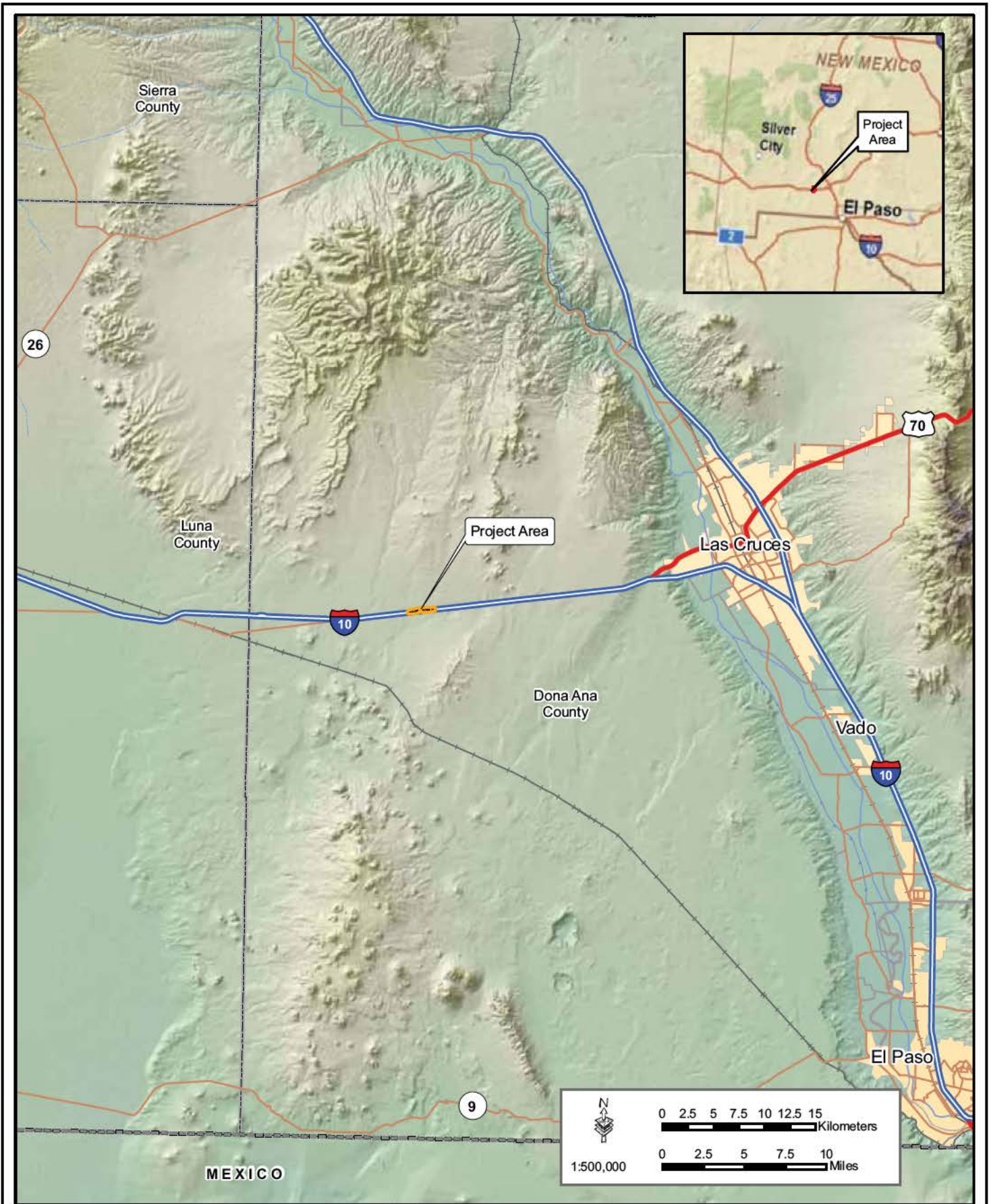
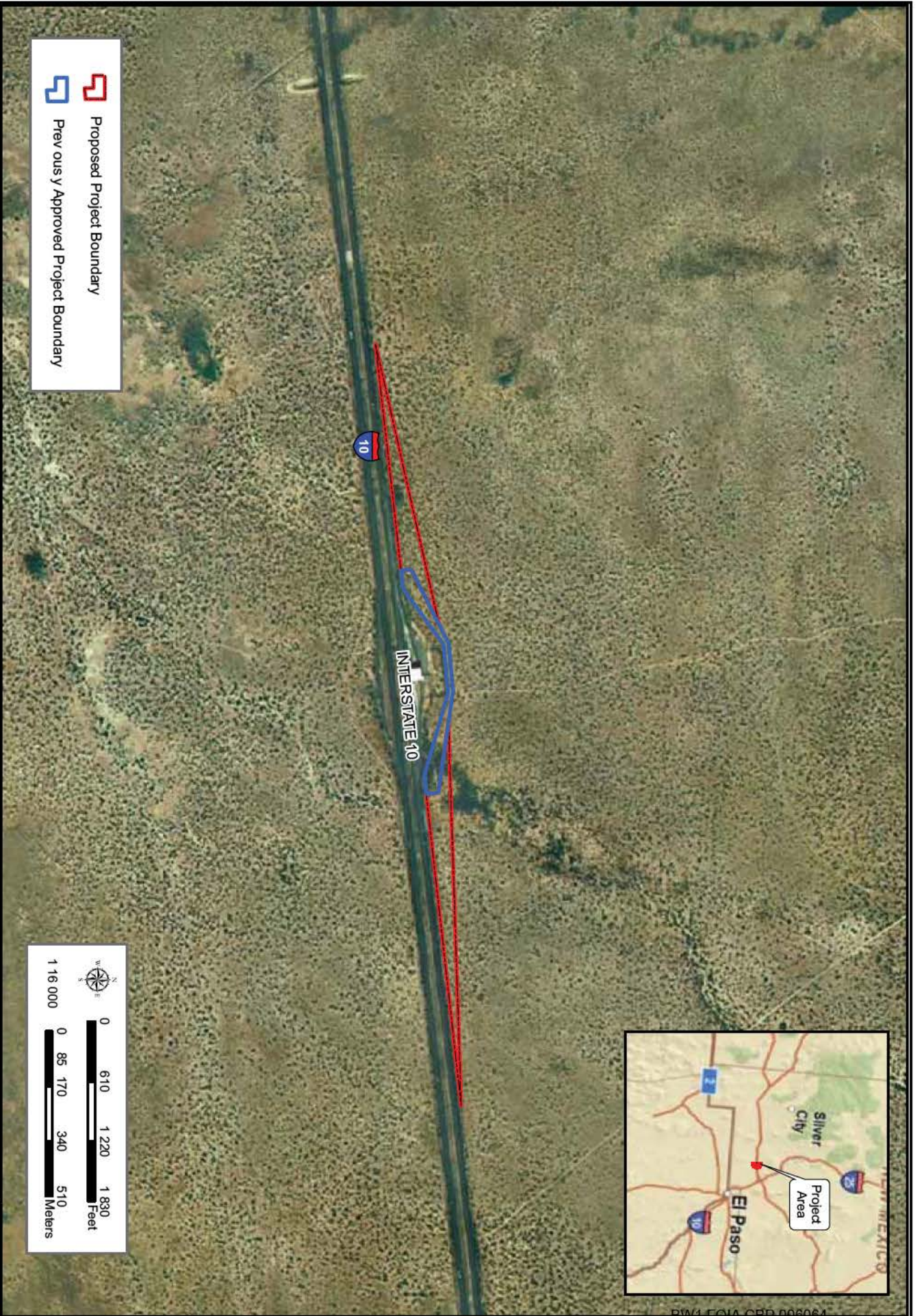


Figure 1: Vicinity Map



June 2009



 Proposed Project Boundary
 Previous y Approved Project Boundary



 0 610 1 220 1 830
 Feet
 0 85 170 340 510
 Meters
 1:16,000



Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Honorable Mark Chine, President
ATTN: Ms. Holly Houghton, Cultural Affairs Office
Mescalero Apache Tribe
124 Chiricahua Plaza
Mescalero, New Mexico 88340

Dear President Chine,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that you provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

We intend to provide you with a copy of the Draft SEA for review once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

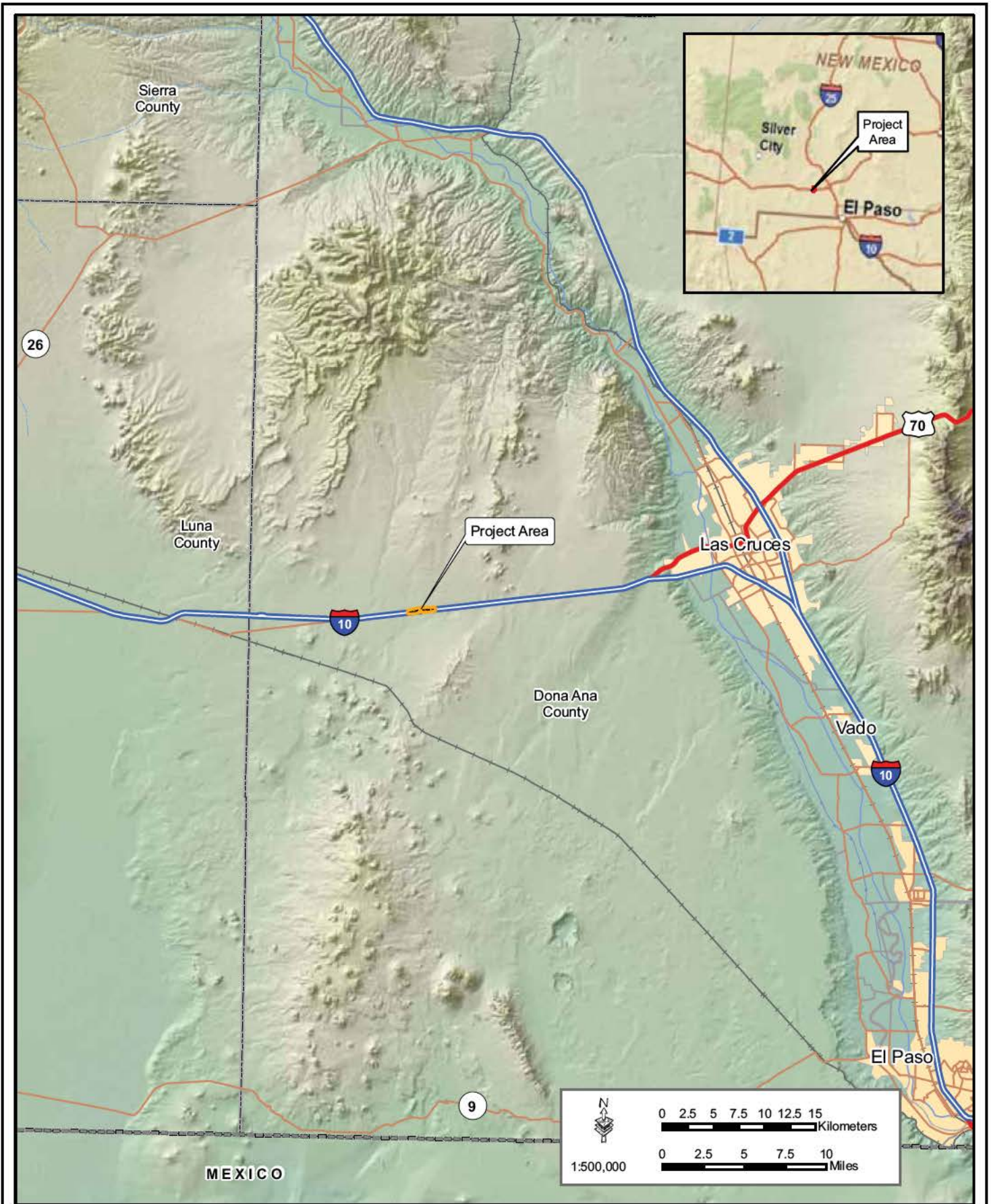
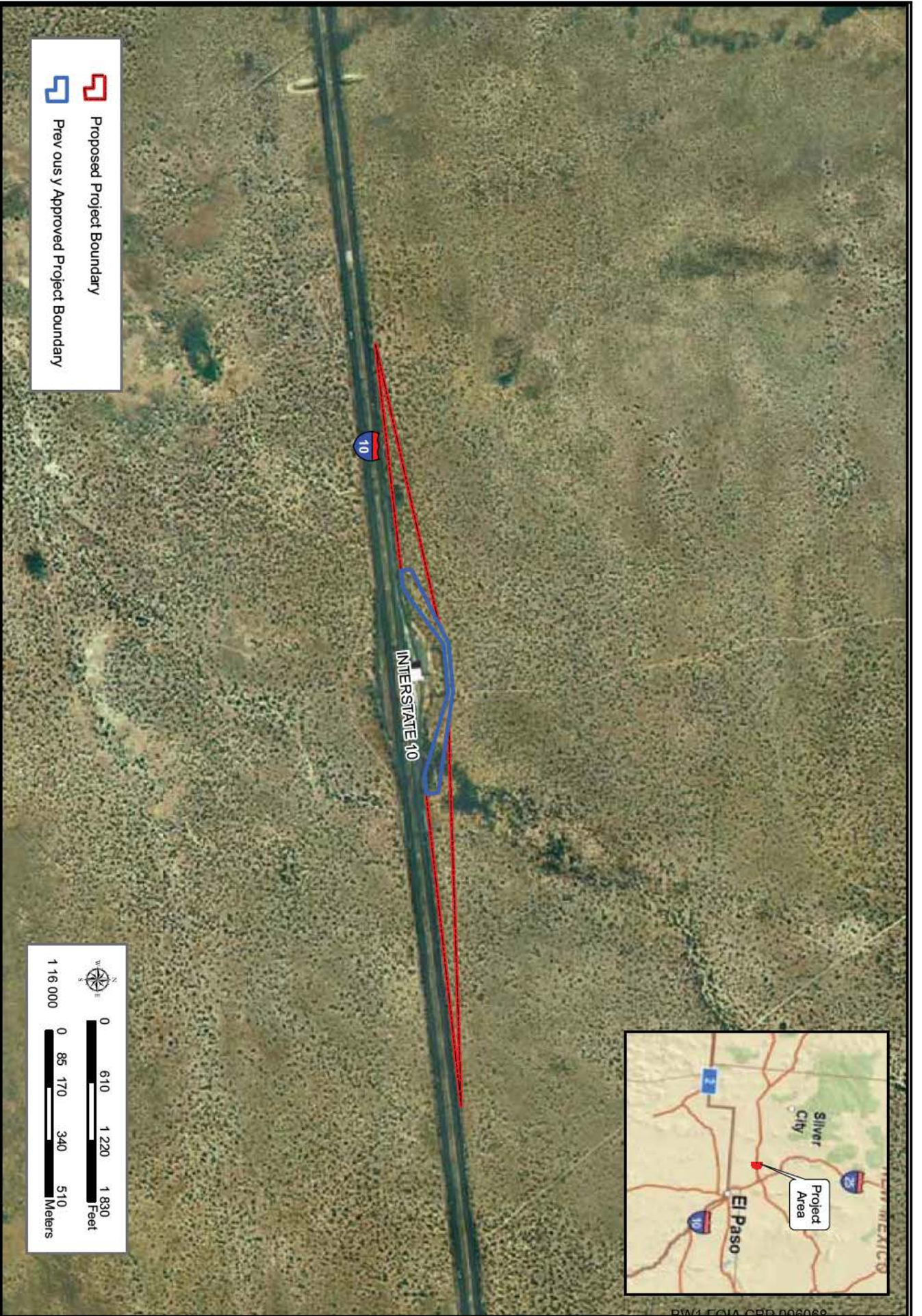


Figure 1: Vicinity Map



June 2009



PW1-EQIA-CFD-006068

Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

U.S. Fish and Wildlife Service
New Mexico Ecological Services State Office
ATTN: Wally Murphy
2105 Osuna NE
Albuquerque, NM 87113

Dear Mr. Murphy:

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available regarding Federal and state resources of concern potentially occurring within the project area. CBP respectfully requests that your agency provide a list of resources of concern that occur within or near the project site, and a location map for those resources that you believe may be affected by the proposed CBP activities in Doña Ana County, New Mexico.

We intend to provide your agency with a copy of the Draft SEA once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

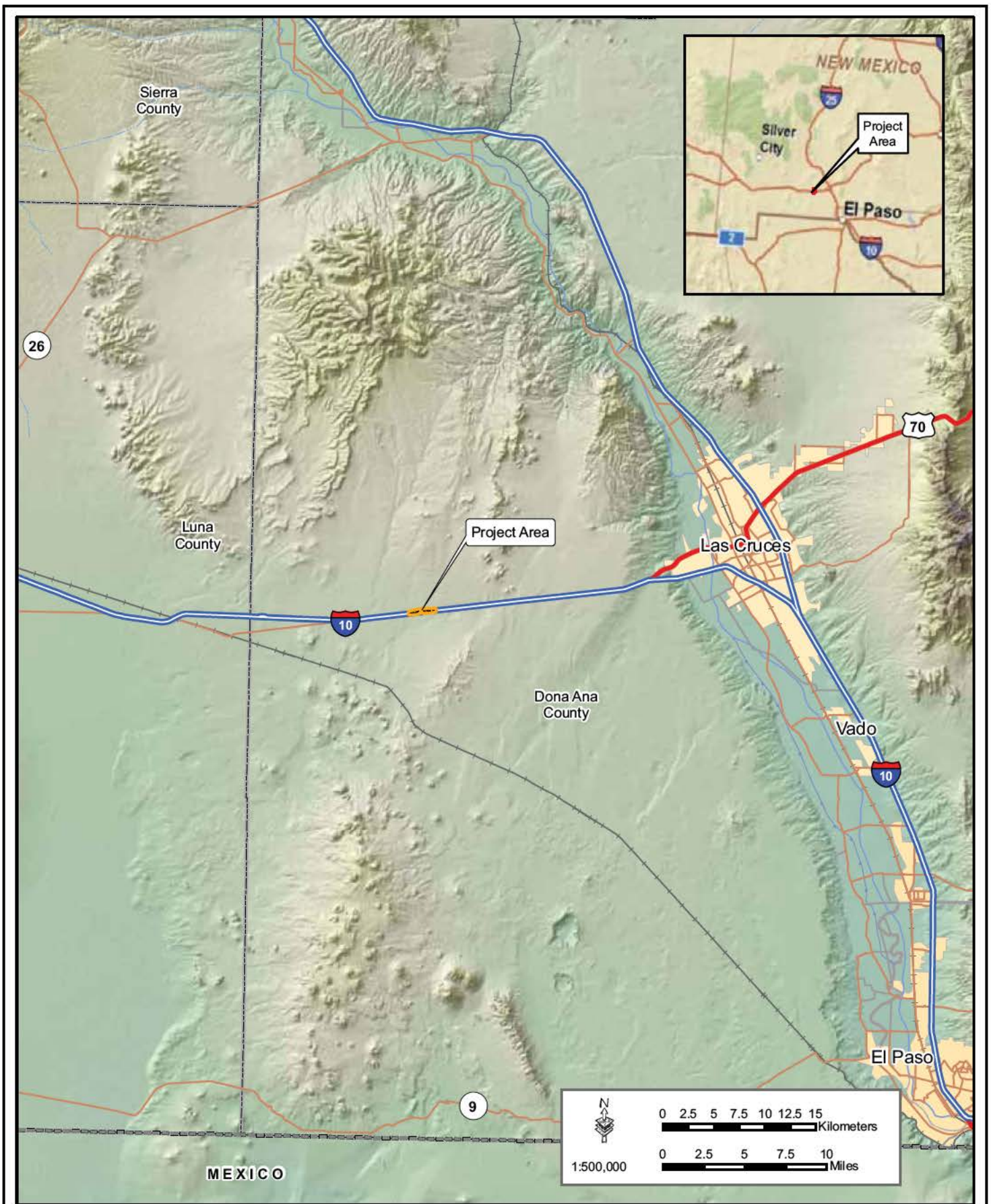
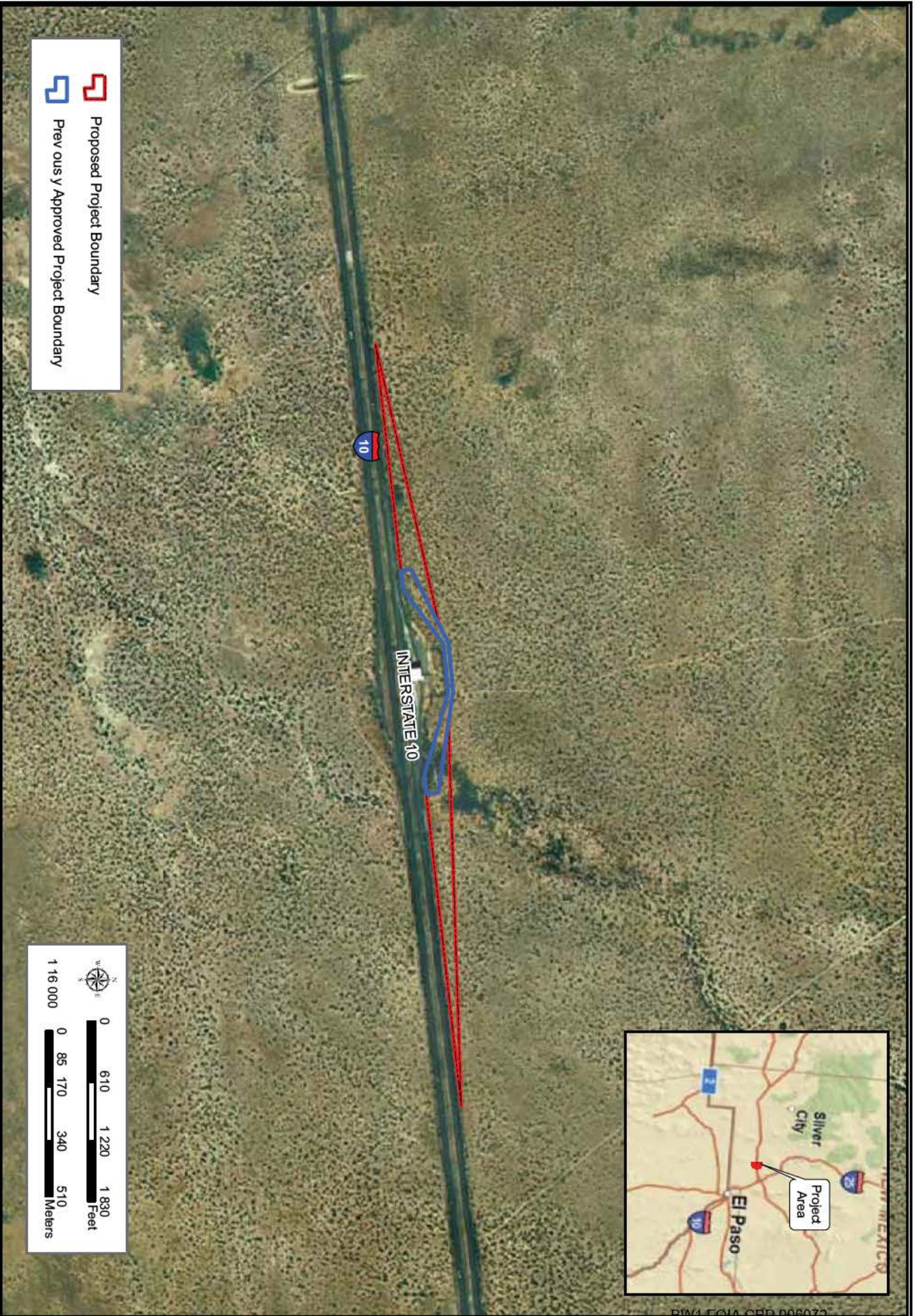


Figure 1: Vicinity Map



June 2009



PW1-EQIA-CFD-006072

Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Ms. Katherine Slick, Director
Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Ms. Slick,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that your agency provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

We intend to provide your agency with a copy of the Draft SEA once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

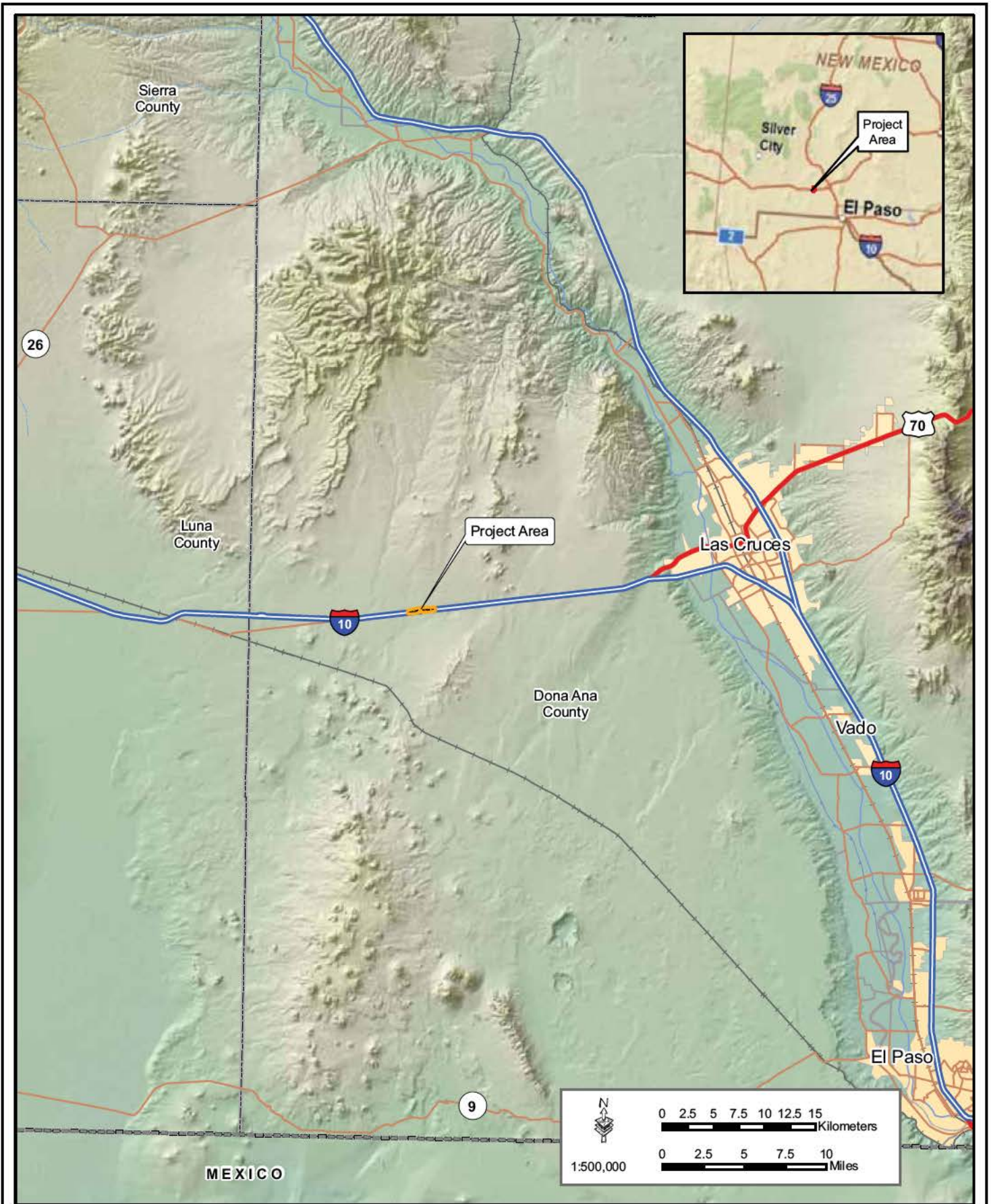


Figure 1: Vicinity Map



June 2009

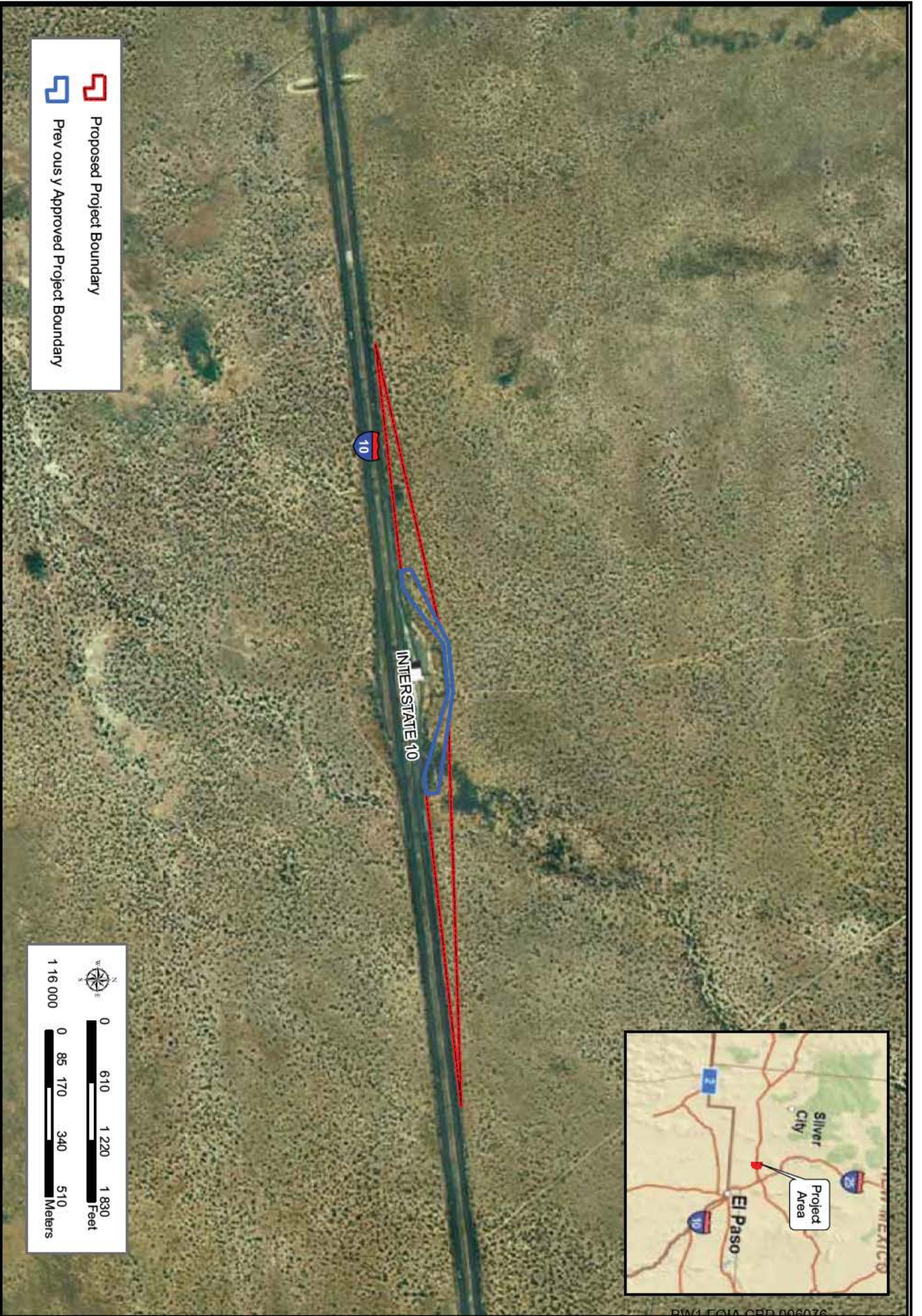


Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247-4232



U.S. Customs and
Border Protection

11 August 2009

087459



Ms. Katherine Slick, Director
Department of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Ms. Slick:

The U.S. Customs and Border Protection (CBP) intends to expand an existing checkpoint located along Interstate 10 in Dona Ana County, New Mexico. The extension will encompass 17 acres adjacent to the interstate at the current checkpoint location. CBP is in the process of completing an Environmental Assessment for this project. In addition, we have conducted a cultural resources survey of the 17 acres proposed for the expansion. As part of our on-going Section 106 consultation, we have enclosed a copy of the survey report for your review and comment. The survey did not locate any prehistoric or historic cultural resources at the site.

Based on the findings of the survey report, and in accordance with 36 CFR Part 800.4(d)(1), CBP has determined that No Historic Properties will be affected by the proposed undertaking. CBP respectfully requests your concurrence with this finding of no effect. If you have any questions, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

per
Cait Allred
Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

Concur No Historic Properties Affected. 9/16/09
M. Ensey
for NM State Historic Preservation Officer

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Honorable Frank Piaz, Governor
Ysleta del Sur Pueblo
Tigua Reservation
119 South Old Pueblo Road
El Paso, Texas 79907

Dear Governor Piaz,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that you provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

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Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

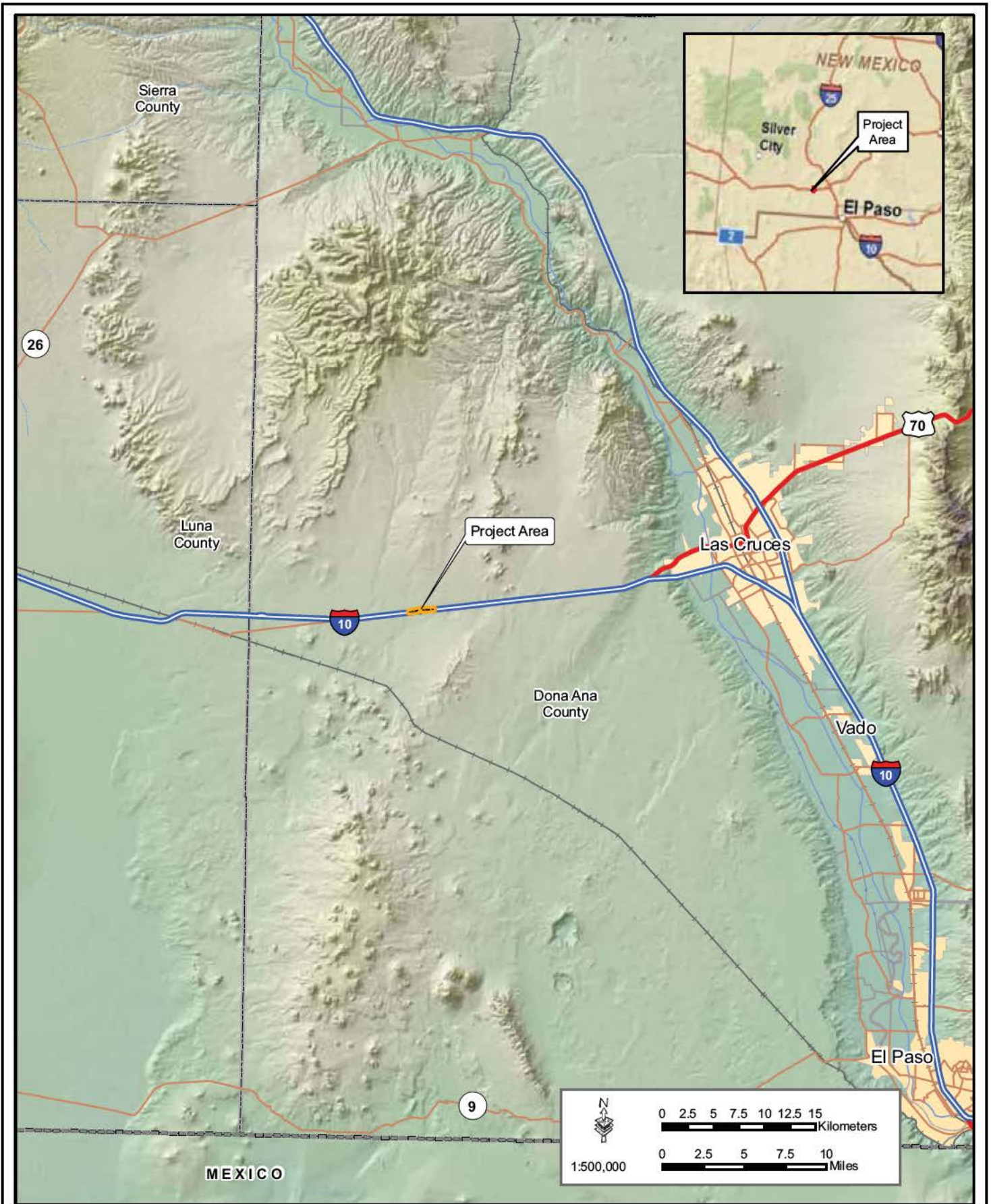


Figure 1: Vicinity Map



June 2009

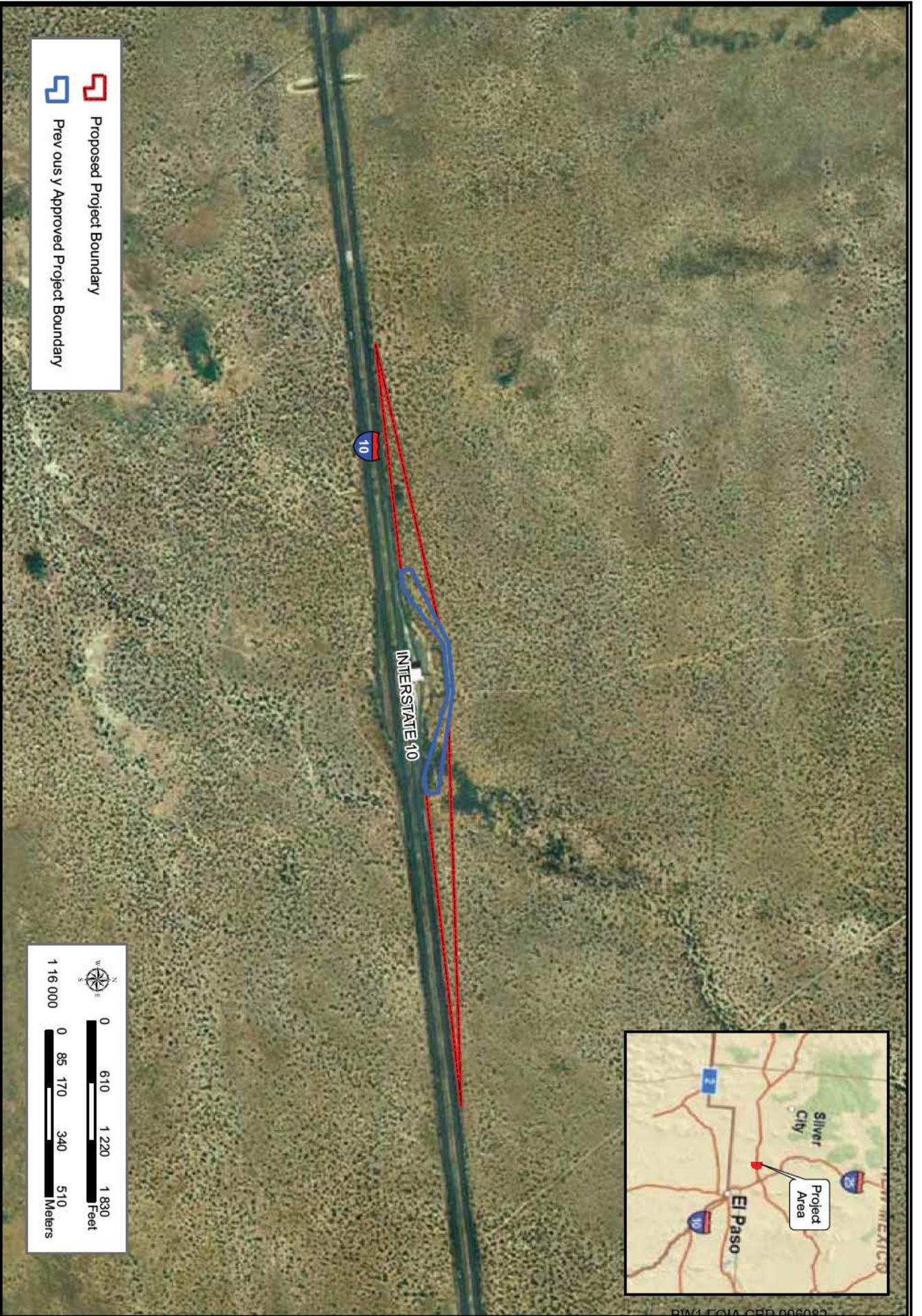


Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Honorable Benjamin H. Nuvamsa, Chairman
Hopi Tribal Council
P.O. Box 123
Kykotsmovi, AZ 86039

Dear Chairman Nuvamsa,

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available, and in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP respectfully requests that you provide information on any cultural resources that you believe may be affected by the proposed USBP activities in Doña Ana County, New Mexico. A cultural survey is being conducted for the proposed project area, and we will provide you a copy of the cultural resources report for your comment and concurrence once it is prepared.

We intend to provide you with a copy of the Draft SEA for review once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Margaret Hartigan', with a long horizontal flourish extending to the right.

Margaret Hartigan, Director
Dallas Facilities Center

Enclosure

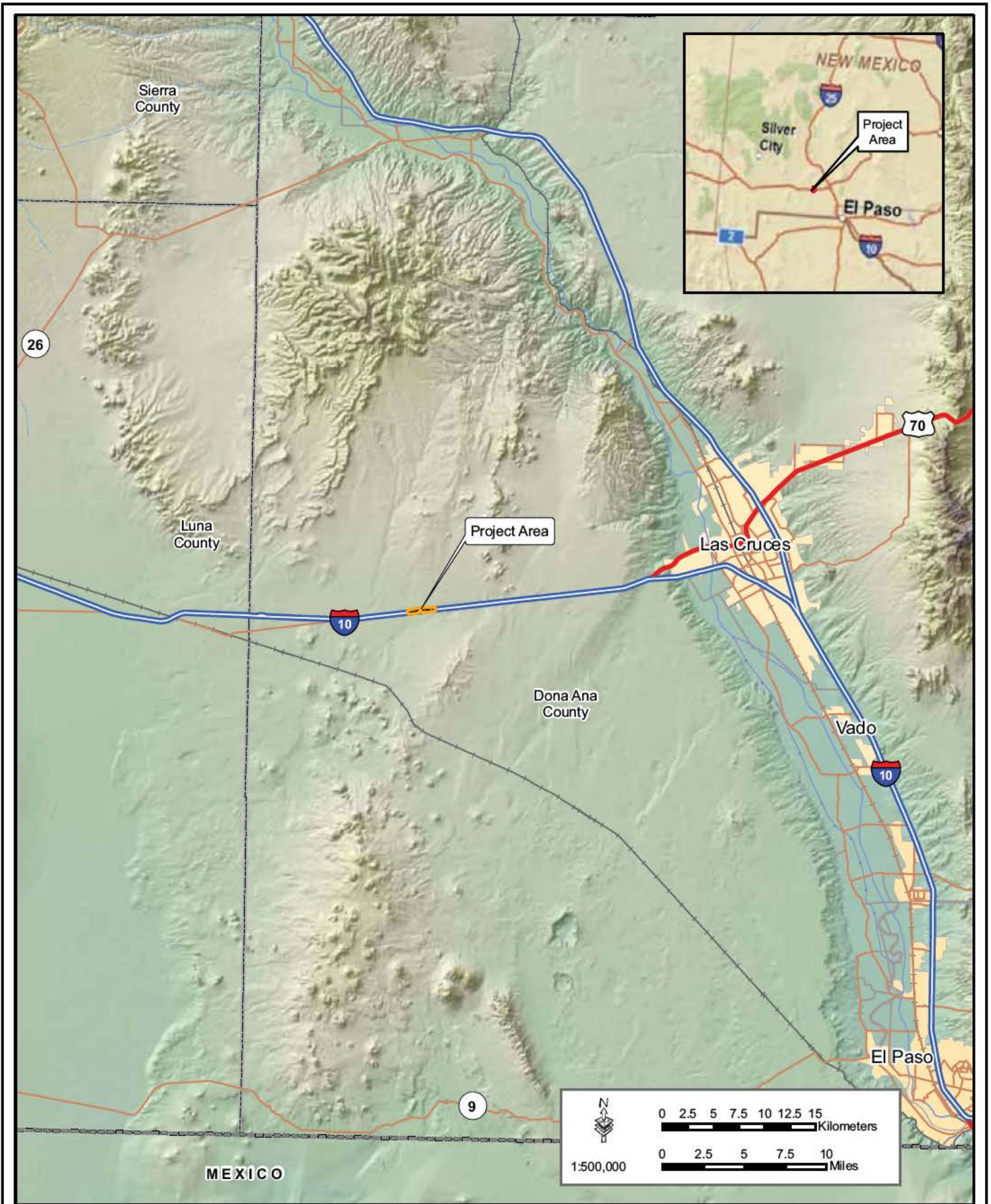
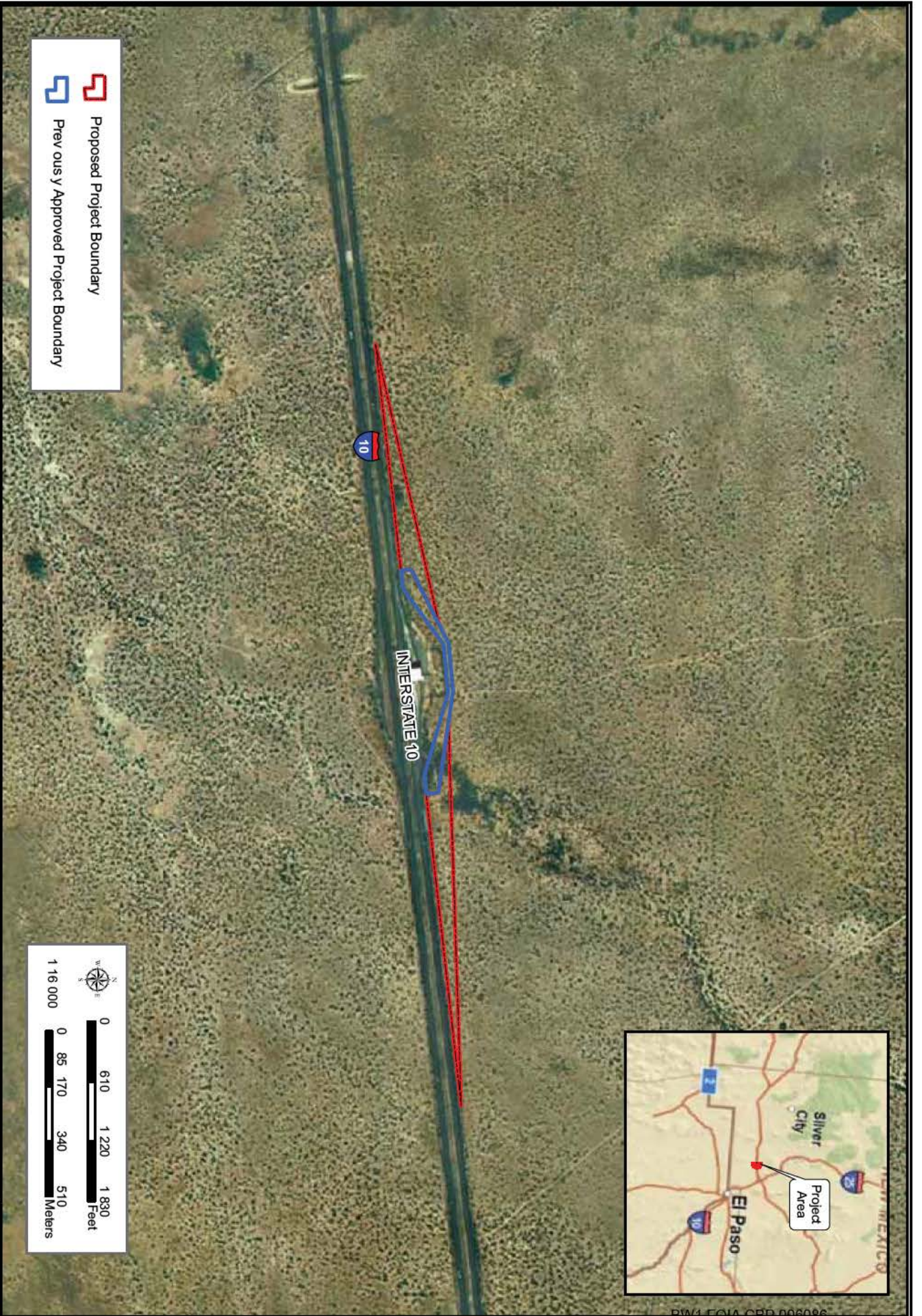


Figure 1: Vicinity Map



June 2009



 Proposed Project Boundary
 Previous Approved Project Boundary





 1:16,000

 0 610 1220 1830 Feet

 0 85 170 340 510 Meters

Figure 2: Project Area Map

U.S. Department of Homeland Security
Dallas Facilities Center
7701 North Stemmons Freeway
Dallas, Texas 75247 4232



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

30 June 2009

Dr. Gedi Cibas
New Mexico Environment Department
Environmental Impact Review Coordinator
1190 St. Francis Drive
Santa Fe, NM 87502

Dear Dr. Cibas:

U.S. Customs and Border Protection (CBP) is preparing a Supplemental Environmental Assessment (SEA) that addresses the potential effects, beneficial and adverse, resulting from the proposed construction, operation, and maintenance of expanded commercial traffic lanes at the U.S. Border Patrol (USBP) I-10 Checkpoint near Las Cruces, Doña Ana County, New Mexico. The proposed traffic lanes would be constructed to accommodate the heavy truck traffic at the checkpoint, and to provide for increased separation from general civilian traffic and increase safety at the checkpoint. The expansion of the I-10 checkpoint was examined in a SEA completed in 2007, and a Finding of No Significant Impact (FONSI) was issued for the project in 2007. The new truck lanes are directly adjacent to the previous checkpoint expansion property along I-10. The project area is located approximately 18 miles west of the City of Las Cruces (Figure 1). Figure 2 shows the proposed project area boundaries on aerial photography. The additional 17 acres being added to the project footprint are owned by the State of New Mexico and the U.S. Bureau of Land Management.

We are currently in the process of gathering the most current information available regarding Federal and state resources of concern potentially occurring within the project area. CBP respectfully requests that your agency provide a list of resources of concern that occur within or near the project site, and a location map for those resources that you believe may be affected by the proposed CBP activities in Doña Ana County, New Mexico. Concerns and requirements addressed in your previous response dated February 19, 2007 will be incorporated into this SEA (your file Number: 2409ER).

We intend to provide your agency with a copy of the Draft SEA once the document is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft SEA.

Your prompt attention to this request would be greatly appreciated. For additional information, please contact Mr. Mark Gable, Dallas Facilities Center, CBP, 7701 North Stemmons Freeway, Dallas, Texas 75247-4232; office telephone (214) 905-5509 or email at mark.gable@dhs.gov.

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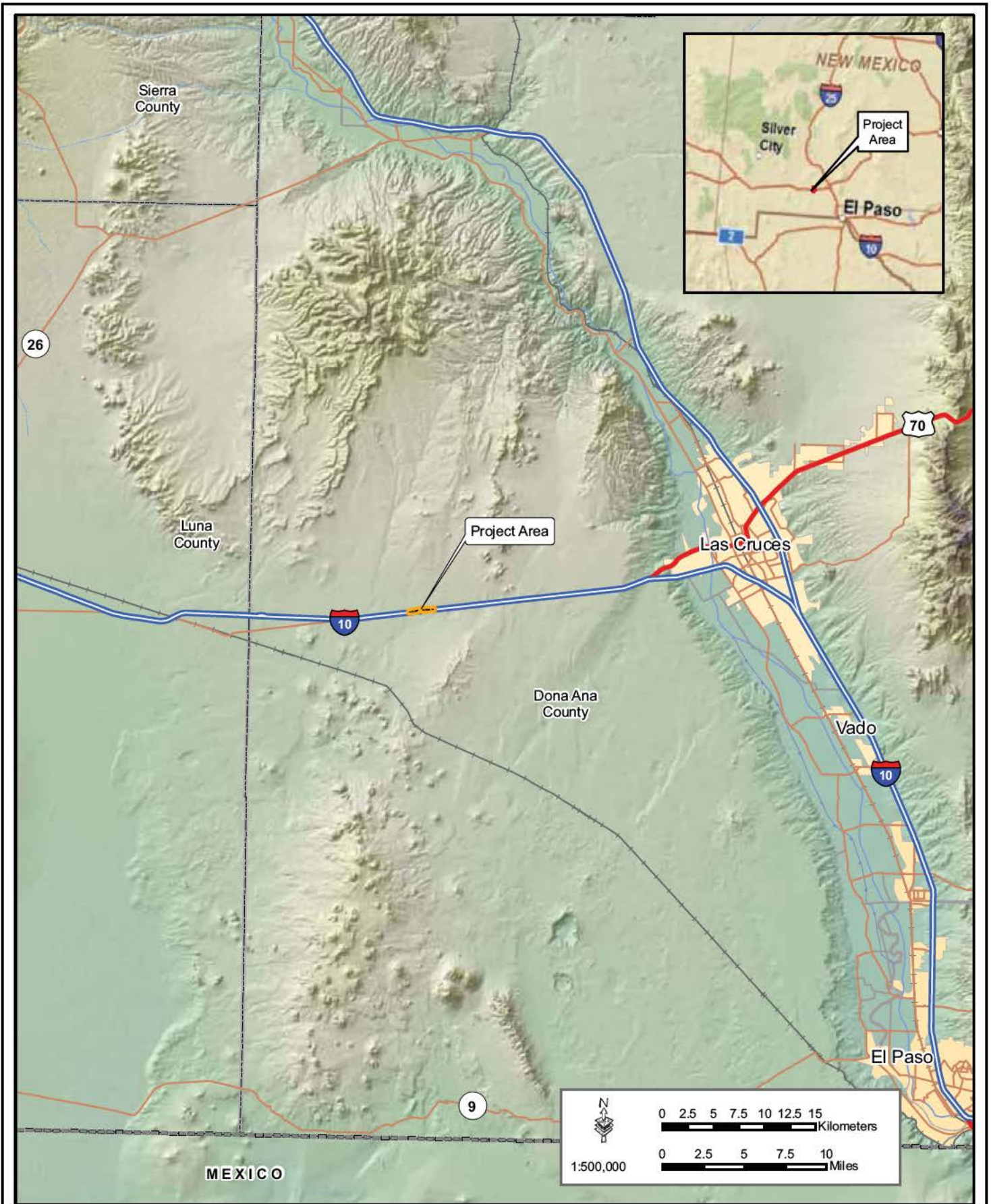
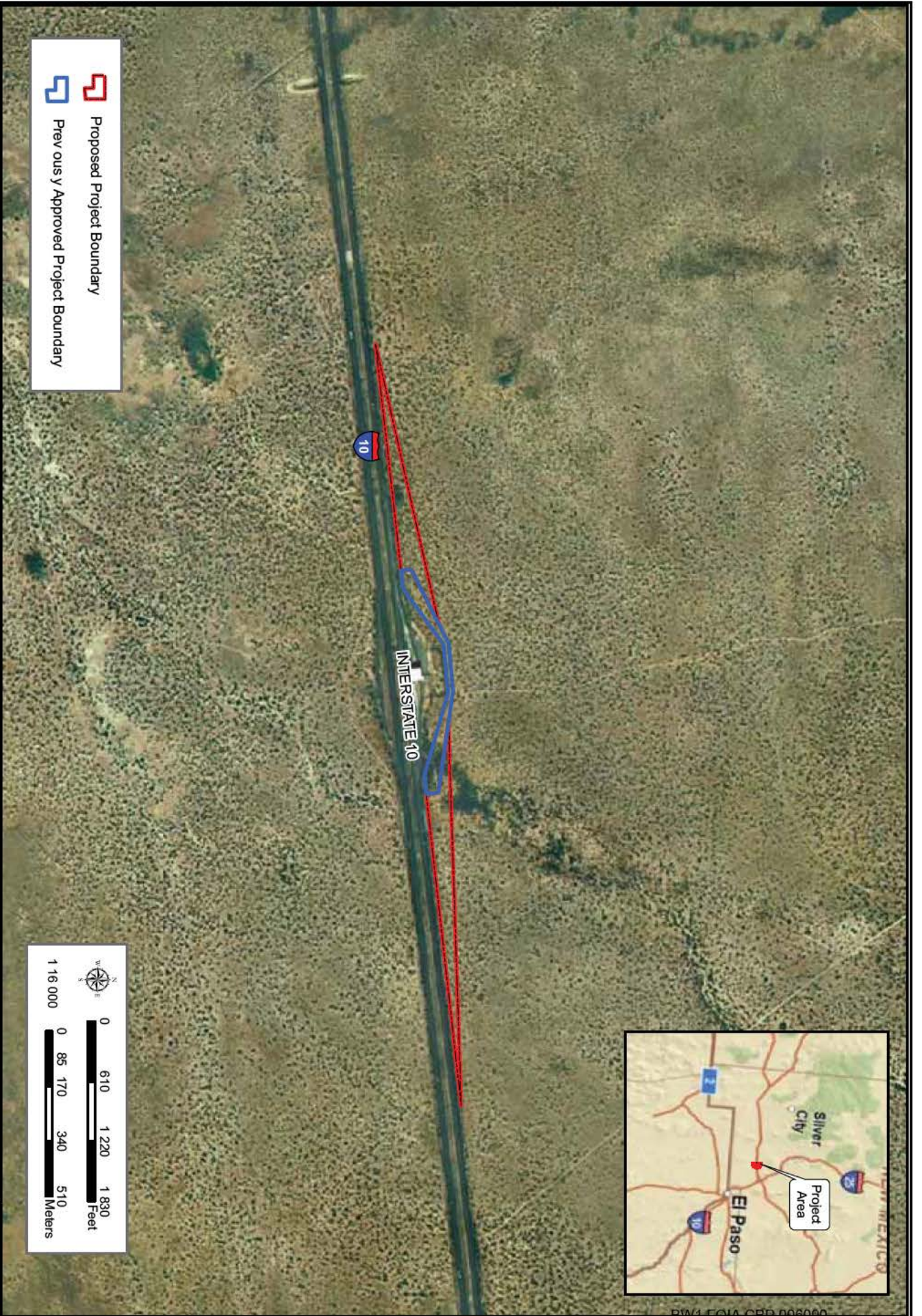


Figure 1: Vicinity Map



June 2009



PW1-EQIA-CFD-006000

Figure 2: Project Area Map

LAS CRUCES SUN-NEWS

PROOF OF PUBLICATION

I, being duly sworn, Lou Hendren deposes and says that he is the Advertising Manager of the Las Cruces Sun-News, a newspaper published daily in the State of New Mexico; that the notice 42327 is an exact duplicate of the notice that was published once a week/day in regular and entire issue of said newspaper and not in any supplement thereof for 1 consecutive week(s)/day(s), the first publication was in the issue dated August 07, 2009 and the last publication was August 07, 2009 ____.

Despondent further states this newspaper is duly qualified to publish legal notice or advertisements within the meaning of Sec. Chapter 167, Laws of 1937.

Signed

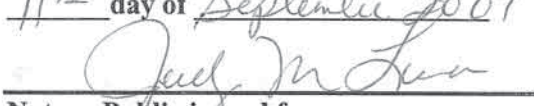

 Advertising Manager
 Official Position

STATE OF NEW MEXICO

ss.

County of Dona Ana

Subscribed and sworn before me this
 11th day of September 2009


 Notary Public in and for

Dona Ana County, New Mexico

March 29, 2011

My Term Expires

NOTICE OF AVAILABILITY DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR THE EXPANSION OF COMMERCIAL TRUCK LANES AT THE U.S. BORDER PATROL I-10 CHECKPOINT NEAR LAS CRUCES, NEW MEXICO

The public is hereby notified of the availability of the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for the expansion of commercial truck lanes at the U.S. Border Patrol I-10 Checkpoint near Las Cruces, New Mexico, prepared by U.S. Customs and Border Protection. The checkpoint improvements are needed to remediate public safety concerns and traffic delays at the checkpoint. The project is located on the north side of I-10, approximately 12 miles west of Las Cruces in Doña Ana County, New Mexico. The Draft SEA and Draft FONSI are available for review and downloading from the U.S. Army Corps of Engineers, Fort Worth District's Internet web page at the following url address: <http://ecso.swf.usace.army.mil/> under the link for Documents for Public Review/Comment. Copies of the documents are also available at the Thomas Brannigan Memorial Library, 200 E. Picacho, Las Cruces, NM 88001.



OFFICIAL SEAL
 JUDY M. LUNA
 NOTARY PUBLIC, STATE OF NEW MEXICO
 My commission expires: 3/29/2011

LAS CRUCES SUN-NEWS

Comments will be accepted on the Draft SEA until September 7, 2009. For additional information, contact Ms. Traci Fambrough, U.S. Army Corps of Engineers, Environmental Resources Branch, 819 Taylor Street, Room 3B09, Fort Worth, Texas 76102.

Pub No. 42327

Pub Date: Aug 07,2009

← *continued from front cover*

ROW	right-of-way
SEA	Supplemental Environmental Assessment
SHPO	State Historic Preservation Officer
SO ₂	sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasure Plan
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
U.S.	United States
U.S.C.	U.S. Code
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
USGS	U.S. Geological Survey
WUS	waters of the U.S.



Final

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
FOR THE SBI_{NET} TUCSON WEST TOWER PROJECT
NOGALES AND SONOITA STATIONS' AREA OF RESPONSIBILITY
U.S. BORDER PATROL,
TUCSON SECTOR**

**U.S. Department of Homeland Security
U.S. Customs and Border Protection
SBI_{net}**



June 2010

BW1 FOIA CBP 006095

FINDING OF NO SIGNIFICANT IMPACT
Supplemental Environmental Assessment
for the SBI*net* Tucson West Tower Project
Nogales and Sonoita Stations' Area of Responsibility
U.S. Border Patrol, Tucson Sector, Arizona

1 **PROJECT HISTORY:** The Secure Border Initiative (SBI) is a comprehensive, multi-
2 year plan established by the Department of Homeland Security (DHS) in November
3 2005 to secure the United States (U.S.) borders and reduce illegal immigration. The
4 SBI mission is to promote border security strategies that protect against and prevent
5 terrorist attacks and other transnational crimes. Additionally, the SBI initiative will
6 coordinate DHS efforts to ensure the legal entry and exit of people and goods moving
7 across our borders and improve the enforcement of immigration, customs, and
8 agriculture laws at our borders, within the country, and abroad.

9
10 SBI*net* is the component of SBI charged with developing and installing technology and
11 attendant tactical infrastructure (TI) solutions to help U.S. Customs and Border
12 Protection (CBP) gain effective control of our Nation's borders. The goal of SBI*net* is to
13 field the most effective, proven technology and response platforms, and integrate them
14 into a single, comprehensive border security system for DHS.

15
16 CBP implements the National Border Patrol Strategy with the goal of establishing and
17 maintaining effective control of the borders. The U.S. Border Patrol (USBP) maximizes
18 border security with an appropriate balance of personnel, technology, and infrastructure.
19 Effective control exists when CBP is consistently able to: 1) detect illegal entries in to
20 the U.S. when they occur; 2) identify the entry and classify its level of threat; 3)
21 efficiently and effectively respond to these entries; and, 4) bring each event to an
22 appropriate law enforcement resolution.

23
24 This Supplemental Environmental Assessment (SEA) updates the *2008 Environmental*
25 *Assessment for the Proposed SBI*net* Tucson West Project Ajo, Tucson, Casa Grande,*
26 *Nogales, and Sonoita Stations Areas of Operation, U.S. Border Patrol, Tucson Sector,*
27 *Arizona* which analyzed various aspects of a proposed project that would be carried out
28 under CBP SBI and implemented as a part of the SBI*net* program. The 2008
29 Environmental Assessment (EA) addressed the potential direct and indirect effects of
30 the proposed construction, upgrade, operation, and maintenance of a system of 54
31 sensor and communication towers and the construction and improvement of access
32 roads. After completion of the 2008 EA and development of the final laydown for the
33 SBI*net* Tucson West Project, SBI*net* identified the need for three new towers and the
34 modification of some aspects of one tower covered in the 2008 EA.

35
36 This SEA was prepared in compliance with provisions of the National Environmental
37 Policy Act (NEPA) of 1969 as amended (42 U.S. Code [U.S.C.] 4321 et seq.), the Council
38 on Environmental Quality's (CEQ) NEPA implementing regulations at 40 Code of Federal
39 Regulations (CFR) Part 1500, and the DHS *Management Directive 023-01,*
40 *Environmental Planning Program (71 Federal Register [FR] 16790).*

1 The SEA addresses the potential direct and indirect effects, beneficial and adverse, of
2 the proposed construction, operation, and maintenance of three new sensor and
3 communication towers and modification of one previously analyzed sensor tower,
4 proposed construction of new access roads and repair or improvements to existing
5 approach roads associated with construction and operation of the proposed towers within
6 the U.S. Border Patrol, Tucson Sector, Arizona.

7
8 **PROJECT LOCATION:** The affected area for this SEA covers the Nogales and Sonoita
9 Areas of Responsibility (AOR) near Nogales, Arizona and approximately 56 linear miles
10 of U.S. border. All activities included as part of the Proposed Action are within Santa
11 Cruz County.

12
13 **PURPOSE AND NEED:** After further analysis of technical and operational needs,
14 *SBlnet* determined that three new towers and modification of one previously analyzed
15 tower were needed to enhance the operational and technical capabilities of the *SBlnet*
16 Tucson West Tower Project. Proposed site TCA-NGL-141 was analyzed as an
17 alternate tower site in the 2008 EA; however, after further consideration it was
18 determined the tower was needed to meet operational needs (i.e., the construction of
19 the tower is essential to the *SBlnet* Tucson West Tower Project). Proposed tower site
20 TCA-NGL-316 is needed to replace tower site TCA-NGL-048 because a real estate
21 agreement has not been reached at this time with the landowner. Additionally, TCA-
22 SON-314 would replace tower site TCA-SON-055 (analyzed as part of the 2008 EA
23 Proposed Action) to allow for a better viewshed. Modifications to tower site TCA-SON-
24 057 are needed to enhance the spatial coverage of the tower site.

25
26 The purpose of this project is to support CBP's mission through enhancing technological
27 capabilities in support of assessing a high frequency and volume of illegal cross border
28 activities over a vast area of the border region. The proposed project described in this
29 SEA would enhance CBP's capability to provide spatially and temporally continuous
30 surveillance across the entire 30,000 square mile area affected by the proposed project.

31
32 This supplemental action is needed to:

- 33 1) provide more efficient and effective means of assessing border activities;
34 2) provide rapid detection and accurate characterization of potential threats;
35 3) provide coordinated deployment of resources in the apprehension of CBVs; and
36 4) reduce crime in border communities and improve the quality of life and economic
37 vitality of border regions through provision of the tools necessary for effective law
38 enforcement.

39
40 **ALTERNATIVES:** Three alternatives were considered: No Action Alternative,
41 Proposed Action, and Alternative 1. Other alternatives considered but rejected and not
42 further analyzed in this EA were the use of:

- 43 • Unmanned aircraft systems;
44 • Remote sensing satellites;

- Unattended ground sensors;
- Increased CBP workforce; and
- Increased aerial reconnaissance/operations.

Seven tower sites were evaluated for both sensor and communication efficiencies and overall compatibility with the *SBlnet* Tucson West Tower Project network design and connectivity. Of the sites evaluated, four sites were eliminated as unsuitable for tower construction due to operational (e.g., area coverage), constructability (e.g., soils, topography), real estate (e.g., rights of entry), and/or technical requirements (e.g., line of sight) that could not be met in a particular location. These sites are summarized along with the reasons for their elimination as proposed tower sites in the table below.

Table 1. Alternate Sites Proposed but Rejected

Tower ID	Station	Reason for Rejection*
TCA-NGL-048	Nogales	RE
TCA-NGL-318	Nogales	RE
TCA-NGL-319	Nogales	RE
TCA-NGL-210	Nogales	T
TCA-NGL-211	Nogales	T
TCA-SON-055	Sonoita	O, T

O—operational, T—technical, C—constructability, RE—real estate

No Action Alternative: The three towers described in this SEA would not be constructed under the No Action Alternative. However, 54 towers analyzed in the 2008 EA would continue to be constructed, upgraded, operated, and maintained within the Ajo, Tucson, Casa Grande, Nogales and Sonoita stations' AORs. Of the proposed 54 towers, 12 are upgrades to existing towers (seven existing CBP towers, one tower located at the new proposed Ajo Station and four existing commercial towers). Impacts resulting from the construction of the 42 new towers and the retrofit/replacement of the 12 existing towers were fully assessed in the 2008 EA; however, upgrades to these existing towers were considered to be environmentally benign due to the fact the areas are currently disturbed and no further ground disturbance would occur. Implementation of the No Action Alternative would not enhance CBP's capability to provide continuous surveillance within the Nogales and Sonoita stations' AORs. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action are evaluated.

Proposed Action Alternative: The Proposed Action includes the construction, operation, and maintenance of three sensor towers (TCA-NGL-141 and 316, and TCA-SON-314), and modification of one previously analyzed sensor tower (TCA-SON-057), construction of new access roads and repair and improvement to existing approach roads associated with construction and operation of the proposed towers.

Proposed site TCA-NGL-141 was analyzed as an alternate tower site in the 2008 EA; however, after further consideration it was determined the tower was needed to meet operational needs (i.e., the construction of the tower is essential to the *SBlnet* Tucson West Tower Project). Proposed tower site TCA-NGL-316 is needed to replace tower site TCA-NGL-048 because a real estate agreement has not been reached at this time

1 with the landowner. Construction of tower site TCA-NGL-316 would also eliminate the
2 need for two originally planned towers (TCA-NGL-210 and 211). Additionally, tower site
3 TCA-SON-314 would replace tower site TCA-NGL-055 (analyzed as part of the 2008
4 EA Proposed Action) to allow for enhanced spatial coverage. Modifications to tower site
5 TCA-SON-057 are needed to enhance the spatial coverage of the tower site. The
6 Proposed Action would decrease the total number of towers in the SBI*net* Tucson West
7 Tower Project, as described in the 2008 EA, to 53 towers.

8
9 In general, a typical tower in the SBI*net* Tucson West Tower Project would:

- 10 • be 80 to 100 feet high and would not require guy wires;
- 11 • have a footprint up to 100- X 100-foot, including the 50- X 50-foot or 80- X 80-
12 foot tower site and a maintained fire buffer. The fire buffer would be maintained
13 free of vegetation;
- 14 • have an equipment shelter with an approximately 10- X 12-foot footprint;
- 15 • have perimeter security fencing; and
- 16 • use one of two power systems: commercial grid power where available, or a
17 hybrid propane fueled generator-solar system with a 1,000-gallon propane fuel
18 tank.

19
20 Two types of tower structures are proposed for this project: self standing towers (SST),
21 and rapidly deployed towers (RDT). RDTs are temporary structures that can be
22 disassembled if necessary.

23
24 Access roads would need to be improved or constructed in order to install, operate, and
25 maintain the proposed towers. Two new access roads totaling 531 feet in length would
26 be constructed to provide access to tower sites TCA-NGL-141 and 316. The new access
27 roads would be constructed to provide a 12-foot wide driving surface with 2-foot wide
28 shoulders on each side (total width of 16 feet). Temporary construction impacts may
29 occur up to 20 feet on either side of the new (constructed) road for a total width of 40 feet
30 of temporary impacts. Where possible, construction equipment would stay within the
31 area to be impacted by cut-and-fill or V-ditches. The 20-foot temporary construction area
32 would allow room for the maneuvering of construction equipment. Road repair includes
33 minor grading, leveling, and the installation of V-ditches. Temporary impacts may occur
34 in the 2-foot construction easement along 0.66 mile of repaired roads and 1.32 miles of
35 improved roads.

36
37 As part of the Proposed Action, a maintenance crew would visit the tower sites up to twice
38 per month to insure that the equipment is operating smoothly. Propane trucks would fuel
39 those towers, which are not connected to the electrical grid, once per month. This
40 necessitates vehicle travel to each of the proposed tower sites for propane delivery,
41 maintenance, and operations of the towers.

42
43 **Alternative 1:** Alternative 1 is the same as the Proposed Action except TCA-SON-323
44 would be constructed as an alternate to TCA-SON-314. TCA-SON-314 may be located
45 on property potentially over a mining claim site. If for some reason TCA-SON-314
46 becomes unavailable because of the mining claim, TCA-SON-323 would be further

1 reviewed for suitability. A total of three new towers sites, TCA-NGL-141, TCA-NGL-316,
2 and TCA-SON-323, would be constructed and TCA-SON-057 would be modified as part
3 of Alternative 1. Permanent and temporary impacts from road improvement, repair, and
4 construction, would be similar to those under the Proposed Action. However, under
5 Alternative 1, there would be 591 feet of new roads constructed and 1.51 miles of road
6 improved. The length of road to be repaired would be the same as under the Proposed
7 Action (0.66 mile). Temporary impacts may occur up to 20 feet on either side of the new
8 (constructed) road for a total width of 40 feet of temporary impacts along the 591 feet of
9 new road. Temporary impacts may occur in the 2-foot easement along the 0.66 mile of
10 repaired road and the 1.51 miles of improved road.

11
12 **ENVIRONMENTAL CONSEQUENCES:** Implementation of the Proposed Action would
13 permanently disturb 2.34 acres for the construction of the proposed towers and
14 construction, repair and improvement of access and approach roads. Additionally, 1.62
15 acres would be temporarily disturbed during construction activities for the three new
16 proposed towers and modification of tower TCA-SON-057 and construction, repair and
17 improvement of access and approach roads. No impacts to prime farmland would
18 occur.

19
20 No impacts to floodplains from access roads would occur with implementation of the
21 Proposed Action. Additionally, the Proposed Action would have temporary and minor
22 impacts to air, roadways and traffic, groundwater, and surface waters during
23 construction activities. A total of 29 new washes, which are considered waters of the
24 U.S., would be impacted as a result of the Proposed Action. Construction and other
25 road improvements within these washes are authorized under a Nationwide Permit 14.
26 Commercial grid power would not be impacted as a result of the Proposed Action
27 although long-term benefits to socioeconomics could occur. Cultural resources would
28 not be impacted by implementation of the Proposed Action.

29
30 One proposed tower site (TCA-SON-314) and its alternate tower site (TCA-SON-323)
31 are located within Mexican spotted owl (*Strix occidentalis lucida*) critical habitat;
32 however the tower sites lack primary constituent elements for nesting, roosting, and
33 foraging habitat. CBP has determined that the proposed project may affect but is not
34 likely to adversely affect the Mexican spotted owl or designated critical habitat.

35
36 Tower site TCA-SON-057 is situated upstream of Huachuca water umbel (*Lilaeopsis*
37 *schaffneriana recurva*) critical habitat. However, no project-related activities would occur
38 directly in suitable or critical water umbel habitat.

39
40 There are no known lesser long-nosed bat (*Leptonycteris yerbabuenae*) roosts within
41 the project area, although the project area is foraging habitat for the bat. Agaves were
42 identified at tower sites TCA-SON-314 and TCA-SON-323. Some of these agaves were
43 in areas that would be disturbed. Since there are mitigation measures to salvage and
44 transplant agaves and columnar cacti, or replace larger agaves and columnar cacti
45 within an area to be disturbed at a 2:1 ratio, the proposed project may affect but is not
46 likely to adversely affect the lesser long-nosed bat. The Proposed Action would have a

1 long-term, indirect beneficial effect on vegetation communities used by Mexican spotted
2 owl and lesser long-nosed bats through the reduction in illegal alien, smuggler, and
3 other cross border violator (CBV) traffic.

4
5 Noise generated by heavy construction equipment would be intermittent and last
6 approximately 4 weeks during the excavation and preparation of the foundation to install
7 each tower and construct, repair and improve roads, after which, noise levels would
8 return to ambient levels. The noise impacts from construction activities would be short-
9 term and minor and would not significantly impact the noise environment. Noise
10 emissions from generators and air-conditioning associated with the operation of the
11 proposed tower sites would have a minor, long-term impact to the noise environment.
12 Implementation of the Proposed Action would reduce impacts compared to the Tucson
13 West Tower Project addressed in the original 2008 EA. The overall project footprint
14 would be reduced by 4.13 acres (3.44 acres and 0.69 acres temporary and permanent
15 impacts, respectively) and impacts to three Waters of the U.S. would be avoided by
16 eliminating tower TCA-SON-055.

17
18 The proposed project would also result in overall beneficial impacts within the region
19 through a reduction in illegal activities. A decrease in border area crime would be
20 expected from the reduction in illegal activities. No significant adverse effects to the
21 natural or human environment, as defined in 40 CFR Section 1508.27 of the CEQ's
22 Regulations for Implementing NEPA, are expected from implementation of the
23 Proposed Action.

24
25 **MITIGATION:** Mitigation measures are identified for each resource category that could
26 be potentially affected. Many of these measures have been incorporated as standard
27 operating procedures by CBP in similar past projects. Mitigation measures and standard
28 best management practices (BMPs) are also identified in the SEA in Section 5. These
29 mitigation measures and BMPs were included in the 2008 EA.

30
31 Project Planning/Design Communication

- 32
- 33 • CBP will minimize bird perching, nesting, and roosting opportunities on new towers.
 - 34 • Proposed tower sites are not in or near wetlands, other known bird concentration
35 areas (e.g., state or Federal refuges, staging areas, rookeries), in known
36 migratory or daily movement flyways, or in habitat of threatened or endangered
37 species. If discovered otherwise, mitigations will be implemented.
 - 38 • CBP will not use guy wires for tower support to reduce the probability of bird and
39 bat collisions.
 - 40 • CBP will use security lighting for on-ground facilities and equipment that is down-
41 shielded to keep light within the boundaries of the site. Security lights will not
42 shine onto habitat areas at a level greater than 1.5 foot-candles.
 - 43 • CBP will site, design, and construct towers and appurtenant elements to avoid or
44 minimize habitat loss within and adjacent to the tower "footprint." CBP will

1 minimize road access and fencing to reduce or prevent habitat fragmentation and
2 disturbance, and to reduce above-ground obstacles to birds in flight.

- 3 • Where feasible, CBP will place electric power lines underground or on the
4 surface as insulated, shielded wire to avoid electrocution of birds and bats. CBP
5 will apply recommendations of the Avian Power Line Interaction Committee for
6 any required above-ground lines, transformers, or conductors. CBP will use
7 raptor protective devices on above ground wires.
- 8 • CBP will control noxious weeds using U.S. Environmental Protection Agency
9 approved herbicides.
- 10 • If rodent populations on the perimeter of the facility are to be controlled, CBP will
11 not use rodenticides.
- 12 • CBP will develop a Fire Management Plan as part of tower construction and in
13 coordination with the landowner and/or land management agency.
- 14 • Once CBP has determined that towers are no longer needed, CBP will remove
15 them within 12 months. CBP will restore footprints of towers and associated
16 facilities to natural conditions.

17
18 Project Planning/Design – General

19 CBP will use disturbed areas or areas that will be used later in the construction period
20 for staging, parking, and equipment storage.

21
22 CBP will properly design and locate roads so the potential for entrapment of surface
23 flows within the roadbed due to grading will be avoided or minimized.

24
25 CBP will properly design and locate roads so the widening of existing or created
26 roadbeds beyond the design parameters due to improper maintenance and use will be
27 avoided or minimized.

28
29 CBP will properly design and locate roads so the fewest roads needed for Proposed
30 Actions will be constructed to proper standards. In concurrence with the landowners
31 and/or land management agency, once CBP determines that access roads constructed
32 as part of this Proposed Action are no longer needed for the purpose of this project,
33 CBP will close and restore access roads to natural surface and topography using
34 appropriate techniques. The Global Positioning System (GPS) coordinates of roads
35 that are thus closed will be recorded and integrated into the CBP Geographic
36 Information System (GIS) database. A record of acreage or miles of roads taken out of
37 use, restored, and revegetated will be maintained.

38
39 CBP will develop and implement a stormwater management plan (SWMP or stormwater
40 pollution prevention plan [SWPPP]). Erosion control measures and appropriate BMPs,
41 as required and promulgated through the SWMP and engineering designs, will be
42 implemented before, during, and after soil disturbing activities. Areas with highly
43 erodible soils will be given special consideration when preparing the SWMP to ensure
44 incorporation of various erosion control techniques such as straw bales, silt fencing,

1 aggregate materials, wetting compounds, and rehabilitation, where possible, to
2 decrease erosion.

3

4 Site, design, and construct towers and their associated facilities, including roads, to
5 avoid or minimize habitat loss within or adjacent to the footprint. Minimize access road
6 and fence construction. Minimize the amount of above-ground obstacles associated
7 with the site.

8

9 Site rehabilitation conducted by CBP will include re-vegetating or the distribution of
10 organic and geological materials (i.e., boulders and rocks) over disturbed areas to
11 reduce erosion and also allow the area to naturally vegetate. Native seeds or plants,
12 which are compatible with the enhancement of protected species, will be used to
13 revegetate staging areas and other temporarily disturbed areas. Native seed mix will be
14 reviewed by a qualified botanist as part of project planning. Organic material will be
15 collected and stockpiled during construction to be used for erosion control after
16 construction while tower areas naturally re-vegetate. Materials used for on-site erosion
17 control will be free of non-native plant seeds and other plant parts to limit potential for
18 infestation. Because natural materials cannot be certified as completely weed-free,
19 CBP will follow up with the use of such materials and monitoring of rehabilitated sites for
20 a period of time to be determined in the site restoration plan.

21

22 CBP will document any establishment of non-native plants and will implement
23 appropriate control measures.

24

25 CBP will ensure that all construction activities adhere to applicable portions of DHS
26 Management Directive 025-01 governing waste management.

27

28 A CBP-approved spill protection plan (or SPCCP) will be developed and implemented at
29 construction and maintenance sites to ensure that any toxic substances are properly
30 handled and that escape into the environment is prevented. Agency standard protocols
31 will be used. Drip pans underneath equipment, containment zones used when refueling
32 vehicles or equipment, and other measures are to be included.

33

34 CBP will incorporate BMPs relating to project area delineation, water sources, waste
35 management, and site restoration into project planning and implementation for road
36 construction and maintenance.

37

38 CBP security lighting at facilities will be designed to minimize light pollution beyond the
39 designated security zone while achieving light levels needed for agent safety and
40 operational purposes. Because directed lighting for security zones can extend ambient
41 light levels well over 900 feet away from the source, the effects of lighting extend
42 beyond the immediate area. Security lights will not shine onto habitat areas at a level
43 greater than 1.5 foot-candles. All lights will be shielded from the top to prevent
44 uplighting.

1 CBP will develop and implement erosion control measures and appropriate BMPs
2 before, during, and after soil disturbing activities. To protect areas with highly erodible
3 soils, various erosion control techniques such as straw bales, silt fencing, aggregate
4 materials, wetting compounds, and rehabilitation will be used where possible where
5 possible to decrease erosion.
6

7 To minimize impacts to natural and cultural resources, a detailed site plan for each
8 tower site and all associated roads (including construction and maintenance access
9 roads and patrol roads) and staging areas will be developed. Site plans will be
10 developed with and approved by the land managers and among other items, it will
11 include dimensions of tower footprint, height of the tower, power source for the tower,
12 level of noise generated by each tower, maintenance schedule of each tower and
13 associated roads, construction schedule, etc. The plans will be included in the
14 description of the Proposed Action of the SEA.
15

16 General Construction Activities

17 CBP will clearly demarcate the perimeter of all areas to be disturbed during construction
18 or maintenance activities using flagging or temporary construction fence, and no
19 disturbance outside that perimeter will be authorized.
20

21 CBP will construct and maintain the fewest roads needed, using proper construction
22 standards.
23

24 The width of all roads that are created or maintained by CBP will be measured and
25 recorded using GPS coordinates and integrated into the CBP GIS database.
26 Maintenance actions will not increase the width of the 12-foot road bed or the amount of
27 disturbed area beyond the 12-foot road bed.
28

29 CBP will obtain materials such as gravel or topsoil from existing developed or previously
30 used sources, not from undisturbed areas adjacent to the project area.
31

32 CBP will minimize the areas to be disturbed by limiting deliveries of materials and
33 equipment to only those needed for effective project implementation.
34

35 CBP will use water for construction from wells at the discretion of the landowner
36 (depending on water rights). If local groundwater pumping would create adverse effects
37 to aquatic, marsh, or riparian dwelling Federally listed species, treated water from
38 outside the immediate area will be utilized.
39

40 CBP will not use surface water from aquatic or marsh habitats for construction purposes
41 if that site supports aquatic Federally listed species or if it contains non-native invasive
42 species or disease vectors and there is any opportunity to contaminate any Federally
43 listed species' habitat through use of the water at the project site.
44

45 CBP will not use surface water from untreated sources, including water used for
46 irrigation purposes, for construction or maintenance projects located within 1 mile of

1 aquatic habitat for Federally listed aquatic species. Groundwater or surface water from
2 a treated municipal source will be used when close to such habitats. This is to prevent
3 the transfer of invasive animals or disease pathogens between habitats if water on the
4 construction site was to reach the Federally listed species habitats.

5
6 CBP water tankers that convey untreated surface water will not discard unused water
7 within 2 miles of any aquatic or marsh habitat.

8
9 CBP storage tanks containing untreated water will be of a size that if a rainfall event
10 were to occur, the tank (assuming open), will not be overtopped and cause a release of
11 water into the adjacent drainages. Water storage on the project areas will be in on-
12 ground containers located on upland areas, not in washes.

13
14 CBP pumps, hoses, tanks and other water storage devices will be cleaned and
15 disinfected with a 10 percent bleach solution at an appropriate facility and before use at
16 another site (this water is not to enter any surface water area). If a new water source is
17 used that is not from a treated or groundwater source, the equipment will require
18 additional cleaning. This is important to kill any residual disease organisms or early life
19 stages of invasive species that may affect local populations of Federally listed species.

20
21 CBP will contain nonhazardous waste materials and other discarded materials such as
22 construction waste, until removed from the construction and maintenance sites. This
23 will assist in keeping the project area and surroundings free of litter and reduce the
24 amount of disturbed area needed for waste storage.

25
26 To eliminate attracting predators of protected animals, CBP will dispose of all food
27 related trash items such as wrappers, cans, bottles, and food scraps in closed
28 containers and remove them daily from the project site.

29
30 Waste water is water used for project purposes that is contaminated with construction
31 materials or from cleaning equipment and thus carries oils or other toxic materials or
32 other contaminants as defined in state regulations. CBP will store waste water in closed
33 containers on site until removed for disposal. Concrete wash water will not be dumped
34 on the ground, but will be collected and moved offsite for disposal. This wash water is
35 toxic to aquatic life.

36
37 CBP will minimize the number of vehicles traveling to and from the project site and the
38 number of trips per day to reduce the likelihood of disturbing animals in the area or
39 injuring an animal on the road.

40
41 Construction speed limits will not exceed 35 miles per hour (mph) on major unpaved
42 roads (graded with ditches on both sides) and 25 mph on all other unpaved roads.
43 Night time travel speeds will not exceed 25 mph, and may be less based on visibility
44 and other safety considerations. Construction at night will be minimized.

1 If CBP construction or maintenance activities continue at night, all lights will be shielded
2 to direct light only onto the work site and the area necessary to ensure the safety of the
3 workers. The minimum foot-candles necessary will be used, and the number of lights will
4 be minimized. Any light extending beyond the construction or maintenance area will be
5 no greater than 1.5 foot-candles.

6
7 CBP will minimize noise levels for day or night construction and maintenance. All
8 generators will be in baffle boxes (a sound-resistant box that is placed over or around a
9 generator), have an attached muffler, or use other noise-abatement methods in
10 accordance with industry standards.

11 Soils

12
13 Vehicular traffic associated with the tower and access road construction activities and
14 operational support activities will remain on established roads to the maximum extent
15 practicable. Areas with highly erodible soils will be given special consideration when
16 designing the proposed project towers and access roads to ensure incorporation of
17 various erosion control techniques such as, straw bales, silt fencing, aggregate materials,
18 wetting compounds, and rehabilitation, where possible, to decrease erosion. Site
19 rehabilitation will include re-vegetating or the distribution of organic and geological
20 materials (i.e., boulders and rocks) over the disturbed areas to reduce erosion while
21 allowing the areas to naturally vegetate. Additionally, erosion control measures and
22 appropriate BMPs, as required and promulgated through the SWPPP and engineering
23 designs, will be implemented before, during, and after construction activities.

24
25 Road repairs or improvements shall avoid, to the greatest extent practicable, creating
26 wind rows with the soils once grading activities are completed. Excess soils from
27 construction activities will be used on-site to raise and shape proposed tower sites and
28 road surfaces.

29 Vegetation

30
31 CBP will use materials free of non-native plant seeds and other plant parts to limit
32 potential for infestation for on-site erosion control in uninfested native habitats. Since
33 natural materials cannot be certified as completely weed-free, if such materials are
34 used, there will be follow-up monitoring to document establishment of non-native plants
35 and appropriate control measures will be implemented for a period of time to be
36 determined in the site restoration plan.

37
38 CBP fill material brought in from outside the project area will be identified as to source
39 location and will be weed-free.

40
41 CBP will remove invasive plants that appear on the tower sites, and along sections of
42 repaired and new road. Removal will be done in ways that eliminate the entire plant and
43 remove all plant parts to a disposal area. Herbicides will be used, according to label
44 directions, if they are not toxic to Federally listed species that may be in the area.

1 Training to identify non-native invasive plants will be provided for CBP personnel or
2 contractors as necessary.

3
4 CBP will avoid removal of riparian vegetation within 100 feet of aquatic habitats to
5 provide a buffer area to protect the habitat from sedimentation.

6
7 Construction equipment will be cleaned at the temporary staging areas, in accordance
8 with BMPs, prior to entering and departing the project corridor to minimize the spread and
9 establishment of non-native invasive plant species.

10

11 Wildlife Resources

12 The Migratory Bird Treaty Act (16 U.S.C. 703-712, [1918, as amended 1936, 1960, 1968,
13 1969, 1974, 1978, 1986 and 1989]) requires that Federal agencies coordinate with the
14 U.S. Fish and Wildlife Service (USFWS) if a construction activity would result in the take
15 of a migratory bird. If construction or clearing activities are scheduled during nesting
16 seasons (February 15 through August 31); surveys will be performed to identify active
17 nests. If construction activities result in the take of a migratory bird; then coordination with
18 the USFWS, Federal Aviation Administration (FAA), and Arizona Game and Fish
19 Department (AGFD) will be required and applicable permits would be obtained prior to
20 construction or clearing activities. Another mitigation measure that would be considered
21 is to schedule all construction activities outside nesting seasons negating the requirement
22 for nesting bird surveys. The proposed sensor and communication towers will also
23 comply with USFWS guidelines for reducing fatal bird strikes on communication towers to
24 the greatest extent practicable. Guidelines recommend co-locating new antennae arrays
25 on existing towers whenever possible and to build towers as short as possible, without
26 guy wires or lighting, and use white strobe lights whenever lights are necessary for
27 aviation safety.

28

29 CBP will minimize the depth of any pits created so animals do not become trapped.

30

31 Protected Species

32 Several BMPs have been identified to decrease any potential impacts to Federal and
33 state protected species:

34 • Where a project could be located within 1.0 mile of occupied species habitats but
35 the individuals of the species are not likely to move into the project area, a
36 biological monitor is not needed during construction. However, the construction
37 manager will be aware of the species location and ensure that BMPs designed to
38 minimize habitat impacts are implemented and maintained as planned.

39 • If an individual of a Federally listed species is found in the designated project
40 area and is in danger of being harmed (e.g., in path of vehicles or foot traffic),
41 work will cease in the area of the species until either a qualified biological monitor
42 can safely remove the individual, or it moves away on its own.

- 1 • Individual animals found in the project area in danger of being harmed will be
2 relocated by a CBP biologist to a nearby safe location in accordance with
3 accepted species handling protocols in Federal and state permits.
- 4 • Construction equipment will be cleaned prior to entering and departing the project
5 area to minimize the spread and establishment of non-native invasive plant
6 species.
- 7 • Soil disturbances in temporary impact areas along roads and staging areas will be
8 re-vegetated with native vegetation from nursery stock or seed.
- 9 • Within the designated disturbance area, CBP will limit grading or topsoil removal
10 to areas where this activity is needed to provide the ground conditions for
11 construction or maintenance activities. Minimizing disturbance to soils will
12 enhance the ability to restore the disturbed area after the project is complete. In
13 Pima pineapple cactus habitat, removal of topsoil is a permanent impact.
- 14 • CBP will confine vehicular traffic associated with construction activities to
15 established roads (with the exception of new roads being constructed).
- 16 • CBP's road maintenance shall avoid making wind rows with the soils once
17 grading activities are completed, and any excess soils will be used on-site to
18 raise and shape the tower site and/or road surface.
- 19 • New roads created or improved by CBP will be located such that the potential for
20 road bed erosion into Federally listed species habitat will be avoided or
21 minimized.
- 22 • CBP will monitor, provide corrective maintenance, and document excessive use
23 of unimproved roads that results in their deterioration such that it affects the
24 surrounding Federally listed species habitat in the CBP Project Report.
- 25 • New access roads to proposed tower sites will avoid routes which cross occupied
26 threatened and endangered aquatic habitats.
- 27 • CBP activities occurring in suitable jaguar (*Panthera onca*) habitat will use
28 existing roads to avoid further fragmentation of habitat, avoid constructing
29 physical barriers that are impenetrable by jaguars in potential movement
30 corridors.
- 31 • All contractors, work crews (including National Guard and military personnel),
32 and CBP personnel in the field performing construction and maintenance
33 activities will receive training. Training would provide information on the habitat
34 and behavior of the specific sensitive species found in the area, including
35 information on how to avoid impacts to these species resulting from construction
36 and operational activities. It will be the responsibility of the construction project
37 manager(s) to ensure that their personnel are familiar with general BMPs, the
38 specific conservation measures presented here, and other limitations and
39 constraints. In addition, training in identification of non-native invasive plants and
40 animals should be provided for contracted personnel engaged in follow-up
41 monitoring of construction sites.

- 1 • Road improvements would not widen any driving surface;
 - 2 ➤ The removal of roadside vegetation would be limited to only those portions
 - 3 of plants necessary to allow the passage of vehicles, material, and
 - 4 equipment;
 - 5 ➤ All access routes into and out of the disturbance area should be flagged,
 - 6 and no travel outside of those boundaries should be authorized;
 - 7 ➤ To the extent practicable, areas already disturbed by past activities or
 - 8 those that will be used later in the construction period should be used for
 - 9 staging, parking, and equipment storage;
 - 10 ➤ The perimeter of all areas to be disturbed during construction should be
 - 11 clearly demarcated using flagging, and no disturbance outside that
 - 12 perimeter should be authorized;
 - 13 ➤ The area to be disturbed should be minimized by limiting deliveries of
 - 14 materials and equipment to only those needed for effective project
 - 15 implementation;
 - 16 ➤ Within the designated disturbance area, grading or topsoil removal should
 - 17 be limited to areas where this activity is needed to provide the ground
 - 18 conditions necessary for construction or maintenance activities;
 - 19 ➤ Any vegetation removal outside the actual tower site should be minimized,
 - 20 and vegetation should be removed using hand tools or controlled by
 - 21 mowing; and
- 22 • The number of construction vehicles traveling to and from the project site and the
- 23 number of trips per day will be minimized to reduce the likelihood of disturbing
- 24 animals in the area or injuring an animal on the road. Construction speed limits
- 25 should not exceed 35 mph on major unpaved roads (graded with ditches on both
- 26 sides) and 25 mph on all other unpaved roads. Night-time travel speeds should
- 27 not exceed 25 mph, or less based on visibility and other safety considerations.
- 28 • Transmission of disease vectors and invasive non-native aquatic species can
- 29 occur if vehicles cross infected or infested streams or other waters and water or
- 30 mud remains on the vehicle. If these vehicles subsequently cross or enter
- 31 uninfected or noninfested waters, the disease or invasive species may be
- 32 introduced to the new area. CBP and its contractors will avoid contact with
- 33 wetted areas. However, if vehicles or other equipment use will occur in wetted
- 34 areas west of Interstate 19 (including ponds, impoundments, or ephemeral or
- 35 permanent streams) that equipment will be a) cleaned of mud and debris and
- 36 then sprayed with a 10 percent bleach, 70 percent ethanol, or one percent
- 37 quaternary ammonium solution, or b) allowed to dry completely, before moving to
- 38 another wetted area. Treatments as just described will not be required for travel
- 39 along paved routes through the project area, as these routes are heavily traveled
- 40 by the public and cleaning/sterilization of project vehicles will do little to prevent
- 41 movement of disease via vehicular travel.

1 *Mexican Spotted Owl - Project Planning/Documentation*

- 2 • Roads, fences, security zones, surveillance sites, staging areas including tower
3 sites, and other facilities that will require land clearing and will have associated
4 noise and artificial light components will be at least 0.25 mile from any known
5 Protected Activity Center (PAC) or CBP will mitigate (See *Post Construction*
6 below). Firebreaks, fuels reduction, or other improved access for fire
7 suppression will be incorporated, as appropriate in the placement of facilities.
8 Facilities will not be located between nests and important forage areas such that
9 movement between the two is compromised, or CBP will mitigate impacts.
- 10 • CBP will avoid new roads in the vicinity of PACs and other important habitat
11 areas to reduce effects of human activity near PACs or CBP will mitigate impacts
12 (see *Post Construction* below). Existing roads used by CBP to access new or
13 existing facilities may need to be closed to other access to protect important owl
14 habitat.

15

16 *Mexican Spotted Owl - During Construction/Maintenance*

- 17 • CBP will monitor:
- 18 a) construction activities for towers, new roads, and road improvements, between
19 March 1 and August 31, which are closer than 0.25 mile to an owl PAC.
20 Construction activities will be monitored by a qualified biologist provided by CBP.
- 21 b) Mexican spotted owl PACs where towers and increased human use may
22 potentially affect owls and other areas where tower sites are within or less than
23 0.25 mile from a PAC.
- 24 • CBP will develop an MOU with the landowners and/or land management
25 agencies to conduct spotted owl monitoring. Monitoring will be conducted by an
26 experienced and Federally permitted spotted owl surveyor. All Mexican spotted
27 owl disturbances will be documented in the CBP project reports. Corrective
28 actions will be developed and implemented in coordination with USFWS and
29 landowner and/or land management agencies, if effects are detected.
- 30 • CBP may conduct maintenance activities for facilities at any time; however, for
31 major work on roads or fences where a significant amount of equipment will be
32 required, the period of October to April is preferred.

33

34 *Mexican Spotted Owl – Post Construction*

- 35 • CBP will monitor affected Mexican spotted owl PACs annually for 3 years (field
36 seasons) from the date construction is completed and towers are fully
37 operational. CBP will develop an MOU with the landowners and/or land
38 management agencies to conduct spotted owl monitoring. Corrective actions
39 should be developed and implemented in coordination with USFWS and
40 landowner and/or land management agencies, if effects are detected. Corrective
41 actions may include road closures, fencing, gating, and/or site restoration.
42 Monitoring will be conducted by an experienced and Federally permitted spotted
43 owl surveyor.

- CBP will provide sufficient funds to close unauthorized roads and restore habitat near affected Mexican spotted owl PACs in conjunction with U.S. Forest Service travel management planning. For every road repaired or created within 0.25 mile of a Mexican spotted owl PAC, CBP will close and/or restore the same length of road. CBP will update maps showing where improved or new roads were completed. CBP will complete a road closure/restoration plan. Mitigation will be completed within 3 years of the completion of construction.

Jaguar - Post Construction

- CBP will complete a road closure/restoration plan for review and approval by landowners and/or land management agencies and USFWS that:
 - a) identifies and maps new roads where barriers will be placed to prevent public access,
 - b) identifies and maps unauthorized roads near potential jaguar movement corridors,
 - c) specifies that USFWS will use jaguar monitoring results to assist CBP in determining which unauthorized roads to close,
 - d) specifies potential road closure methods,
 - e) specifies potential restoration methods for closed roads,
 - f) includes a schedule for closure, and
 - g) includes a schedule and content of annual reporting.
- CBP will prevent public access of new roads through gating, physical barriers, fencing, etc., in combination with appropriate signage and in coordination with the landowner and/or land management agencies. CBP will work with the land management agencies to determine the best method to prevent public access on new roads needing barriers. Blocking access will be achieved in a way that does not increase the probability that unauthorized roads will be created nearby.
- CBP will close and/or restore unauthorized roads (if approved by landowner) in or near jaguar movement corridors to help offset the increase in improved or new roads at a ratio of 2:1 (i.e., 2 miles of road closed and/or restored for every 1 mile of road created or repaired). This will require post construction quantification of (a) the number of miles of roads repaired and created, and (b) the area of new and repaired cut and fill. CBP will work with the land management agencies and USFWS to identify unauthorized roads for closure and determine the method most likely to prevent future access. Some road closures will require discing and seeding (using native species), in addition to placement of barriers. Closures will be achieved in a way that does not increase the probability that unauthorized roads will be created nearby.

Lesser long-nosed Bat - Project Planning/Documentation

- CBP roads, fences, security zones, surveillance sites, staging areas including tower sites, and other facilities that will require land clearing and have associated

1 noise and high intensity artificial light components, will be located at least 1.0
2 mile from any known roost site or will be mitigated (see *Post Construction* below).
3 The location of the facility will not be located between roosts and known foraging
4 sites such that access between the two is compromised.

- 5 • CBP will avoid areas containing columnar cacti (saguaro [*Carnegieia gigantea*],
6 organ pipe [*Stenocereus thurberi*]) or agaves that provide the forage base for the
7 bat or will mitigate effects (see *Post Construction* below).
- 8 • During construction or maintenance activities in or within 1.0 mile radius of bat
9 maternity roosts or known summer roosts (or such distance that noise, light, or
10 other effects reach the habitat), a construction monitor with authority to halt
11 construction at any time the appropriate Conservation BMPs are not being
12 properly implemented as agreed to will be present on site.

14 *Lesser long-nosed Bat - During Construction/Maintenance*

- 15 • Construction activities for towers, new roads, and road improvements that are
16 within 1.0 mile radius of a bat roost and occur between May 1 and September 30
17 will be monitored by a qualified biologist. In some years, bats may arrive earlier
18 and leave later in the year than the May to September time frame. For maternity
19 roosts this will be March through August. For summer roosts, this will be July
20 through October. Any occurrences and/or disturbances of lesser long-nosed bats
21 will be documented and mitigated (see *Post Construction* below).
- 22 • CBP may perform maintenance activities for facilities at any time; however, for
23 major work on roads or fences where significant amount of equipment will be
24 required, the October to April time period is preferred.
- 25 • CBP will salvage and transplant agaves if they are less than 18 inches in
26 diameter and columnar cacti less than 6.0 feet tall. Agaves that have flower
27 stalks will not be salvaged/transplanted. A minimum of 12 to 18 inches of agave
28 and cacti roots will be salvaged. Prior to removal, CBP will mark the orientation
29 on each cactus to be transplanted. CBP will transplant columnar cacti in the
30 same orientation they were removed to increase probability of survival. CBP will
31 relocate plants at least 75 feet from the construction limits. CBP will not plant
32 agaves or columnar cacti in active wash channels. Plants will be watered
33 according to site conditions.
- 34 • CBP will count agaves and columnar cacti removed for construction and will
35 replace agaves and columnar cacti at a 2:1 ratio (for every plant removed, two
36 will be replaced).

38 *Lesser long-nosed Bat - Post Construction*

- 39 • CBP will conduct annual bat surveys at bat roosts within 1.0 mile radius of tower
40 sites for 2 years from the date towers are fully operational. CBP will compare
41 results with previous years' surveys. If negative effects of the Proposed Action
42 are documented, CBP will take corrective action (e.g., gating, signing, fencing)
43 and will continue to survey annually until negative effects are no longer detected.

1 Surveys will be conducted throughout the season by a lesser long-nosed bat
2 expert.

- 3 • CBP will monitor roosts within 1.0 mile radius of tower sites for direct or indirect
4 effects of the action for 2 years from the date towers are fully operational. CBP
5 will install Hobo data loggers in lesser long-nosed bat roosts most prone to
6 human use to detect changes in temperature, humidity, etc. CBP will take
7 corrective actions in coordination with USFWS and/or the landowners/land
8 management agencies if such effects are detected. This may include road
9 closures, gating, signing, fencing, etc.
- 10 • CBP will conduct a telemetry study to locate bat roosts and foraging areas used
11 by those bats found in the vicinity of towers. This study will be conducted for 5
12 years when the towers are constructed and are fully operational. If occupied
13 mines or caves are found within a mile of towers, they will be monitored with
14 Hobo™ data loggers. CBP will telemeter 15 bats per year in early August and
15 will track bats through mid October. CBP will telemeter up to five bats at a time;
16 transmitters have a two to three week lifespan. CBP will hire five field biologists
17 to conduct the study. The Patagonia Mountains are covered with hundreds of
18 abandoned mines that may be used by lesser long-nosed bats. Tracking bats
19 telemetered near towers in the Patagonia Mountains will determine where these
20 bats are foraging and roosting. If negative effects are found in foraging or
21 roosting areas as a result of this Proposed Action, CBP will take corrective
22 action. This may include road closures, gating, signing, fencing, etc.
- 23 • CBP will conduct monitoring to document and assess tower related mortality of
24 lesser long-nosed bats beginning once tower construction is completed and
25 continuing for 5 years after the towers are fully operational. Monitoring will
26 include systematic lesser long-nosed bat searches and use of radar, GPS,
27 infrared, thermal imagery, and/or acoustical monitoring equipment to assess and
28 verify bat movements and to gain information on the impacts of various tower
29 sizes, configurations, and lighting systems. If lesser long-nosed bat mortality is
30 documented at tower or wind turbine sites, CBP will: a) immediately notify
31 USFWS in writing, b) work with USFWS to develop site-specific measures to
32 reduce that mortality, and c) continue monitoring beyond the 5 years until
33 mortality is no longer occurring. Information gained from monitoring will be used
34 to develop tower retrofits to reduce lesser long-nosed bat mortality, if collisions
35 are documented. CBP will incorporate the bat mortality monitoring associated
36 with the Proposed Action into an annual report for a minimum of 5 years.
- 37 • Where improved or new roads may increase human use of bat roosts occupied
38 or potentially occupied by lesser long-nosed bats, CBP will prevent access
39 through gating, fencing, other physical barriers, etc. This includes the State of
40 Texas mine roost. Patagonia Mountains abandoned mines, and other lesser
41 long-nosed bat roosts. Close coordination with USFWS and landowners and/or
42 land management agencies will be necessary, as the design and season of
43 installation is critical to ensure bat gates benefit lesser long-nosed bats.

- 1 • CBP will water transplanted agave and columnar cacti if needed and according to
2 site conditions to ensure survival. CBP will monitor annually for survival for 5
3 years and will replace dead or dying plants.
- 4 • CBP will replace agaves and columnar cacti removed for construction at a 2:1
5 ratio. CBP will work with landowners and/or land management agencies to
6 determine location for replacement plants. CBP will water plants according to site
7 conditions to ensure survival. CBP will monitor annually for survival for 5 years
8 after tower construction is complete and will replace dead or dying plants.

9 10 Water Resources

11 Standard construction procedures will be implemented to minimize potential for erosion
12 and sedimentation during construction. All work shall cease during heavy rains and
13 would not resume until conditions are suitable for the movement of equipment and
14 material. All fuels, waste oils, and solvents will be collected and stored in tanks or
15 drums within secondary containment areas consisting of an impervious floor and
16 bermed sidewalls capable of holding the volume of the largest container stored therein.
17 The refueling of machinery will be completed following accepted guidelines, and all
18 vehicles will have drip pans during storage to contain minor spills and drips. No
19 refueling or storage will take place within 100 feet of drainages.

20
21 A Construction Stormwater General Permit will be obtained prior to construction, and
22 this would require approval of a site-specific SWPPP and Notice of Intent (NOI). A site-
23 specific SPCCP will also be in place prior to the start of construction. Other
24 environmental design measures will be implemented such as straw bales, silt fencing,
25 aggregate materials, wetting compounds, and re-vegetation with native plant species,
26 where possible, to decrease erosion and sedimentation.

27
28 Prior to the start of construction activities, the construction contractor will review the
29 most up-to-date version of the Arizona Department of Environmental Quality 305(b) and
30 303(d) report. Additionally, road repair or improvement activities in wash or drainage
31 crossings will not impede the flow of affected water courses.

32
33 CBP will remove animal waste from areas where horses are housed.

34 35 Cultural Resources

36 Should any archaeological artifacts be found during construction, the appropriate land
37 management archaeologist will be notified immediately. All work will cease in the area
38 until an evaluation of the discovery is made by the authorized officer to determine
39 appropriate actions to prevent the loss of significant cultural or scientific values.

40 41 Air Quality

42 Mitigation measures will be incorporated to ensure that fugitive dust and other air quality
43 constituents emission levels do not rise above the minimum threshold as required per 40
44 CFR 51.853(b)(1). Measures will include dust suppression methods such as road

1 watering to minimize airborne particulate matter created during construction activities.
2 Standard construction BMPs such as routine watering of the construction site as well as
3 access roads to the site will be used in limiting fugitive dust, particulate matter, and
4 potential particulate matter measuring less than 10 microns emissions during the
5 construction phase of the proposed project. Additionally, all construction equipment and
6 vehicles will be required to be maintained in good operating condition to minimize exhaust
7 emissions.

8

9 Noise

10 During tower construction periods, short-term noise impacts are anticipated. All
11 applicable Occupational Safety and Health Administration regulations and requirements
12 will be followed. On-site activities would be restricted to daylight hours to the greatest
13 extent practicable although night-time construction could occur if the construction
14 schedule requires it. Construction equipment will possess properly working mufflers and
15 would be kept properly tuned to reduce backfires. Implementation of these measures will
16 reduce the expected short-term noise impacts to an insignificant level in and around tower
17 construction sites.

18

19 Hazardous materials

20 BMPs will be implemented as standard operating procedures during all construction
21 activities, and will include proper handling, storage, and/or disposal of hazardous and/or
22 regulated materials. To minimize potential impacts from hazardous and regulated
23 materials, all fuels, waste oils and solvents will be collected and stored in tanks or
24 drums within a secondary containment system that consists of an impervious floor and
25 bermed sidewalls capable of containing the volume of the largest container stored
26 therein. The refueling of machinery will be completed in accordance with applicable
27 industry and regulatory guidelines, and all vehicles will have drip pans during storage to
28 contain minor spills and drips. Although it is unlikely that a major spill would occur, any
29 spill of reportable quantities will be contained immediately within an earthen dike, and
30 the application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb
31 and contain the spill. To ensure oil pollution prevention, a SPCCP will be in place prior
32 to the start of construction activities and all personnel will be briefed on the
33 implementation and responsibilities of this plan. All spills will be reported to the
34 designated CBP point of contact for the project. Furthermore, a spill of any petroleum
35 liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity
36 must be cleaned up and reported to the appropriate Federal and state agencies.

37

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

42

43 Solid waste receptacles will be maintained at construction staging areas. Non-hazardous
44 solid waste (trash and waste construction materials) will be collected and deposited in on-


1 site receptacles. Solid waste will be collected and disposed of by a local waste disposal
2 contractor.


3
4 Contamination of ground and surface waters will be avoided by storing concrete wash
5 water, and any water that has been contaminated with construction materials, oils,
6 equipment residue, etc., in closed containers on-site until removed for disposal. This
7 wash water is toxic to wildlife. Storage tanks will have proper air space (to avoid rainfall-
8 induced overtopping), be on-ground containers, and be located in upland areas instead of
9 washes.

10
11 Disposal of used batteries or other small quantities of hazardous waste will be handled,
12 managed, maintained, stored, and disposed of in accordance with applicable Federal
13 and state rules and regulations for the management, storage, and disposal of
14 hazardous materials, hazardous waste and universal waste. Additionally, to the extent
15 practicable, all batteries will be recycled, locally.

16
17 Where handling of hazardous and regulated materials does occur, CBP will collect and
18 store all fuels, waste oils and solvents in clearly labeled tanks or drums within a
19 secondary containment system that consists of an impervious floor and bermed
20 sidewalls capable of containing the volume of the largest container stored therein.

21
22 **FINDING:** Based upon the analyses of the EA and the mitigation measures to be
23 incorporated as part of the Proposed Action, it has been concluded that the Proposed
24 Action will not result in any significant effects to the environment. Therefore, no further
25 environmental impact analysis is warranted.

26
27
28
29  _____ 4-9-10
30 David R. Hoffman Date
31 Chief
32 Strategic Planning, Policy, and Analysis Division
33 Office of Border Patrol

34
35
36
37  _____ 5/3/10
38 Gregory Giddens Date
39 Executive Director
40 Facilities Management and Engineering
41 U.S. Customs and Border Protection

FINAL

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
FOR
THE SBI*net* TUCSON WEST TOWER PROJECT
NOGALES AND SONOITA STATIONS' AREA OF RESPONSIBILITY
U.S. BORDER PATROL, TUCSON SECTOR**

June 2010

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EXECUTIVE SUMMARY

INTRODUCTION

The Secure Border Initiative (SBI) is a comprehensive, multi-year plan established by the Department of Homeland Security (DHS) in November 2005 to secure the United States (U.S.) borders and reduce illegal immigration. The SBI mission is to promote border security strategies that protect against and prevent terrorist attacks and other transnational crimes. Additionally, SBI will coordinate DHS efforts to ensure the legal entry and exit of people and goods moving across our borders and improve the enforcement of immigration, customs, and agriculture laws at U.S. borders, within the country, and abroad.

*SBI*net is the component of SBI charged with developing and installing technology and attendant tactical infrastructure (TI) solutions to help U.S. Customs and Border Protection (CBP) gain effective control of our Nation's borders. The goal of *SBI*net is to field the most effective, proven technology and response platforms, and integrate them into a single, comprehensive border security system for DHS.

CBP implements the National Border patrol Strategy with the goal of establishing and maintaining effective control of the borders. The U.S. Border Patrol (USBP) maximizes border security with an appropriate balance of personnel, technology, and infrastructure. Effective control exists when CBP is consistently able to: 1) detect illegal entries in to the U.S. when they occur; 2) identify the entry and classify its level of threat; 3) efficiently and effectively respond to these entries; and, 4) bring each event to an appropriate law enforcement resolution.

This Supplemental Environmental Assessment (SEA) supplements the *SBI*net's 2008 *Environmental Assessment for the Proposed SBI*net Tucson West Project Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Operation, U.S. Border Patrol,

1 *Tucson Sector, Arizona*, which analyzed various aspects of a proposed project that
2 would be carried out under the CBP SBI and be implemented as a part of the *SBI_{net}*
3 program. The 2008 EA addressed the potential direct and indirect effects of the
4 proposed construction, installation, operation, and maintenance of a system of 54
5 sensor and communication towers and the construction and improvement of access
6 roads. After completion of the 2008 Environmental Assessment (EA) and development
7 of the final laydown for the *SBI_{net}* Tucson West Project, *SBI_{net}* identified the need for
8 three new towers and the modification of some aspects of one tower covered in the
9 2008 EA.

10

11 **PURPOSE AND NEED**

12

13 The purpose of the proposed project is to improve CBP's efficiency and probability of
14 detection, identification, and apprehension of cross border violators (CBVs). Achieving
15 effective control of the borders of the U.S is a key mission of CBP. The objective of this
16 *SBI_{net}* project is to maximize surveillance along approximately 56 linear miles of U.S.
17 border within the Tucson Sector's Nogales and Sonoita Stations' Areas of Responsibility
18 (AOR).

19

20 This *SBI_{net}* Tucson West Tower Project is needed to:

- 21 1) provide more efficient and effective means of assessing border activities;
- 22 2) provide rapid detection and accurate characterization of potential threats;
- 23 3) provide coordinated deployment of resources in the apprehension of
24 CBVs; and
- 25 4) reduce crime in border communities and improve the quality of life and
26 economic vitality of border regions through provision of the tools
27 necessary for effective law enforcement.

1 **DESCRIPTION OF PROPOSED ACTION**

2

3 The Proposed Action includes the construction, operation, and maintenance of three
4 new sensor towers (TCA-NGL-141 and 316, and TCA-SON-314) and modification of
5 one previously analyzed sensor tower (TCA-SON-057), which creates a
6 communications network in support of the *SBI*net Tucson West common operating
7 picture (COP) among components of CBP and other Federal, state, and local partners
8 outside CBP. Construction of these towers would eliminate the need for two originally
9 planned towers (TCA-NGL-210 and 211). The Proposed Action would decrease the
10 total number of towers in the *SBI*net Tucson West Tower Project, as described in the
11 2008 EA, to 53 towers. TCA-SON-057 was originally analyzed in the 2008 EA as a 80-
12 foot rapidly deployed tower with a permanent impact footprint of 50- X 50-foot. After
13 further technical and operational analyses, the proposed tower for site SON-057 would
14 require construction of a 100-foot self standing tower with a permanent impact footprint
15 of 80- X 80-foot. The Proposed Action also includes the construction of new access
16 roads and repair or improvement to existing approach roads associated with
17 construction and operation of the proposed towers. Maintenance of associated access
18 roads and approach roads is also included as part of the Proposed Action. Information
19 gathered from the proposed towers would further contribute to the comprehensive
20 operability of the *SBI*net Tucson West COP. The *SBI*net Tucson West COP would also
21 provide mechanisms to communicate comprehensive situational awareness, including
22 information to incorporate intelligence-driven capabilities at all operational levels and
23 locations. Two alternate tower sites, TCA-NGL-318 and 319, were reviewed as
24 alternates to TCA-NGL-316 but were not included as part of the analysis because CBP
25 could not obtain rights of entries from the landowners to access their properties.

26

27 The Proposed Action described in this SEA represents CBP's plan to develop the right
28 combination of technology, infrastructure, transportation assets, and deployment of CBP
29 personnel to enhance the *SBI*net Tucson West Tower Project and to achieve effective
30 control of 56 miles of border in the Tucson Sector.

1 **PROPOSED ACTION AND ALTERNATIVES CONSIDERED**

2

3 There are three alternatives analyzed: 1) No Action Alternative; 2) Proposed Action,
4 which is described above; and 3) Alternative 1.

5

6 Under the No Action Alternative the three new towers would not be constructed and the
7 Tower TCA-SON-057 would not be modified; however, the 54 towers analyzed in the
8 2008 EA would continue to be constructed, upgraded, operated, and maintained within
9 the Ajo, Tucson, Casa Grande, Nogales and Sonoita stations' AORs. Of the proposed
10 54 towers, 12 are upgrades to existing towers (seven existing CBP towers, one tower
11 located at the new proposed Ajo Station and four existing commercial towers). Impacts
12 resulting from the construction of the 42 new towers and the retrofit/replacement of the
13 12 existing towers were fully assessed in the 2008 EA; however, upgrades to the
14 existing towers were considered to be environmentally benign due to the fact the areas
15 are currently disturbed and no further ground disturbance would occur. Under the No
16 Action Alternative, none of the proposed three new sensor towers would be constructed
17 or the previously analyzed sensor towers modified, and the stated purpose and need of
18 the supplemental action would not be satisfied. The No Action Alternative serves as a
19 baseline against which the impacts of the Proposed Action are evaluated.

20

21 Alternative 1 is the same as the Proposed Action except TCA-SON-323 would be
22 constructed as an alternate to TCA-SON-314. TCA-SON-314 may be potentially
23 located on property over a mining claim site. If for some reason TCA-SON-314
24 becomes unavailable because of the mining claim, TCA-SON-323 would be further
25 reviewed for suitability. A total of three new towers sites, TCA-NGL-141, TCA-NGL-
26 316, and TCA-SON-323, would be constructed and TCA-SON-057 would be modified
27 as part of Alternative 1.

1 **AFFECTED ENVIRONMENT AND CONSEQUENCES**

2

3 Implementation of the Proposed Action or the Alternative 1 would permanently disturb
4 2.34 or 2.64 acres, respectively, for the construction of all towers and roads.
5 Additionally, 1.62 or 1.76 acres would be temporarily disturbed during construction
6 activities for all proposed towers and new access roads, approach road repair or
7 improvement, and road maintenance as part of the Proposed Action or Alternative 1,
8 respectively. However, no impacts to prime farmland would occur.

9

10 One of the proposed tower sites (TCA-SON-314) and one alternate site (TCA-SON-
11 323), are located on Coronado National Forest (CNF) lands which are all undeveloped
12 lands used primarily for recreational and educational purposes. Proposed tower sites
13 TCA-NGL-141 and 316 are located on private and Arizona State Lands, respectively.

14

15 Under the Proposed Action, aesthetic resources within the region would be permanently
16 impacted. These resources are currently impacted by existing structures, or are in
17 remote areas. The installation of towers would detract from the aesthetic resources of
18 the project area. Infrastructure components would be located primarily within
19 undeveloped areas, the majority of which are located adjacent to or within CNF.
20 Alternative 1 would result in impacts similar to those described for the Proposed Action.

21

22 Direct effects of the Proposed Action on Federally listed species include degradation or
23 potential loss of habitat as a result of construction and operation of the proposed tower
24 sites. Additionally, insignificant direct effects to Federally listed species would occur
25 from electromagnetic fields associated with operation of radars. Most of these effects
26 would be avoided or substantially minimized through the implementation of best
27 management practices (BMP) and other conservation measures such as the training of
28 construction project managers, use of biological monitors, avoidance of disturbance in
29 sensitive habitats or during breeding seasons, and efforts to minimize the spread of
30 invasive species. Indirect effects resulting from the project would be limited to changes
31 in CBV, illegal alien (IA), and smuggler activity and subsequent CBP interdiction and

1 apprehension efforts. The Proposed Action would allow CBP to identify CBV, IA, and
2 smuggler activities closer to the U.S./Mexico and thus conduct focused interdiction
3 activities. Thus, the Proposed Action would have an indirect beneficial effect as a result
4 of decreasing illegal cross border traffic and decreasing the consequent CBP
5 enforcement footprint. The decreased enforcement footprint would reduce habitat
6 degradation north of the U.S./Mexico border. Alternative 1 would have similar impacts
7 on Federally listed species.

8
9 The implementation of the Proposed Action or Alternative 1 would not significantly
10 impact floodplains in the region. During site surveys, a total of 29 waters of the U.S.
11 (WUS) were observed crossing either the access or approach roads associated with the
12 three proposed tower sites. Tower construction and repair activities within the potential
13 WUS would be authorized under Nationwide Permit 14. Additionally, the Proposed
14 Action would have minor short-term impacts to air quality and roadways and traffic,
15 during tower construction. The Proposed Action would result in 2.34 acres of
16 permanent and 1.62 acres of temporary impacts on vegetation and soils in the project
17 area and Alternative 1 would result in approximately 2.64 acres of permanent and 1.76
18 acres of temporary impacts on vegetation and soils in the project area. Increased noise
19 emissions associated with the construction, operation and maintenance of the proposed
20 towers and construction, repair, or maintenance of associated access roads would have
21 a temporary moderate impact on nearby CNF lands and a moderate impact on wildlife,
22 including migratory birds. No utilities would be significantly impacted as a result of the
23 Proposed Action or the Alternative 1, although long-term benefits to socioeconomics
24 could occur.

25
26 No previously recorded cultural resources sites are located within the area of potential
27 effect of the proposed towers. Two new archaeological sites located within the project
28 area, AZ EE:9:260(Arizona State Museum [ASM]) and AZ EE:10:181(ASM), were
29 identified as part of this project and are not considered eligible for the National Register
30 of Historic Places and are not considered significant. As a result, no adverse impacts
31 on cultural resources are anticipated.

1 Beneficial impacts in the form of increased knowledge of the past are realized as a
2 result of surveys conducted as part of this SEA. Additionally, both previously recorded
3 and unidentified cultural resource sites located within the project area and regionally
4 would receive increased protection from disturbance through the deterrence of illegal
5 alien foot and vehicle traffic moving through surrounding areas. Impacts on cultural
6 resources under the Alternative 1 would be similar to those under the Proposed Action.

7
8 No significant adverse effects to the natural or human environment, as defined in 40
9 Code of Federal Regulations Section 1508.27 of the Council on Environmental Quality's
10 Regulations for Implementing National Environmental Policy Act, are expected from
11 implementation of the Proposed Action. The proposed project would also result in
12 overall beneficial impacts within the region through a reduction in illegal activities. A
13 decrease in border area crime would be expected from the reduction in illegal activities.

14
15 Implementation of the Proposed Action would reduce impacts compared to the Tucson
16 West Tower Project addressed in the original 2008 EA. The overall project footprint
17 would be reduced by 4.13 acres (3.44 acres and 0.69 acres temporary and permanent
18 impacts, respectively) and impacts to three Waters of the U.S. would be avoided by
19 eliminating tower TCA-SON-055.

20

21 **FINDINGS AND CONCLUSIONS**

22

23 Based upon the analyses of this SEA and the environmental design and mitigation
24 measures to be implemented, the Proposed Action would not have a significant effect
25 on the environment. Therefore, no additional environmental evaluation is warranted.

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TABLE OF CONTENTS

1

2

3 **EXECUTIVE SUMMARY ES-1**

4 **1.0 BACKGROUND 1**

5 1.1 INTRODUCTION 1

6 1.1.1 Program Background 4

7 1.1.2 Legislative Background 4

8 1.2 PURPOSE AND NEED 4

9 1.3 PUBLIC INVOLVEMENT 5

10 1.3.1 Public Review 5

11 1.3.2 Agency Coordination 6

12 1.4 COOPERATING AGENCIES 7

13 1.5 FRAMEWORK FOR ANALYSIS 8

14 **2.0 PROPOSED ACTION AND ALTERNATIVES 9**

15 2.1 ALTERNATIVES AND ALTERNATIVES SELECTION 9

16 2.2 CRITERIA FOR TOWER SITE SELECTION 9

17 2.3 PROPOSED ACTION 13

18 2.4 ALTERNATIVE 1 34

19 2.5 NO ACTION ALTERNATIVE 35

20 2.6 ALTERNATIVES ELIMINATED FROM ANALYSIS 36

21 2.7 SUMMARY 36

22 **3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES 41**

23 3.1 PRELIMINARY IMPACT SCOPING 41

24 3.2 LAND USE 43

25 3.2.1 Affected Environment 43

26 3.2.2 Environmental Consequences 44

27 3.2.2.1 No Action Alternative 44

28 3.2.2.2 Proposed Action 44

29 3.2.2.3 Alternative 1 44

30 3.3 GEOLOGY AND SOILS 45

31 3.3.1 Affected Environment 45

32 3.3.2 Environmental Consequences 45

33 3.3.2.1 No Action Alternative 45

34 3.3.2.2 Proposed Action 47

35 3.3.2.3 Alternative 1 48

36 3.4 HYDROLOGY AND GROUNDWATER 48

37 3.4.1 Affected Environment 48

38 3.4.2 Environmental Consequences 49

39 3.4.2.1 No Action Alternative 49

40 3.4.2.2 Proposed Action 49

41 3.4.2.3 Alternative 1 50

42 3.5 SURFACE WATERS AND WATERS OF THE U.S. 50

1 3.5.1 Affected Environment..... 50
2 3.5.1.1 Surface Waters 50
3 3.5.1.2 Waters of the U.S. and Wetlands 51
4 3.5.2 Environmental Consequences 52
5 3.5.2.1 No Action Alternative..... 52
6 3.5.2.2 Proposed Action 53
7 3.5.2.3 Alternative 1 54
8 3.6 FLOODPLAINS..... 54
9 3.6.1 Affected Environment..... 54
10 3.6.2 Environmental Consequences 54
11 3.6.2.1 No Action Alternative..... 54
12 3.6.2.2 Proposed Action 55
13 3.6.2.3 Alternative 1 55
14 3.7 VEGETATIVE HABITAT 55
15 3.7.1 Affected Environment..... 55
16 3.7.2 Environmental Consequences 59
17 3.7.2.1 No Action Alternative..... 59
18 3.7.2.2 Proposed Action 59
19 3.7.2.3 Alternative 1 60
20 3.8 WILDLIFE RESOURCES..... 60
21 3.8.1 Affected Environment..... 60
22 3.8.2 Environmental Consequences 61
23 3.8.2.1 No Action Alternative..... 61
24 3.8.2.2 Proposed Action 61
25 3.8.2.3 Alternative 1 63
26 3.9 PROTECTED SPECIES AND CRITICAL HABITATS 63
27 3.9.1 Affected Environment..... 63
28 3.9.2 Federal..... 64
29 3.9.2.1 Critical Habitat..... 66
30 3.9.2.2 State..... 67
31 3.9.3 Environmental Consequences 67
32 3.9.3.1 No Action Alternative..... 67
33 3.9.3.2 Proposed Action 67
34 3.9.3.3 Alternative 1 71
35 3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES ... 71
36 3.10.1 Affected Environment..... 71
37 3.10.1.1 Previous Archaeological Investigations 72
38 3.10.1.2 Current Investigations..... 72
39 3.10.2 Environmental Consequences 73
40 3.10.2.1 No Action Alternative..... 73
41 3.10.2.2 Proposed Action 73
42 3.10.2.3 Alternative 1 73
43 3.11 AIR QUALITY 73
44 3.11.1 Affected Environment..... 73
45 3.11.2 Environmental Consequences 74
46 3.11.2.1 No Action Alternative..... 74

1	3.11.2.2 Proposed Action Alternative	74
2	3.11.2.3 Alternative 1	77
3	3.12 NOISE.....	78
4	3.12.1 Affected Environment	78
5	3.12.2 Environmental Consequences	78
6	3.12.2.1 No Action Alternative.....	78
7	3.12.2.2 Proposed Action.....	78
8	3.12.2.3 Alternative 1	80
9	3.13 RADIO FREQUENCY ENVIRONMENT.....	80
10	3.13.1 Affected Environment.....	80
11	3.13.2 Environmental Consequences	80
12	3.13.2.1 No Action Alternative.....	80
13	3.13.2.2 Proposed Action.....	81
14	3.13.2.3 Alternative 1	82
15	3.14 UTILITIES AND INFRASTRUCTURE.....	82
16	3.14.1 Affected Environment.....	82
17	3.14.1.1 Utility Commercial Grid Power	82
18	3.14.1.2 Ambient and Artificial Lighting	83
19	3.14.2 Environmental Consequences	84
20	3.14.2.1 No Action Alternative.....	84
21	3.14.2.2 Proposed Action.....	84
22	3.14.2.3 Alternative 1	84
23	3.15 ROADWAYS AND TRAFFIC	85
24	3.15.1 Affected Environment.....	85
25	3.15.2 Environmental Consequences	85
26	3.15.2.1 No Action Alternative.....	85
27	3.15.2.2 Proposed Action.....	85
28	3.15.2.3 Alternative 1	86
29	3.16 AESTHETIC AND VISUAL RESOURCES.....	86
30	3.16.1 Affected Environment.....	86
31	3.16.2 Environmental Consequences	87
32	3.16.2.1 No Action Alternative.....	87
33	3.16.2.2 Proposed Action.....	87
34	3.16.2.3 Alternative 1	88
35	3.17 HAZARDOUS MATERIALS	88
36	3.17.1 Affected Environment.....	88
37	3.17.2 Environmental Consequences	88
38	3.17.2.1 No Action Alternative.....	88
39	3.17.2.2 Proposed Action.....	89
40	3.17.2.3 Alternative 1	90
41	3.18 SOCIOECONOMICS	90
42	3.18.1 Environmental Consequences	93
43	3.18.1.1 No Action Alternative.....	93
44	3.18.1.2 Proposed Action Alternative	93
45	3.18.1.3 Alternative 1	94
46	3.19 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN	94

1	3.19.1 Affected Environment.....	94
2	3.19.1.1 Executive Order 12898, Environmental Justice.....	94
3	3.19.1.2 Executive Order 13045, Protection of Children	94
4	3.19.2 Environmental Consequences	95
5	3.19.2.1 No Action Alternative.....	95
6	3.19.2.2 Proposed Action.....	95
7	3.19.2.3 Alternative 1	95
8	3.20 SUSTAINABILITY AND GREENING	95
9	3.20.1 Affected Environment.....	95
10	3.20.2 Environmental Consequences	96
11	3.20.2.1 No Action Alternative.....	96
12	3.20.2.2 Proposed Action.....	96
13	3.20.2.3 Alternative 1	96
14	4.0 CUMULATIVE IMPACTS.....	97
15	4.1 REASONABLY FORESEEABLE CBP PROJECTS WITHIN AND NEAR	
16	THE TUCSON SECTOR.....	97
17	4.2 OTHER AGENCY/ORGANIZATIONS PROJECTS	100
18	4.3 IDENTIFICATION OF CUMULATIVE EFFECTS ISSUES	101
19	4.3.1 Water, Soils, and Air	101
20	4.3.2 Floodplains.....	102
21	4.3.3 Vegetation Communities and Wildlife.....	102
22	4.3.4 Sensitive Species.....	103
23	4.3.5 Cultural Resources.....	103
24	4.3.6 Land Use and Socioeconomics.....	104
25	4.3.7 Aesthetics	104
26	4.4 DEFINING CUMULATIVE EFFECTS ASSESSMENT GOALS.....	105
27	4.5 SUMMARY OF OTHER PROJECTS CONTRIBUTING TO CUMULATIVE	
28	EFFECTS ISSUES	105
29	4.6 CUMULATIVE ENVIRONMENTAL EFFECTS.....	105
30	4.6.1 Proposed Action.....	105
31	4.6.2 Land Use.....	106
32	4.6.3 Air Quality	106
33	4.6.4 Aesthetics	106
34	5.0 MITIGATION MEASURES	109
35	5.1 PROJECT PLANNING/DESIGN COMMUNICATION	109
36	5.2 PROJECT PLANNING/DESIGN – GENERAL	110
37	5.3 GENERAL CONSTRUCTION ACTIVITIES	112
38	5.4 SOILS	115
39	5.5 VEGETATION.....	116
40	5.6 WILDLIFE RESOURCES.....	117
41	5.7 PROTECTED SPECIES	117
42	5.8 WATER RESOURCES	125
43	5.9 CULTURAL RESOURCES	126
44	5.10 AIR QUALITY	126
45	5.11 NOISE.....	126

1 5.12 HAZARDOUS MATERIALS 127
2 **6.0 REFERENCES..... 129**
3 **7.0 ACRONYMS AND ABBREVIATIONS 135**
4 **8.0 LIST OF PREPARERS 139**

5
6

LIST OF FIGURES

7 Figure 1-1. Vicinity Map..... 2
8 Figure 2-1. SBI*net* Proposed Action Tower Location Map..... 11
9 Figure 2-2. Profile of a Rapidly Deployed Tower 15
10 Figure 2-3. Rapidly Deployed Tower Schematic 16
11 Figure 2-4. Self Standing Tower Schematic 17
12 Figure 2-5. Profile of a SST Tower 18
13 Figure 2-6. Tower Construction Footprint..... 23
14 Figure 2-7. TCA-NGL-141 Tower and Access Road 27
15 Figure 2-8. TCA-NGL-316 Tower and Access Road 29
16 Figure 2-9. TCA-SON-057 Location Map 30
17 Figure 2-10. TCA-SON-314 and TCA-SON-323 Towers and Access Roads 32
18 Figure 3-1. Santa Cruz County FEMA Floodplain Map 57

LIST OF TABLES

1

2 Table 2-1. Alternate Sites Proposed but Rejected 13

3 Table 2-2. SBInet Tucson West Tower Project Tower Site Data and Configuration... 21

4 Table 2-3. Summary of Annual Vehicle Trips Required..... 25

5 Table 2-4. Alternative Matrix of Purpose and Need to Alternatives 36

6 Table 2-5. Summary Matrix 37

7 Table 3-1. Temporary and Permanent Impacts from the Proposed Action..... 42

8 Table 3-2. Proposed Tower Site and Access Road Land Ownership..... 44

9 Table 3-3. Characteristics of Soils Within the Project Corridor 46

10 Table 3-4. Groundwater Basins Municipal, Industrial, and Agricultural Use and

11 Recharge Rate 49

12 Table 3-5. List of ADEQ Impaired Streams in Santa Cruz Watershed 51

13 Table 3-6. Waters of the U.S. Associated with the Proposed Tower Sites and

14 Approach and Access Roads 52

15 Table 3-7. USFWS Listed Species and Critical Habitat Potentially Impacted..... 64

16 Table 3-8. Total Air Emissions (tons/year) from the Proposed Action Construction and

17 Maintenance Activities verses the *De minimis* Threshold Levels 76

18 Table 3-9. Total Air Emissions (tons/year) from the Alternative 1 Construction verses

19 the *De minimis* Threshold Levels 77

20 Table 3-10. 3-Year Census Ending in 2007 Population and Race Estimates within the

21 Region of Influence 90

22 Table 3-11. Total Number of Jobs within the Region of Influence 91

23 Table 3-12. Unemployment Rate within the Region of Influence..... 91

24 Table 3-13. Income Median Household Income for the U.S., Arizona, and Santa Cruz

25 County..... 92

26 Table 3-14. Housing Units by Location (3-year Census Ending 2007) 93

27 Table 3-15. 2007 Poverty Data for the Nation, Arizona, and the ROI..... 94

28 Table 4-1. Recently Completed or Reasonably Foreseeable CBP projects within and

29 near the Tucson Sector 99

30

LIST OF APPENDICES

31

32 Appendix A. Correspondence

33 Appendix B. Soil Survey Maps

34 Appendix C. Threatened and Endangered Species

35 Appendix D. Air Quality Calculations

36 Appendix E. Viewshed Analysis

SECTION 1.0
BACKGROUND



1 **1.0 BACKGROUND**

2
3 **1.1 INTRODUCTION**

4
5 This Supplemental Environmental Assessment (SEA) updates the Secure Border
6 Initiative (SBI) *Environmental Assessment for the Proposed SBInet Tucson West*
7 *Project Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Operation,*
8 *U.S. Border Patrol, Tucson Sector, Arizona* (CBP 2008a), which analyzed various
9 aspects of a proposed project that would be carried out under the United States (U.S.)
10 Customs and Border Protection (CBP) SBI and implemented as a part of the SBInet
11 program. The 2008 Environmental Assessment (EA) addressed the potential direct and
12 indirect effects of the proposed construction, installation, operation, and maintenance of
13 a system of 54 sensor and communication towers and the construction and
14 improvement of access roads. After completion of the 2008 EA and development of the
15 final laydown for the SBInet Tucson West Project, SBInet identified the need for three
16 new towers and the modification of some aspects of one tower covered in the 2008 EA.
17 This SEA includes the construction, operation and maintenance of three sensor towers;
18 construction of approximately 591 feet of new access roads; approximately 3,329 feet of
19 road improvements; and approximately 3,465 feet of road repairs within the U.S. Border
20 Patrol (USBP) Nogales and Sonoita Stations' Areas of Responsibility (AOR) in south
21 central Arizona (Figure 1-1). Additionally, one tower (TCA-SON-057), addressed in the
22 2008 EA, would be modified from 80 feet to 100 feet in height and the permanent
23 impact would increase from 50- X 50-foot to 80- X 80-foot. The tower type would
24 change from a rapidly deployed tower (RDT) to a self standing tower (SST).

25
26 This SEA was prepared in compliance with provisions of the National Environmental
27 Policy Act (NEPA) of 1969 as amended (40 U.S. Code [U.S.C.]. 4321 *et seq.*), the
28 Council on Environmental Quality's (CEQ) NEPA implementing regulations at 40 Code
29 of Federal Regulations (CFR) Part 1500, and the U.S. Department of Homeland



Figure 1-1: Vicinity Map



1 Security's (DHS) *Environmental Planning Management Directive 023-1* (71 *Federal*
2 *Register* [FR] 16790).

3

4 Consistent with 40 CFR 1508.28, this SEA analyzes direct and indirect site-specific and
5 cumulative environmental impacts of the proposed project. The affected area for this
6 SEA covers approximately 113 square miles of south central Arizona in the Nogales
7 and Sonoita stations' AORs. In connection with earlier border infrastructure projects,
8 much of this area and similar actions were analyzed in previous NEPA documents
9 prepared by CBP and the legacy Immigration and Naturalization Service (INS).
10 Accordingly, this SEA tiers from a July 2001 INS and Joint Task Force-Six (JTF-6)
11 NEPA document entitled, *Supplemental Programmatic Environmental Impact*
12 *Statement, INS and JTF-6 Activities on the Southwest U.S.-Mexico Border* (INS and
13 JTF-6 2001) and the *Programmatic Environmental Assessment for the Proposed*
14 *Installation and Operation of Remote Video Surveillance Systems in the Western*
15 *Region of Immigration and Naturalization Service* (INS 2003). Where the SEA
16 incorporates previously documented information, the appropriate NEPA document is
17 cited and the incorporated content is summarized in this SEA, such as from the 2008
18 CBP EA. Where previous NEPA documents do not provide sufficient information for the
19 analysis required in this SEA, new surveys for sensitive resources and characterization
20 of tower sites were completed and this information is included in this SEA.

21

22 USBP Tucson Sector provides law enforcement support for the Arizona counties of
23 Maricopa, Pima, Santa Cruz, Pinal, and Cochise. The Nogales and Sonoita stations
24 would be affected by the proposed project. CBP proposes to design, develop, and
25 deploy technology-based solutions to decrease illegal cross border activities and deter
26 and detect illegal entries in the Nogales and Sonoita stations' AOR. This project would
27 support the CBP's mission by strengthening National security between ports of entry
28 (POE) to prevent illegal entry of illegal aliens (IAs), smugglers, and other cross border
29 violators (CBV) into the U.S.

1 The *SBI*net project described and analyzed in this SEA is anticipated to achieve CBP
2 operational requirements and CBP's mission of improving land border security. This
3 SEA describes the project goals that *SBI*net is required to support and analyzes the
4 potential environmental impacts of the proposed tower construction, installation,
5 operation, and maintenance of its component structures and facilities.
6

7 **1.1.1 Program Background**

8 The U.S. experiences substantial cross border traffic of IAs, illegal drugs, and other
9 contraband every year. Along with other societal costs, these illegal activities cost U.S.
10 citizens billions of dollars annually; directly from criminal activities, including the costs of
11 apprehension, detention, and incarceration of criminals and indirectly by loss of
12 property, illegal participation in government programs, and increased insurance costs.
13 The program background was described in the 2008 EA and is incorporated herein by
14 reference (CBP 2008a).
15

16 **1.1.2 Legislative Background**

17 Among its many functions, DHS is charged with enforcing the Immigration and
18 Naturalization Act, which includes the authority and duty to control and guard the
19 boundaries and borders of the U.S. against the illegal entry of aliens (8 U.S.C. 1103).
20 Pursuant to Section 1502 of the Homeland Security Act, and the President's
21 reorganization plan of January 30, 2003, established CBP, which has responsibility for
22 the resources and missions of the legacy Customs Service and USBP relating to
23 borders and POEs. CBP's core mission is to defend U.S. borders against all threats
24 while facilitating legitimate trade and travel. The legislative background of DHS and
25 CBP was described in the 2008 EA and is incorporated herein by reference (CBP
26 2008a).
27

28 **1.2 PURPOSE AND NEED**

29
30 After further analysis of technical and operational needs, *SBI*net determined that three
31 new towers and modification of one previously analyzed tower were needed to enhance

1 the operational and technical capabilities of the *SBinet* Tucson West Tower Project (i.e.,
2 the construction of the towers are essential to the *SBinet* Tucson West Tower Project).
3 Proposed tower site TCA-NGL-141 would provide spatial coverage for areas east of
4 Nogales, Arizona. Proposed tower site TCA-NGL-316 is needed to replace tower site
5 TCA-NGL-048 because a real estate agreement has not been reached at this time with
6 the landowner. Construction of tower site TCA-NGL-316 would also eliminate the need
7 for two towers (TCA-NGL-210 and 211). Additionally, tower site TCA-SON-314 would
8 replace tower site TCA-NGL-055 (analyzed as part of the 2008 EA Proposed Action) to
9 enhance tower effectiveness. Modifications to tower site TCA-SON-057 are needed to
10 enhance the effectiveness of the tower site.

11
12 The purpose of this project is to support CBP's mission through enhancing technological
13 capabilities in support of assessing a high frequency and volume of illegal activities over
14 a vast area of the border region. The proposed project described in this SEA would
15 enhance CBP's capability to provide surveillance within the Nogales and Sonoita
16 stations' AORs encompassed by the proposed Tucson West Tower Project.

17
18 This supplemental action is needed to:

- 19 1) provide more efficient and effective means of assessing border activities;
- 20 2) provide rapid detection and accurate characterization of potential threats;
- 21 3) provide coordinated deployment of resources in the apprehension of
22 CBVs; and
- 23 4) reduce crime in border communities and improve the quality of life and
24 economic vitality of border regions through provision of tools necessary for
25 effective law enforcement.

26

27 **1.3 PUBLIC INVOLVEMENT**

28

29 **1.3.1 Public Review**

30 *SBinet* initiated public involvement and scoping activities as directed by 40 CFR Section
31 1501.7, 1503, and 1506.6 to identify any significant environmental issues related to this
32 proposed project. This process began in June 2007 through the issuance of 47 agency

1 coordination letters to Federal, state and local agencies and Indian tribes, inviting their
2 participation and input regarding the SBI^{net} tower projects in the Tucson Sector's AOR
3 (Appendix A).

4
5 A public scoping meeting was held on July 17, 2007, in Tucson to present and discuss
6 plans for this proposed project and to explain how this action would be analyzed in the
7 original 2008 EA. Members of the public in attendance were invited to provide
8 comments and questions about the proposed project after the presentation.

9
10 The 2008 EA was released for 30-day public comment period. During the 30-day public
11 comment period, 24 letters and emails were received: four from Federal agencies, two
12 from state agencies, four from non-governmental organizations, and 14 from private
13 citizens. Comments were addressed and revisions were made to the document.

14
15 The draft SEA and draft Finding of No Significant Impact (FONSI) were released to the
16 public and Federal, state, and local agencies for 30-day public review and comment
17 period on November 20, 2009 and comments were received until December 21, 2009.
18 The Notice of Availability (NOA) announcing the availability of the draft SEA and draft
19 FONSI for public review and comments was published in the *Arizona Daily Star*,
20 *Nogales International*, and *Sierra Vista Herald* newspapers. Proof of Publication of the
21 NOA is provided in Appendix A. Three comment letters, one from Arizona Department
22 of Environmental Quality, one from the White Mountain Apache Tribe, and one from the
23 National Optical Astronomy Observatory were received. The comment letter received
24 from the National Optical Astronomy Observatory was the same letter submitted for the
25 2008 EA. These letters, as well as responses to these letters, are provided in Appendix
26 A. The final SEA and FONSI will be released to the public.

27 28 **1.3.2 Agency Coordination**

29 Coordination and consultation with stakeholder agencies and other potentially affected
30 parties occurred at the initial preparation stages of this SEA. This began, for the original
31 Tucson West EA, in June 2007 through the issuance of agency coordination letters to

1 potentially affected Federal, state, and local agencies and Indian tribes, inviting their
2 participation and input regarding the proposed project. Six responses were received. In
3 May 2009, nine agency coordination letters specifically addressing the three proposed
4 *SBI*net Tucson Tower Project towers and one alternate tower were issued to potentially
5 affected Federal, state, and local agencies and Indian tribes, inviting their participation
6 and input regarding this supplemental project. Two responses to the May 2009
7 coordination letters were received by *SBI*net. Copies of correspondence generated
8 during the preparation of this Supplemental EA are presented in Appendix A. Formal
9 and informal coordination was conducted and is on-going with the following agencies:

- 10 • U.S. Department of the Interior (DOI)
 - 11 ➤ Bureau of Land Management (BLM)
 - 12 ➤ U.S. Fish and Wildlife Service (USFWS)
- 13 • U.S. Environmental Protection Agency (USEPA)
- 14 • U.S. Department of Agriculture (USDA)
 - 15 ➤ Natural Resource Conservation Service (NRCS)
 - 16 ➤ U.S. Forest Service (USFS)
- 17 • U.S. Section, International Boundary and Water Commission (USIBWC)
- 18 • U.S. Army Corps of Engineers (USACE)
- 19 • Arizona State Trust Land (ASTL)
- 20 • Arizona Game and Fish Department (AGFD)
- 21 • Arizona State Historic Preservation Officer (SHPO)
- 22 • Arizona Department of Environmental Quality (ADEQ)
- 23 • Arizona Department of Transportation (ADOT)

24

25 **1.4 COOPERATING AGENCIES**

26

27 USDA and DOI are cooperating agencies on SBI projects including the *SBI*net proposed
28 project in this SEA. A Memorandum of Understanding (MOU) was entered into in
29 March 2006 between USDA, DOI, and CBP. The MOU outlines the cooperative efforts
30 between all USDA and DOI agencies acting as land managers and/or with operations in
31 the southwest border region when planning and negotiating project details to best meet
32 each agency's goals and objectives. Further, a Memorandum of Agreement, entered
33 into in January 2008 between CBP and DOI for SBI, formalized the commitment among
34 CBP and DOI projects to coordinate the review of projects subject to NEPA and CEQ
35 regulations implementing NEPA.

1 **1.5 FRAMEWORK FOR ANALYSIS**

2

3 The framework for analysis was discussed in detail in the 2008 EA and is incorporated
4 herein by reference (CBP 2008a). This SEA was prepared in accordance with
5 provisions of the NEPA of 1969 as amended (40 U.S.C. 4321 *et seq.*), CEQ's NEPA
6 implementing regulations in 40 CFR Part 1500, and the DHS *Environmental Planning*
7 *Management Directive 023-1 (previously numbered 5100.1)*.

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

1 **2.0 PROPOSED ACTION AND ALTERNATIVES**

2
3 Two alternatives to the Proposed Action were identified and considered during the
4 planning stages of the proposed project, Alternative 1 and No Action alternatives. The
5 following paragraphs describe the alternative selection process and the Proposed
6 Action and alternatives considered.
7

8 **2.1 ALTERNATIVES AND ALTERNATIVES SELECTION**

9
10 The alternative selection process was discussed in detail in the 2008 EA and is
11 incorporated herein by reference (CBP 2008a). As the proponent agency preparing this
12 SEA, CBP developed a range of alternatives with consideration of the purpose and
13 need outlined above and of the potential effects to the environment. The purpose of this
14 project is to support CBP's mission through enhancing technological capabilities in
15 support of assessing a high frequency and volume of illegal activities over a vast area of
16 the border region. CBP considered various technological systems and equipment
17 capable of providing continuous surveillance across the entire 30,000 square mile area
18 affected area of the *SBinet* Tucson West Tower Project. The No Action Alternative,
19 described in Section 2.5, is assessed as required by NEPA and CEQ regulations.
20

21 **2.2 CRITERIA FOR TOWER SITE SELECTION**

22
23 Criteria for the selection of tower sites were discussed in detail in the 2008 EA and that
24 discussion is incorporated herein by reference (CBP 2008a). Briefly, the sensor and
25 communication tower site selection process identifies potential suitable site locations
26 and their alternatives. Key tower site evaluation considerations take into account
27 constructability, operability, and environmental factors.

1 After further analysis of technical and operational needs, *SBI*net determined that three
2 new towers and modification of one previously analyzed tower were needed to enhance
3 the operational and technical capabilities of the *SBI*net Tucson West Tower Project.
4 Each of these proposed towers was fully evaluated in terms of the purpose and need,
5 as well as costs, operability, and potential impacts to the environment. The location of
6 each tower is provided in (Figure 2-1). TCA-NGL-141 was analyzed as an alternate
7 tower site in the 2008 EA; however, after further consideration it was determined the
8 tower was needed to meet operational needs and is included in this SEA. TCA-NGL-
9 048 was analyzed in the 2008 EA but would be replaced with TCA-NGL-316 as part of
10 the Proposed Action discussed in this SEA, because a real estate agreement for tower
11 site TCA-NGL-048 has not been reached at this time with the landowner. Construction
12 of TCA-NGL-316 would also eliminate the need for tower sites TCA-NGL-210 and 211
13 (analyzed as part of the 2008 EA Proposed Action). Proposed tower site TCA-SON-314
14 is analyzed as part of the Proposed Action; this tower site would replace TCA-SON-055
15 (analyzed as part of the 2008 EA Proposed Action) to allow for better sensor
16 performance. TCA-SON-323 is an alternate to TCA-SON-314 and is discussed under
17 Alternative 1 in this SEA. TCA-SON-057 was discussed in the 2008 EA and the type of
18 tower and permanent footprint of the tower would be modified as part of the Proposed
19 Action or Alternative 1 of this SEA. Modifications are needed to enhance the sensor
20 efficiency of TCA-SON-057.

21
22 Seven tower sites were evaluated for both sensor and communication efficiencies and
23 overall compatibility with the *SBI*net Tucson West Tower Project network design and
24 connectivity. Of the sites evaluated, four sites were eliminated as unsuitable for tower
25 construction due to operational (e.g., area coverage), constructability (e.g., soils,
26 topography), real estate (e.g., rights of entry), and/or technical requirements (e.g.,
27 sensor performance) that could not be met in a particular location. These sites are
28 summarized in Table 2-1 with the reasons for their elimination as proposed tower sites.

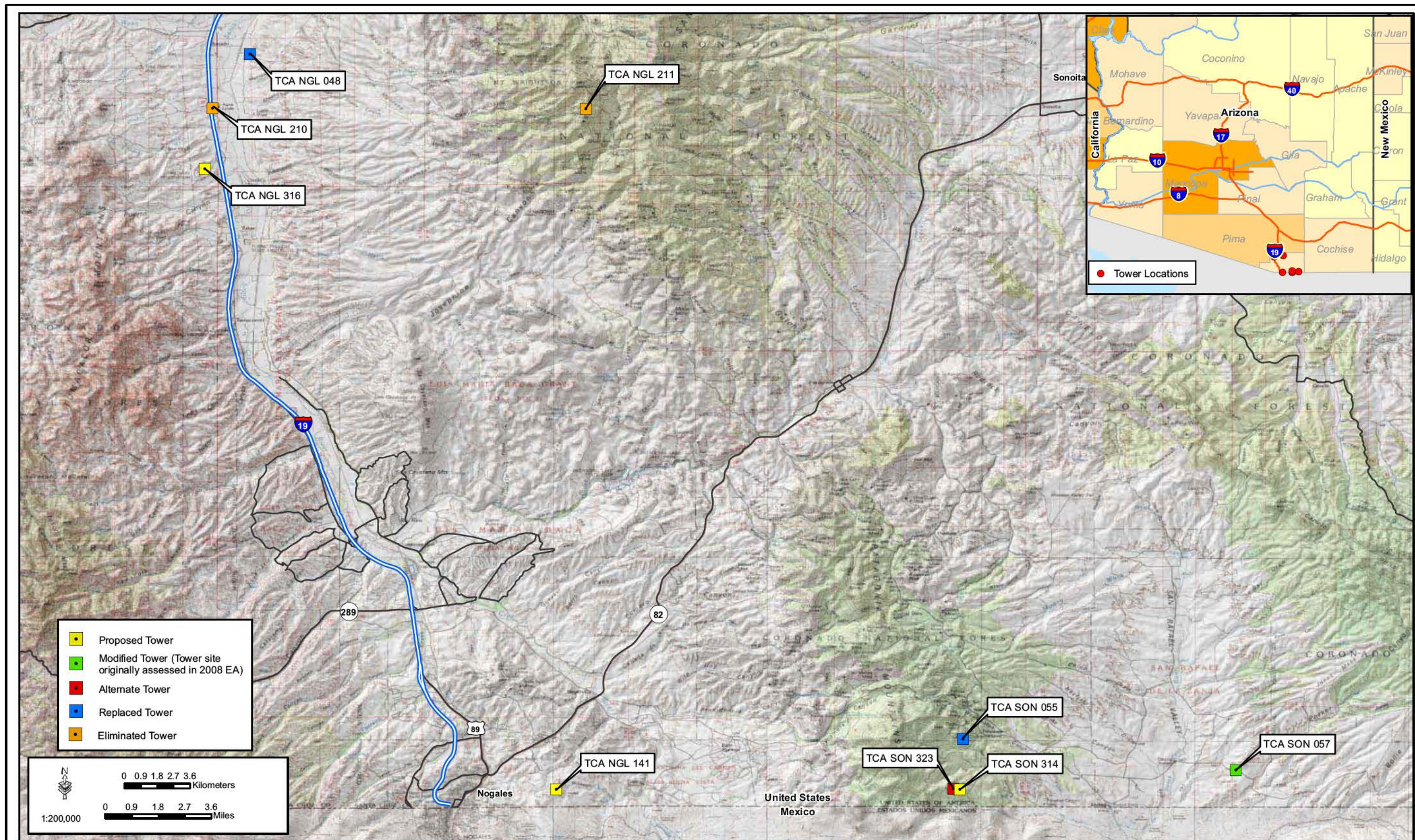


Figure 2-1: SBNet Proposed Action Tower Location Map

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Table 2-1. Alternate Sites Proposed but Rejected

Tower ID	Station	Reason for Rejection*
TCA-NGL-048	Nogales	RE
TCA-NGL-318	Nogales	RE
TCA-NGL-319	Nogales	RE
TCA-NGL-210	Nogales	T
TCA-NGL-211	Nogales	T
TCA-SON-055	Sonoita	O, T

O—Operational, T—Technical, RE—Real Estate

2.3 PROPOSED ACTION

The Proposed Action includes the construction, operation, and maintenance of three new sensor towers (TCA-NGL-141 and 316, and TCA-SON-314) and modification of one previously analyzed sensor tower (TCA-SON-057), which creates a communications network in support of the *SBI*net Tucson West common operating picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. Construction of these towers would eliminate the need for two originally planned towers (TCA-NGL-210 and 211). The Proposed Action would decrease the total number of towers in the *SBI*net Tucson West Tower Project, as described in the 2008 EA, to 53 towers. TCA-SON-057 was originally approved in the 2008 EA as a 80-foot high RDT with a permanent impact footprint of 50- X 50- feet. After further analysis, *SBI*net proposes to construct a 100-foot high SST with a permanent impact footprint of 80- X 80- feet. The Proposed Action also includes the construction of new access roads and repair or improvement to existing approach roads associated with construction and operation of the other three proposed towers. Maintenance of associated access roads and approach roads is also included as part of the Proposed Action. Information gathered from the proposed towers would contribute to the comprehensive operability of the *SBI*net Tucson West Tower Project COP. The *SBI*net Tucson West Tower Project COP would also provide mechanisms to communicate comprehensive situational awareness, including information to incorporate intelligence-driven capabilities at all operational levels and locations.

1 The Proposed Action described in this SEA represents CBP's plan to develop the right
2 combination of technology, infrastructure, transportation assets, and deployment of CBP
3 personnel to enhance the *SBI_{net}* Tucson West Tower Project and to achieve
4 operational control of 56 miles of border in the Tucson Sector (CBP 2007 and 2008b).

5

6 **2.3.1 Tower Construction and Maintenance**

7 To construct the proposed towers and access roads, CBP plans to lease or purchase
8 private and state lands, or obtain special use permits on public lands, as necessary.

9 Two types of tower structures, RDT and SST, are proposed for this project: The RDTs
10 proposed for this project would be 80 feet to 120 feet high and the SST at TCA-SON-
11 057 would be 100 feet high. Neither type would require guy wires. The following is a
12 brief description of RDTs and SSTs:

- 13 • RDTs are lattice style structures which use pre-cast modular stacked slabs for
14 the foundation and are typically 8- X 8-foot X 6 inches, 10- X 10-foot X 6 inches,
15 or 12- X 12-foot X 6 inches depending upon tower height (Figures 2-2 and 2-3).
16 The lowermost foundation slab rests on top of approximately 2 feet of crushed
17 stone at the base of the excavated area. The depth of each tower foundation is
18 dependent on tower height and geotechnical characteristics at each tower site.
19 Tower foundations could be placed to a depth of 3 to 5 feet below ground surface
20 (bgs) depending on tower height and geotechnical characteristics at each tower
21 site. The uppermost tower foundation slab may potentially extend from 7 inches
22 to 26 inches above the existing surface grade.
- 23 • SSTs are steel, lattice-style structures which have three circular concrete pilings
24 approximately 4 feet in diameter, and would be placed at each site to anchor the
25 tower legs in the ground (Figures 2-4 and 2-5). Depth of the pilings is dependent
26 on tower height and geotechnical characteristics at each tower site, but would not
27 go deeper than 60 feet bgs.

28

29 Currently, an existing 1-acre industrial warehouse facility in south Tucson near
30 Interstate 10, as well as the individual staging areas at each proposed tower site would
31 be utilized for tower and associated access road work. The storage area would be used
32 to store bulk materials and equipment during construction. The storage area was
33 described in the 2008 EA and that discussion is incorporated herein by reference (CBP
34 2008a).

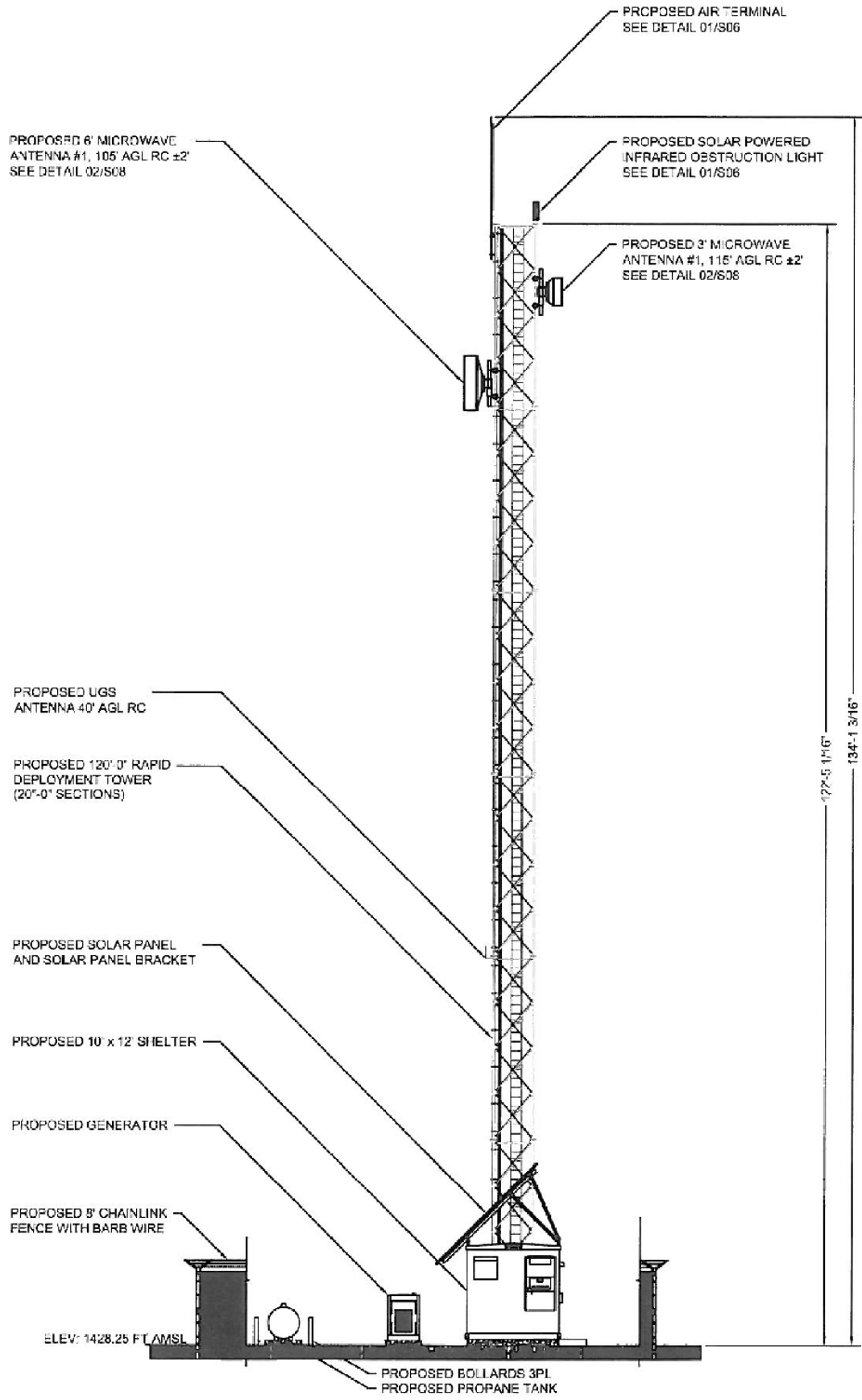


Figure 2-2: Profile of a Rapidly Deployed Tower



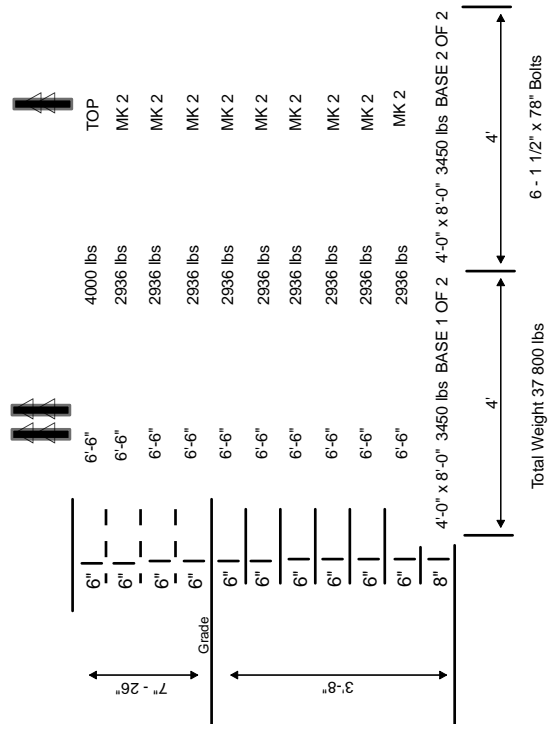
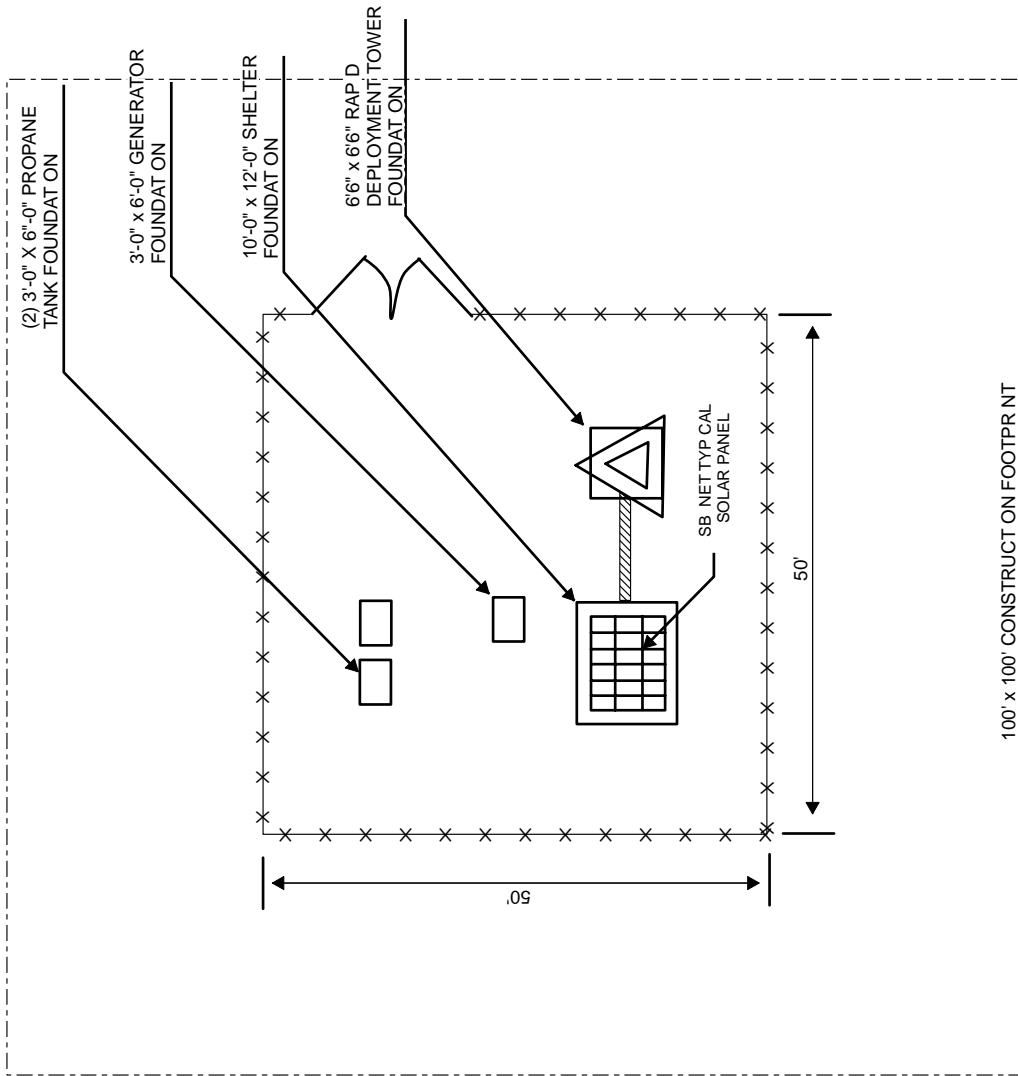


Figure 2-3: Rapidly Deployed Tower Schematic

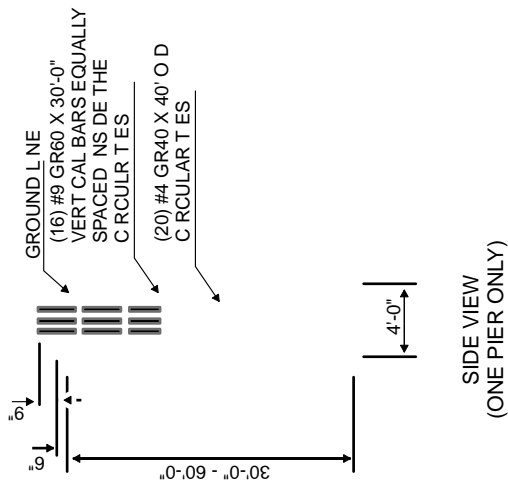
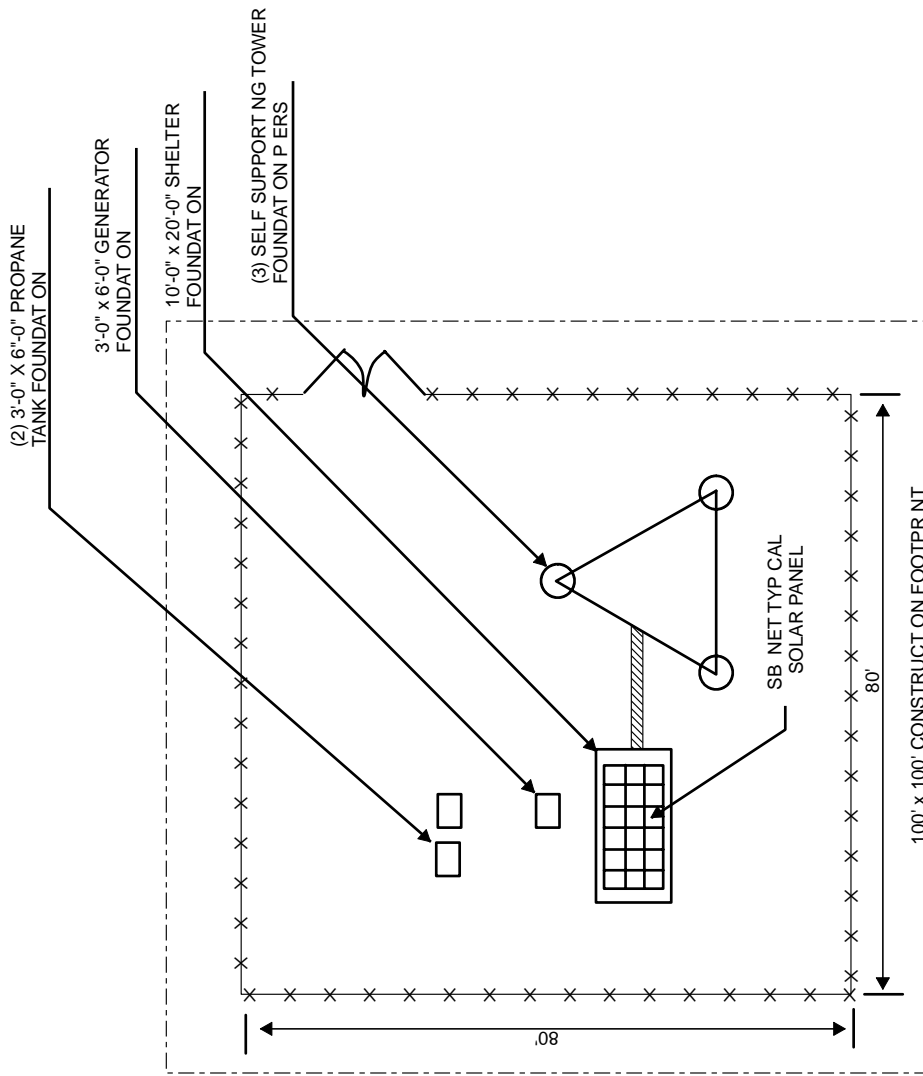


Figure 2-4: Self Standing Tower Schematic

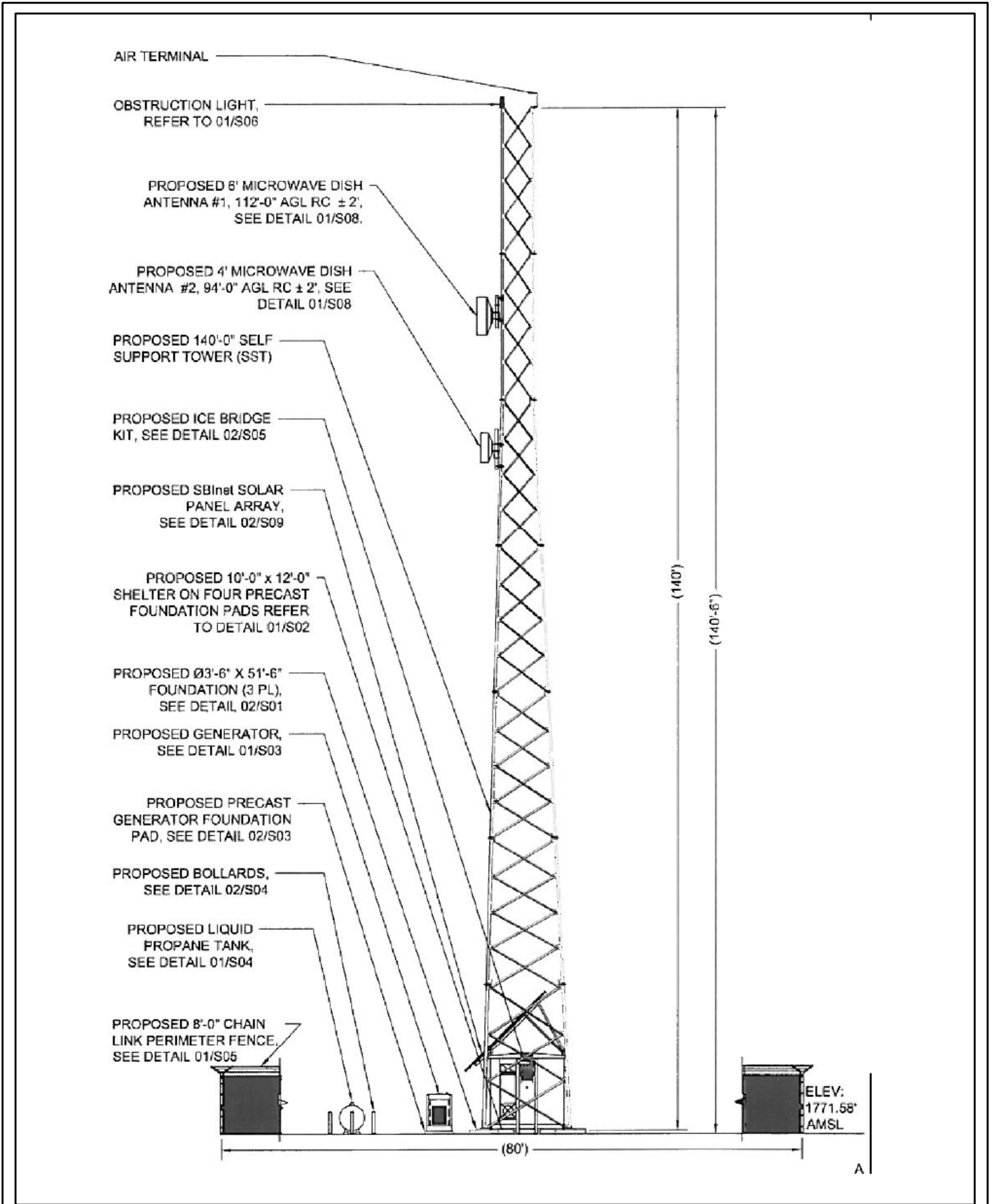


Figure 2-5: Profile of a SST Tower



1 Each tower would have the following design, power requirements, and site and fence
2 enclosure footprint, unless otherwise noted in the detailed proposed tower sites
3 discussion. Table 2-2 provides a summary of the pertinent information of each tower
4 site and configuration.

5

6 • Tower heights – RDTs are typically 80 feet high, but can be up to 120 feet high,
7 and the SST at TCA-SON-057 would be 100 feet high. Neither tower type would
8 require guy wires.

9 • Power source – commercial grid power (where available) with a propane fueled
10 generator backup or a propane hybrid 25 kilowatt (kW) generator system with
11 solar capabilities. A 1,000 gallon propane fuel tank would be located at sites
12 utilizing propane fueled generators. Generator-solar hybrid systems are
13 expected to operate twice per day for up to 2 to 4 hours for each start. Operation of
14 backup generators for towers connected to an electric grid system should be
15 limited to 1 hour, twice a month for system conditioning, plus off-grid operational
16 schedules if grid power is interrupted. Generators would be housed within an
17 enclosure equipped with noise baffles.

18 • Commercial grid power – Proposed tower TCA-NGL-316 would be connected to
19 commercial grid electric power. All power lines would be installed either
20 overhead or in buried cables from the main trunk line to the tower sites shelter
21 and then on an elevated cable tray to the tower². If commercial power is utilized,
22 then the installation of overhead or buried lines would be placed within surveyed
23 road construction buffer areas, all of which would be verified to identify potential
24 impacts to biological and cultural resources along access roads.

25 • A 10- X 12-foot equipment shelter would be within the perimeter fencing of each
26 proposed tower site. The shelter would be installed on a precast concrete pad.
27 The shelters would be air conditioned with an 18,000 British Thermal Unit system
28 operated on an as needed basis. The equipment shelters would also be
29 equipped with an air blower (130 watts) that forces filtered ambient air through
30 the shelter to cool the electronics during normal tower operation.

31 • Tower site footprint – at a maximum construction of RDT and SST tower sites
32 would result in ground disturbance within a 100- X 100-foot area (Figure 2-6). All
33 staging of construction equipment and materials, if necessary would occur within
34 this footprint during construction. The permanent tower site footprint would be
35 50- X 50-foot for RDTs and 80- X 80-foot for SSTs. A fire buffer would be
36 maintained outside the permanent tower site footprint but within the 100- X 100-
37 foot area.

² Although proposed tower TCA-NGL-316 would be powered by commercial grid power, commercial grid power may not be available immediately upon tower deployment. In that case, the power source would be supplied by a 25 kW generator hybrid system until the tower is connected to commercial grid power.

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Table 2-2. SBInet Tucson West Tower Project Tower Site Data and Configuration

Tower Name	TCA-NGL-141	TCA-NGL-316	TCA-SON-057*	TCA-SON-314	TCA-SON-323**
Tower Type	Type: RRVS	Type: RRVS-	Type: RRVS	Type: RRVS	Type: RRVS
Basic Site Conditions					
Construction staging/footprint area and maintained fire buffer (permanent)	100' X 100'	100' X 100'	100' X 100'	100' X 100'	100' X 100'
Tower site footprint	50' X 50'	50' X 50'	80' X 80'	50' X 50'	50' X 50'
Access road improvements and construction (length/width and surface treatment)	New road construction (101' X 16') and road repair (3,465' X 12')	New access road construction (430' X 16')	Road Improvements (3,656' X 12')	Road Improvements (3,329' X 12')	New road construction (60' X 16') and road repair (4,331' X 12')
Drainage structure requirements	None needed	None needed	None needed	None needed	None needed
Dimension, height, and type of security fence for this site	50' X 50' X 8' chainlink w/barb wire	50' X 50' X 8' chainlink w/barb wire	80' X 80' X 8' chainlink w/barb wire	50' X 50' X 8' chainlink w/barb wire	50' X 50' X 8' chainlink w/barb wire
Current land use at site	Private	ASTL	CNF	CNF	CNF
Tower Description					
Tower construction type	RDT	RDT	SST	RDT	RDT
Tower height	Up to 120'	Up to 120'	Up to 100'	Up to 120'	Up to 120'
Guy wires requirements	None needed	None needed	None needed	None needed	None needed
Recommended foundation for site	Stacked slabs	Stacked slabs	3 concrete piers	Stacked slabs	Stacked slabs
Power Description					
Distance to commercial power or type of primary power	Generator-solar	Grid/Generator-solar	Generator-solar	Generator-solar	Generator-solar
Commercial power right-of-way	None needed	None needed	None needed	None needed	None needed
Generator fuel type	Propane	Propane	Propane	Propane	Propane
Fuel tank capacity for generator, if required	1,000	1,000	1,000	1,000	1,000
Amount of energy consumption from each tower site? (Anticipated percentage of generator use, percentage power from existing utility, alternate energy sources).	3,650 kW-hours/month	3,650 kW-hours/month	3,650 kW-hours/month	3,650 kW-hours/month	3,650 kW-hours/month

ASTL - Arizona State Trust Lands

CNF - Coronado National Forest

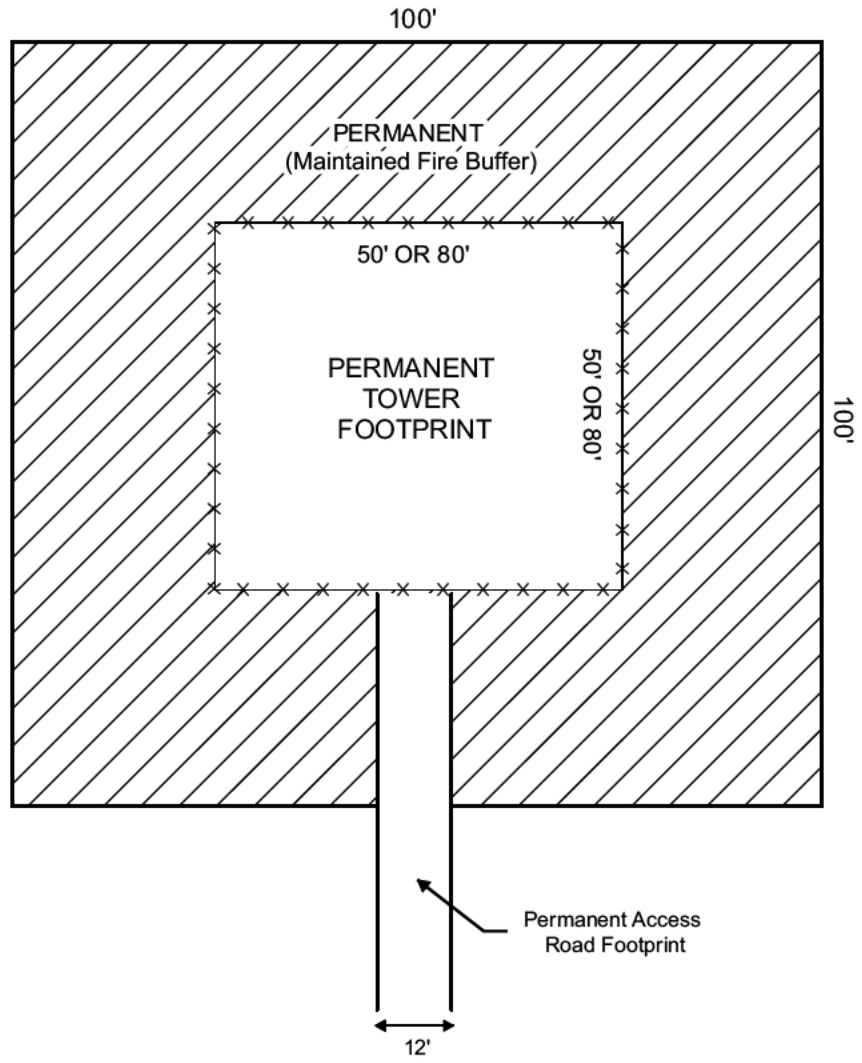
RRVS - radar and remote video system

* Tower was discussed in the 2008 EA; the permanent footprint would be increased from 50'X50' to 80'X80', the tower height would be increased from 80' to 100', and the tower type would be SST instead of RDT. TCA SON 057 was covered in the 2008 EA, the only change being addressed in this SEA is the permanent footprint, tower height, and tower type.

** Tower would replace TCA SON 314 in Alternative 1.

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NOT TO SCALE

Figure 2-6: Tower Construction Footprint



- Perimeter security fence enclosure footprint – 50- X 50-foot X 8-foot high chainlink with six strands of barbed wire, in a v-shape, at the top of the perimeter security fence surrounding the tower and its associated equipment shelter.

The 100- X 100-foot construction footprint for each proposed tower would be cleared and grubbed. Prior to any land disturbance, measures outlined in Section 5.0 would be in place to control erosion and minimize potential adverse environmental effects. Individual tower staging areas would be within this construction footprint. Depending on the type of tower construction, the construction time frame for each proposed tower site is expected to be approximately 4 weeks and, in general, would occur during daylight hours; however, it is possible, due to construction schedule constraints that some night-time construction could occur.

Typical designs for the sensor towers consist of the following components:

- Multiple cameras (electro-optical/infrared sensors, video cameras);
- Radio-frequency radar; and
- Data receiving/transmitting antennas.

The exact number and type of equipment would depend on the number and types of cameras used, the area to be monitored, and other design variables. Cameras, antennas, and parabolic antennas would be installed at heights that would ensure satisfactory line-of-sight and provide clear pathways for transmission of information to relay towers and the Nogales or Sonoita stations. Towers generally require line-of-sight to ensure unobstructed microwave transmission signals from tower to tower. Currently, it is expected that the transmitters and sensors associated with the *SBI_{net}* Tucson West Tower Project would operate below 30 gigaHertz (GHz).

When tower facility lighting is deemed necessary due to CBP operational needs, such as the installation of infrared lighting, USFWS (2000) *Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers* would be followed to reduce night-time atmospheric lighting and the potential adverse effects of night-time lighting to migratory bird and nocturnal flying species. Any infrared lighting

1 installed on the proposed towers would be compatible with night vision goggle usage. If
2 the tower sites are lighted for CBP security purposes then lighting would utilize low
3 sodium bulbs, be shielded to avoid illumination outside the footprint of the tower sites,
4 and be activated by motion detectors.

5
6 As part of the Proposed Action, the towers would require routine maintenance and
7 refueling. Tower site maintenance would include, but is not limited to, changing oil, oil
8 filters, and spark plugs. This necessitates vehicle travel to each of the proposed tower
9 sites for propane delivery, maintenance, and operations of the towers. Maintenance
10 would be required approximately two times per month (approximately 24 times per year)
11 for those tower sites not connected to a commercial electric power grid and tower sites
12 connected to commercial electric grid power would require maintenance approximately
13 13 times per year (Boeing 2009). Maintenance personnel would use single axle, four-
14 wheel drive pickup trucks to travel to each tower site. In addition to the vehicle trips for
15 maintenance, tower sites not connected to the electrical grid would require refueling
16 once a month or 12 times per year, and the tower sites connected to the electrical grid
17 would require refueling only once a year. Tanker trucks with dual rear tires and or rear
18 dual axles with a gross vehicle weight of 30,000 pounds would be used to deliver fuel to
19 each applicable tower site. A total of approximately 79 vehicle trips per year for all three
20 tower sites would occur for maintenance and refueling efforts Table 2-3. Maintenance
21 of TCA-SON-057 was previously addressed in the 2008 EA (CBP 2008a).

22
23 **Table 2-3. Summary of Annual Vehicle Trips Required**
24 **for Tower Maintenance and Refueling**

Tower	Power Source	Maintenance Trips	Refueling Trips	Total
TCA-NGL-141	Generator/solar	24	12	36
TCA-NGL-316	Grid and generator/solar	13	1	7
TCA-SON-314	Generator/solar	24	12	36
TOTAL		61	25	79

25 Source: Boeing 2009

1 The following discussion is a detailed description of each of the three proposed towers
2 and one tower proposed for modification as part of the Proposed Action. The potential
3 impacts from road construction and improvement for TCA-SON-057 were discussed in
4 the 2008 EA; the only changes to the tower site being addressed in this SEA are to
5 tower height, tower type and permanent footprint.

Tower ID: TCA-NGL-141

Type of Tower: Radar and Remote Video System (RRVS)

Tower Foundation: RDT

Tower Height: Up to 120 feet

Station: Nogales

Location: Santa Cruz County

Land Use: Private

Location Description: The proposed tower site for TCA-NGL-141 is located on private land, approximately 3,175 feet north of the U.S./Mexico border and 3,955 south of N. Royal Road (see Figure 2-7). The proposed tower site is approximately 2 miles east of Nogales.

Tower Access: Access to the proposed site is via an unnamed road that extends north from the U.S./Mexico border to the proposed tower site. Approximately 101 feet of new access road construction and 3,465 feet of road repair are needed to facilitate tower installation and maintenance.

Type of Primary Power: Hybrid generator-solar backup

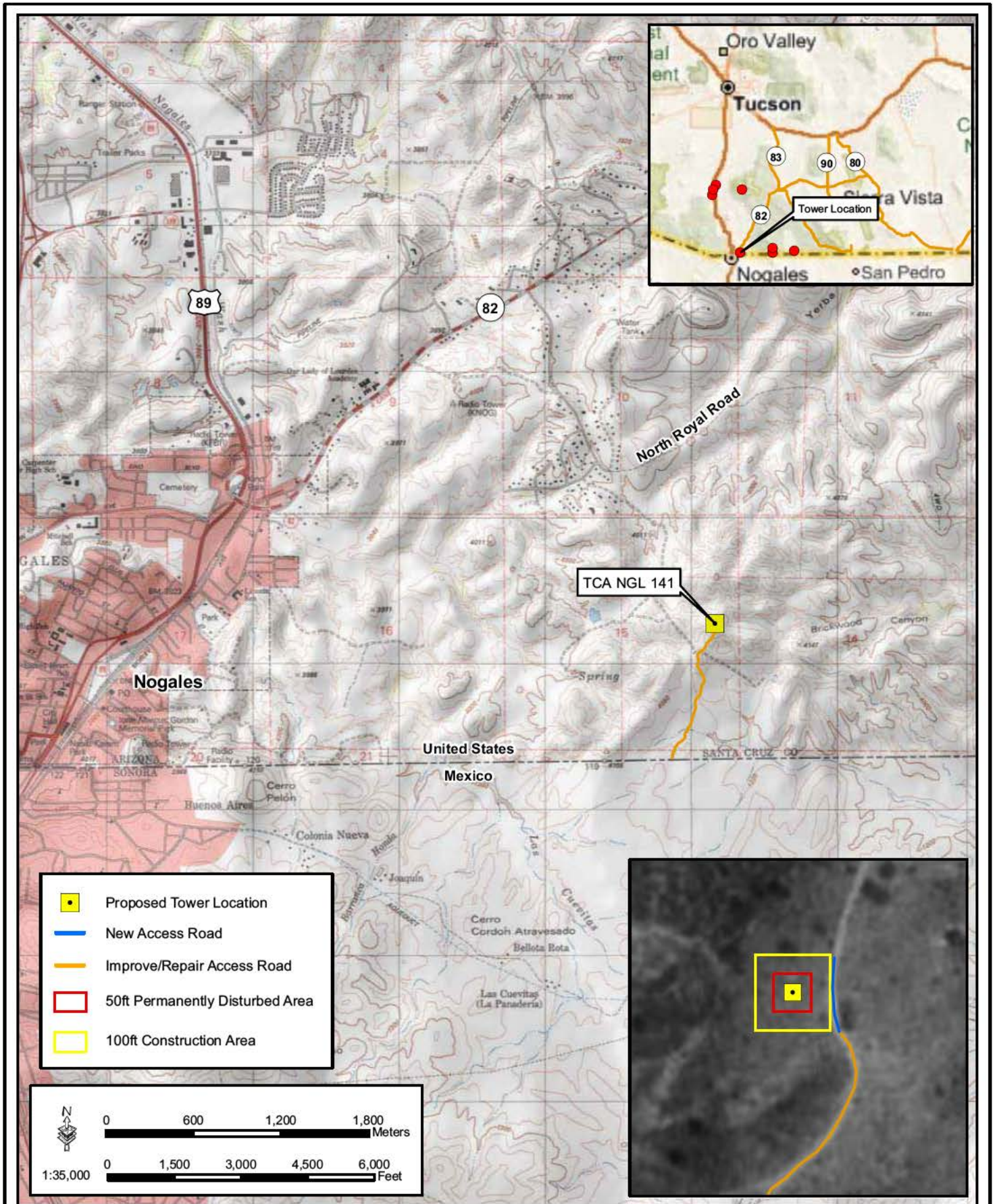


Figure 2-7: TCA-NGL-141 Tower and Access Road

Tower ID: TCA-NGL-316
Type of Tower: RRVS
Tower Foundation: RDT
Tower Height: Up to 120 feet
Station: Nogales
Location: Santa Cruz County
Land Use: ASTL
Location Description: The proposed tower site for TCA-NGL-316 is located on ASTL property approximately 2,721 feet west of Interstate 19, approximately 321 feet west of El Burro Lane, and approximately 1,926 feet east of an El Paso Pipeline Company gasoline right-of-way (see Figure 2-8). The proposed tower site is approximately 22.5 miles north of the Nogales POE.

Tower Access: Access to the proposed site would be via an unpaved road that originates at El Burro Lane. Approximately 430 feet of new access road construction is needed to facilitate tower installation and maintenance.

Type of Primary Power: Grid and hybrid generator-solar backup

Tower ID: TCA-SON-057
Type of Tower: RRVS
Tower Foundation: SST
Tower Height: 100 feet
Station: Sonoita
Location: Santa Cruz County
Land Use: USFS (i.e., CNF)
Location Description: The proposed tower site for TCA-SON-057 is approximately 23 miles south of the intersection of State Routes 82 and 83 near Sonoita, Arizona (see Figure 2-9).

Tower Access: Access to the tower is from an un-named existing access road via Forest Service Road 61. Repair to the un-named road (3,656 feet) would be needed to facilitate tower installation and maintenance.

Type of Primary Power: Hybrid generator-solar backup
County: Santa Cruz

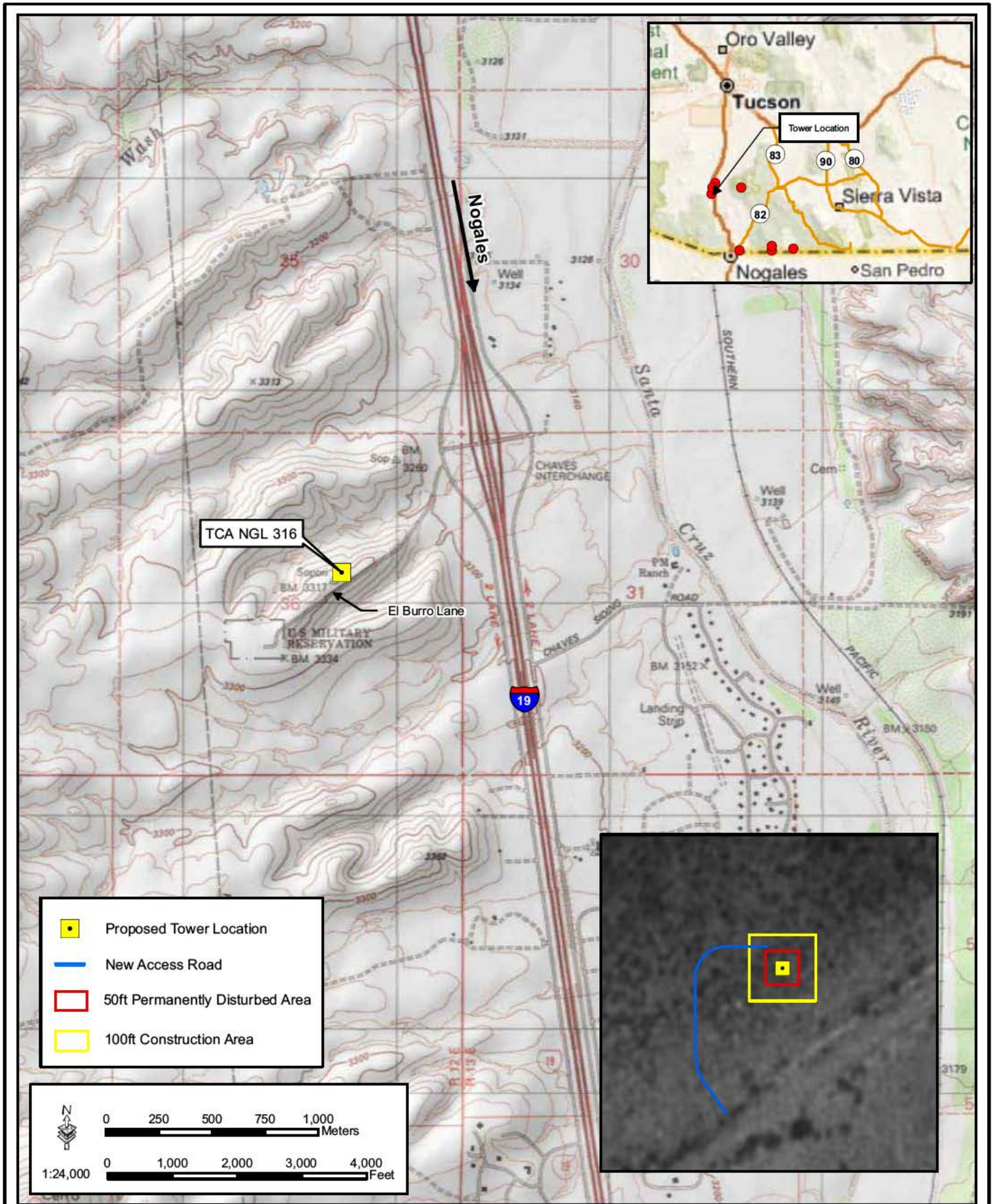


Figure 2-8: TCA-NGL-316 Tower and Access Road



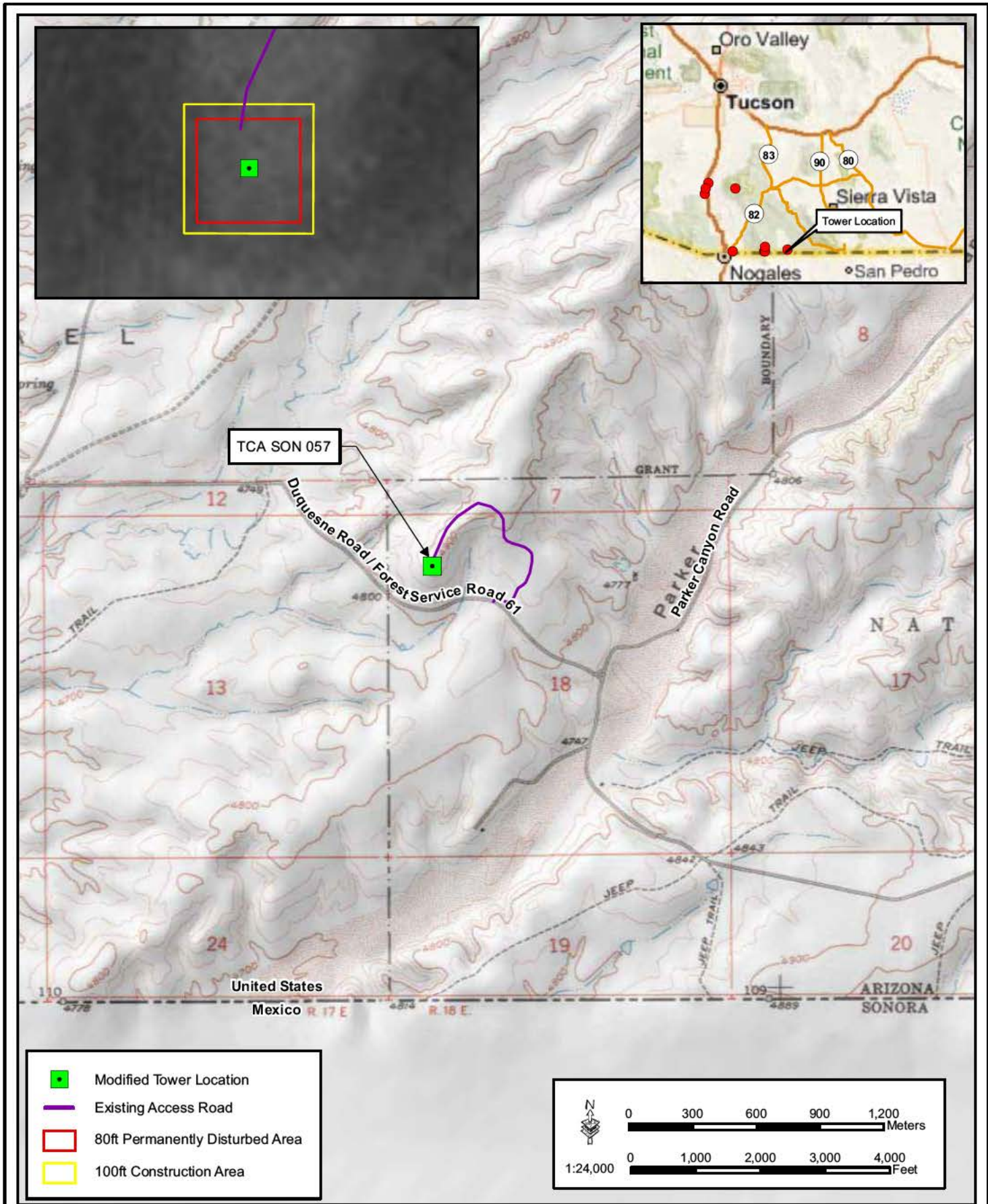


Figure 2-9: TCA-SON-057 Location Map



Tower ID: TCA-SON-314
Type of Tower: RRVS
Tower Foundation: RDT
Tower Height: Up to 120 feet
Station: Sonoita
Location: Santa Cruz County
Land Use: USFS (i.e., CNF)
Location Description: The proposed tower site for TCA-SON-314 is at Benton Mine in the Patagonia Mountains (Figure 2-10). Further, the proposed tower site is located approximately 2,989 feet north of the U.S./Mexico border and approximately 2.5 miles southwest of Duquesne.
Tower Access: Access to the site would be via an existing unpaved, unmaintained road that branches off the existing border road. Approximately 3,329 feet of road improvement is needed for tower installation and maintenance.
Type of Primary Power: Hybrid generator-solar backup
County: Santa Cruz

3 **2.3.2 Road Construction, Repair, Improvement, and Maintenance**

4 Road Construction

5 Two new access roads totaling 531 feet in length would be constructed to provide
6 access to tower sites, TCA-NGL-141 and 316, from existing approach roads. The new
7 access roads would be constructed to provide a 12-foot wide driving surface with 2-foot
8 wide shoulders on each side (total width of 16 feet). Additionally, some of the new
9 roads may require cut and fill while others may require a v-ditch on one side of the new
10 road. If cut and fill would be required the construction impact could extend as much as
11 22 feet on either side of new roads (yielding an impact corridor 56 feet wide). The new
12 access roads would be surfaced with *in situ* materials. Following construction activities,
13 the temporary impact areas would be revegetated with a mixture of native plant seeds.

14

16 Road Repairs

17 The approach road to proposed tower site TCA-NGL-141 would require repairs along a
18 total of approximately 3,465 feet of road segments. Road repair includes minor grading,

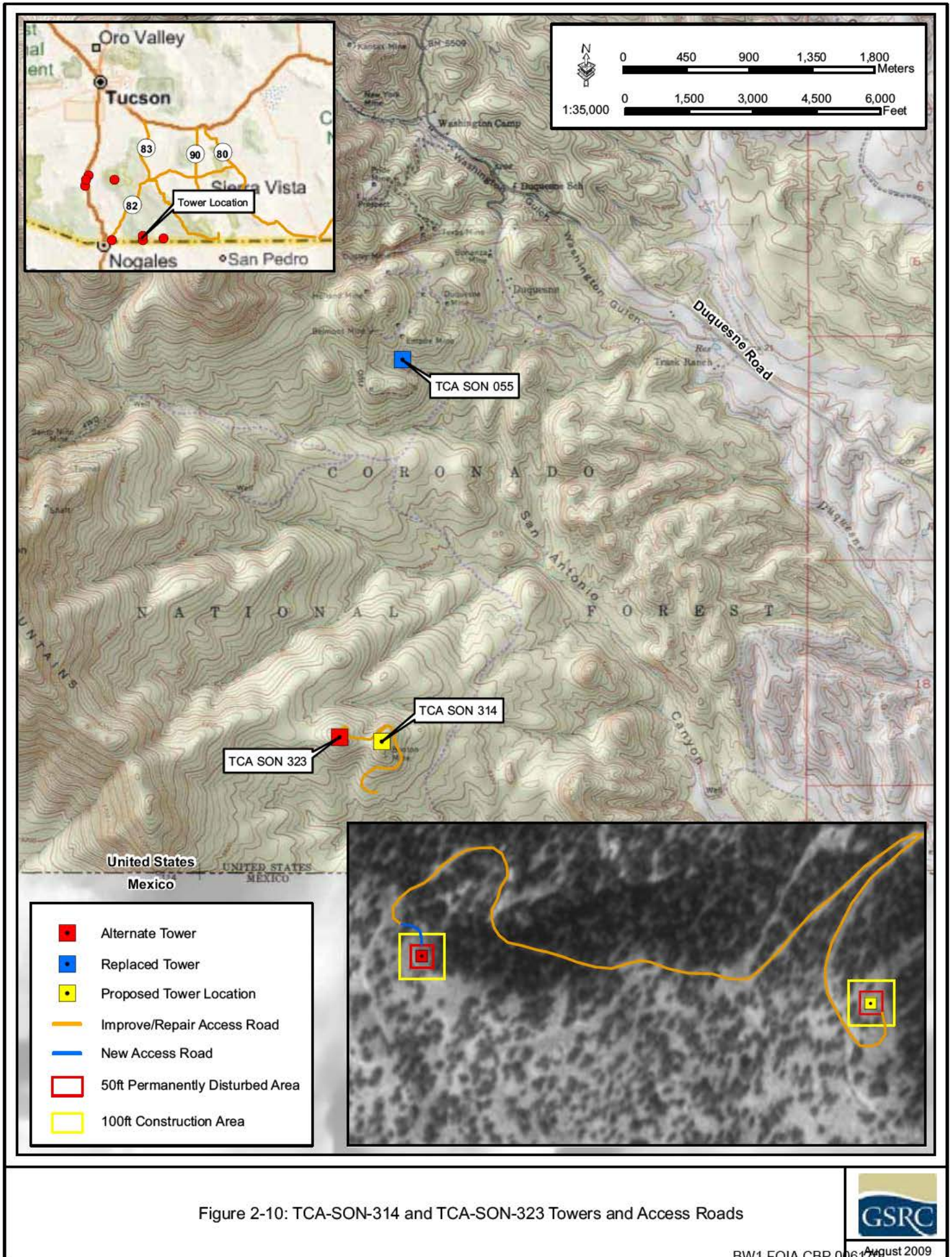


Figure 2-10: TCA-SON-314 and TCA-SON-323 Towers and Access Roads



1 leveling, and the installation of nuisance drainage structures. All existing approach
2 roads are currently accessible by four-wheel drive vehicles; thus, repair is only needed
3 to allow passage of heavy construction equipment. All repaired road segments would
4 be graded to a maximum driving surface width of 12 feet within the existing alignment of
5 the road and would include a 2-foot wide temporary construction easement on each
6 side of the road. The 2-foot wide temporary construction easement would be
7 revegetated following construction activities. *In situ* materials from the impacted areas
8 would be used to repair road segments and no additional aggregate or stabilizers would
9 be used to improve the driving surface. Repairs to the approach road at TCA-SON-057
10 were addressed in the 2008 EA and are, therefore, not addressed further in this SEA
11 (CBP 2008a).

12

13 Road Improvements

14 The approach road to proposed tower site TCA-SON-314 would require approximately
15 3,329 feet of improvements. Road improvements include reconstruction, widening, and
16 straightening of the existing approach roads. Road improvements would be completed
17 to provide the maximum driving surface. No road improvements would be made
18 beyond the 12-foot roadbed and a 2-foot temporary construction easement on each side
19 of the road. The 2-foot temporary construction easement would be revegetated
20 following construction activities.

21

22 Road Maintenance

23 CBP is implementing a comprehensive tactical infrastructure maintenance and repair
24 (CTIMR) for CBP tactical infrastructure and all roads associated with CBP tactical
25 infrastructure and *SBI*net projects required to ensure full-time access to the towers and
26 other tactical infrastructure (TI). In general, roads would be maintained to the original
27 construction condition. Specific maintenance requirements and schedules for each
28 road will be developed between the USBP Sector and the land manager. Maintenance
29 may be performed by contractors or by the land manager as deemed appropriate
30 between the USBP Sector and land manager. However, it is anticipated that
31 maintenance activities of approach and access roads may be required up to six times

1 per year or as necessary. Maintenance of approach and access roads could include
2 grading within the existing road alignment to maintain the condition of the road surface
3 for maintenance access. Maintenance actions would include necessary erosion control
4 associated with the roads. If significant upgrades to roads are required, additional
5 environmental documentation would be required.

6

7 **2.4 ALTERNATIVE 1**

8

9 A total of three towers would be constructed and TCA-SON-057 would be modified as
10 part of Alternative 1. Alternative 1 is the same as the Proposed Action except that TCA-
11 SON-314 would be removed from the tower laydown and replaced by TCA-SON-323.
12 TCA-SON-314 may be potentially located on property over an existing mining claim site.
13 If it is determined the mining claim renders the property unusable as a tower site, TCA-
14 SON-323 would be selected over TCA-SON-314. The design metrics for TCA-SON-
15 323, with the exception of road footprints, would be the same as those for TCA-SON-
16 314 (see Table 2-1). Further, tower maintenance requirements would be the same as
17 those described for TCA-SON-314 in the Proposed Action.

1 The following discussion is a detailed description of TCA-SON-323 (see Figure 2-10).

Tower ID: TCA-SON-323
Type of Tower: RRVS
Tower Foundation: RDT
Tower Height: Up to 120 feet
Station: Sonoita
Location: Santa Cruz County
Land Use: USFS (i.e., CNF)
Location Description: The proposed tower site for TCA-SON-323 is located approximately 900 feet west of TCA-SON-314 in the Patagonia Mountains (see Figure 2-10).
Tower Access: Access to the site would be via an existing unpaved, unmaintained road that branches off the existing border road. Approximately 76 feet of new access road construction and 4,272 feet of road improvements is needed for tower installation and maintenance.
Type of Primary Power: Generator-solar hybrid
County: Santa Cruz

5 **2.5 NO ACTION ALTERNATIVE**

6

7 Under the No Action Alternative, the three towers discussed in this SEA and the one
8 tower to be modified in this SEA would not be constructed. The construction, upgrade,
9 operation, and maintenance of 54 sensor and communication towers and associated
10 access road evaluated in the 2008 EA would continue as planned. The No Action
11 would partially satisfy the stated purpose and need and its inclusion in this EA is
12 required by NEPA regulations (40 CFR 1502.14(d)). Implementation of the No Action
13 Alternative would not enhance CBP's capability to provide surveillance of that portion of
14 the Nogales and Sonoita stations' AORs affected by the proposed project.

1 **2.6 ALTERNATIVES ELIMINATED FROM ANALYSIS**

2

3 CBP considered a range of alternatives during the planning process for the Proposed
4 Action. The alternatives that were eliminated from further detailed analysis for various
5 reasons are incorporated from the 2008 EA herein by reference (CBP 2008a). The
6 alternatives discussed in the 2008 EA included: 1) unmanned aircraft systems; 2)
7 remote sensing satellites; 3) remote sensors; 4) increased CBP workforce; and 5)
8 increased aerial reconnaissance/operations. Preliminary tower sites considered in the
9 preparation of this SEA are discussed below.

10

12 **2.7 SUMMARY**

13

14 The three alternatives selected for further analysis are the No Action Alternative,
15 Proposed Action, and Alternative 1. An alternative matrix (Table 2-4) shows how each
16 of these alternatives satisfies the stated purpose and need. Table 2-5 presents a
17 summary matrix of the impacts from the three alternatives analyzed and how they affect
18 the environment and environmental resources in the project area.

19

20 **Table 2-4. Alternative Matrix of Purpose and Need to Alternatives**

Purpose and Need	No Action Alternative	Proposed Action	Alternative 1
Providing more efficient and effective means of assessing border activities;	Partial	Yes	Yes
Providing rapid detection and accurate characterization of potential threats;	Partial	Yes	Yes
Providing coordinated deployment of resources in the apprehension of IAs, smugglers, and other CBVs; and	Partial	Yes	Yes
Reducing crime in border communities and improving the quality of life and economic vitality of border regions through provision of tools necessary for effective law enforcement	Partial	Yes	Yes

Table 2-5. Summary Matrix

Affected Environment	No Action Alternative	Proposed Action	Alternative 1
Land Use (Section 3.2)	No additional impacts would occur as the three proposed towers and upgrade of one tower would not be completed under the No Action Alternative. However, illegal cross border activity would continue to affect land use.	Approximately 2.34 acres of land would be converted from their current use as private, USFS (CNF), or Arizona State Trust Lands to CBP enforcement activities compared to the No Action Alternative. No direct significant adverse impact on land use is anticipated as the SBInet Tucson West Tower Project has been extensively coordinated with private persons and affected land management agencies. Additionally, special use permits would be obtained by CBP prior to initiating construction of the proposed towers and associated access roads, and repairs and improvements to approach roads associated with the proposed towers.	Construction of the proposed three towers and access roads would permanently convert 2.64 acres from their current use as private, USFS (CNF), or Arizona State Trust Lands to CBP enforcement activities compared to the No Action Alternative.
Geology and Soils (Section 3.3)	No additional impacts to soils would occur as the three proposed towers and upgrade of one tower would not be completed under the No Action Alternative. However, illegal cross border activity would continue to disturb soils in the project area.	There would be no impacts to geologic resources of the area. The Proposed Action involves primarily disturbances to topsoil layers, or somewhat deeper in the case of the SST at TCA-SON-057. Construction of the proposed towers and access roads and repairs and improvements to associated approach roads would have a direct permanent impact on 2.34 acres and temporarily impact on 1.62 acres of soils compared to the No Action Alternative. Although these impacts are long-term, they would be minor when examined on a regional scale, due to the small amount of soils lost relative to the quantity of the same soils regionally. The Proposed Action would reduce CBV traffic within the project area, and improve the detection of CBV traffic closer to the U.S./Mexico border thus focusing and improving USBP agent's apprehension capabilities. No soils classified as prime farmlands occur in the project area. Therefore, no impacts to prime farmlands would occur as part of the Proposed Action.	Direct permanent and temporary impacts to geologic resources, soils, and prime farmlands associated with the Alternative 1 would be similar to those resulting from the Proposed Action. There would be 2.64 acres of permanent impacts and 1.76 acres of temporary impacts on regionally common soils, when compared to the No Action Alternative.
Hydrology and Groundwater (Section 3.4)	The No Action Alternative would not require the use of additional groundwater. The three proposed towers and upgrade of one tower would not be constructed under the No Action Alternative.	Approximately 1.46 acre-feet of water would be required for tower and access road construction and road improvements and repair compared to the No Action Alternative. The proposed project is located in the Santa Cruz Active Management Area (AMA). Currently, the Santa Cruz AMA is experiencing a groundwater recharge surplus. Therefore, the Proposed Action would not result in a significant impact to the groundwater and hydrology in the region.	Impacts to hydrology and groundwater would be similar to those described for the Proposed Action. However, implementation of Alternative 1 would require 1.66 acre-feet of water, when compared to the No Action Alternative.
Surface Waters and Waters of the U.S., (Section 3.5)	No surface waters or waters of the U.S. would be impacted as the three proposed towers and upgrade of one tower would not occur under the No Action Alternative. However, illegal cross border activity would continue to impact surface waters and waters of the U.S.	Surface waters could be temporarily affected by the proposed construction actions. Short-term effects could include a temporary increase in erosion and sedimentation during periods of construction. Disturbed soils and hazardous substances (i.e., anti-freeze, fuels, oils, and lubricants) could directly impact water quality during a rain event. These effects would be minimized through the use of best management practices (BMP). A General Stormwater Permit would be obtained prior to construction. This would require approval of a site-specific Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent. A site-specific Spill Prevention, Control and Countermeasure Plan would be in place prior to the start of construction. All pertinent BMP would be implemented to minimize erosion into surface waters. No wetlands are located within the project area. A total of 29 Waters of the U.S. (WUS) are located in the project corridor. All impacts to WUS meet the criteria for a Nationwide Permit 14.	Impacts to surface waters and WUS would be similar to those described for the Proposed Action.
Floodplains (Section 3.6)	No additional impacts to floodplains would occur with the implementation of the No Action Alternative. In the absence of the Proposed Action, illegal cross border activity would continue to impact floodplains in the project area.	None of the roads and towers, foundations, and associated buildings described in the Proposed Action is located in the 100-year floodplain. Therefore, there would be no impacts on floodplains.	Alternative 1 would not impact floodplains.

Table 2-5, continued

Affected Environment	No Action Alternative	Proposed Action	Alternative 1
Vegetation (Section 3.7)	The No Action Alternative would not result in additional permanent impacts and temporary disturbances to Sonoran desertscrub, semi-desert grassland, and Madrean evergreen woodland vegetation types in the project area. Vegetation would continue to be disturbed by illegal cross border activity.	The Proposed Action would result in the permanent loss of 2.34 acres of Sonoran desertscrub, semi-desert grassland and Madrean evergreen woodland and the temporary degradation of 1.62 acres of the same communities at three tower sites and associated roads, compared to the No Action Alternative.	Alternative 1 would result in similar but slightly greater impacts as those discussed for the Proposed Action. There would be 2.64 acres of permanent impacts and 1.76 acres of temporary impacts on semidesert grassland, Sonoran desertscrub, and Madrean evergreen Oakland vegetation communities when compared to the No Action Alternative.
Wildlife and Aquatic Resources (Section 3.8)	Under the No Action Alternative terrestrial wildlife habitat would not be permanently impacted in the project area. Illegal cross border activity would continue to degrade wildlife habitats and potentially disturb wildlife in the project area.	Tower and access road construction would permanently impact an additional 2.34 acres and temporarily degrade 1.62 acres of terrestrial wildlife habitat compared to the No Action Alternative. The proposed towers could have an adverse impact on migratory birds as a result of bird strikes. However, the number and extent of bird strikes in relation to the size of migratory bird populations and the extent of the migratory flyway would be minimal and would not affect sustainability of migratory bird populations in the region. Appropriate mitigation measures would be implemented to reduce migratory bird strikes.	Alternative 1 would result in similar impacts as the Proposed Action. There would be 2.64 acres of permanent impacts and 1.76 acres of temporary impacts on terrestrial wildlife habitat, when compared to the No Action Alternative.
Protected Species (Section 3.9)	No additional impacts to protected species would occur under the No Action Alternative as the actions described in the Proposed Action would not be implemented. Illegal cross border activity would continue to degrade protected species habitats and potentially disturb protected species in the project area.	One proposed tower site and an alternate tower are located within Mexican spotted owl critical habitat; however, the proposed tower sites lack primary constituent elements for nesting and roosting habitat. CBP has determined that the proposed project may affect but is not likely to adversely affect the Mexican spotted owl, however, it is likely to result in adverse modifications to its critical habitat. The Proposed Action would have a long-term, indirect beneficial affect on vegetation communities used by Mexican spotted owl through the reduction in IA, smuggler, and other CBV traffic. The construction of new roads and, repair, and improvements to existing roads may increase the number and extent of passable roads and increase access to habitat occupied or potentially occupied by sensitive species. However beneficial impacts would be expected under the Proposed Action. Long-term, beneficial effects would occur by lessening impacts of other CBV activities on habitats throughout the project area and surrounding areas. Appropriate best conservation measures, best management practices, and off-setting measures would be implemented to minimize potential effects.	Alternative 1 would result in similar impacts as the Proposed Action.
Cultural Resources (Section 3.10)	No additional impacts to cultural resources would occur as the actions described as part of the Proposed Action would not be implemented. Illegal cross border activity would continue and potentially impact cultural resources in the project area.	No previously recorded sites are located within the area of potential effect (APE) of the proposed towers. In addition, two new archaeological sites located within the APE of the access roads and proposed tower sites are not considered eligible for the NRHP and are not considered significant. As a result, no adverse impacts to cultural resources are anticipated.	Alternative 1 would have no significant impacts on cultural resources.
Air Quality (Section 3.11)	No additional impacts to air quality would occur as the actions described as part of the Proposed Action would not be implemented.	Temporary and minor increases in air pollution would occur from the use of construction equipment and the disturbance of soils during construction of the proposed towers and access roads and road repair and improvements. However, air quality emissions resulting from the Proposed Action would not exceed <i>de minimis</i> thresholds for National Ambient Air Quality Standards pollutants. Therefore, a general conformity analysis would not be required for the Proposed Action.	The impacts to the air quality would be similar to those described in the Proposed Action Alternative, but slightly more because this alternative involves the construction of a longer access road. However, air quality emissions resulting from the Alternative 1 would not exceed <i>de minimis</i> thresholds for National Ambient Air Quality Standards pollutants.
Noise (Section 3.12)	The three new towers and proposed upgrade of one tower would not be constructed under the No Action Alternative; therefore, no additional impacts from construction and operational noise associate with the three proposed towers and proposed tower upgrade would occur.	Noise generated by heavy construction equipment would be intermittent and last approximately 4 weeks to excavate and prepare the foundation to install each tower and construct, repair and improve roads, after which, noise levels would return to ambient levels. The noise impacts from construction activities would be temporary and minor and would not significantly impact the noise environment. Noise generated by generators and air-conditioning associated with the operation of the proposed tower sites would have a minor, long-term impact to the noise environment.	Alternative 1 would result in similar impacts as those discussed for the Proposed Action.

Table 2-5, continued

Affected Environment	No Action Alternative	Proposed Action	Alternative 1
Radio Frequency Environment (Section 3.13)	No additional impacts to the radio frequency environment would occur under the No Action Alternative.	Radio and microwave transmissions associated with the operation of towers would not have a significant adverse impact on humans, wildlife, or other communication systems. All transmitters and sensors would operate below 30 gigaHertz. Compliance and coordination with National Telecommunications and Information Administration (NTIA) and Federal Communications Commission (FCC) regulations and guidelines would ensure there would be no significant adverse impacts to observatories, human safety, or the natural and biological environment.	Alternative 1 would result in similar impacts as those discussed for the Proposed Action.
Utilities and Infrastructure (Section 3.14)	No additional demands on utilities and infrastructure would occur under the No Action Alternative.	Negligible demands on power utilities would be required as a result of the Proposed Action. One additional tower would be on the electrical grid compared to the No Action Alternative.	Alternative 1 would result in similar impacts as those discussed for the Proposed Action.
Roadways and Traffic (Section 3.15)	No additional impacts to roadways and traffic would be expected under the No Action Alternative.	Construction and staging for the access roads, foundations, and towers would create a minor short-term impact to roadways and traffic within the project region. The increase of vehicular traffic would occur to supply materials and work crews at each tower site for a short period of time.	Impacts to roadways and traffic would be similar to those described for the Proposed Action.
Aesthetics (Section 3.16)	Under the No Action Alternative, the three proposed new towers and proposed upgrade of one tower would not occur and not additional impacts would be expected. Roads and trails created by illegal cross border activity would continue to degrade the aesthetics of the project area.	The installation of towers would detract from the aesthetic resources of the project area. Infrastructure components would be located primarily within undeveloped areas. The Proposed Action would have a moderate, permanent adverse impact to aesthetic qualities.	Alternative 1 would result in impacts similar to those described for the Proposed Action. Alternative 1 would have a moderate, permanent adverse impact to aesthetic qualities.
Hazardous Waste (Section 3.17)	The No Action Alternative would not result in any additional exposure of the public or environment to any hazardous materials.	The Proposed Action would not result in significant exposures of the environment or public to any hazardous materials. The potential exists for minor releases of POL during construction or operational activities. BMPs would be put in place to minimize any potential contamination at the proposed sites during construction activities and operation.	Alternative 1 would result in similar impacts as those discussed for the Proposed Action.
Socioeconomics (Section 3.18)	No additional impacts to socioeconomics would occur under the No Action Alternative.	The Proposed Action would not cause any changes to local employment rates, poverty levels, or local incomes. Long-term beneficial, socioeconomic impacts could be realized from the purchasing of propane. Additionally, indirect beneficial impacts would be expected in the reduced costs of apprehension, detention, and incarceration of criminals and reduced insurance costs, reduced property loss, and other societal costs.	Impacts to socioeconomics would be similar to those described for the Proposed Action.
Environmental Justice (Section 3.19)	Implementation of the No Action Alternative would cause no direct impacts on environmental justice concerns.	Implementation of the Proposed Action would cause no direct impacts to minority and low income populations.	Environmental justice issues would be similar those described for the Proposed Action.
Sustainability and Greening (Section 3.20)	Under the No Action Alternative, applicable Federal sustainability and greening practices would be implemented to the greatest extent practicable.	Under the Proposed Action, applicable Federal sustainability and greening practices would be implemented to the greatest extent practicable.	Applicable Federal sustainability and greening practices would be implemented to the greatest extent practicable as part of Alternative 1.

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SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.0 **AFFECTED ENVIRONMENT AND CONSEQUENCES**

3.1 **PRELIMINARY IMPACT SCOPING**

This section of the SEA describes the natural and human environment that exists within the project area and the potential impacts of the No Action Alternative, Proposed Action, and Alternative 1 as outlined in Section 2.0 of this document. Only those parameters with the potential to be affected by the Proposed Action are described, per CEQ regulation (40 CFR 1501.7 [3]). Impacts can vary in magnitude from a slight to a total change in the environment. The impact analysis presented in this EA is based upon existing regulatory standards, scientific, and environmental knowledge and best professional opinions.

Some topics are limited in scope due to the lack of direct effect from the proposed project on the resource, or because that particular resource is not located within the project corridor. Resources such as climate and wild and scenic rivers are not addressed for the following reasons:

- Climate

The climate would not be impacted by the construction and operation of the Proposed Action.

- Wild and Scenic Rivers

The Proposed Action would not affect any designated Wild and Scenic Rivers (16 U.S.C. 551, 1278[c], 1281[d]) because no rivers designated as such are located within or near the study corridor.

Impacts (consequence or effect) can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR 1508.8[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). As discussed in this section, the No Action Alternative, Proposed Action,

1 and Alternative 1 may create temporary (lasting the duration of construction), short-term
2 (up to 3 years), long-term (3 to 10 years following construction), or permanent (greater
3 than 10 years) impacts or effects.

4
5 Impacts on each resource can vary in degree or magnitude from a slightly noticeable
6 change to a total change in the environment. Significant impacts are those effects that
7 would result in substantial changes to the environment (40 CFR 1508.27) and should
8 receive the greatest attention in the decision-making process. Insignificant impacts are
9 those that would result in minimal changes to the environment. The following
10 discussions describe and, where possible, quantify the potential effects of each
11 alternative on the resources within or near the project area. All impacts described
12 below are considered to be adverse unless stated otherwise.

13
14 Table 3-1 presents the permanent and temporary impacts (total of 3.96 acres) for the
15 construction of the proposed towers, new access roads, approach road repair or
16 improvement, and road maintenance. Biological and cultural resources surveys were
17 conducted at each proposed tower site and the one proposed alternate tower site, as
18 well as associated access and approach roads. The results of these surveys are
19 provided in the affected environment section of the appropriate resource.

20
21 **Table 3-1. Temporary and Permanent Impacts from the Proposed Action**

Tower Name	Tower		Road	
	Temporary Impacts (in acres)	Permanent Impacts (in acres)	Temporary Impacts (in acres)	Permanent Impacts (in acres)
TCA-NGL-141	0.17	0.06	0.41	0.99
TCA-NGL-316	0.17	0.06	0.39	0.16
TCA-SON-057	0	0.09	0	0
TCA-SON-314	0.17	0.06	0.31	0.92
Tower subtotal	0.51	0.27	-	-
Road subtotal	-	-	1.11	2.07
Total temporary				1.62
Total permanent				2.34

22 NOTE: Includes previously disturbed areas
23 Access and approach road impacts were calculated from the Road Plan and Profile in the
24 60 percent Design Plans.

1 **3.2 LAND USE**

2

3 **3.2.1 Affected Environment**

4 Santa Cruz County is located on the southwestern border of Arizona and covers 1,236
5 square miles (Arizona Department of Commerce 2009). Land use in this desert region
6 is generally dependent upon soil characteristics and water availability. Government,
7 tourism, and commercial land use are the county's principal land uses. The USFS and
8 BLM manage 54.6 percent of the land; the State of Arizona owns 7.8 percent, and
9 individual or corporate ownership is 37.5 percent.

10

11 Proposed tower sites TCA-SON-314 and TCA-SON-323 are on CNF land, TCA-NGL-
12 141 is on private land, and the remaining proposed tower, TCA-NGL-316 is on Arizona
13 State Trust Land. Tower site TCA-SON-057 is also located on CNF land.

14

15 TCA-NGL-316 would be located about 2 miles northeast of the Tumacácori Ecosystem
16 Management Area (EMA) on CNF lands and is located within the Tumacácori-Santa
17 Rita Linkage. The Tumacácori EMA supports varied habitats and has three large
18 mountain ranges within its boundaries – the Tumacácori Mountains, Atascoca
19 Mountains and the San Luis Mountains. These mountain ranges and surrounding
20 valleys support a diversity of wildlife and plants.

21

22 The proposed towers would require new access roads to be constructed and/or would
23 require road improvements or repairs to existing roads associated with the proposed
24 towers. Table 3-2 indicates which tower sites and access roads would impact specific
25 landowners or land managing agencies.

1 **Table 3-2. Proposed Tower Site and Access Road Land Ownership**

Tower Name	Landowner of Tower Site and Access Road	Acres
TCA-NGL-141	Private	1.63
TCA-NGL-316	Arizona State Trust Land	0.78
TCA-SON-057*	USFS (CNF)	0.09
TCA-SON-314	USFS (CNF)	1.46
TCA-SON-323**	USFS (CNF)	1.89

2 *This tower was analyzed in the 2008 EA; however, modifications to the type of tower,
3 the height of the tower, and the permanent footprint are now proposed.
4 ** Alternate tower that would replace TCA-SON-314 in Alternative 1.

5

6 **3.2.2 Environmental Consequences**

7 **3.2.2.1 No Action Alternative**

8 No additional impacts to land use would occur as a result of implementing the No Action
9 Alternative. Construction of the three proposed new towers and proposed upgrade of
10 tower site TCA-SON-057 would not occur under the No Action Alternative.

11

12 **3.2.2.2 Proposed Action**

13 Construction of the proposed towers and access roads, would permanently convert 2.34
14 acres from their current use as USFS, private, or ASTL land to CBP enforcement
15 activities compared to the No Action Alternative. Construction of the towers and road
16 construction, repairs, and improvements associated with the proposed towers would
17 temporarily impact 1.62 acres of land managed by these same entities compared to the
18 No Action Alternative. No direct significant adverse impacts to land use are anticipated
19 as the Proposed Action has been extensively coordinated with the private landowner
20 and affected land management agencies. Furthermore, the Proposed Action would
21 indirectly reduce the number of illegal roads and trails being created in CNF each year
22 and the Proposed Action would reduce the amount of human waste and trash deposited
23 across CNF each year.

24

25 **3.2.2.3 Alternative 1**

26 Alternative 1 would result in impacts similar to those described for the Proposed Action.
27 Construction of the proposed towers and access roads, would permanently convert

1 2.64 acres and temporarily impact 1.76 acres from their current uses as USFS, private,
2 or ASTL land to CBP enforcement activities compared to the No Action Alternative.

3

4 **3.3 GEOLOGY AND SOILS**

5

6 **3.3.1 Affected Environment**

7 **Geology**

8 The project area is located in the Basin and Range Physiographic Province as
9 delineated by the U.S. Geological Survey (USGS) (USGS and California Geologic
10 Survey 2000). The geology of the project area was discussed in the 2008 EA and is
11 incorporated herein by reference (CBP 2008a).

12

13 **Soils**

14 There are five soil types associated with the proposed tower sites and associated
15 access and approach roads. The soil type at TCA-SON-057 was analyzed in the 2008
16 EA and is herein incorporated by reference (CBP 2008a). A description of each soil
17 type at the three tower sites is presented in Table 3-3 and soil maps depicting the
18 proposed tower locations are provided in Appendix B.

19

20 **Prime Farmland**

21 Prime farmland was discussed in the 2008 EA and is incorporated herein by reference
22 (CBP 2008a). USDA, NRCS did not report any of the five soil types as prime farmlands
23 and none of the lands are currently in agricultural production (i.e., irrigated).
24 Furthermore, the soils in this region are not typically irrigated so these soils would fail to
25 meet prime farmland criteria.

26

27 **3.3.2 Environmental Consequences**

28 **3.3.2.1 No Action Alternative**

29 No additional impacts to geology, soils, or prime farmlands would occur as a result of
30 implementing the No Action Alternative. Construction of the three proposed new towers

Table 3-3. Characteristics of Soils Within the Project Corridor

Soils	Slope (percent)	Type	Permeability	Runoff	Erosion Hazard Wind / Water for Undisturbed Soils	Tower Site or Approach Road
Barkerville-Gaddes complex	10-30	Gravelly Sandy Loam	Moderate or moderately rapidly	Medium	Moderate	TCA-SON-314 TCA-SON-323
Barkerville-Gaddes association, steep	30-60	Gravelly Sandy Loam	Moderate or moderately rapidly	Rapid	High	TCA-SON-314 TCA-SON-323
Graham soils	5-20	Gravelly or Cobbly Clay Loam	Slow	Medium	Slight	TCA-NGL-141
Lampshire-Graham-Rock outcrop association	20-60	Cobbly Loam	Moderate to bedrock	Medium or Rapid	Moderate	TCA-NGL-141
White House-Caralampi complex	10-35	Gravelly Loam	Slow	Medium	Moderate	TCA-NGL-316

Source: USDA, Soil Conservation Service (SCS) 1979

1 and proposed upgrade of tower site TCA-SON-057 would not occur under the No Action
2 Alternative.

3

4 **3.3.2.2 Proposed Action**

5 **Geology**

6 The Proposed Action involves primarily disturbances to topsoil layers, or somewhat
7 deeper in the case of SST (TCA-SON-057). During construction activities, any holes or
8 excavations for either perimeter fence posts or towers, would impact an area no larger
9 than approximately 38 square feet for the three piers on the larger SST, and would not
10 substantially alter the geology in the project area. Each pier would be no deeper than
11 60 feet bgs, and only one of the proposed towers, TCA-SON-057, is anticipated to be a
12 SST. Additionally, all proposed roads would be located in predominately alluvial
13 material and would, therefore, not require substantial modifications to the area's
14 topography (i.e., road cuts).

15

16 **Soils**

17 Construction of the proposed towers and access roads and repairs and improvements
18 to associated approach roads would have a direct permanent impact on 2.34 acres and
19 a temporary impact on 1.62 acres of soils. Road repairs and improvements would occur
20 on existing roads; therefore, these soils have been previously disturbed. Although
21 these impacts are long-term, they would be minor when examined on a regional scale,
22 due to the small amount of soils lost relative to the quantity of the same soils regionally.
23 Additionally, BMPs to reduce soil erosion would be employed during construction
24 activities as outlined in Section 5.0, and a SWPPP which would be prepared prior to
25 construction. No hydric soils would be impacted.

26

27 The Proposed Action would have a permanent indirect benefit as a result of reducing
28 CBV traffic within the project area. The Proposed Action would improve the detection of
29 CBV traffic closer to the U.S./Mexico border thus focusing and improving USBP agent's
30 apprehension capabilities. The increased detection and apprehension capabilities
31 resulting from the Proposed Action would reduce the amount of CBV off-road traffic and

1 subsequent soil disturbance. The creation of new illegal roads and trails would be
2 reduced and existing illegal roads and trails would be able to naturally rehabilitate.

3

4 **Prime Farmlands**

5 No soils classified as prime farmlands occur in the project area. Therefore, no impacts
6 to prime farmlands would occur as part of the Proposed Action.

7

8 **3.3.2.3 Alternative 1**

9 **Geology**

10 Alternative 1 would result in similar impacts compared to the Proposed Action.

11

12 **Soils**

13 Direct permanent and temporary impacts on soils associated with the Alternative 1
14 would be similar to those resulting from the Proposed Action; however there would be
15 permanent impacts on 2.64 acres and temporary impacts on 1.76 acres of regionally
16 common soils due to the longer length of the approach road to TCA-SON-323.

17

18 **3.4 HYDROLOGY AND GROUNDWATER**

19

20 **3.4.1 Affected Environment**

21 The proposed tower sites are located in the Arizona Department of Water Resources
22 (ADWR) groundwater basin Santa Cruz Active Management Area (AMA). Groundwater
23 resources were described in the 2008 EA and are incorporated herein by reference
24 (CBP 2008a).

25

26 Some areas of the State of Arizona have relatively deep alluvial aquifers with
27 substantial amounts of groundwater in storage. In 2003, groundwater was the primary
28 water supply utilized in the Santa Cruz AMA (ADWR 2006). Table 3-4 presents the
29 groundwater storage and recharge of the Santa Cruz AMA in project corridor.

Table 3-4. Groundwater Basins Municipal, Industrial, and Agricultural Use and Recharge Rate

Groundwater Basin	Recharge Rate (acre-feet)	Municipal* Water Use (acre-feet)
Santa Cruz AMA	35,500 - 160,300	56,000 – 62,000

Source: ADWR 2006.

*Includes industrial and agricultural water use as well.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

No impacts to groundwater would occur under the No Action Alternative. The actions described in the Proposed Action would not be implemented under the No Action Alternative.

3.4.2.2 Proposed Action

Under the Proposed Action, water would be required for the concrete tower foundations, watering of new access road surfaces and fugitive dust suppression during construction activities. The water used to compact and construct new access roads typically averages 1.7 acre-foot per mile (554,000 gallons) of new road construction (Miranda 2006). Widening and resurfacing existing roads requires approximately 1 acre-foot per mile (325,841 gallons). Using these assumptions, the Proposed Action would require 0.1 acre-feet of water for road construction and 1.3 acre-feet of water for road improvements for a total of 1.46 acre-feet of water.

The water used in association with the Proposed Action, which is not lost to evaporation during watering of access road surfaces during construction, would potentially contribute to aquifer recharge through downward seepage. The Santa Cruz AMA is experiencing groundwater recharge surpluses and the water needs for the proposed project are insignificant compared to the volume used annually for municipal, agricultural, and industrial purposes. The construction of towers and access roads would not substantially alter natural drainage patterns. The access roads are surfaced with *in situ* material and would not create impermeable surfaces. The construction of the access roads would not interfere with groundwater recharge. Therefore, the Proposed

1 Action would not result in significant adverse impact on groundwater basins and
2 hydrology in the project area.

3

4 **3.4.2.3 Alternative 1**

5 Under Alternative 1, water needs for new access road surfaces and fugitive dust
6 suppression during construction activities are slightly greater than the Proposed Action,
7 due to the longer length of the approach road to TCA-SON-323. Water use for
8 construction under Alternative 1 would require 1.66 acre-feet of water (0.1 acre-foot for
9 new road construction and 1.5 acre-foot of water for road repair or improvements). The
10 additional 0.20 acre-feet of water use compared to the Proposed Action would not have
11 a significant adverse impact on groundwater resources.

12

13 **3.5 SURFACE WATERS AND WATERS OF THE U.S.**

14

15 **3.5.1 Affected Environment**

16 All of the proposed towers sites and associated access roads are located in the Santa
17 Cruz-Rio Magdalena-Rio Sonoyta (Santa Cruz) watershed. The Santa Cruz watershed
18 receives about 15 inches of rain and up to 1 inch of snow per year. Groundwater
19 pumping has eliminated natural perennial flow in most of the mainstream Santa Cruz
20 River. Treated wastewater effluent provides perennial flow below discharges from the
21 cities of Nogales and Tucson (ADEQ 2008). A more detailed discussion of the region's
22 surface waters was provided in the 2008 EA and that information is incorporated herein
23 by reference (CBP 2008a).

24

25 **3.5.1.1 Surface Waters**

26 Section 303(d)(1)(A) of the Clean Water Act (CWA) was discussed in the 2008 EA and
27 is incorporated herein by reference (CBP 2008a). The 2006/2008 305(b) and 303(d)
28 report by ADEQ assessed 32 stream reaches and seven lakes within the watershed and
29 found three stream reaches to be impaired. Table 3-5 provides information on the
30 impaired stream sections in the Santa Cruz watershed as listed in the 2006/2008 ADEQ
31 303(d) Impaired Waters List. None of the proposed tower sites, new access roads,

1 and/or roads identified for repair or improved as part of the proposed project are located
2 near the impaired stream reaches listed in Table 3-5.

3
4

Table 3-5. List of ADEQ Impaired Streams in Santa Cruz Watershed

Sub-watershed Name & ADEQ ID	Location	Suspected Causes of Impairment	Suspected Sources of Impairment
Nogales Wash 15050301-011	From Mexico border to Potrero Creek	Copper, ammonia, <i>Escherichia coli</i> and Chlorine	Abandoned mines Mexico
Santa Cruz River 15050301-010	U.S./Mexico border north thru Nogales	<i>E. coli</i>	Natural background and Mexico
Sonoita Creek 15050301-013C	Patagonia Waste Treatment Plant to Santa Cruz River	Zinc and low dissolved oxygen	Abandoned mines

5 Source: ADEQ 2008; 303 (d) Water Quality Inventory Integrated Report List of Impaired
6 Watersheds [303 (d) list]

7

8 **3.5.1.2 Waters of the U.S. and Wetlands**

9 Section 404 of the CWA of 1977 (Public Law 95-217) and Waters of the U.S. (WUS)
10 were discussed in the 2008 EA and are incorporated herein by reference (CBP 2008a).

11

12 Activities that result in the dredging and/or filling of WUS are regulated under Section
13 404 of the CWA. Nationwide Permits (NWP) are used to efficiently authorize common
14 activities, which do not significantly impact WUS, including wetlands. Activities required
15 for the construction, expansion, modification, or improvement of linear transportation
16 crossings (e.g., highways, railways, trails, etc.) in WUS, including wetlands are
17 authorized under a NWP 14 if the activity meets the appropriate criteria established for
18 this NWP. The limitation criteria for an NWP 14 are impacts equal to or less than 0.5
19 acre of non-tidal waters or not greater than 0.33 acre in tidal waters.

20

21 In April 2009, Gulf South Research Corporation (GSRC) conducted a survey of
22 potentially affected WUS in the project area. There were 29 WUS identified crossing
23 either the new access or approach roads associated with three of the proposed tower
24 sites (TCA-NGL-141, TCA-NGL-316, and TCA-SON-323). All washes observed are
25 classified as ephemeral streams and are considered jurisdictional under the CWA for
26 the purpose of this SEA. A list of WUS observed during the survey conducted by GSRC
27 is presented in Table 3-6.

1 **Table 3-6. Waters of the U.S. Associated with the Proposed Tower Sites and**
 2 **Approach and Access Roads**

Tower ID	Drainage Type	Periodicity	Width of Channel (feet)	Width of Road & Shoulders (feet)	Proposed Action	Impact (acre)
TCA-NGL-141	Wash	Ephemeral	1	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	1	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	2	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	3	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	1	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	7	16	Grading	< 0.1
TCA-NGL-141	Gully	Ephemeral	8	16	Grading	< 0.1
TCA-NGL-141	Gully	Ephemeral	2	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-NGL-141	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-NGL-316	Wash	Ephemeral	3	16	New Road Construction	< 0.1
TCA-SON-323	Wash	Ephemeral	3	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	6	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	1	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	5	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	4	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	5	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	5	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	3	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	12	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	1	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	3	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	48	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	8	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	10	16	Grading	< 0.1
TCA-SON-323	Wash	Ephemeral	3	16	Grading	< 0.1

3
 4 No potential jurisdictional wetlands or perennial pools were identified at the proposed
 5 tower sites, within the footprint of existing approach roads or the proposed footprint of
 6 any new access roads.

7
 8 **3.5.2 Environmental Consequences**

9 **3.5.2.1 No Action Alternative**

10 Tower construction and upgrades, and road construction, improvements, or repairs
 11 associated with the Proposed Action would not take place under the No Action

1 Alternative; therefore, no additional impacts to Waters of the U.S. and wetlands would
2 occur under the No Action Alternative.

3

4 **3.5.2.2 Proposed Action**

5 Surface waters could be temporarily affected by the proposed construction actions.
6 Short-term effects could include a temporary increase in erosion and sedimentation
7 during periods of construction. Disturbed soils and hazardous substances (i.e., anti-
8 freeze, fuels, oils, and lubricants) could directly impact water quality during a rain event.
9 These effects would be minimized through the use of BMPs. A Construction
10 Stormwater General Permit would be obtained prior to construction, and this would
11 require approval of a site-specific SWPPP and Notice of Intent (NOI). A site-specific
12 Spill Prevention, Control and Countermeasure Plan (SPCCP) would also be in place
13 prior to the start of construction. BMPs outlined in these plans would reduce potential
14 migration of soils, oil and grease, and construction debris into local watersheds. Once
15 the construction project is complete, the temporary impact areas at the tower project
16 sites would be re-vegetated with native vegetation per design plans and BMPs in
17 erosion and sediment plans (e.g., SWPPP), which would mitigate the potential of non-
18 point source pollution to enter local surface waters.

19

20 The implementation of the Proposed Action would require re-grading of existing low-
21 water crossings or the construction of new low-water crossings using *in situ* material. A
22 total of 29 new potential WUS would be impacted as a result of implementing the
23 Proposed Action (see Table 3-6). Impacts to three Waters of the U.S. would be avoided
24 by eliminating tower TCA-SON-055. No drainage structures (e.g., concrete low-water
25 crossings) would be constructed as part of the Proposed Action. A Section 404 Permit
26 from the USACE Los Angeles District Regulatory Branch would be required to place fill
27 or operate mechanized equipment in jurisdictional WUS. However, because the
28 USACE Los Angeles District typically considers separate utility for each crossing, a
29 NWP 14 would be used for each WUS crossing. All impacts to affected WUS would be
30 less than the 0.1 acre minimum threshold established for reporting requirements under
31 NWP 14. Consequently, all road repair (i.e., grading) or improvements and construction

1 in WUS would be authorized under a NWP 14 and a preconstruction notice would not
2 be required. Therefore, there would be no significant adverse effects on surface waters
3 or WUS.

4 5 **3.5.2.3 Alternative 1**

6 The Alternative 1 project area is slightly larger than the Proposed Action project area.
7 Surface waters could be temporarily affected by the construction actions proposed in
8 Alternative 1 and short-term effects would be similar to those described in the Proposed
9 Action. Therefore, under Alternative 1, there would be no significant impacts on surface
10 waters or WUS.

11 12 **3.6 FLOODPLAINS**

13 14 **3.6.1 Affected Environment**

15 Floodplains in the Tucson West Tower Project area were discussed in detail in the 2008
16 EA; those discussions are incorporated herein by reference. Executive Order (EO)
17 11988, Floodplain Management, requires that each Federal agency take actions to
18 reduce the risk of flood loss, minimize the impact of floods on human safety, health and
19 welfare, and preserve the beneficial values which floodplains serve. EO 11988 requires
20 that agencies evaluate the potential effects of actions within a floodplain and to avoid
21 floodplains unless the agency determines there is no practicable alternative. Where the
22 only practicable alternative is to site in a floodplain, an eight-step planning process is
23 followed to ensure compliance with EO 11988 (Federal Emergency Management
24 Administration [FEMA] 2009).

25 26 **3.6.2 Environmental Consequences**

27 **3.6.2.1 No Action Alternative**

28 Tower construction and upgrades, and road construction, improvements, or repairs
29 associated with the Proposed Action would not take place under the No Action
30 Alternative; therefore, no additional impacts to floodplains would occur under the No
31 Action Alternative.

1 **3.6.2.2 Proposed Action**

2 None of the proposed tower sites, new access roads, or roads proposed for repair or
3 improvement as part of the Proposed Action are located in the 100-year floodplain
4 (Figure 3-1). TCA-SON-057 (previously analyzed in the 2008 EA) is not located in a
5 floodplain. Therefore, there would be no impacts on floodplains.

6

7 **3.6.2.3 Alternative 1**

8 Impacts to floodplains under Alternative 1 would be the same as described for the
9 Proposed Action; there would be no impacts to floodplains.

10

11 **3.7 VEGETATIVE HABITAT**

12

13 **3.7.1 Affected Environment**

14 The vegetative environment of the project corridor of the SBI^{net} Tucson West Tower
15 Project was described in the 2008 EA and is incorporated herein by reference (CBP
16 2008a). In summary, the vegetative communities within the project corridor include the
17 Sonoran desertscrub, semidesert grasslands, and Madrean evergreen woodland
18 (Brown 1994, CBP 2008a).

19

20 In April of 2009, GSRC conducted biological surveys of the three proposed tower sites
21 and one alternate tower site. The vegetation type at TCA-NGL-316 is semidesert
22 grassland with mesquite (*Prosopis* sp.) as the dominant non-grass species. The other
23 flora consisted of teddy bear cholla (*Cylindropuntia bigelovii bigelovii*), chain fruit cholla
24 (*Cylindropuntia fulgida*), palo verde (*Cercidium floridum*), barrel cactus (*Ferrocactus*
25 sp.), prickly pear (*Opuntia* sp.), and ocotillo (*Fouquieria splendens*).

26

27 At proposed tower site TCA-NGL-141, the vegetation community was Sonoran
28 desertscrub with interspersed semidesert grasslands. Ocotillo was the dominant non-
29 grass species at the tower site changing into mesquite at lower elevations and south
30 along the access road. Vegetation consisted of sotol (*Dasyilirion wheeleri*), Spanish

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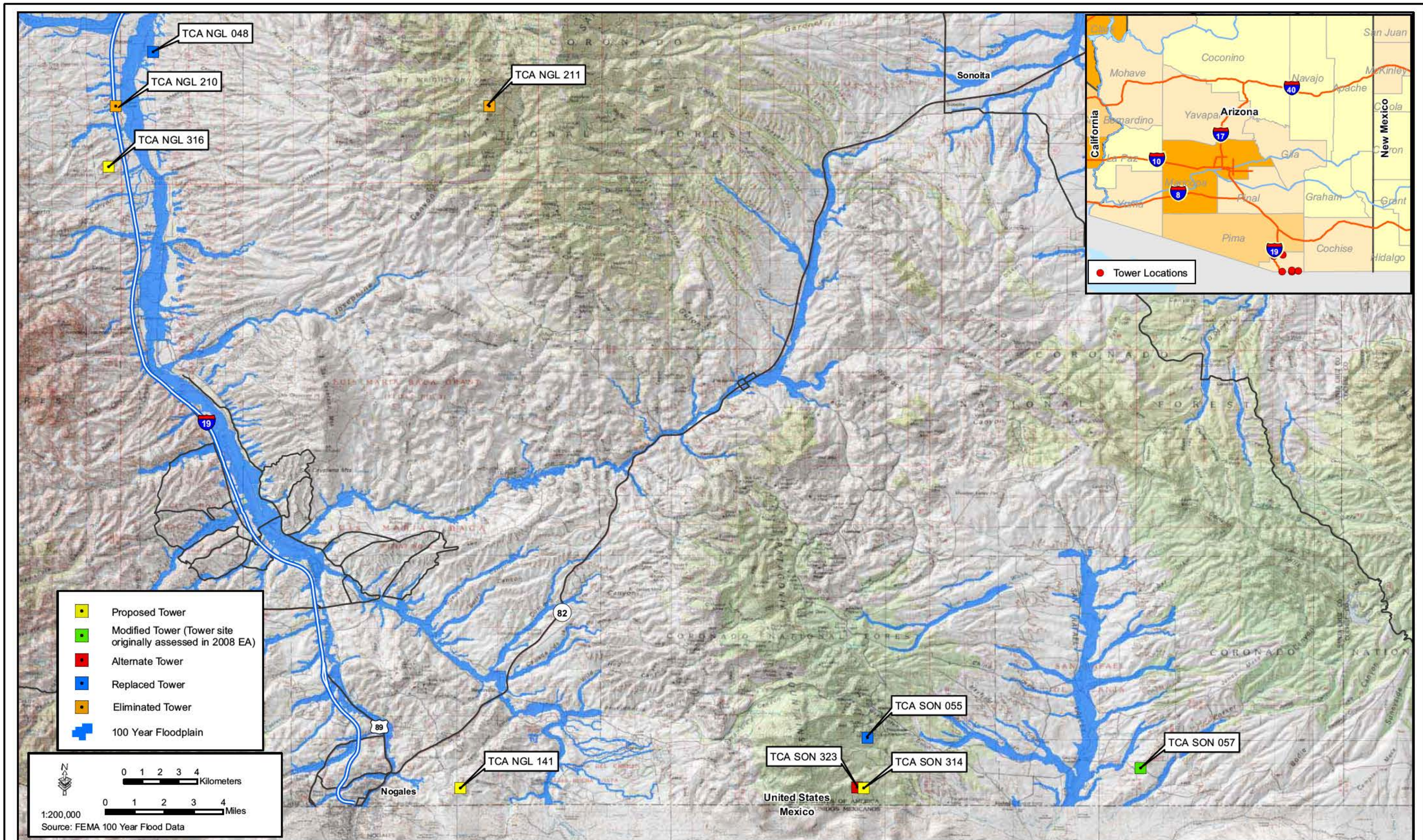


Figure 3-1: Santa Cruz County FEMA Floodplain Map

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1 dagger (*Yucca gloriosa*), mesquite, bear grass (*Nolina microcarpa*), Emory oak
2 (*Quercus emoryi*), ocotillo, and prickly pear.

3
4 The vegetation community at proposed tower site TCA-SON-314, including the new
5 access road was Madrean evergreen woodland. Plants identified during the survey
6 were Emory oak, sotol, alligator juniper (*Juniperis deppeana*), prickly pear, Parry's
7 agave (*Agave parryi*), manzanita (*Arctostaphoylos patula*), chain fruit cholla
8 (*Cylindropuntia fulgida*), rainbow cactus (*Echinocereus pectinatus*), and Spanish
9 dagger.

10
11 The proposed alternate tower site TCA-SON-323 was also located in the Madrean
12 evergreen woodland. The vegetation identified at this site and access road was the
13 same as that of TCA-SON-314.

14

15 **3.7.2 Environmental Consequences**

16 **3.7.2.1 No Action Alternative**

17 Under the No Action Alternative, no additional permanent impacts to Sonoran
18 desertscrub, semidesert grassland, and Madrean evergreen woodland vegetative
19 communities would occur, since construction of the three new towers and the upgrade
20 of TCA-SON-057 would not be implemented.

21

22 **3.7.2.2 Proposed Action**

23 Construction of proposed tower sites and new access roads would permanently convert
24 approximately 2.34 acres of Sonoran desertscrub, semidesert grassland, and Madrean
25 evergreen woodland vegetative communities to CBP enforcement activities.
26 Furthermore road construction, repairs, and improvements associated with the
27 proposed towers would temporarily impact approximately 1.62 acres of Sonoran
28 desertscrub, semidesert grassland, and Madrean evergreen woodland vegetation
29 communities. Each of these communities has been affected by development, cattle
30 grazing, fire suppression, timber harvesting, mining, and the invasion of exotic species
31 over the last century. All of these plant communities are locally and regionally

1 abundant; therefore, the Proposed Action would not cause the loss of any one of the
2 above mentioned communities and would not have significant adverse impacts to
3 vegetation. Mitigation measures are provided in Section 5.0 to minimize the spread and
4 establishment of invasive species within the project area (CBP 2008a).

5

6 Many of the roads leading to tower sites are infrequently used due to poor road
7 conditions. Repair and/or improvements to roads, as well as new road construction,
8 may lead to increased use by humans, both directly in association with construction and
9 operation of towers and indirectly in association with increased recreational access,
10 creating favorable conditions for invasive species already established and the spread of
11 invasive species to new areas. However, the indirect reduction of CBV activity would
12 benefit these habitats through the reduction of similar impacts over a much greater
13 area. Furthermore, improved and new roads would serve as fire breaks which would
14 aid efforts to control wildfires and to manage vegetative habitats through the use of
15 prescribed burns.

16

17 **3.7.2.3 Alternative 1**

18 The impact of Alternative 1 would be similar to that of the Proposed Action with the
19 exception that tower site TCA-SON-314 would be removed from the tower laydown and
20 replaced by TCA-SON-323. The tower sites are located in the same vegetation
21 community types, thus, impacts to existing vegetation would be the similar; however,
22 there would be 0.30 and 0.18 acre of additional permanent and temporary impacts to
23 Madrean evergreen woodland, respectively, compared to the Proposed Action.

24

25 **3.8 WILDLIFE RESOURCES**

26

27 **3.8.1 Affected Environment**

28 The biological environment of the project area was discussed in detail in the EA for the
29 *SBI*net Tucson West Project, and is herein incorporated by reference (CBP 2008a). In
30 summary, many of the animals found in Sonoran desertscrub vegetation community are
31 found throughout the warmer and drier regions of the southwestern U.S. Because of

1 the lack of available forage and extreme temperatures, many of the mammals
2 occupying these vegetation communities are small and most are nocturnal. The
3 semidesert grassland vegetation community provides more forage than other vegetation
4 communities in the project area. The climate of this vegetation community is typically
5 more temperate and rainfall is greater in comparison to the Sonoran desertscrub
6 vegetation community. The Madrean evergreen woodland vegetation community
7 provides abundant forage for mule deer (*Odocoileus hemionis*), which is common
8 throughout these habitats in the southwest.

9

10 **3.8.2 Environmental Consequences**

11 **3.8.2.1 No Action Alternative**

12 Tower construction and upgrades, and road construction, improvements, or repairs
13 associated with the Proposed Action would not take place under the No Action
14 Alternative; therefore, no additional impacts to wildlife habitat would occur under the No
15 Action Alternative.

16

17 **3.8.2.2 Proposed Action**

18 The permanent loss of the 2.34 acres of wildlife habitat comprising Sonoran
19 desertscrub, semidesert grasslands, and Madrean evergreen woodland vegetation
20 communities and the temporary impact on 1.62 acres of wildlife habitat would have a
21 minimal impact on wildlife. Although a few sedentary animals could be lost during
22 construction activities, most wildlife would avoid disturbance and construction activities
23 and utilize the abundant surrounding habitat. There is a possibility that the proposed
24 towers could pose hazards to migratory birds; however, since none of the towers would
25 use guy wires, the potential for adverse impacts is greatly reduced. Furthermore, tower
26 construction would adhere to the USFWS interim guidelines and Federal Aviation
27 Administration (FAA) guidelines designed to reduce impacts to migratory birds such as
28 installation of white or red strobe lights and limiting heights of towers (USFWS 2000).

29

30 The 2008 EA (CBP 2008a) contained a detailed discussion regarding concerns about
31 the effects of towers to migratory birds and tower lighting. In summary, several studies

1 have been conducted but are largely inconclusive; most have indicated that more
2 research is needed to better understand the effects of tower lighting on night-migrating
3 birds. However, the Proposed Action is not anticipated to have a significant impact to
4 the sustainability of the wildlife or migratory bird population in the region.

5

6 The electromagnetic field (EMF) associated with radars could disorient migratory
7 species, thus increasing the potential for bird strikes (Nicholls and Racey 2007).
8 Mitigation measures as outlined in Section 5.0 would ensure there would be no
9 significant impacts on migratory birds.

10

11 Repair of access roads and maintenance of towers would cause temporary, short-term
12 disturbances to wildlife. However, no significant losses of wildlife population due to
13 operation and maintenance of the towers would be expected.

14

15 Noise associated with tower and road construction, improvements, and maintenance
16 would result in short-term impacts to wildlife. Elevated noise levels associated with
17 short-term construction and maintenance activities would only occur during the duration
18 of these activities. The effects of this disturbance would include temporary avoidance of
19 work areas and competition for unaffected resources. Due to the limited extent and
20 duration of these activities, impacts on wildlife would be minimal (CBP 2008a).
21 Mitigation measures as outlined in the 2008 EA (CBP 2008a), incorporated by reference
22 herein, would reduce noise associated with operation of heavy equipment.

23

24 The increase in noise levels associated with operation of the proposed tower sites (i.e.,
25 generators and air conditioners) would be sporadic, only occurring when this equipment
26 is operating. Generators would be equipped with mufflers or baffle boxes to reduce
27 their noise, and noise would be attenuated to 57 A-weighted decibel (dBA) at a distance
28 of 1,165 feet. It is anticipated that wildlife would become accustomed to these
29 intermittent, low-level increases in noise, and that subsequent avoidance of tower sites
30 and any wildlife resources in the area would be minimal.

1 The Proposed Action could result in indirect and long-term beneficial impacts to wildlife
2 by reducing the adverse impacts of CBV activity on the Sonoran Desert vegetation
3 communities. A reduction in the degradation of these communities would result in an
4 increase or improvement to wildlife resources such as forage, cover, and nesting
5 opportunities. Furthermore, the reduction of CBV activity would result in a proportional
6 reduction in disturbance of wildlife, habitat degradation, and litter. These beneficial
7 impacts could off-set potentially adverse impacts by increasing the availability of wildlife
8 resources and reducing competition for those resources.

9

10 **3.8.2.3 Alternative 1**

11 The impact of Alternative 1 would be similar to that of the Proposed Action with the
12 exception that tower site TCA-SON-314 would be removed from the tower laydown and
13 replaced by TCA-SON-323. Since the tower sites are located in the same plant
14 community types, Alternative 1 would have similar on wildlife as the Proposed Action;
15 however, there would be a permanent loss of 2.64 acres of wildlife habitat in Sonoran
16 desertscrub, semidesert grasslands, and Madrean evergreen woodland vegetation
17 communities and a temporary impact on 1.62 acres of wildlife habitat, compared to the
18 Proposed Action Alternative. Operational impacts under Alternative 1 would be the
19 same as described for the Proposed Action Alternative. These impacts would have a
20 minimal impact on wildlife.

21

22 **3.9 PROTECTED SPECIES AND CRITICAL HABITATS**

23

24 **3.9.1 Affected Environment**

25 Protected species and critical habitats were discussed in the 2008 EA and are herein
26 incorporated by reference (CBP 2008a). Biological surveys of the proposed tower sites
27 were conducted by GSRC during April 2009. These investigations included surveys for
28 all Federally and state protected species potentially occurring in the project region.

1 **3.9.2 Federal**

2 USFWS, Arizona Ecological Field Services Office, lists 11 endangered species and
 3 three threatened species believed to occur within Santa Cruz County, Arizona. USFWS
 4 also lists four candidate species, although candidate species are not afforded protection
 5 under the Endangered Species Act (ESA) (USFWS 2009). A list of all USFWS
 6 threatened, endangered, and candidate species is provided in Appendix C. Species
 7 that could potentially be affected by the Proposed Action are provided in Table 3-7.

8

9 **Table 3-7. USFWS Listed Species and Critical Habitat Potentially Impacted**

Common Name	Species Name	Status	Habitat
Jaguar	<i>Panthera onca</i>	E	Found in Sonoran deserts scrub up through subalpine conifer forest.
Ocelot	<i>Leopardus pardalis</i>	E	Deserts scrub habitat with agave and columnar cacti present as food plants.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T	Nests in canyons and dense forests with multi-layered foliage structure.
Mexican spotted owl critical habitat	<i>Strix occidentalis lucida</i>	Final	<i>Federal Register</i> (31 August 2004) Approximately 4.6 million acres on Federal lands in Arizona, Colorado, New Mexico, and Utah have been designated critical habitat.
Lesser long-nosed bat	<i>Leptonycteris yerbabuenae</i>	E	Deserts scrub habitat with agave and columnar cacti present as food plants.
Pima pineapple cactus	<i>Coryphantha scheeri robustispina</i>	E	Sonoran deserts scrub or semi-desert grassland communities.

10 T = Listed Threatened, E = Listed Endangered.
 11 Source: USFWS 2009 (see Appendix C).

12

13 CBP entered into formal consultation with USFWS pursuant to Section 7 of the ESA for
 14 the *SBI*net Tucson West Tower Project in 2004. On September 4, 2008, USFWS
 15 issued a Biological Opinion (BO [AESO/SE 22410-2008-F-0373]) concluding the
 16 Proposed Action may affect and is likely to adversely affect Chiricahua leopard frog
 17 (*Lithobates chiricahuensis*), Mexican spotted owl (*Strix occidentalis lucida*) and critical
 18 habitat, jaguar (*Panthera onca*), lesser long-nosed bat (*Leptonycteris yerbabuenae*) and
 19 Pima pineapple cactus (*Coryphantha scheeri* var *robustispina*). Potential affects to
 20 Federally listed species from the Proposed Action would be similar or less in intensity
 21 than those described in USFWS's BO (AESO/SE 22410-2008-F-0373) for the *SBI*net
 22 Tucson West Tower Project. Through discussions with USFWS, *SBI*net has determined
 23 that the Proposed Action does not require reinitiation of formal consultation based on

1 the four general conditions for reinitiating formal consultation pursuant to Section 7 of
2 the ESA. In September 2008, *SBI*net provided USFWS a letter with its determination
3 that reinitiation of formal consultation pursuant to Section 7 of the ESA is not warranted
4 (Appendix A).

5

6 **Jaguar**

7 The biology and life history of the jaguar was discussed in detail in the EA for the *SBI*net
8 Tucson West Project, and is herein incorporated by reference (CBP 2008a). The jaguar
9 may transiently use a wide variety of habitats in the project area. Potential habitats in
10 the U.S. are as extensive as those occupied by the population of jaguars in northern
11 Sonora, Mexico. Thus, habitats in the U.S. could become increasingly important as
12 threats continue in Mexico.

13

14 **Ocelot**

15 The biology and life history of the ocelot was discussed in detail in the EA for the *SBI*net
16 Tucson West Project, and is herein incorporated by reference (CBP 2008a). The ocelot
17 is more adaptable than the jaguar and may persist in partly cleared forests, dense cover
18 near large towns, second growth woodland, and abandoned cultivation. However, the
19 most recent sighting, in 2000, of ocelot near any of the proposed towers occurred 30
20 miles south of the U.S./Mexico border (Gonzalez 2003). Recent occurrences of ocelot
21 in the project area have not been confirmed.

22

23 The biology and life history of the Mexican spotted owl was discussed in detail in the EA
24 for the *SBI*net Tucson West Project, and is herein incorporated by reference (CBP
25 2008a). In southeast Arizona, the species typically occurs in mixed-conifer forests, but
26 the species utilizes a variety of habitat types throughout its range (USFWS 1995).

27

28 **Lesser Long-nosed Bat**

29 The biology and life history of the lesser long-nosed bat was discussed in the EA for the
30 *SBI*net Tucson West Project, and is herein incorporated by reference (CBP 2008a). The
31 lesser long-nosed bat primarily utilizes natural caves and abandoned mines for roosting,

1 but can transiently roost among overhanging rocks and other shelters. The bats eat
2 nectar and fruits of columnar cacti and nectar of paniculate agaves, as such, they are
3 considered to be an important dispersal and pollination vector for these species. Lesser
4 long-nosed bat are known to travel 30 miles to reach suitable concentrations of forage
5 (USFWS 1997).

6

7 **Pima Pineapple Cactus**

8 The Pima pineapple cactus was discussed in detail in the 2008 EA and is herein
9 incorporated by reference (CBP 2008a). This species is found in association with
10 alluvial substrates at elevations below 4,000 feet between the Baboquivari and Santa
11 Rita Mountains, and in low densities in the northern areas of Sonora, Mexico (USFWS
12 2007).

13

14 **3.9.2.1 Critical Habitat**

15 Critical habitat was discussed in the 2008 EA and is herein incorporated by reference
16 (CBP 2008a). Two fish, the Gila chub (*Gila intermedia*) and the Sonoran chub (*Gila*
17 *ditaenia*), and one aquatic plant, the Huachuca water umbel (*Lilaeopsis schaffneriana*
18 *recurva*), have critical habitat listed in Santa Cruz County. However, these three
19 species do not have critical habitat in the proposed project area. Furthermore, they
20 would not be impacted because there are no permanent or perennial waterbodies within
21 the project area.

22

23 Tower site TCA-SON-057 is situated 0.7 mile upstream of Huachuca water umbel
24 critical habitat; however, no project-related activities would occur directly in suitable or
25 critical water umbel habitat (CBP 2008a).

26

27 Tower sites TCA-SON 314 and TCA-TSON-323 are within Mexican spotted owl critical
28 habitat; however, the proposed tower sites lack primary constituent elements for nesting
29 and roosting habitat such as deep canyons and stringers of large trees. The nearest
30 recorded roost is approximately 7 miles north of Benton Mine (Frederick 2009).

1 **3.9.2.2 State**

2 AGFD Natural Heritage Program maintains lists of wildlife of special concern (WSC) by
3 county. WSC are defined as species whose occurrence in Arizona is or may be in
4 jeopardy, or with known or perceived threats or population declines, as described by the
5 AGFD's listing of WSC in Arizona (AGFD 2009a).

6
7 According to AGFD's Heritage Data Management System, there are 40 WSC that
8 occur in Santa Cruz County. There are four reptile, six amphibian, 20 bird, six mammal
9 and four fish species listed as WSC in Santa Cruz County (AGFD 2009b). A complete
10 list of state-listed species is in Appendix D.

11
12 **3.9.3 Environmental Consequences**

13 **3.9.3.1 No Action Alternative**

14 The three new proposed towers, associated road construction and improvements, and
15 proposed upgrades to tower site TCA-SON-057 would not occur under the No Action
16 Alternative. Thus, the No Action Alternative would have no additional impacts to
17 protected species and critical habitat.

18
19 **3.9.3.2 Proposed Action**

20 Designated critical habitat for the Mexican spotted owl occurs within the project area.
21 Proposed tower site TCA-SON-314 lacks primary constituent elements and the nearest
22 recorded roost is approximately 7 miles north of the tower site in the Patagonia
23 Mountains. Furthermore, there is no foraging habitat at tower site TCA-SON-314.
24 Therefore, the project may affect but is not likely to adversely affect the Mexican spotted
25 owl. However, CBP has determined that the proposed project is not likely to result in
26 adverse modifications to its critical habitat.

27
28 There are no known lesser long-nosed bat roosts within the project area, although the
29 project area could have foraging habitat for the bat. Agaves were identified at tower
30 sites TCA-SON-314. Some of these agaves were in areas that would be disturbed.
31 However, CBP would salvage and transplant agaves and columnar cacti or replace

1 larger agaves and columnar cacti at a 2:1 ratio. Additionally, direct effects on lesser
2 long-nosed bats could occur from EMF associated with operation of radars. It has been
3 demonstrated by Nichols and Racey (2007) that bat activity is reduced in habitats
4 exposed to EMF when compared to similar sites where no such radiation can be
5 detected. The study showed that bat activity was reduced in habitats exposed to EMF
6 strength greater than 2 volts/meter (v/m) when compared to similar sites registering
7 EMF levels of zero. Radars to be used as par of the Proposed Action emit an EMF
8 strength of 2 v/m out to 180 feet. Thus, any foraging bats would likely avoid a 180-foot
9 radius around the proposed towers. However, agave is abundant throughout landscape
10 and operation of the proposed towers and this would not affect the viability of lesser
11 long-nosed bat in the project area. It has been determined the proposed project may
12 affect but is not likely to adversely affect the lesser long-nosed bat.

13

14 No Pima pineapple cacti were observed during the April 2009 surveys of the proposed
15 tower sites. However, if a Pima pineapple cactus was discovered within the project
16 area, it would be flagged and avoided. If avoidance is not possible, these individuals
17 would be transplanted outside of the disturbance footprint. Therefore, the proposed
18 project may affect but would not likely adversely affect the Pima pineapple cactus.

19

20 The most recent sighting (2000) of ocelot near any of the proposed tower sites in the
21 project area occurred 30 miles south of the U.S. border (Gonzalez 2003). Since the
22 ocelot does not occur in the proposed project area, the proposed project would have no
23 effect on the ocelot.

24

25 A total of three towers sites would be located in habitats identified as potentially suitable
26 for jaguar based on extrapolation from a limited number of past occurrences.
27 Construction related noise effects would not extend more than 1,000 feet from
28 construction activities. Due to the vast amount of equally suitable habitat between
29 proposed tower sites, the potential is low for noise related effects to result in significant
30 changes in behavior such that the health of individual jaguars would be affected.
31 Operational related noise, any required maintenance, and post construction monitoring

1 would have similar effects, but would be more limited in extent and duration.
2 Implementation of conservation measures identified in Section 5.0 would minimize the
3 effects of noise, light, and human presence during construction and operation.
4 Therefore, the proposed project may affect but is not likely to adversely affect the
5 jaguar.

6
7 Direct effects of the Proposed Action on Federally listed species include degradation or
8 loss of potential habitat as a result of construction and operation of the tower sites.
9 The majority of these effects would be avoided or substantially minimized through the
10 implementation of standard BMPs and other conservation measures such as the
11 training of construction project managers and maintenance staff, use of biological
12 monitors, avoidance of disturbance in sensitive habitats or during breeding seasons,
13 and efforts to minimize the spread of invasive species. Indirect effects resulting from
14 the project would be primarily limited to changes in CBV activity and subsequent CBP
15 interdiction and apprehension efforts. As the level of deterrence increases within areas
16 affected by the Proposed Action, CBV activity is likely to shift to areas where the level of
17 deterrence is lower. Although shifts in illegal activity are reasonably certain to occur,
18 they could occur at nearly any location along the U.S./Mexico border. However,
19 changes in illegal alien traffic patterns result from a myriad of factors in addition to CBP
20 operations and, therefore, are considered unpredictable and beyond the scope of this
21 EA. The location of sensor towers could affect patterns of CBV movement within the
22 action area as CBVs seek new routes through the landscape. The location of towers
23 could affect the areas in which interdiction and apprehension activities occur. Where
24 CBV activity and subsequent apprehension efforts shift into habitats occupied by
25 protected species, some effects could occur. These would include loss and degradation
26 of habitats, loss or damage to protected species, and avoidance of the area. However,
27 the exact location of these effects is difficult to predict and quantify.

28
29 In April 2009, the proposed tower sites were surveyed for listed plant and animal
30 species. No Federally protected wildlife species were observed during the biological
31 surveys.

1 Of the 40 State WSC known to occur in Santa Cruz County, 17 species potentially occur
2 near the tower sites; however, the area of disturbance for each tower site is minor.
3 Therefore, no significant impacts on habitat for these species are expected.
4 Additionally, no occurrences of these species have been documented at the proposed
5 tower sites during field surveys.

6

7 Just as with the Federally listed species, direct effects of the Proposed Action on state
8 WSC include degradation or loss of potential habitat as a result of proposed tower
9 construction and operation. Additionally, direct effects on state listed species would
10 occur from EMF associated with operation of radars. The majority of these effects
11 would be avoided or substantially minimized through the implementation of BMPs and
12 other conservation measures described above, and in Section 5.0.

13

14 Indirect effects resulting from the project would be primarily limited to changes in CBV
15 activity and subsequent USBP interdiction and apprehension efforts. The proposed
16 towers would increase USBP's ability to detect CBVs thus enhancing enforcement
17 efforts. As the probability of detection and apprehension increases in the project area,
18 the level of deterrence would increase and, consequently, CBV activity would be
19 reduced in the project area. Further, the Proposed Action would through increased
20 effectiveness provide USBP the opportunity to conduct interdiction activities closer to
21 the international border.

22

23 Proposed tower site TCA-NGL-316 is located within the Santa Rita-Tumacácori Wildlife
24 Corridor. This corridor is critical in maintaining connectivity between the Sky Islands of
25 the Santa Rita Mountain Complex and the Tumacácori-Atascosa-Pajarito Mountain
26 Complex as well as Sonoran semidesert wildlands. Although the tower would be built
27 within the wildlife corridor, there would be no significant impacts on wildlife connectivity.

28

29 The construction of approach and access roads and repair, and improvements made to
30 impassible roads, would increase access to habitat occupied or potentially occupied by

1 sensitive species. However, the reduction of similar impacts related to CBV activity
2 would benefit these species within the project area.

3

4 **3.9.3.3 Alternative 1**

5 The impact of Alternative 1 would be similar to that of the Proposed Action with the
6 exception that tower site TCA-SON-314 would be removed from the tower laydown and
7 replaced by TCA-SON-323. Since the tower sites are located in the same habitat types,
8 Alternative 1 would have the same impacts on state and Federal listed species as the
9 Proposed Action. Tower site TCA-SON 323 is also located within Mexican spotted owl
10 critical habitat; however, like tower site TCA-SON 314, the site is lacking in primary
11 constituent elements for nesting and breeding.

13

14 **3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES**

15

16 **3.10.1 Affected Environment**

17 The cultural overview of the project region was described in detail in the 2008 EA and is
18 incorporated herein by reference (CBP 2008a). Briefly, the cultural history of
19 southwestern Arizona is usually discussed in periods: Paleo-Indian (circa 11,500 to
20 8,000 years before present), Archaic (circa 8,000 to 1,400 years before present) which
21 is generally divided into the Early, Middle and Late Archaic periods, Formative Period
22 (1,400 to 550 years before present) which is generally divided into the Pioneer Period,
23 Colonial Period, Sedentary Period, and Classic Period, Protohistoric and Early Historic
24 Periods (A.D. 1540 to 1860), and Late Historic Period (A.D. 1860 to 1950). The
25 National Historic Preservation Act (NHPA) established the National Register of Historic
26 Places (NRHP), which is the Nation's official list of cultural resources worthy of
27 preservation and protection. The historic preservation review process mandated by
28 Section 106 of the NHPA is outlined in the Advisory Council on Historic Preservation
29 regulations, "Protection of Historic Properties" (36 CFR 800), which were revised and
30 became effective on January 11, 2001.

1 **3.10.1.1 Previous Archaeological Investigations**

2 A total of 24 known archaeological surveys were previously conducted within a 1-mile
3 radius of each of the proposed tower locations. A total of 17 archaeological sites were
4 previously recorded within 1-mile of the proposed tower sites. These sites include
5 prehistoric and historic artifacts scatters along with historic-period trails, and mining and
6 ranching sites. None of the previously recorded sites are adjacent to or intersect the
7 Area of Potential Effect (APE) of the proposed tower sites or access and approach
8 roads (Hart 2009). A search of records and literature for the proposed TCA-SON-057
9 tower was conducted for the 2008 EA and is incorporated by reference (CBP 2008a).
10 No previously recorded archaeological sites were recorded within the APE of TCA-
11 SON-057 during that records and literature search.

12

13 **3.10.1.2 Current Investigations**

14 Archaeological surveys were conducted by Northland Research, Inc. for the three
15 proposed tower sites (TCA-NGL-141, TCA-NGL-316, TCA-SON-314) and one alternate
16 site (TCA-SON-323) and their associated access and approach roads between the 20
17 and 22 April 2009. A total of 51 acres was surveyed as part of this effort. The surveys
18 identified two archaeological sites (AZ EE:9:260 Arizona State Museum [ASM] and AZ
19 EE:10:181[ASM]). AZ EE:9:260 (ASM) is the location of an historic kiln (or kilns) that
20 had recently been destroyed (Hart 2009). The site had limited cultural remains and no
21 intact features remain. The site is considered not eligible for the NRHP and as a result
22 is not considered a significant resource. AZ EE:10:181(ASM) is a historic mine complex
23 consisting of an adit, a short shaft, numerous test adits and test shafts, rock piles or
24 cairns, and two small artifact concentrations. The majority of the site appears modern.
25 The site is not considered eligible for inclusion on the NRHP and is not considered a
26 significant cultural resource (Hart 2009). The SHPO concurred with Mr. Hart's eligibility
27 determinations and the concurrence letter is provided in Appendix A. An archaeological
28 survey had already been conducted for tower location TCA-SON-057 for the 2008 EA
29 and is incorporated here by reference (CBP 2008a). No cultural resources were
30 identified within the APE of tower TCA-SON-057 as a result of those surveys.

1 **3.10.2 Environmental Consequences**

2 **3.10.2.1 No Action Alternative**

3 The No Action Alternative would not result in additional impacts to cultural resources as
4 the three proposed new towers and associate roads, and proposed tower upgrades
5 associated with the Proposed Action would not be constructed. However, illegal cross
6 border activity would continue within the project area and potentially disturb known and
7 unknown cultural resources sites.

8

9 **3.10.2.2 Proposed Action**

10 No previously recorded sites are located within the APE of the proposed towers. In
11 addition, the two new archaeological sites located within the APE of the proposed tower
12 sites and associated access and approach roads, AZ EE:9:260(ASM) and AZ
13 EE:10:181(ASM), are not considered eligible for the NRHP and are not considered
14 significant. As a result, no adverse impacts to cultural resources are anticipated.

15

16 Beneficial impacts in the form of increased knowledge of the past are realized as a
17 result of surveys conducted as part of this SEA. Additionally, both recorded and
18 unidentified cultural resource sites located within the study area and regionally would
19 receive increased protection from disturbance through the deterrence of CBV foot and
20 vehicle traffic which currently moves through surrounding areas.

21

22 **3.10.2.3 Alternative 1**

23 Under Alternative 1, the impacts to cultural resources would be the same as those
24 described under the Proposed Action Alternative.

25

26 **3.11 AIR QUALITY**

27

28 **3.11.1 Affected Environment**

29 National Ambient Air Quality Standards (NAAQS) represent the maximum levels of
30 background pollution that are considered safe, with an adequate margin of safety, to

1 protect the public health and welfare. NAAQS were fully described in the 2008 EA and
2 are incorporated herein by reference (CBP 2008a).

3
4 Areas that do not meet these NAAQS standards are called non-attainment areas or
5 maintenance areas; areas that meet both primary and secondary standards are known
6 as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93)
7 specifies criteria or requirements for conformity determinations for Federal projects.

8
9 A conformity analysis determines whether a Federal agency's project is subject to a
10 determination of conformance with a State Implementation Plan if the project is
11 proposed in an area of non-attainment or maintenance regarding NAAQS for constituent
12 pollutants. It requires the responsible Federal agency to evaluate the nature of the
13 Proposed Action and associated air pollutant emissions, calculate emissions as a result
14 of the Proposed Action, and mitigate emissions if *de minimis* thresholds are exceeded.

15
16 Santa Cruz County
17 Santa Cruz County is designated as a moderate non-attainment area for particulate
18 matter less than 10 microns (PM-10; USEPA 2008). The sources of PM-10 include
19 natural wind storms, wind blown dust from agricultural operations and emissions from
20 the combustion of hydrocarbons in cars, trucks, generators and industrial equipment.

21
22 **3.11.2 Environmental Consequences**
23 **3.11.2.1 No Action Alternative**
24 The No Action Alternative would not increase air emissions in Santa Cruz County as the
25 proposed three new towers and associated roads, and proposed tower upgrades would
26 not be constructed as described in the Proposed Action.

27
28 **3.11.2.2 Proposed Action Alternative**
29 Temporary and minor increases in air pollution would occur from the use of construction
30 equipment (i.e., combustible emissions) and soil disturbance (i.e., fugitive dust), during

1 construction of the communications and sensor towers and associated road
2 construction, repair, and improvement.

3

4 Combustible emission calculations were made for standard construction equipment,
5 such as bulldozers, excavators, pole trucks, front end loaders, backhoes, cranes, and
6 dump trucks, using emission factors from USEPA approved emission model
7 NONROAD6.2 (USEPA 2001). Assumptions were made regarding the type of
8 equipment, duration of the total number of days each piece of equipment would be
9 used, and the number of hours per day each type of equipment would be used.

10 Construction workers and delivery trucks would temporarily increase the combustible
11 emissions in the air shed during their daily commute to and from the project area.
12 Emissions from commuter and delivery trucks were calculated using emission factors
13 generated by the USEPA approved emission factor model MOBILE6.2.

14

15 Fugitive dust calculations were made for disturbing the soils while excavating, and
16 grading and constructing the roads and structures. Fugitive dust emissions were
17 calculated using emission factors recommended in USEPA's National Emission
18 Inventory (USEPA 2001) which were the result of field studies conducted by Midwest
19 Research Institute (1996).

20

21 The total air quality emissions were calculated to determine the applicability of the
22 General Conformity Rule and are provided in Appendix D. A summary of the total
23 emissions, including fugitive dust, heavy equipment operation, commuter vehicle
24 emissions, and maintenance and operation activities are presented in Table 3-8. As
25 can be seen from this table, the proposed construction activities do not exceed *de*
26 *minimis* thresholds for Santa Cruz County and, thus, do not require a Conformity
27 Determination.

1 **Table 3-8. Total Air Emissions (tons/year) from the Proposed Action Construction**
2 **and Maintenance Activities verses the *De minimis* Threshold Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year) ¹
CO	14.91	100
Volatile organic compounds	2.67	100
Nitrous Oxides (NOx)	20.86	100
PM-10	13.23	100
PM-2.5	2.76	100
Sulfur Dioxide (SO ₂)	2.59	100

3 Source: 40 CFR 51.853 and GSRC model projections (Appendix D).
4 1. Note that Santa Cruz County is in non-attainment for PM-10.

5
6 Several sources of air pollutants contribute to the overall air impacts of the construction
7 project, includes the following:

- 8 1. Combustible engines of construction equipment;
- 9 2. Construction workers commute to and from work;
- 10 3. Supply trucks delivering materials to construction sites;
- 11 4. Fugitive dust from job site ground disturbances; and
- 12 5. Bi-monthly commute to towers site for maintenance.

13
14 Air emissions would be produced after the towers have been installed and are
15 operating. A maintenance crew would visit the tower sites up to twice per month to
16 insure that the equipment is operating properly and propane trucks would fuel those
17 towers, which are not connected to the electrical grid, once per month. The emissions
18 generated during maintenance trips were summarized and included in Table 3-8. The
19 USEPA approved air emission model MOBILE6.2 was used to produce emission factors
20 for the calculations.

21
22 As can be seen from the table above, the proposed maintenance activities do not
23 exceed *de minimis* thresholds in Santa Cruz County and, thus, do not require a
24 Conformity Determination. As there are no violations of air quality standards and no
25 conflicts with the state implementation plans, there would be no significant impacts to air
26 quality from the implementation of the Proposed Action.

1 During the construction of the proposed project, proper and routine maintenance of all
2 vehicles and other construction equipment would be implemented to ensure that
3 emissions are within the design standards of all construction equipment. Dust
4 suppression methods would be implemented to minimize fugitive dust. In particular,
5 wetting solutions would be applied to construction area to minimize the emissions of
6 fugitive dust. By using these environmental design measures, air emissions from the
7 Proposed Action would be temporary and would not significantly impair air quality in the
8 region.

10
11 **3.11.2.3 Alternative 1**

12 The air emissions resulting from the implementation of Alternative 1 would be similar to
13 those described in the Proposed Action; however, Alternative 1 requires additional road
14 repairs. The air emissions for Alternative 1 were calculated in the air emission analysis
15 (Appendix D) and are summarized in Table 3-9.

16
17 **Table 3-9. Total Air Emissions (tons/year) from the Alternative 1 Construction**
18 **verses the *De minimis* Threshold Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year) ¹
CO	15.69	100
VOCs	2.86	100
NOx	23.22	100
PM-10	16.93	100
PM-2.5	3.28	100
Sulfur Dioxide (SO ₂)	2.91	100

19 Source: 40 CFR 51.853 and GSRC model projections (Appendix D).

20 1. Note that Santa Cruz County is in non-attainment for PM-10.

21
22 As can be seen from the table above, the proposed construction activities do not
23 exceed *de minimis* thresholds in Santa Cruz County and, thus, do not require a
24 Conformity Determination. As there are no violations of air quality standards and no
25 conflicts with the state implementation plans, there would be no significant impacts to air
26 quality from the implementation of Alternative 1.

1 **3.12 NOISE**

2

3 **3.12.1 Affected Environment**

4 Noise is generally described as unwanted sound, which can be based either on
5 objective effects (i.e., hearing loss, damage to structures, etc.) or subjective judgments
6 (e.g., community annoyance). Sound is usually represented on a logarithmic scale with
7 a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level.
8 The threshold of human hearing is approximately 0 dB, and the threshold of discomfort
9 or pain is around 120 dB. Noise was discussed in the 2008 EA and is incorporated
10 herein by reference (CBP 2008a).

11

12 **3.12.2 Environmental Consequences**

13 ***3.12.2.1 No Action Alternative***

14 The No Action Alternative would not increase noise levels within the project area as the
15 proposed three new towers and associated roads, and proposed tower upgrades would
16 not be constructed.

17

18 ***3.12.2.2 Proposed Action***

19 One of the proposed tower sites, TCA-NGL-141, is located on private land. There are
20 no residential receptors within 2,000 feet of TCA-NGL-141 or any of the other proposed
21 towers and approach or access roads. Therefore, the Proposed Action would not impact
22 residential sensitive noise receptors. However, one of the proposed towers (TCA-SON-
23 314) and associated access and approach roads would be located in the CNF. This
24 analysis focuses on the noise emissions affecting potential receptors on the CNF.

25

26 Assumptions for Tower and Road Construction Noise

27 It was assumed that the construction of RDTs would require the use of general
28 construction equipment, which produces noise emission up to 81 dBA, for 22 days.
29 Most of the other construction equipment used to install the towers and build and repair
30 the roads, such as backhoe, dump truck, and excavators, produce noise emissions up
31 to 81 dBA (FAA 2007). It is assumed that the general construction equipment would be

1 operating consistently throughout the day, 5 days a week during the 1 month
2 construction period to install one tower. Assuming the worst case scenario of 81 dBA
3 from general construction equipment, the noise model predicts that noise emissions of
4 81 dBA from construction equipment would have to travel 320 feet before they would
5 attenuate to 65 dBA. Visitors on the CNF could experience noise levels above 65 dBA
6 if they are within 320 feet of construction activities. However, elevated noise levels from
7 construction activities would be temporary (approximately 22 days) and minor and
8 would not have a significant impact on CNF lands or visitors.

9

10 The construction of a SST tower at TCA-SON-057 would require the use of a drill rig in
11 addition to the general construction equipment discussed previously. Drill rigs produce
12 noise emissions up to 97 dBA (FAA 2007). It is anticipated a drill rig would operate 2
13 days to drill the holes for the three tower piers. The noise model predicts that noise
14 emissions of 97 dBA from a drill rig would have to travel 2,400 feet before attenuating to
15 65 dBA. Operation of a drill rig would have an adverse impact on visitors within 2,400
16 feet of TCA-SON-057 during drilling operations. However, these elevated noise levels
17 from drilling operations would be temporary (2 days). During the remaining construction
18 schedule noise levels would be the same as described above. Due to the temporary
19 nature of construction activities, impacts from noise emissions on CNF visitors would be
20 temporary and minor.

21

22 Tower Operations

23 Tower operations refer to noise emissions that would occur after the towers have been
24 installed and associated roads have been constructed, repaired and/or improved. Tower
25 TCA-SON-314 would be powered by a hybrid propane fueled generator – solar system.
26 The propane generator would be expected to operate 4 to 8 hours a day. Noise
27 emissions from the propane generator are approximately 72 dBA at 22 feet from the
28 enclosure under standard test conditions (Office of Border Patrol [OBP] 2009).
29 Assuming the worst case scenario of 72 dBA, noise models predict that noise emissions
30 of 72 dBA from the generator set would have to travel 49 feet before attenuation to the

1 acceptable level of 65 dBA. Thus, noise emissions from tower operations would result
2 in minor, long-term impacts to CNF lands.

3

4 **3.12.2.3 Alternative 1**

5 The noise signature created in the CNF during tower construction and operation of
6 TCA-SON-323 would impact the same area as the Proposed Action; however, the
7 length of access road repair and new road construction associated with TCA-SON-323
8 is greater than the Proposed Action. However, construction is still expected to take 22
9 days and the noise emissions under Alternative 1 would not result in significant adverse
10 impacts on CNF land or visitors.

11

12

15 **3.13 RADIO FREQUENCY ENVIRONMENT**

16

17 **3.13.1 Affected Environment**

18 The radio frequency (RF) environment was discussed in detail in the 2008 EA and is
19 incorporated herein by reference (CBP 2008a). It is currently anticipated that the
20 transmitters and sensors associated with the *SBinet* Tucson West Tower Project would
21 operate below 30 GHz. The Federal Communications Commission (FCC) is
22 responsible for licensing frequencies and ensuring that the approved uses would not
23 interfere with television or radio broadcasts or substantially affect the natural or human
24 environment. The National Telecommunications and Information Administration (NTIA)
25 of the FCC manages Federal agencies' use of the telecommunications spectrum and
26 certifies equipment transmit/receive frequencies for Federal agency use. *SBinet*
27 coordinates and certifies all of its radio frequencies through NTIA prior to equipment
28 deployment on its towers.

29

30 **3.13.2 Environmental Consequences**

31 **3.13.2.1 No Action Alternative**

32 Implementation of the No Action Alternative would not increase RF energy within the
33 project areas as no additional RF transmitters would be would be installed as part of the
34 No Action Alternative.

1 **3.13.2.2 Proposed Action**

2 With the implementation of the Proposed Action, three proposed towers equipped with
3 radio wave and microwave communication systems, as well as radar systems, would be
4 installed for use by CBP in maintaining a secure border. As with any RF transmitter, all
5 of these systems would emit RF energy and EMF radiation; therefore, a potential for
6 adverse effects could occur. However, any adverse effects to human safety and wildlife
7 would likely be negligible due to the minimal exposure limits associated with both the
8 type of equipment used and the elevated locations in which they would be positioned on
9 the proposed towers. The proposed tower sites would also be fenced for security,
10 making human and terrestrial wildlife exposure to RF emitting equipment even less
11 likely.

12

13 The potential to exceed maximum permissible exposure (MPE) limits of RF energy such
14 as those described by Kelly (2007) are far outside the capability limits of data and
15 communications systems in the Proposed Action (CBP 2008a). Furthermore,
16 communication and radar systems installed on the proposed towers would be a
17 minimum of 20 feet off the ground and would exceed the safe operating distance for
18 these systems (i.e., 17 feet). Thus, maintenance and operational personnel working
19 within the secure tower sites would not be exposed to any RF energy that exceeds MPE
20 limits set by the FCC.

21

22 Though greater research is required to have a better understanding of the effects of RF
23 energy on the avian brain, the potential effects on passing birds is expected to be
24 negligible as well (Beason 1999, Evans and Manville 2000). Any disorientating effect, if
25 experienced, would be short-term and would occur only at close distances from the
26 antennas.

27

28 As part of the overall spectrum management process, the NTIA and the FCC have
29 developed radio regulations to help ensure that the various radio services operate
30 compatibly in the same environment without unacceptable levels of RF interference and
31 emissions. While the communication systems and the frequencies in which they would

1 be operated are considered law enforcement sensitive and cannot be provided to the
2 public, compliance with FCC and NTIA regulations would be required, and would ensure
3 that recognized safety guidelines are not exceeded. All frequencies used by CBP would
4 be coordinated through the FCC and NTIA as required by NTIA regulations.
5 Additionally, transmitters and sensors associated with the *SBI_{net}* Tucson West Tower
6 Project would operate below 30 GHz. Therefore, the RF environment created by the
7 installation, operation and maintenance of the communication and radar systems on the
8 proposed towers would not result in significant adverse impacts to observatories,
9 human safety or the natural and biological environment.

10
11 **3.13.2.3 Alternative 1**

12 TCA-SON-323 has the same design and equipment as TCA-SON-314, therefore
13 impacts from Alternative 1 would be the same as the impacts from the Proposed Action.

14
15 **3.14 UTILITIES AND INFRASTRUCTURE**

16
17 **3.14.1 Affected Environment**

18 **3.14.1.1 Utility Commercial Grid Power**

19 Utilities and infrastructure were discussed in the 2008 EA and are incorporated herein
20 by reference (CBP 2008a). Citizens Utilities Company services Santa Cruz County,
21 including Nogales and Sonoita (Arizona Department of Commerce 2009). One tower,
22 TCA-NGL-316, would be connected to the commercial electrical grid. It is
23 approximately 80 feet from the proposed tower site to commercial electrical grid.

24
25 Power would be extended from the service or secondary pole to the proposed tower
26 utilizing overhead lines. Although power line corridors have not been defined as of yet,
27 coordination is currently underway with the local utility provider within the service area.
28 It is assumed that new power lines would be installed adjacent to surveyed new or
29 existing access roads. If it is necessary to deviate from access road locations, new
30 biological and archaeological surveys would not need to be conducted as the entire
31 area between tower site TCA-NGL-316 and El Burro Lane was surveyed for cultural and

1 biological resources. The remaining towers would typically be powered by a propane-
2 fueled hybrid generator system which consists of a common generator system with
3 supplemental photovoltaic capabilities consisting of 18 solar panels, an energy storage
4 battery system, an inverter, and direct current power subsystems. Each proposed
5 tower site is not expected to utilize more than 3,650 kW-hours per month from the
6 electrical grid or hybrid generator-solar systems.

7
8 The propane fuel source for the generator at each tower would be supplied by local
9 propane dealers. It is anticipated that refueling of each 1,000-gallon propane tank
10 would be required approximately once monthly. For TCA-NGL-316, commercial power
11 may not be available immediately upon tower deployment. If this should occur, the 25
12 kW hybrid propane generator-solar system would be utilized until commercial power
13 infrastructure can be deployed.

14
15 **3.14.1.2 Ambient and Artificial Lighting**

16 Ambient or atmospheric light is of concern to many including, most notably,
17 astronomical observatories (International Dark Sky Association 2008). The reduction of
18 man-made or artificial light sources is generally what astronomers would like to see in
19 the southwest and there are light ordinances in place in some cities in the southwest to
20 minimize sky brightness in large population centers.

21
22 When tower facility lighting is deemed necessary due to CBP operational needs, such
23 as the installation of infrared lighting, USFWS (2000) *Guidance on the Siting,*
24 *Construction, Operation and Decommissioning of Communications Towers* would be
25 implemented to reduce night-time atmospheric lighting and the potential adverse effects
26 of night-time lighting to migratory bird and nocturnal flying species, and astronomical
27 observatories. Any infrared lighting installed on the proposed towers would be
28 compatible with night vision goggle usage.

29
30 Currently, it not anticipated that night-time construction would occur; however if night-
31 time construction becomes necessary, use of lighting would be minimized.

1 **3.14.2 Environmental Consequences**

2 **3.14.2.1 No Action Alternative**

3 Since none of the actions described in the Proposed Action would be implemented, no
4 additional demands on utilities or construction of infrastructure would occur under the
5 No Action Alternative.

6

7 **3.14.2.2 Proposed Action**

8 Negligible demands on power utilities would be required as the result of the Proposed
9 Action. One of the proposed towers, TCA-NGL-316, would utilize the local commercial
10 power grid. More renewable sources of power (i.e., solar) would be employed at other
11 sites which would allow the generator batteries to be charged during daylight hours, and
12 then when exhausted, would switch to propane fuel, a non-renewable resource.
13 Therefore, there would be no significant impacts on power utilities. TCA-SON-057 was
14 previously analyzed in the 2008 EA as having no significant impacts (CBP 2008a).

15

16 No towers within the Proposed Action would be over 200 feet in height, and as such,
17 would not be required to follow FAA lighting regulations. Lighting would be necessary
18 for CBP security purposes within the tower perimeter; these lights would utilize low
19 sodium bulbs, be shielded to avoid illumination outside the footprint of the tower sites,
20 and would be activated by motion detectors. Such security lights would be similar to a
21 residential porch light and would be situated on the equipment shelter. Based on these
22 measures no significant long term impact to the night sky and ambient lighting would
23 occur from the implementation of the Proposed Action.

24

25 **3.14.2.3 Alternative 1**

26 The Alternative 1 would result in impacts similar to those described for the Proposed
27 Action.

1 **3.15 ROADWAYS AND TRAFFIC**

2

3 **3.15.1 Affected Environment**

4 The project area is generally remote, although Interstate 19 is located just east of TCA-
5 NGL-316. U.S. Highway 89 and State Highway 82 are the only highways within the
6 project area. Interstate 19 follows the original route of U.S. 89 and the portion of
7 Interstate 19 from Nogales to Tucson is part of the Canamex Corridor.

8

9 Many of the project sites are located in rural, undeveloped areas with recreation or
10 wilderness as the main land uses for the region. Traffic flow is usually low on these
11 roads because most vehicular movement in the region occurs on the Interstate 19.

12

13 **3.15.2 Environmental Consequences**

14 ***3.15.2.1 No Action Alternative***

15 Under the No Action Alternative, roadways and travel corridors would not be impacted
16 from increased truck and construction personnel owned vehicles as a result of
17 constructing the three proposed new towers, associated access roads, and proposed
18 upgrades to tower site TCA-SON-057.

19

20 ***3.15.2.2 Proposed Action***

21 With the implementation of the Proposed Action Alternative, three new towers would be
22 installed for use by CBP in maintaining a secure border. Construction and staging for
23 the access roads, foundations, towers and associated equipment shelters would create
24 a minor short-term impact to roadways and traffic within the project region. The
25 increase of vehicular traffic would occur during delivery of supply materials and travel by
26 work crews at each tower site for a short amount of time. Each tower would be installed
27 within an approximate 4-week time period. The initial construction phase would include
28 creation of a staging area for materials and equipment. Once a staging area is
29 established, traffic near the construction sites would be from the influx of construction
30 workers and new materials. Staging areas would be set off the main roads and would
31 not disrupt the flow of traffic.

1 Existing roads would mainly be utilized to access the tower sites and they would be
2 maintained. A total of 531 feet of new roads would be constructed to access the
3 proposed tower sites from existing roads. The public already has access to the existing
4 roads and the additional 531 feet of roads would end at a tower site.

5
6 There are no anticipated long-term impacts to traffic from the installation of the towers.
7 Once construction work is completed, maintenance visits to each site would be required
8 up to two times monthly and refueling visits would be required once monthly. These
9 visits would not increase normal traffic activity locally or regionally.

10

11 **3.15.2.3 Alternative 1**

12 Alternative 1 would have permanent and direct impacts similar to those discussed for
13 the Proposed Action. A total of 591 feet of new roads would be constructed to access
14 the proposed tower sites from existing roads, compared to 531 feet under the Proposed
15 Action Alternative.

16

17 **3.16 AESTHETIC AND VISUAL RESOURCES**

18

19 **3.16.1 Affected Environment**

20 Aesthetics and visual resources were discussed in Section 3.16.2.2 of the 2008 EA and
21 are incorporated herein by reference (CBP 2008a). Towers currently exist within the
22 project area and are generally commercial or CBP communications towers. Roads
23 within the CNF, private and other Federal lands may be maintained by these various
24 entities depending upon land management strategies or plans.

25

26 Aesthetic resources vary throughout the project corridor, which includes vast open
27 areas of arid desert land, mountains and diverse ecosystems. Areas within the project
28 corridor visited for their natural setting and aesthetic values include the CNF, the
29 Tumacácori EMA, the Sky Islands, and the Tumacácori-Santa Rita Linkage.
30 Tumacácori EMA provides recreation opportunities such as bird viewing and a space for
31 quiet and solitude. The Tumacácori EMA is a rugged, vast landscape with great

1 aesthetic appeal. The Sky Islands, forested mountain “islands”, are surrounded by vast
2 expanses of desert and grassland plains and host a variety of diverse ecosystems. The
3 Tumacácori-Santa Rita Linkage provides a valuable corridor for wildlife to travel
4 between the Sky Islands of southeastern Arizona. As previously noted, TCA-NGL-316
5 is located within Tumacácori-Santa Rita Linkage land.

6

7 **3.16.2 Environmental Consequences**

8 **3.16.2.1 No Action Alternative**

9 No additional impacts to aesthetics in the project area would occur under the No Action
10 Alternative.

11

12 **3.16.2.2 Proposed Action**

13 The proposed towers would be located on high points (i.e., ridges) and are typically
14 visible from long distances. Installation of towers could detract from the aesthetic
15 resources of the project area. Towers currently exist within the project area and are
16 generally commercial or CBP communication towers. A viewshed analysis was
17 conducted for proposed tower site TCA-NGL-141 and 316, and TCA-SON-314. A total
18 of five observation points were randomly located along roads, populated areas, and
19 higher elevation points and (i.e., Saucito Mountain), and where the public would visit for
20 a wilderness experience. A total of 15 observation points were designated in the project
21 area. Maps depicting each observation point and the viewshed from that point are
22 provided in Appendix E. Proposed towers site TCA-NGL-316 would be visible from
23 areas east of I-19. Specifically the tower would be visible from Tubac Presidio State
24 Historical Park. However, both the proposed tower site TCA-NGL-316 and the historical
25 park are located adjacent to I-19 and development along I-19 is common. Further,
26 although TCA-NGL-316 is in the Tumacácori-Santa Rita Linkage, the impacts would not
27 be expected to significantly degrade aesthetic resources in the area as the tower site is
28 located within 0.5 mile of I-19. Proposed tower site TCA-NGL-141 is located in an
29 undeveloped area east of Nogales. The proposed tower would be visible from four
30 observation points located north and east of the proposed tower site. Specifically, the
31 tower would be visible from Mt. Washington in the Patagonia Mountains. Based on the

1 undeveloped nature of the proposed tower site location and surrounding lands, the
2 proposed tower would be expected to have a moderate impact on aesthetic resources.
3 Proposed tower site TCA-SON-314 is located in the Patagonia Mountains on the CNF.
4 The area is undeveloped with the exception of historic mine. The proposed tower site
5 would be visible from three of the observation points in the Patagonia Mountains.
6 Based on the undeveloped nature of the proposed tower site location and surrounding
7 lands, the proposed tower would be expected to have a moderate impact on aesthetic
8 resources. Therefore, overall impacts on aesthetic quality of the area would be minor to
9 moderate and would not be considered significant impacts.

10

11 **3.16.2.3 Alternative 1**

12 Alternative 1 would result in impacts similar to those described for the Proposed Action.

13

14 **3.17 HAZARDOUS MATERIALS**

15

16 **3.17.1 Affected Environment**

17 Solid and hazardous wastes are regulated in Arizona by a combination of laws
18 promulgated by the Federal, state and regional Councils of Government. All proposed
19 tower sites had a search conducted on the USEPA's Comprehensive Environmental
20 Response, Compensation, and Liability Information System (CERCLIS). CERCLIS
21 contains information on hazardous waste sites, potential hazardous waste sites, and
22 remedial activities, including sites that are on the National Priorities List (NPL) or being
23 considered for the NPL. The search found nine sites in Santa Cruz County; however,
24 none of those sites are active NPL sites (USEPA 2009a and 2009b).

25

26 **3.17.2 Environmental Consequences**

27 **3.17.2.1 No Action Alternative**

28 Under the No Action Alternative, construction of the three proposed new towers and
29 associated access road construction and improvements, and upgrades to tower site
30 TCA-SON-057 would not occur. Therefore, no solid or hazardous waste would be

1 generated as part of constructing the project and no adverse impact to the natural and
2 human environment from solid or hazardous waste would occur.

3
4 The No Action Alternative would not result in any indirect beneficial impacts to the
5 environment through the reduction of solid and hazardous waste. Abandoned vehicles
6 and other solid or hazardous waste associated with illegal cross border activities would
7 continue to occur within the project area.

8

9 **3.17.2.2 Proposed Action**

10 **Construction Activities**

11 During construction of the proposed towers, access and approach roads, a potential
12 exists for petroleum, oils, and lubricants (POL) contamination at the construction sites
13 due to storage of POL material for maintenance and refueling of vehicles and fuel
14 storage tanks. However, these activities would include primary and secondary
15 containment measures. Clean-up materials (e.g., oil mops) would be maintained at
16 each site for appropriate spill response and cleanup in case an accidental spill occurs.
17 Drip pans would be provided for the power generators and other stationary equipment
18 to capture any POL that is accidentally spilled during maintenance activities or leaks
19 from equipment. A SPCCP would be in place prior to the start of construction activities
20 as outlined in Section 5.0.

21
22 Portable sanitary facilities would be provided during construction activities and waste
23 products would be collected and disposed of by licensed contractors. Disposal
24 contractors would use only established roads to transport equipment and supplies, and
25 all waste would be disposed of in compliance with Federal, state, and local regulations,
26 and in accordance with contractors' permits.

27

28 **Maintenance and Operations Activities**

29 Additionally, all solid and hazardous wastes and materials, including universal waste
30 (such as batteries, fluorescent light bulbs, etc.), would be handled in accordance with
31 applicable Federal and state laws and guidelines governing these items.

1 **3.17.2.3 Alternative 1**

2 Impacts resulting from the Alternative 1 would be similar to those described for the
3 Proposed Action.

4
5 **3.18 SOCIOECONOMICS**

6
7 The Region of Influence (ROI) of the Proposed Action Alternative consists of Santa
8 Cruz County, Arizona. This discussion supplements and updates the socioeconomic
9 analysis conducted for the 2008 EA (CBP 2008a).

10
11 The population and racial mixes of the ROI and Arizona are presented in Table 3-10.
12 Population in Santa Cruz County was 48,196 in the 3-year census ending in 2007 (U.S.
13 Census Bureau 2007a and 2007b). Approximately 15 percent of Santa Cruz County
14 and 29 percent of Arizona reported having populations of (or populations with) Hispanic
15 origin in the 3-year census ending in 2007, while 12.4 percent of Santa Cruz County
16 and 3.4 percent of Arizona reported being African American.

17
18 **Table 3-10. 3-Year Census Ending in 2007 Population and Race Estimates within**
19 **the Region of Influence**

	Arizona	Santa Cruz County*
White	4,701,013 (76.4%)	31,137 (74.1%)
African American	210,069 (3.4%)	5,210 (12.4%)
Native American	276,132 (4.5%)	336 (0.8%)
Asian	144,389 (2.3%)	1,807 (4.3%)
Native Hawaiian	8,878 (0.1%)	42 (0.1%)
Some Other Race	661,797 (10.8%)	2,605 (6.2%)
Two or More Races	149,897 (2.4%)	882 (2.1%)
Hispanic Origin	1,785,737 (29.0%)	6,177 (14.7%)
Total Population	7,937,912	48,196

Sources: U.S. Census Bureau 2007a and 2007b.
* Actual numbers of persons in each of the race categories were not provided, percentages were estimated; therefore these values are estimates of persons in each of the categories.

20
21
22
23

1 **3.18.1 Employment and Income**

2 Table 3-11 summarizes the total number of jobs in the ROI and Arizona. The number of
 3 jobs in Santa Cruz County increased 26.1 percent between 1997 and 2007 (a gain of
 4 3,946 jobs). However, in a 2-year period (from 2007 to May 2009), the number of jobs in
 5 Santa Cruz County has decreased 20 percent, which is comparable to the percentage
 6 of jobs lost in the state during the same time period (22 percent). The decrease in jobs
 7 in the last year, from May 2008 until May 2009, was 6.9 percent in Santa Cruz County,
 8 but only 3.2 percent in the state. The trade, transportation, and utilities sectors provided
 9 the most jobs in Santa Cruz County in May 2009 (5,450 jobs) followed by government
 10 and other private service-providing entities (Arizona Department of Commerce
 11 Research Administration 2009).

12

13 **Table 3-11. Total Number of Jobs within the Region of Influence**

Location	1997	2007	May 2008	May 2009	Percent Change from May 2008 – May 2009
Arizona	2,515,360	3,520,657	2,986,500	2,890,100	-3.23%
Santa Cruz County	15,108	19,054	17,050	15,875	-6.89%

14 Sources: U.S. Bureau of Economic Analysis 1997a, 1997b, 2007a and 2007b, Arizona Department of Commerce
 15 Research Administration 2008 and 2009.

16

17 The unemployment rate decreased slightly in Arizona between 1997 and 2007 (Table 3-
 18 12) but has steadily increased since 2007. In Santa Cruz County, between 1997 and
 19 2007, there was a 13.2 percent decrease in the unemployment rate. Since 2007, the
 20 unemployment rate has been climbing, although the increase between 2008 and the
 21 present (1.8 percent) is not as much as the increase was for the state (2.5 percent).

22

23 **Table 3-12. Unemployment Rate within the Region of Influence**

Location	1997	2007	2008	May 2009
Arizona	4.6%	3.8%	5.5%	8.0%
Santa Cruz County	20.5%	7.3%	10.0%	11.8%

24 Sources: Arizona Department of Commerce Research Administration 2009 and Real Estate Center
 25 2008a and 2008b.

1 The 2007 per capita personal income (PCPI) for Santa Cruz County was \$23,744 and
 2 ranked 9th in the state (Table 3-13; U.S. Bureau of Economic Analysis 2007c). This
 3 PCPI was 72 percent of the state average (\$32,833) and 61 percent of the National
 4 average (\$38,615). The 1997 to 2007 average annual growth rate in the ROI was 4.6,
 5 greater than both the average annual growth rate for the state (4.2 percent) and the
 6 Nation (4.3 percent) (U.S. Bureau of Economic Analysis 2007c).

7
 8
 9

Table 3-13. Income Median Household Income for the U.S., Arizona, and Santa Cruz County

Location	2007 Per Capita Personal Income (PCPI)	PCPI 1997-2007 Average Annual Growth Rate (percent)	2007 Median Household Income
U.S.	\$38,615	4.3	\$50,740
Arizona	\$32,833	4.2	\$49,923
Santa Cruz County	\$23,744	4.6	\$35,661

Source: U.S. Bureau of Economic Analysis 2007c.

10
 11

12 In 1997, the median household income in Santa Cruz County was \$26,515, with 25.8
 13 percent of the population living below poverty (U.S. Census Bureau 1997); the
 14 percentage of persons living in poverty decreased over 5 percentage points to 20.1
 15 percent in 2007 and the median household income increased nearly 35 percent to
 16 \$35,661 (U.S. Census Bureau 2007c). In 1997, the State of Arizona experienced a
 17 median household income of \$34,751, with 15.5 percent of the population living below
 18 poverty (U.S. Census Bureau 1997). The percentage of persons living below poverty in
 19 2007 remained the same at 15.5 percent and the median household income increased
 20 by 44 percent to \$49,923 in 2007 (U.S. Census Bureau 2007c).

21
 22

Housing

23 The total number of housing units in the ROI in the 3-year census ending 2007 was
 24 16,237, with a 33 percent vacancy, which is a vacancy rate more than twice that of the

1 State of Arizona (Table 3-14). There are a higher percentage of owner-occupied
2 houses in the state than in the ROI.

3

4 **Table 3-14. Housing Units by Location (3-year Census Ending 2007)**

Location	Vacant Housing Units	Occupied Housing Units		Total Housing Units
		Owner	Renter	
Arizona	380,590 (14.7%)	1,520,037 (68.6%)	695,724 (31.4%)	2,596,351
Santa Cruz County	5,360 (33.0%)	8,534 (76.8%)	2,523 (23.2%)	16,237

5 Sources: U.S. Census Bureau 2007a and 2007b.

6

7 **3.18.1 Environmental Consequences**

8 **3.18.1.1 No Action Alternative**

9 No additional beneficial impacts to economics would occur in the project as a result of
10 purchasing liquid propane to fuel generators at the towers sites proposed as part of the
11 Proposed Action.

12

13 **3.18.1.2 Proposed Action Alternative**

14 The labor for the Proposed Action Alternative would be provided by private contractors,
15 resulting in only temporary increases in the population of the project area. When
16 possible, materials and other project expenditures would predominantly be obtained
17 through merchants in the local community resulting in minor, temporary economic
18 benefits. All construction activities, regardless of the area, would be limited to daylight
19 hours only, to the maximum extent practicable. Safety buffer zones would be
20 designated around all construction sites to ensure public health and safety. No
21 displacement of residential or commercial properties would result from this action.

22

23 Adequate housing and contracting resources are available in the ROI for private
24 contractor involvement in constructing the proposed towers. Only minor direct impacts
25 to housing or employment in the project areas would result from temporary, short-term
26 increases in the tower construction workforce that would last for the approximate 4
27 week construction work schedule. No changes to local employment rates, poverty
28 levels, or local incomes would occur as a result of this program.

1 The increased surveillance and improved CBP response times to apprehend CBVs
2 would reduce illegal traffic in the project area. Reductions in illegal traffic resulting from
3 increased surveillance from the implementation of the proposed towers are expected to
4 reduce crime in the area and enhance the safety of U.S. residents.

5
6 **3.18.1.3 Alternative 1**

7 Alternative 1 would result in impacts similar to those described for the Proposed Action.

8
9 **3.19 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

10
11 **3.19.1 Affected Environment**

12 **3.19.1.1 Executive Order 12898, Environmental Justice**

13 Environmental Justice and Protection of Children were discussed in the 2008 EA and
14 are incorporated herein by reference (CBP 2008a). Santa Cruz County has
15 approximately 14.7 percent of their population claiming Hispanic or Latino origin (see
16 Table 3-10). Furthermore, Santa Cruz County has a greater percentage of its
17 population in poverty relative to both Arizona and the Nation (Table 3-15).

18
19 **Table 3-15. 2007 Poverty Data for the Nation, Arizona, and the ROI**

Location	Percent of All Ages in Poverty
United States	13.0
Arizona	14.1
Santa Cruz County	20.1

20 Source: U.S. Census Bureau 2007c.

21
22 **3.19.1.2 Executive Order 13045, Protection of Children**

23 In Santa Cruz County, 13,538 individuals, or 32.2 percent of the population, are children
24 under the age of 18 (U.S. Census Bureau 2007b). The potential for impacts to the
25 health and safety of children would be greater where projects are located near
26 residential areas.

1 **3.19.2 Environmental Consequences**

2 **3.19.2.1 No Action Alternative**

3 The No Action Alternative would not result in disproportionately high or adverse
4 environmental health or safety impacts on minority or low-income populations or
5 children.

6

7 **3.19.2.2 Proposed Action**

8 The Proposed Action would beneficially affect the ROI, regardless of race and income
9 level due to a reduction in CBV activities. The Proposed Action would not result in
10 disproportionately high or adverse environmental health or safety impacts to minority or
11 low-income populations or children. This conclusion is based on the fact that the project
12 area is not in proximity to any populations and there would be no displacement of
13 persons (minority, low-income, children, or otherwise) as a result of implementing the
14 Proposed Action.

15

16 **3.19.2.3 Alternative 1**

17 Alternative 1 would result in similar impacts compared to the Proposed Action.

18

19 **3.20 SUSTAINABILITY AND GREENING**

20

21 **3.20.1 Affected Environment**

22 EO 13423 – *Strengthening Federal Environmental, Energy, and Transportation*
23 *Management* (72 FR 3919), was discussed in the 2008 EA and is incorporated herein
24 by reference (CBP 2008a). New facility construction would comply with the *Guiding*
25 *Principles for Federal Leadership in High Performance and Sustainable Buildings* set
26 forth in the *Federal Leadership in High Performance and Sustainable Memorandum of*
27 *Understanding*. DHS will also reduce total consumption of petroleum products as set
28 forth in the EO and use environmentally sound practices with respect to the purchase
29 and disposition of electronic equipment.

1 **3.20.2 Environmental Consequences**

2 **3.20.2.1 No Action Alternative**

3 Under the No Action Alternative, CBP would continue to implement Federal
4 sustainability and greening practices, to the extent practicable as part of other CBP
5 projects.

6

7 **3.20.2.2 Proposed Action**

8 Under the Proposed Action, the Federal sustainability and greening practices would be
9 implemented, to the extent practicable. CBP intends to obtain the goal of reducing
10 petroleum-based product use with a Fleet Management Plan facilitated through CBP's
11 Asset Management Division. This project would adhere to this management plan.

12

13 **3.20.2.3 Alternative 1**

14 Alternative 1 would result in impacts similar to those described for the Proposed Action.

SECTION 4.0
CUMULATIVE IMPACTS

1 **4.0 CUMULATIVE IMPACTS**

2
3 The NEPA regulations define cumulative impacts as an “impact on the environment
4 which results from the incremental impact of the action when added to other past,
5 present, and reasonably foreseeable future actions regardless of what agency (Federal
6 or non-Federal) or person undertakes such other actions” (40 CFR 1508.7).
7 Cumulative impacts can result from individually minor but collectively significant actions
8 taking place over a period of time by various agencies (Federal, state, and local) or
9 individuals. Informed decision-making is served by consideration of cumulative impacts
10 resulting from projects that are proposed, under construction, recently completed, or
11 anticipated to be implemented in the reasonably foreseeable future.

12
13 This cumulative impacts analysis summarizes expected environmental effects from the
14 combined impacts of past, current, and reasonably foreseeable future projects within
15 the Proposed Action areas. Projects were identified for this analysis by reviewing CBP
16 documents, news/press releases and published media reports, and through consultation
17 with planning and engineering departments of local governments, and state and Federal
18 agencies, including DHS/CBP/SBI and *SBI*net project proponents. Projects not planned
19 in proximity to the proposed tower sites would not contribute to cumulative impacts
20 within the project area and were not considered. Since the ROI for the proposed tower
21 locations is Santa Cruz County, Arizona, the following analyses will address cumulative
22 impacts only within the central portion of Tucson Sector.

23
24 **4.1 REASONABLY FORESEEABLE CBP PROJECTS WITHIN AND NEAR THE**
25 **TUCSON SECTOR**
26

27 CBP has been conducting law enforcement actions along the U.S./Mexico border since
28 its inception in 1924, and has continually transformed its methods as new missions,
29 CBV modes of operations, agent needs, and national enforcement strategies have
30 evolved. Development and maintenance of training ranges, station and sector facilities,
31 detention facilities, and roads and fences have affected thousands of acres with

1 synergistic and cumulative impacts on soils, wildlife habitats, water quality, and noise.
2 Beneficial effects have resulted from the construction and use of these roads and
3 fences, including but not limited to: increased employment and income for border
4 regions and surrounding communities, protection and enhancement of sensitive
5 resources north of the border; reduction in crime within urban areas near the border;
6 increased land value in areas where border security has increased; and increased
7 knowledge of the biological communities and pre-history of the region through
8 numerous biological and cultural resources surveys and studies.

9

10 With continued funding and implementation of CBP's environmental conservation
11 measures, including environmental education and training of its agents, use of biological
12 and archaeological monitors, wildlife water systems, wildlife forage plots, and
13 restoration activities, adverse impacts of future and ongoing projects would be
14 prevented or minimized. However, recent, ongoing, and reasonably foreseeable
15 proposed projects would result in cumulative impacts. In particular, the FY 2007 DHS
16 Appropriations Act provided \$1.2 billion for the installation of fencing, infrastructure, and
17 technology along the border. In FYs 2008 and 2009, CBP completed construction of
18 approximately 338 miles of primary fence in the CBP Sectors of Rio Grande Valley,
19 Marfa, Del Rio, and El Paso, Texas; Tucson and Yuma, Arizona; El Centro and San
20 Diego, California.

21

22 Another CBP initiative, entitled Vehicle Fence 300 (VF 300), constructed approximately
23 298 miles of vehicle fence in California, Arizona, and New Mexico in FYs 2008 and
24 2009. Approximately, 15 miles of vehicle fence was constructed on Cabeza Prieta
25 National Wildlife Refuge (CPNWR). Projects recently completed or reasonably
26 foreseeable in the near future in the Tucson Sector are presented in Table 4-1.

27

28 CBP would continue with the construction of 54 towers as part of the *SBI_{net}* Tucson
29 West Tower Project. In FY 2009, CBP constructed 14 towers in the USBP Tucson
30 Station's AOR as part of the *SBI_{net}* Tucson West Tower Project. The majority of these
31 towers were constructed on the CNF and Buenos Aires National Wildlife Refuge.

1 Projects recently completed or reasonably foreseeable in the near future in the Tucson
 2 Sector are presented in Table 4-1.

3

4 **Table 4-1. Recently Completed or Reasonably Foreseeable CBP projects within**
 5 **and near the Tucson Sector**

Project	Approximate Acres Permanently Impacted
Recent construction of 36 miles of hybrid barrier and the proposed construction of 35 miles of patrol and drag road, eight water wells, two new temporary staging areas, five existing staging areas, and approximately 7.5 miles of improvements to north-south access roads on the Barry M. Goldwater Range (BMGR)	189
Proposed expansion of the USBP Ajo Station in Why, Arizona	30
Proposed widening of the El Camino Del Diablo to approximately 18-feet wide.	62
Construction of approximately 15 miles of vehicle fence and north-south access road improvements on the CPNWR (VF 300).	115
Construction of approximately 37 miles of permanent vehicle barrier, improvements to approximately 37 miles of access road, construction of 1-mile of new road, and installation of approximately 1.5 miles of temporary vehicle barriers on the CPNWR.	186
Construction and upgrade of 54 towers, including construction, repair and improvement of associated roads for <i>SBI</i> net Tucson West project	43
Improvement of 80 miles of all weather patrol road and construction of 50 miles of permanent vehicle barriers (PVB) on Tohono O'odham Nation as well as a construction access road for the installation and maintenance of the PVBs.	72
Leased an 80-acre parcel of land near the Mariposa POE for CBP operations (portable lights and maintenance of roads)	80
Proposed construction and maintenance of approximately 11.7 miles of all-weather roads, which includes 8.5 miles of drag roads, low-water crossings, and drainage structures on either side of Nogales	40
Restoration of Ephraim Ridge near Nogales	1
Construction and improvement of 3 miles of new patrol road, including 0.3 mile of drag road, low-water crossings, and drainage structures west of the Mariposa commercial Port of Entry (POE) in the Tucson Sector, Nogales Station's AOR.	37
Expansion of CBP checkpoint facilities near Three-Points	5
Proposed construction of vehicle fence on the Tohono O'odham Nation (VF 300)	41
Proposed tower construction and access roads for <i>SBI</i> net Yuma/BMGR Project	15*
Proposed tower construction and access roads for <i>SBI</i> net CPNWR Project	15*
Proposed tower construction and access roads for <i>SBI</i> net Tucson EastProject	40*
Proposed tower construction and access roads for <i>SBI</i> net Ajo-1 Station Tower Project	13
Proposed tower construction and access roads for <i>SBI</i> net Tohono O'odham Project	15*
Tower construction and access roads for <i>SBI</i> net Tucson West Project	41
TOTAL	1,040

6 * These are only initial planning estimates based on tower impacts and currently does not include roads.

1 Other *SBI_{net}* tower projects are currently in the planning phase for Arizona and would
2 include tower construction and access roads in the Naco, Douglas and Wilcox AORs
3 (Tucson East, 29 proposed towers), Tohono O’odham Nation (30 proposed towers), and
4 in the Ajo and Yuma Sector’s Wellton Station AORs (CPNWR, 11 proposed towers).
5 The number of proposed towers for these projects may change based on the
6 development of final planning and analysis designs.

7
8 CBP is planning the implementation of the CTIMR program for the maintenance and
9 repair of CBP TI and all roads associated with CBP tactical infrastructure and *SBI_{net}*
10 projects required to ensure full-time access to the towers and other T). In general,
11 roads would be maintained to the original construction condition.

12
13 In addition to these phased projects, CBP might be required to implement other
14 activities and operations that are currently not foreseen or not within the ROI and
15 therefore not discussed in this document. These actions could be in response to
16 national emergencies or security events like the terrorist attacks on September 11,
17 2001, or to changes in the mode of operations of CBVs.

18

19 **4.2 OTHER AGENCY/ORGANIZATIONS PROJECTS**

20

21 Plans by other agencies that would also affect the region’s natural and human
22 environment include various road improvements by ADOT and/or Santa Cruz County.
23 The majority of these projects would be expected to occur along existing corridors
24 and/or within previously disturbed sites. The magnitude of the impacts would depend
25 upon the length and width of the road right-of-way (ROW) and the extant conditions
26 within and adjacent to the ROW.

27

28 ADOT planned improvements for Santa Cruz County through 2009 are to perform
29 pavement preservation along State Route 83 Sonoita North (MohaveBusiness.com
30 2009 and ADOT 2009).

1 In addition, projects are currently being planned by other Federal entities which could
2 affect areas in use by CBP. CBP should maintain close coordination with these
3 agencies to ensure that CBP activities do not conflict with other agencies' policies or
4 management plans. CBP would consult with applicable state and Federal agencies
5 prior to performing any construction activities and would coordinate operations so that
6 they do not inappropriately impact the mission of other agencies. Other agencies, such
7 as BLM and USFS routinely prepare or update Resource Management Plans for the
8 resources they manage.

9

10 CBP activities have had many positive cumulative impacts. For example, construction
11 and maintenance activities resulting in reductions in illegal drug smuggling have had
12 cumulative positive impacts on socioeconomic resources within the border area. INS
13 (now CBP) activities completed from 1994 to 2002 have provided information on over
14 100 new cultural resources sites potentially eligible for NRHP listing.

15

16 A summary of the anticipated cumulative impacts of the Proposed Action (i.e.,
17 construction of three towers in the *SBI*net Tucson West portion of the Tucson Sector) is
18 presented in the following sections. Discussions are presented for each of the
19 resources described previously.

20

21 **4.3 IDENTIFICATION OF CUMULATIVE EFFECTS ISSUES**

22

23 **4.3.1 Water, Soils, and Air**

24 The pollution of water, soils, and air resulting from independently small actions can have
25 additive and synergistic effects on single resources, ecosystems, and human
26 communities when combined with the cumulative effects of similar actions in a region.

27 The effects of water pollution on wildlife, sensitive fish, migratory birds, and the Sonoran
28 Desert ecosystem have been significant. Water quality in the river basins is generally
29 affected by agricultural uses north of the project area. Planned and existing
30 improvements to agricultural practices can reduce pollutants and reduce effects on
31 resources ecosystems, and human communities. The Proposed Action and other

1 similar development actions would most likely occur on managed lands, primarily
2 because the majority of the ROI is either under Federal or state management.

3
4 Each development action in the southwestern Arizona river basins would likely
5 implement mitigation measures to reduce the potential effects of pollutants associated
6 with the handling of POLs, volatile organic compounds, and hazardous materials. Each
7 new development would also likely comply with wastewater treatment regulations, and
8 most would probably connect to the existing wastewater treatment system. Therefore,
9 the point- and non-point sources of pollution created by the Proposed Action and other
10 similar developments would not result in cumulative effects.

11
12 Construction of the towers and access roads would add to CBP's cumulative impact of
13 1,040 acres on soils. However, CBP and other agency projects are spread throughout
14 the region and have occurred since the inception of USBP and other Federal land
15 management agencies. Therefore, impacts to soils would not be a significant
16 cumulative impact due to the distribution of projects over time and space.

17

18 **4.3.2 Floodplains**

19 Most of the 100-year floodplain in Santa Cruz County is occupied by rangeland, forest
20 lands, and Federal and state lands; and minimal development has occurred within the
21 floodplain. Federal and local laws governing floodplains limit development within the
22 100-year floodplain. The Proposed Action and other developments are not expected to
23 result in substantial impacts to the 100-year floodplain. Therefore, there is no potential
24 for the Proposed Action, when combined with other similar developments, to
25 cumulatively affect floodplains.

26

27 **4.3.3 Vegetation Communities and Wildlife**

28 The proposed tower sites are located in semidesert grassland, Sonoran desertscrub,
29 and Madrean evergreen woodland vegetation communities. The Proposed Action and
30 other similar developments are not expected to result in substantial new development of
31 previously undisturbed lands. The majority of the project area is currently undisturbed.

1 The proposed towers when considered with other CBP infrastructure projects and other
2 agencies actions would impact habitat and potentially disturb wildlife. Design measures
3 incorporated as part of the Proposed Action would reduce additional opportunities for
4 the spread of invasive plants and noxious weeds. Further, BMPs implemented as part
5 of CBP infrastructure projects would minimize potential effects to habitat and wildlife.
6 The Proposed Action when considered with other recently completed and foreseeable
7 CBP would have a moderate cumulative impact on vegetation and wildlife.

8

9 **4.3.4 Sensitive Species**

10 Past and on-going CBP projects and other Federal projects have had a cumulative
11 impact on sensitive species. However, all Federal actions require Section 7
12 Consultation in accordance with the ESA and potential impacts to Federal species are
13 avoided or minimized through the consultation process. Therefore, the cumulative
14 impact to sensitive species have been minor. Further, CBP actions have reduced illegal
15 traffic and subsequent USBP enforcement actions, thus, reducing habitat degradation
16 and disturbance to sensitive species. Additionally, off-setting measures developed
17 through Section 7 Consultation have had a beneficial impact on sensitive species as a
18 result of habitat restoration, habitat protection, habitat enhancement (i.e., food plots),
19 and species protection.

20

21 **4.3.5 Cultural Resources**

22 The VF 300 and primary fence projects were authorized under a waiver authorized by
23 the Secretary of DHS on April 1, 2008. The waiver authorized the expeditious
24 construction of tactical infrastructure without strict compliance with environmental laws
25 and regulations; however, as part of CBP's environmental stewardship commitments
26 cultural resources surveys of project sites were conducted and cultural resources
27 monitors were present during construction activities. As a result, adverse potential
28 impacts to cultural resources may have occurred during the construction of VF and
29 primary fence projects. Thus, past CBP projects have had a cumulative impact on
30 cultural resources. Much of the land within the immediate vicinity of the tower sites and
31 access roads is located on Federal lands and all actions on these lands would require

1 NEPA and Section 106 compliance. Consequently the impacts to cultural resources
2 would be avoided and or impacts to cultural resources would be mitigated through
3 appropriate measures. Cultural resources surveys and data recovery efforts associated
4 with past and current CBP projects, including projects covered under the waiver have
5 avoided or minimized impacts to cultural resources and provided valuable information
6 regarding cultural resources of the region. Future developments are expected to
7 conduct surveys and assess the potential for impacts to cultural resources if a Federal
8 action (including financial aid or assistance, permits, or land) is required. Section 106
9 compliance has been met and the Proposed Action is not expected to contribute to
10 cumulative impacts on cultural resources.

11

12 **4.3.6 Land Use and Socioeconomics**

13 Past CBP projects have had a cumulative impact to land use along the U.S./Mexico
14 border in the Tucson Sector. When considered with past, current, and reasonably
15 foreseeable projects the Proposed Action would have a cumulative impact of
16 approximately 1,042 acres to land use in the Tucson Sector.

17

18 Other socioeconomic/human resources, including noise, local economy, and housing
19 have been impacted by past and on-going development. Impacts to noise and local
20 economy are temporary and the effects are only present during construction of a project
21 and are not considered cumulative. However, CBP projects reduce illegal cross border
22 activities, crime within the U.S., and the social costs associated with these illegal
23 activities. Therefore, the Proposed Action would contribute to the beneficial cumulative
24 impact associated with other CBP projects.

25

26 **4.3.7 Aesthetics**

27 Past and on-going CBP infrastructure projects have developed infrastructure in
28 undeveloped areas valued for their aesthetic qualities. In some areas more than one
29 infrastructure may be visible from a given viewpoint; therefore, CBP infrastructure
30 projects have had cumulative impacts on aesthetics in the region.

1 **4.4 DEFINING CUMULATIVE EFFECTS ASSESSMENT GOALS**

2

3 Three cumulative effects issues, two resource related (cultural and aesthetics) and one
4 related to human communities (land use), have been identified as potentially
5 substantial. These issues are inter-dependent since cultural resources, aesthetics and
6 land use would be affected primarily by urban development. Ultimately, the
7 construction, operation and maintenance of the proposed towers represent a minimal
8 proportion of the planned and reasonably foreseeable growth in southern Arizona,
9 which would occur regardless of the action implemented by *SBI*net. No cultural
10 resources sites would be affected under the Proposed Action, the action would not
11 cause *de minimis* thresholds to be exceeded, and the conversion of 2.34 acres of land
12 for enforcement use would be negligible. Therefore, relative to the baseline conditions
13 (i.e., No Action Alternative), implementation of the Proposed Action would have a
14 minimal cumulative effect on air quality, cultural resources or land use.

15

16 **4.5 SUMMARY OF OTHER PROJECTS CONTRIBUTING TO CUMULATIVE**
17 **EFFECTS ISSUES**

18

19 The following sections describe current and Proposed Actions by CBP and other entities
20 which, when combined with the Proposed Action, could result in cumulative impacts to
21 the natural and human environment.

22

23 **4.6 CUMULATIVE ENVIRONMENTAL EFFECTS**

24

25 **4.6.1 Proposed Action**

26 A summary of the anticipated cumulative impacts relative to the Proposed Action (i.e.,
27 construction, operation and maintenance of three tower sites and modification of one
28 tower site) is presented below. These discussions are presented for each of the
29 resources described previously.

1 **4.6.2 Land Use**

2 A significant impact would occur if any action is inconsistent with adopted land use
3 plans or an action would substantially alter those resources required for, supporting or
4 benefiting the current use. The Proposed Action Alternative would permanently affect
5 land use on approximately 2.34 acres but these effects would not be inconsistent with
6 the Federal or state land use plans. The additional 2.34 acres of impacts to land use
7 associated with the Proposed Action would not have a significant cumulative impact.

8

9 **4.6.3 Air Quality**

10 Emissions generated during construction of the towers and associated access and
11 approach roads would be short-term and minor. It should be noted that construction of
12 those projects mentioned in Table 4-1 have or would occur over time and have or would
13 not be constructed at the same time. Operation of the towers would generate emissions
14 that would be long-term but intermittent in nature. Although maintenance of the towers
15 and access road repairs would result in minor cumulative impacts to the region's air
16 shed, these impacts would not be considered significant even when combined with
17 other proposed developments in the border region of Arizona because the counties in
18 the Proposed Action area are in attainment. Liquid propane gas generators would be
19 used only sporadically and emissions from these generators would be negligible.
20 Deterrence of, and improved response time to, CBVs created by the operation of the
21 towers are anticipated to reduce off-road enforcement actions currently required by CBP
22 agents.

23

24 **4.6.4 Aesthetics**

25 No major impacts to visual resources would occur from implementing the Proposed
26 Action, due in part to the small footprint of the towers and access roads, and the large
27 amount of undeveloped land, and border infrastructure that exists within vicinity of the
28 project area. The tower selection process placed as many towers as possible at
29 existing communications or sensor tower locations. The relatively low tower heights
30 could also alleviate the potential for the proposed project to obstruct aesthetic vistas or
31 otherwise impact visual resources of the project area. Additionally, the proposed towers

1 would be constructed several miles apart. So, depending on topography, no viewshed
2 would be impacted by more than one or two towers. Construction, operation, and
3 maintenance of the proposed towers, when considered with existing and proposed
4 developments (e.g., primary fence, VF, and other towers) in the surrounding area, could
5 result in minor to moderate cumulative impacts to the visual quality of the specific
6 localities. These cumulative impacts would not be regionally significant because the
7 proposed developments are spread out across the viewshed.

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SECTION 5.0
MITIGATION MEASURES

5.0 MITIGATION MEASURES

It is CBP's policy to reduce impacts through a sequence of avoidance, minimization, mitigation, and compensation. This chapter describes those measures that would be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. Many of these measures have been incorporated as standard operating procedures by CBP on past projects. Mitigation measures are presented for each resource category potentially affected. These are general mitigation measures; development of specific mitigation measures would be required for certain activities implemented under the Proposed Action. The specific mitigation measures would be coordinated through appropriate agencies and land managers or administrators, as required. Mitigations vary and include activities such as restoration of habitat in other areas, acquisition of lands, implementation of BMPs, and are typically coordinated with the USFWS and other appropriate Federal and state resource agencies.

5.1 PROJECT PLANNING/DESIGN COMMUNICATION

The following measures were adapted from the *Interim Guidance on Siting, Construction, Operation, and Decommissioning of Communication Towers* (USFWS 2000).

- CBP will minimize bird perching and nesting opportunities for new towers.
- Proposed tower sites are not in or near wetlands, other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. If discovered otherwise, mitigations will be implemented.
- CBP will not use guy wires for tower support to reduce the probability of bird and bat collisions.
- CBP will use security lighting for on-ground facilities and equipment that is down-shielded to keep light within the boundaries of the site.
- CBP will site, design, and construct towers and appurtenant elements to avoid or minimize habitat loss within and adjacent to the tower "footprint." CBP will minimize road access and fencing to reduce or prevent habitat fragmentation and disturbance, and to reduce above-ground obstacles to birds in flight.

- 1 • Where feasible, CBP will place electric power lines underground or on the
2 surface as insulated, shielded wire to avoid electrocution of birds and bats. CBP
3 will apply recommendations of the Avian Power Line Interaction Committee for
4 any required above-ground lines, transformers, or conductors. CBP will use
5 raptor protective devices on above ground wires.
- 6 • CBP will control noxious weeds using U.S. Environmental Protection Agency
7 approved herbicides.
- 8 • If rodent populations on the perimeter of the facility are to be controlled, CBP will
9 not use rodenticides.
- 10 • CBP will develop a Fire Management Plan as part of tower construction and in
11 coordination with the landowner and/or land management agency.
- 12 • Once CBP has determined that towers are no longer needed, CBP will remove
13 them within 12 months. CBP will restore footprints of towers and associated
14 facilities to natural conditions.

15

16 **5.2 PROJECT PLANNING/DESIGN – GENERAL**

17

18 CBP will use disturbed areas or areas that will be used later in the construction period
19 for staging, parking, and equipment storage.

20

21 CBP will properly design and locate roads so the potential for entrapment of surface
22 flows within the roadbed due to grading will be avoided or minimized. Depth of any pits
23 created will be minimized so animals do not become trapped.

24

25 CBP will properly design and locate roads so the widening of existing or created
26 roadbeds beyond the design parameters due to improper maintenance and use will be
27 avoided or minimized.

28

29 CBP will properly design and locate roads so the fewest roads needed for Proposed
30 Actions will be constructed to proper standards. In concurrence with the landowners
31 and/or land management agency, once CBP determines that access roads constructed
32 as part of this Proposed Action are no longer needed for the purpose of this project,
33 CBP will close and restore access roads to natural surface and topography using
34 appropriate techniques. The Global Positioning System (GPS) coordinates of roads
35 that are thus closed will be recorded and integrated into the CBP Geographic

1 Information System (GIS) database. A record of acreage or miles of roads taken out of
2 use, restored, and revegetated will be maintained.

3

4 CBP will develop and implement a stormwater management plan (SWMP or SWPPP).
5 Erosion control measures and appropriate BMPs, as required and promulgated through
6 the SWMP and engineering designs, will be implemented before, during, and after soil
7 disturbing activities. Areas with highly erodible soils will be given special consideration
8 when preparing the SWMP to ensure incorporation of various erosion control
9 techniques such as straw bales, silt fencing, aggregate materials, wetting compounds,
10 and rehabilitation, where possible, to decrease erosion.

11

12 Site, design, and construct towers and their associated facilities, including roads, to
13 avoid or minimize habitat loss within or adjacent to the footprint. Minimize access road
14 and fence construction. Minimize the amount of above-ground obstacles associated
15 with the site.

16

17 Site rehabilitation conducted by CBP will include re-vegetating or the distribution of
18 organic and geological materials (i.e., boulders and rocks) over disturbed areas per
19 design plans and BMPs in erosion and sediment plans (e.g., SWPPP) to reduce erosion
20 and also allow the area to naturally vegetate. Native seeds or plants, which are
21 compatible with the enhancement of protected species, will be used to revegetate
22 staging areas and other temporarily disturbed areas. Native seed mix will be reviewed
23 by a qualified botanist as part of project planning. Organic material will be collected and
24 stockpiled during construction to be used for erosion control after construction while
25 tower areas naturally re-vegetate. Materials used for on-site erosion control will be free
26 of non-native plant seeds and other plant parts to limit potential for infestation. Because
27 natural materials cannot be certified as completely weed-free, CBP will follow up with
28 the use of such materials and monitoring of rehabilitated sites.

29

30 CBP will document any establishment of non-native plants and will implement
31 appropriate control measures.

1 CBP will ensure that all construction will follow DHS Management Directive 025-01 for
2 waste management.

3

4 A CBP-approved spill protection plan (or SPCCP) will be developed and implemented at
5 construction and maintenance sites to ensure that any toxic substances are properly
6 handled and that escape into the environment is prevented. Agency standard protocols
7 will be used. Drip pans underneath equipment, containment zones used when refueling
8 vehicles or equipment, and other measures are to be included.

9

10 CBP will incorporate BMPs relating to project area delineation, water sources, waste
11 management, and site restoration into project planning and implementation for road
12 construction and maintenance.

13

14 CBP security lighting at facilities will be designed to minimize light pollution beyond the
15 designated security zone while achieving light levels needed for operational purposes.
16 Because directed lighting for security zones can extend ambient light levels well over
17 900 feet away from the source, the effects of lighting extend beyond the immediate
18 area. Security lights will not shine onto habitat areas at a level greater than 1.5 foot-
19 candles. All security lights will be shielded from the top to prevent uplighting.

20

21 CBP will develop and implement erosion control measures and appropriate BMPs
22 before, during, and after soil disturbing activities. To protect areas with highly erodible
23 soils, various erosion control techniques such as straw bales, silt fencing, aggregate
24 materials, wetting compounds, and rehabilitation will be used where possible where
25 possible to decrease erosion.

26

27 **5.3 GENERAL CONSTRUCTION ACTIVITIES**

28

29 CBP will clearly demarcate the perimeter of all areas to be disturbed during construction
30 or maintenance activities using flagging or temporary construction fence, and no
31 disturbance outside that perimeter will be authorized.

1 CBP will construct and maintain the fewest roads needed, using proper construction
2 standards.

3

4 The width of all roads that are created or maintained by CBP will be measured and
5 recorded using GPS coordinates and integrated into the CBP GIS database.
6 Maintenance actions will not increase the width of the 12-foot road bed or the amount of
7 disturbed area beyond the 12-foot wide road bed.

8

9 CBP will obtain materials such as gravel or topsoil from existing developed or previously
10 used sources, not from undisturbed areas adjacent to the project area.

11

12 CBP will minimize the areas to be disturbed by limiting deliveries of materials and
13 equipment to only those needed for effective project implementation.

14

15 CBP will use water for construction from wells at the discretion of the landowner
16 (depending on water rights). If local groundwater pumping would create adverse effects
17 to aquatic, marsh, or riparian dwelling Federally listed species, treated water from
18 outside the immediate area will be utilized.

19

20 CBP will not use surface water from aquatic or marsh habitats for construction purposes
21 if that site supports aquatic Federally listed species or if it contains non-native invasive
22 species or disease vectors and there is any opportunity to contaminate any Federally
23 listed species' habitat through use of the water at the project site.

24

25 CBP will not use surface water from untreated sources, including water used for
26 irrigation purposes, for construction or maintenance projects located within 1 mile of
27 aquatic habitat for Federally listed aquatic species. Groundwater or surface water from
28 a treated municipal source will be used when close to such habitats. This is to prevent
29 the transfer of invasive animals or disease pathogens between habitats if water on the
30 construction site was to reach the Federally listed species habitats.

1 CBP water tankers that convey untreated surface water will not discard unused water
2 within 2 miles of any aquatic or marsh habitat.

3

4 CBP storage tanks containing untreated water will be of a size that if a rainfall event
5 were to occur, the tank (assuming open), will not be overtopped and cause a release of
6 water into the adjacent drainages. Water storage on the project areas will be in on-
7 ground containers located on upland areas, not in washes.

8

9 CBP pumps, hoses, tanks and other water storage devices will be cleaned and
10 disinfected with a 10 percent bleach solution at an appropriate facility and before use at
11 another site (this water is not to enter any surface water area). If a new water source is
12 used that is not from a treated or groundwater source, the equipment will require
13 additional cleaning. This is important to kill any residual disease organisms or early life
14 stages of invasive species that may affect local populations of Federally listed species.

15

16 CBP will contain nonhazardous waste materials and other discarded materials such as
17 construction waste, until removed from the construction and maintenance sites. This
18 will assist in keeping the project area and surroundings free of litter and reduce the
19 amount of disturbed area needed for waste storage.

20

21 To prevent attracting predators of protected animals, CBP will dispose of all food related
22 trash items such as wrappers, cans, bottles, and food scraps in closed containers and
23 remove them daily from the project site.

24

25 Waste water is water used for project purposes that is contaminated with construction
26 materials or from cleaning equipment and thus carries oils or other toxic materials or
27 other contaminants as defined in state regulations. CBP will store waste water in closed
28 containers on site until removed for disposal. Concrete wash water will not be dumped
29 on the ground, but will be collected and moved offsite for disposal. This wash water is
30 toxic to aquatic life.

1 CBP will minimize the number of construction vehicles traveling to and from the project
2 site and the number of trips per day to reduce the likelihood of disturbing animals in the
3 area or injuring an animal on the road.

4
5 Construction vehicle speed limits during construction periods will not exceed 35 miles
6 per hour (mph) on major unpaved roads (graded with ditches on both sides) and 25
7 mph on all other unpaved roads. Construction vehicle night-time travel speeds will not
8 exceed 25 mph, and may be less based on visibility and other safety considerations.
9 Construction at night will be minimized.

10

11 If CBP construction or maintenance activities continue at night, all lights will be shielded
12 to direct light only onto the work site and the area necessary to ensure the safety of the
13 workers. The minimum foot-candles necessary will be used, and the number of lights
14 will be minimized. Any light extending beyond the construction or maintenance area will
15 be no greater than 1.5 foot candles.

16

17 CBP will minimize noise levels for day or night construction and maintenance. All
18 generators will be in baffle boxes (a sound-resistant box that is placed over or around a
19 generator), have an attached muffler, or use other noise-abatement methods in
20 accordance with industry standards.

21

22 **5.4 SOILS**

23

24 Vehicular traffic associated with the tower and access road construction activities and
25 operational support activities will remain on established roads to the maximum extent
26 practicable. Areas with highly erodible soils will be given special consideration when
27 designing the proposed project towers and access roads to ensure incorporation of
28 various erosion control techniques such as, straw bales, silt fencing, aggregate
29 materials, wetting compounds, and rehabilitation, where possible, to decrease erosion.
30 Site rehabilitation will include re-vegetating or the distribution of organic and geological
31 materials (i.e., boulders and rocks) over the disturbed area per design plans and BMPS

1 in erosion and sediment plans (e.g., SWPPP) to reduce erosion while allowing the area
2 to naturally vegetate. Additionally, erosion control measures and appropriate BMPs, as
3 required and promulgated through the SWPPP and engineering designs, will be
4 implemented before, during, and after construction activities.

5

6 Road repair or improvements shall avoid, to the greatest extent practicable, creating
7 wind rows with the soils once grading activities are completed. Excess soils from
8 construction activities will be used on-site to raise and shape proposed tower sites and
9 road surfaces.

10

11 **5.5 VEGETATION**

12

13 CBP will use materials free of non-native plant seeds and other plant parts to limit
14 potential for infestation for on-site erosion control in uninfested native habitats. Since
15 natural materials cannot be certified as completely weed-free, if such materials are
16 used, there will be follow-up monitoring to document establishment of non-native plants
17 and appropriate control measures will be implemented for a period of time to be
18 determined in the site restoration plan.

19

20 CBP fill material brought in from outside the project area will be identified as to source
21 location and will be weed-free.

22

23 CBP will remove invasive plants that appear on the tower sites, and along sections of
24 repaired and new road. Removal will be done in ways that eliminate the entire plant
25 and remove all plant parts to a disposal area. Herbicides will be used according to label
26 directions if they are not toxic to Federally listed species that may be in the area.
27 Training to identify non-native invasive plants will be provided for CBP personnel or
28 contractors as necessary.

29

30 CBP will avoid removal of riparian vegetation within 100 feet of aquatic habitats to
31 provide a buffer area to protect the habitat from sedimentation.

1 Construction equipment will be cleaned at the temporary staging areas, in accordance
2 with BMPs, prior to entering and departing the project corridor to minimize the spread
3 and establishment of non-native invasive plant species.

4 5 **5.6 WILDLIFE RESOURCES**

6
7 The Migratory Bird Treaty Act (16 U.S.C. 703-712, [1918, as amended 1936, 1960,
8 1968, 1969, 1974, 1978, 1986 and 1989]) requires that Federal agencies coordinate
9 with the USFWS if a construction activity would result in the take of a migratory bird. If
10 construction or clearing activities are scheduled during nesting seasons (February 15
11 through August 31); surveys will be performed to identify active nests. If construction
12 activities will result in the take of a migratory bird; then coordination with the USFWS,
13 FAA, and AGFD will be required and applicable permits would be obtained prior to
14 construction or clearing activities. Another mitigation measure that would be considered
15 is to schedule all construction activities outside nesting seasons negating the
16 requirement for nesting bird surveys. The proposed sensor and communication towers
17 will also comply with USFWS guidelines for reducing fatal bird strikes on communication
18 towers (USFWS 2000) to the greatest extent practicable. Guidelines recommend co-
19 locating new antennae arrays on existing towers whenever possible and to build towers
20 as short as possible, without guy wires or lighting, and use white strobe lights whenever
21 lights are necessary for aviation safety.

22
23 CBP will avoid or minimize the potential for entrapment of surface flows within the
24 roadbed due to grading. CBP will minimize the depth of any pits created so animals do
25 not become trapped.

26 27 **5.7 PROTECTED SPECIES**

28
29 Several BMPs have been identified to decrease any potential impacts to Federal and
30 state protected species. Many of these measures were developed as part of the
31 Section 7 consultation and included in USFWS's BO (AESO/SE 22410-2008-F-0373)

1 for the *SBI*net Tucson West Tower Project. Additional conservation measures and
2 BMPs developed as part of formal Section 7 consultation and identified in USFWS's BO
3 will be adhered to by CBP.

- 4
- 5 • CBP will provide a designated biological monitor on site during the work activities
6 for all construction and maintenance projects in Federally listed species habitats.
7 The biological monitor will be in charge of implementing and documenting
8 construction-related BMPs as designed for the project to reduce the potential for
9 adverse effects to the species or their habitats. CBP will use the reports from the
10 biological monitor will be used for development of the post construction report.
11 The designated biological monitor will notify the construction manager of any
12 activities that may harm or harass an individual of a Federally listed species.
13 Upon such notification, the construction manager will temporarily suspend all
14 subject activities and notify the Contracting Officer, the Administrative
15 Contracting Officer, and the Contracting Officer's Representative of the suspense
16 so that the key personnel may be notified, apprised of the situation, and the
17 potential conflict resolved.
18
 - 19 • Where, based on species location maps and/or results of surveys, individuals of
20 a Federally listed species could be present on or near the project site, CBP will
21 have a designated, qualified biological monitor (a person having experience with
22 the species involved and if the task requires handling or species surveys,
23 appropriate Federal and state permits) to be present during the activity to protect
24 individuals of the species from harm. Duties of the biological monitor will include
25 ensuring that activities stay within designated project areas, evaluating the
26 response of individuals that come near the project site, and implementing the
27 appropriate BMP. For some species, there may only be a seasonal need for the
28 biological monitor to be present. This category includes at least the following
29 species for those roads and towers near occupied habitat: Mexican spotted owl,
30 Chiricahua leopard frog and lesser long-nosed bat.
 - 31 • Where a project could be located within one mile of occupied species habitats
32 but the individuals of the species are not likely to move into the project area, a
33 biological monitor is not needed during construction. However, the construction
34 manager will be aware of the species location and ensure that BMPs designed to
35 minimize habitat impacts are implemented and maintained as planned. This
36 category includes the following species: all aquatic species.
 - 37 • If an individual of a Federally listed species is found in the designated project
38 area and is in danger of being harmed (e.g. in path of vehicles or foot traffic),
39 work will cease in the area of the species until either a qualified biological monitor
40 can safely remove the individual, or it moves away on its own.
 - 41 • Individual animals found in the project area in danger of being harmed will be
42 relocated by a CBP qualified biological monitor to a nearby safe location in

- 1 accordance with accepted species handling protocols in Federal and state
2 permits.
- 3 • Construction equipment will be cleaned prior to entering and departing the
4 project area to minimize the spread and establishment of non-native invasive
5 plant species.
 - 6 • Soil disturbances in temporary impact areas along roads and staging areas will
7 be re-vegetated with native vegetation from nursery stock or seed.
 - 8 • Within the designated disturbance area, CBP will limit grading or topsoil removal
9 to areas where this activity is needed to provide the ground conditions for
10 construction or maintenance activities. Minimizing disturbance to soils will
11 enhance the ability to restore the disturbed area after the project is complete. In
12 Pima pineapple cactus habitat, removal of topsoil is a permanent impact.
 - 13 • CBP will confine vehicular traffic associated with construction activities to
14 established roads (with the exception of new roads being constructed).
 - 15 • CBP's road maintenance shall avoid making wind rows with the soils once
16 grading activities are completed, and any excess soils will be used on-site to
17 raise and shape the tower sites and/or road surface.
 - 18 • New roads created or improved by CBP will be located such that the potential for
19 road bed erosion into Federally listed species habitat will be avoided or
20 minimized.
 - 21 • CBP will monitor, provide corrective maintenance, and document excessive use
22 of unimproved roads that results in their deterioration such that it affects the
23 surrounding Federally listed species habitat in the CBP Project Report.
 - 24 • New access roads to proposed tower sites will avoid routes which cross occupied
25 threatened and endangered aquatic habitats.
 - 26 • CBP construction activities occurring in suitable jaguar habitat will use existing
27 roads to avoid further fragmentation of habitat, avoid constructing physical
28 barriers that are impenetrable by jaguars in potential movement corridors.
 - 29 • All contractors, work crews (including National Guard and military personnel),
30 and CBP personnel in the field performing construction and maintenance
31 activities will receive training. Training would provide information on the habitat
32 and behavior of the specific sensitive species found in the area, including
33 information on how to avoid impacts to these species resulting from construction
34 and operational activities. It will be the responsibility of the construction project
35 manager(s) to ensure that their personnel are familiar with general BMPs, the
36 specific conservation measures presented here, and other limitations and
37 constraints. In addition, training in identification of non-native invasive plants and
38 animals should be provided for contracted personnel engaged in follow-up
39 monitoring of construction sites.
 - 40 • Road improvements would not widen any driving surface;

- 1 ➤ The removal of roadside vegetation would be limited to only those portions
2 of plants necessary to allow the passage of vehicles, material, and
3 equipment;
- 4 ➤ All access routes into and out of the disturbance area should be flagged,
5 and no construction vehicle travel outside of those boundaries should be
6 authorized;
- 7 ➤ Road repair or improvements shall avoid, to the extent practicable, making
8 wind rows with the soils once grading activities are completed, and any
9 excess soils will be used on-site to raise and shape the tower sites and/or
10 road surface;
- 11 ➤ To the extent practicable, areas already disturbed by past activities or
12 those that will be used later in the construction period should be used for
13 staging, parking, and equipment storage;
- 14 ➤ The perimeter of all areas to be disturbed during construction should be
15 clearly demarcated using flagging, and no disturbance from construction
16 activities outside that perimeter should be authorized;
- 17 ➤ The area to be disturbed should be minimized by limiting deliveries of
18 materials and equipment to only those needed for effective project
19 implementation;
- 20 ➤ Within the designated disturbance area, grading or topsoil removal should
21 be limited to areas where this activity is needed to provide the ground
22 conditions necessary for construction or maintenance activities;
- 23 ➤ Any vegetation removal outside the actual tower sites should be
24 minimized, and vegetation should be removed using hand tools or
25 controlled by mowing; and
- 26 • The number of construction vehicles traveling to and from the project sites and
27 the number of trips per day will be minimized to reduce the likelihood of
28 disturbing animals in the area or injuring an animal on the road. Construction
29 speed limits should not exceed 35 mph on major unpaved roads (graded with
30 ditches on both sides) and 25 mph on all other unpaved roads. Night-time travel
31 speeds should not exceed 25 mph, or less based on visibility and other safety
32 considerations.
- 33 • Transmission of disease vectors and invasive non-native aquatic species can
34 occur if vehicles cross infected or infested streams or other waters and water or
35 mud remains on the vehicle. If these vehicles subsequently cross or enter
36 uninfected or noninfested waters, the disease or invasive species may be
37 introduced to the new area. CBP and its contractors will avoid contact with
38 wetted areas. However, if construction vehicles or other equipment use will
39 occur in wetted areas west of Interstate-19 (including ponds, impoundments, or
40 ephemeral or permanent streams) that equipment will be a) cleaned of mud and
41 debris and then sprayed with a 10 percent bleach, 70 percent ethanol, or one
42 percent quaternary ammonium solution, or b) allowed to dry completely, before

1 moving to another wetted area. Treatments as just described will not be required
2 for travel along paved routes through the project area, as these routes are
3 heavily traveled by the public and cleaning/sterilization of project vehicles will do
4 little to prevent movement of disease via vehicular travel.

5 *Mexican Spotted Owl - Project Planning/Documentation*

- 6 • Roads, fences, security zones, surveillance sites, staging areas including tower
7 sites, and other facilities that will require land clearing and will have associated
8 noise and artificial light components will be at least 0.25 mile from any known
9 Protected Activity Center (PAC) or CBP will mitigate (See *Post Construction*
10 below). Firebreaks, fuels reduction, or other improved access for fire
11 suppression will be incorporated, as appropriate in the placement of facilities.
12 Facilities will not be located between nests and important forage areas such that
13 movement between the two is compromised, or CBP will mitigate impacts.
- 14 • CBP will avoid new roads in the vicinity of PACs and other important habitat
15 areas to reduce effects of human activity near PACs or CBP will mitigate impacts
16 (see *Post Construction* below). Existing roads used by CBP to access new or
17 existing facilities may need to be closed to other access to protect important owl
18 habitat.

19
20 *Mexican Spotted Owl - During Construction/Maintenance*

- 21 • CBP will monitor:
 - 22 a) construction activities for towers, new roads, and road improvements, between
23 March 1 and August 31, which are closer than 0.25 mile to an owl PAC.
24 Construction activities will be monitored by a qualified biologist provided by CBP.
 - 25 b) Mexican spotted owl PACs where towers and increased human use may
26 potentially affect owls and other areas where tower sites are within or less than
27 0.25 mile from a PAC.
- 28 • CBP will develop an MOU with the landowners and/or land management
29 agencies to conduct spotted owl monitoring. Monitoring will be conducted by an
30 experienced and Federally permitted spotted owl surveyor. All Mexican spotted
31 owl disturbances will be documented in the CBP project reports. Corrective
32 actions will be developed and implemented in coordination with USFWS and
33 landowner and/or land management agencies, if effects are detected.
- 34 • CBP may conduct maintenance activities for facilities at any time; however, for
35 major work on roads or fences where significant amount of equipment will be
36 required, the September to February period is preferred.
- 37 • CBP will monitor affected Mexican spotted owl PACs annually for 3 years (field
38 seasons) from the date construction is completed and towers are fully
39 operational. CBP will develop an MOU with the landowners and/or land
40 management agencies to conduct spotted owl monitoring. Corrective actions
41 should be developed and implemented in coordination with USFWS and

1 landowner and/or land management agencies, if effects are detected. Corrective
2 actions may include road closures, fencing, gating, and/or site restoration.
3 Monitoring will be conducted by an experienced and Federally permitted spotted
4 owl surveyor.

- 5 • CBP will provide sufficient funds to close unauthorized roads and restore habitat
6 near affected Mexican spotted owl PACs in conjunction with USFS travel
7 management planning. For every road repaired or created within 0.25 mile of a
8 Mexican spotted owl PAC, CBP will close and/or restore the same length of road.
9 CBP will update maps showing where improved or new roads were completed.
10 CBP will complete a road closure/restoration plan. Mitigation will be completed
11 within three years of the completion of construction.

12 13 *Jaguar - Post Construction*

- 14 • CBP will complete a road closure/restoration plan for review and approval by
15 landowners and/or land management agencies and USFWS that:
 - 16 a) identifies and maps new roads where barriers will be placed to prevent public
17 access,
 - 18 b) identifies and maps unauthorized roads near potential jaguar movement
19 corridors,
 - 20 c) specifies that USFWS will use jaguar monitoring results to assist CBP in
21 determining which unauthorized roads to close,
 - 22 d) specifies potential road closure methods,
 - 23 e) specifies potential restoration methods for closed roads,
 - 24 f) includes a schedule for closure, and
 - 25 g) includes a schedule and content of annual reporting.
- 26 • CBP will prevent public access of new roads through, physical barriers, fencing,
27 etc., in combination with appropriate signage and in coordination with the
28 landowner and/or land management agencies. CBP will work with the land
29 management agencies to determine the best method to prevent public access on
30 new roads needing barriers. Blocking access will be achieved in a way that does
31 not increase the probability that unauthorized roads will be created nearby.
- 32 • CBP will close and/or restore unauthorized roads (if approved by landowner) in
33 or near jaguar movement corridors to help offset the increase in improved or new
34 roads at a ratio of 2:1 (i.e., 2 miles of road closed and/or restored for every 1 mile
35 of road created or repaired). This will require post construction quantification of
36 (a) the number of miles of roads repaired and created, and (b) the area of new
37 and repaired cut and fill. CBP will work with the land management agencies and
38 USFWS to identify unauthorized roads for closure and determine the method
39 most likely to prevent future access. Some road closures will require discing and
40 seeding (using native species), in addition to placement of barriers. Closures will

1 be achieved in a way that does not increase the probability that unauthorized
2 roads will be created nearby.

3

4 *Lesser long-nosed Bat - Project Planning/Documentation*

- 5 • CBP roads, fences, security zones, surveillance sites, staging areas including
6 tower sites, and other facilities that will require land clearing and have associated
7 noise and high intensity artificial light components, will be located at least one
8 mile from any known roost site or will be mitigated (see *Post Construction* below).
9 The location of the facility will not be located between roosts and known foraging
10 sites such that access between the two is compromised.
- 11 • CBP will avoid areas containing columnar cacti (saguaro [*Carnegieia gigantea*],
12 organ pipe [*Stenocereus thurberi*]) or agaves that provide the forage base for the
13 bat or will mitigate effects (see *Post Construction* below).
- 14 • During construction or maintenance activities in or within one mile of bat
15 maternity roosts or known summer roosts (or such distance that noise, light, or
16 other effects reach the habitat), a construction monitor with authority to halt
17 construction at any time the appropriate conservation BMPs are not being
18 properly implemented as agreed to will be present on site.

19

20 *Lesser long-nosed Bat - During Construction/Maintenance*

- 21 • Construction activities for towers, new roads, and road improvements that are
22 within one mile of a bat roost and occur between May 1 and September 30 will
23 be monitored by a qualified biologist. In some years, bats may arrive earlier and
24 leave later in the year than the May to September time frame. For maternity
25 roosts this will be March through August. For summer roosts, this will be July
26 through October. Any occurrences and/or disturbances of lesser long-nosed bats
27 will be documented and mitigated (see *Post Construction* below).
- 28 • CBP may perform maintenance activities for facilities at any time; however, for
29 major work on roads or fences where significant amount of equipment will be
30 required, the October to April period is the minimum period for avoidance.
- 31 • CBP will salvage and transplant agaves and columnar cacti. Agaves that have
32 flower stalks will not be salvaged/transplanted. A minimum of 12 to 18 inches of
33 agave and cacti roots will be salvaged. Prior to removal, CBP will mark the
34 orientation on each cactus to be transplanted. CBP will transplant columnar cacti
35 in the same orientation they were removed to increase probability of survival.
36 CBP will relocate plants at least 75 feet from the construction limits. CBP will not
37 plant agaves or columnar cacti in active wash channels. Plants will be watered
38 according to site conditions.
- 39 • CBP will count agaves and columnar cacti removed for construction and will
40 replace agaves and columnar cacti at a 2:1 ratio (for every plant removed, two
41 will be replaced).

1 *Lesser long-nosed Bat - Post Construction*

- 2 • CBP will conduct annual bat surveys at bat roosts within 1.0 mile of tower sites
3 for 2 years from the date towers are fully operational. CBP will compare results
4 with previous years' surveys. If negative effects of the Proposed Action are
5 documented, CBP will take corrective action (e.g. gating, signing, fencing) and
6 will continue to survey annually until negative effects are no longer detected.
7 Surveys will be conducted throughout the season by a lesser long-nosed bat
8 expert.

- 9 • CBP will monitor roosts within 1.0 mile of tower sites for direct or indirect effects
10 of the action for 2 years from the date towers are fully operational. CBP will
11 install Hobo data loggers in lesser long-nosed bat roosts most prone to human
12 use to detect changes in temperature, humidity, etc. CBP will take corrective
13 actions in coordination with USFWS and/or the landowners/land management
14 agencies if such effects are detected. This may include road closures, gating,
15 signing, fencing, etc.

- 16 • CBP will conduct a telemetry study to locate bat roosts and foraging areas used
17 by those bats found in the vicinity of towers. This study will be conducted for 5
18 years following tower construction (when towers are fully operational). If
19 occupied mines or caves are found within 1.0 mile of towers, they will be
20 monitored with Hobo data loggers. CBP will telemeter 15 bats per year in early
21 August and will track bats through mid October. CBP will telemeter up to five
22 bats at a time; transmitters have a 2 to 3 week lifespan. CBP will hire five field
23 biologists to conduct the study. The Patagonia Mountains is covered with
24 hundreds of abandoned mines that may be used by lesser long-nosed bats.
25 Tracking bats telemetered near towers in the Patagonia Mountains will determine
26 where these bats are foraging and roosting. If negative effects are found in
27 foraging or roosting areas as a result of this Proposed Action, CBP will take
28 corrective action. This may include road closures, gating, signing, fencing, etc.

- 29 • CBP will conduct monitoring to document and assess tower related mortality of
30 lesser long-nosed bats beginning once tower construction is completed and
31 continuing for 5 years after the towers are fully operational. Monitoring will
32 include systematic lesser long-nosed bat searches and use of radar, GPS,
33 infrared, thermal imagery, and/or acoustical monitoring equipment to assess and
34 verify bat movements and to gain information on the impacts of various tower
35 sizes, configurations, and lighting systems. If lesser long-nosed bat mortality is
36 documented at tower or wind turbine sites, CBP will: a) immediately notify
37 USFWS in writing, b) work with USFWS to develop site-specific measures to
38 reduce that mortality, and c) continue monitoring beyond the 5 years until
39 mortality is no longer occurring. Information gained from monitoring will be used
40 to develop tower retrofits to reduce lesser long-nosed bat mortality, if collisions
41 are documented. CBP will incorporate the bat mortality monitoring associated
42 with the Proposed Action into an annual report for a minimum of 5 years.

- 43 • Where improved or new roads may increase human use of bat roosts occupied
44 or potentially occupied by lesser long-nosed bats, CBP will prevent access

1 through gating, fencing, other physical barriers, etc. This includes the State of
2 Texas mine roost. Patagonia Mountains abandoned mines, and other lesser
3 long-nosed bat roosts. Close coordination with USFWS and landowners and/or
4 land management agencies will be necessary, as the design and season of
5 installation is critical to ensure bat gates benefit lesser long-nosed bats.

- 6 • CBP will water transplanted agave and columnar cacti if needed and according to
7 site conditions to ensure survival. CBP will monitor annually for survival for five
8 years and will replace dead or dying plants.
- 9 • CBP will replace agaves and columnar cacti removed for construction at a 2:1
10 ratio. CBP will work with landowners and/or land management agencies to
11 determine location for replacement plants. CBP will water plants according to site
12 conditions to ensure survival. CBP will monitor annually for survival for five
13 years and will replace dead or dying plants.

14

15 **5.8 WATER RESOURCES**

16

17 Standard construction procedures will be implemented to minimize potential for erosion
18 and sedimentation during construction. All work shall cease during heavy rains and
19 would not resume until conditions are suitable for the movement of equipment and
20 material. All fuels, waste oils, and solvents will be collected and stored in tanks or
21 drums within secondary containment areas consisting of an impervious floor and
22 bermed sidewalls capable of holding the volume of the largest container stored therein.
23 The refueling of machinery will be completed following accepted guidelines, and all
24 vehicles will have drip pans during storage to contain minor spills and drips. No
25 refueling or storage will take place within 100 feet of drainages.

26

27 A Construction Stormwater General Permit will be obtained prior to construction, and
28 this would require approval of a site-specific SWPPP and NOI. A site-specific SPCCP
29 will also be in place prior to the start of construction. Other environmental design
30 measures will be implemented such as straw bales, silt fencing, aggregate materials,
31 wetting compounds, and re-vegetation with native plant species, where possible, to
32 decrease erosion and sedimentation.

33

34 Prior to the start of construction activities, the construction contractor will review the
35 most up-to-date version of the ADEQ 305(b) and 303(d) report. Additionally, road repair

1 or improvement activities in wash or drainage crossings will not impede the flow of
2 affected water courses.

3

4 **5.9 CULTURAL RESOURCES**

5

6 Should any archaeological artifacts be found during construction, notify the appropriate
7 land management archaeologist immediately. All work in the area will cease until an
8 evaluation of the discovery is made by the authorized officer to determine appropriate
9 actions to prevent the loss of significant cultural or scientific values.

10

11 **5.10 AIR QUALITY**

12

13 Mitigation measures will be incorporated to ensure that fugitive dust and other air quality
14 constituents emission levels do not rise above the minimum threshold as required per
15 40 CFR 51.853(b)(1). Measures will include dust suppression methods such as road
16 watering to minimize airborne particulate matter created during construction activities.
17 Standard construction BMPs such as routine watering of construction sites as well as
18 access roads to the site will be used to control fugitive dust and thereby assist in limiting
19 potential PM-10 excursions during the construction phase of the proposed project.
20 Additionally, all construction equipment and vehicles will be required to be maintained in
21 good operating condition to minimize exhaust emissions.

22

23 **5.11 NOISE**

24

25 During the construction phase, short-term noise impacts are anticipated. All applicable
26 Occupational Safety and Health Administration regulations and requirements will be
27 followed. On-site activities would be restricted to daylight hours to the greatest extent
28 practicable although night-time construction could occur if the construction schedule
29 requires it. Construction equipment will possess properly working mufflers and would
30 be kept properly tuned to reduce backfires. Implementation of these measures will

1 reduce the expected short-term noise impacts to an insignificant level in and around
2 tower construction sites.

3

4 **5.12 HAZARDOUS MATERIALS**

5

6 BMPs will be implemented as standard operating procedures during all construction
7 activities, and will include proper handling, storage, and/or disposal of hazardous and/or
8 regulated materials. To minimize potential impacts from hazardous and regulated
9 materials, all fuels, waste oils and solvents will be collected and stored in tanks or
10 drums within a secondary containment system that consists of an impervious floor and
11 bermed sidewalls capable of containing the volume of the largest container stored
12 therein. The refueling of machinery will be completed in accordance with accepted
13 industry and regulatory guidelines, and all vehicles will have drip pans during storage to
14 contain minor spills and drips. Although it is unlikely that a major spill would occur, any
15 spill of reportable quantities will be contained immediately within an earthen dike, and
16 the application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb
17 and contain the spill. To ensure oil pollution prevention, a SPCCP will be in place prior
18 to the start of construction activities and all personnel will be briefed on the
19 implementation and responsibilities of this plan as is typical in CBP/SBI projects. All
20 spills will be reported to the designated CBP point of contact for the project.
21 Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302
22 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate
23 Federal and state agencies.

24

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

29

30 Solid waste receptacles will be maintained at construction staging areas. Non-
31 hazardous solid waste (trash and waste construction materials) will be collected and

1 deposited in on-site receptacles. Solid waste will be collected and disposed of by a
2 local waste disposal contractor.

3

4 Avoid contamination of ground and surface waters by storing concrete wash water, and
5 any water that has been contaminated with construction materials, oils, equipment
6 residue, etc., in closed containers on-site until removed for disposal. This wash water is
7 toxic to wildlife. Storage tanks must have proper air space (to avoid rainfall-induced
8 overtopping), be on-ground containers, and be located in upland areas instead of
9 washes.

10

11 Disposal of used batteries or other small quantities of hazardous waste will be handled,
12 managed, maintained, stored, and disposed of in accordance with applicable Federal
13 and state rules and regulations for the management, storage, and disposal of
14 hazardous materials, hazardous waste and universal waste. Additionally, to the extent
15 practicable, all batteries will be recycled, locally.

16

17 Where handling of hazardous and regulated materials does occur, CBP will collect and
18 store all fuels, waste oils and solvents in clearly labeled tanks or drums within a
19 secondary containment system that consists of an impervious floor and bermed
20 sidewalls capable of containing the volume of the largest container stored therein.

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SECTION 7.0
ACRONYMS AND ABBREVIATIONS

1 **7.0 ACRONYMS AND ABBREVIATIONS**

2

3	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter of air
4	ADEQ	Arizona Department of Environmental Quality
5	ADOT	Arizona Department of Transportation
6	ADWR	Arizona Department of Water Resources
7	AGFD	Arizona Game and Fish Department
8	AMA	Active Management Area
9	AOR	area of responsibility
10	APE	Area of Potential Effect
11	ASM	Arizona State Museum
12	ASTL	Arizona State Trust Lands
13	bgs	below ground surface
14	BLM	Bureau of Land Management
15	BMGR	Barry M. Goldwater Range
16	BMP	best management practices
17	BO	Biological Opinion
18	CBP	U.S. Customs and Border Protection
19	CBV	cross border violator
20	CEQ	Council on Environmental Quality
21	CERCLIS	Comprehensive Environmental Response, Compensation, and Liability
22		Information System
23	CFR	Code of Federal Regulations
24	CNF	Coronado National Forest
25	COP	Common Operating Picture
26	CPNWR	Cabeza Prieta National Wildlife Refuge
27	CTIMR	Comprehensive Tactical Infrastructure Maintenance and Repair
28	CWA	Clean Water Act
29	dB	decibel
30	dBA	A-weighted decibel
31	DHS	Department of Homeland Security
32	DOI	Department of Interior
33	EA	Environmental Assessment
34	EMF	electromagnetic field
35	EMA	Ecosystem Management Area
36	EO	Executive Order
37	ESA	Endangered Species Act
38	FAA	Federal Aviation Administration
39	FCC	Federal Communications Commission
40	FEMA	Federal Emergency Management Agency
41	FONSI	Finding of No Significant Impact
42	FR	Federal Register
43	GHz	gigaHertz
44	GIS	Geographic Information System

1	GPS	Global Positioning Service
2	GSRC	Gulf South Research Corporation
3	IA	illegal alien
4	INS	Immigration and Naturalization Service
5	JTF-6	Joint Task Force-Six
6	kW	Kilowatt
7	MOU	Memorandum of Understanding
8	MPE	Maximum Permissible Exposure
9	mph	miles per hour
10	NAAQS	National Ambient Air Quality Standards
11	NEPA	National Environmental Policy Act
12	NCRP	National Council of Radiation Protection and Measurements
13	NHPA	National Historic Preservation Act
14	NOx	Nitrous Oxides
15	NOA	Notice of Availability
16	NOI	Notice of Intent
17	NPL	National Priorities List
18	NRCS	Natural Resource Conservation Service
19	NRHP	National Register of Historic Places
20	NTIA	National Telecommunications and Information Administration
21	NWP	Nationwide Permit
22	OBP	Office of Border Patrol
23	PAC	Protected Activity Center
24	PCPI	per capita personal income
25	PM-10	particulate matter measuring less than 10 microns
26	POE	port of entry
27	POL	petroleum, oil, and lubricants
28	PVB	permanent vehicle barrier
29	RDT	rapidly deployed tower
30	RF	radio frequency
31	ROI	region of influence
32	ROW	right-of-way
33	RRVS	radar and remote video system
34	Santa Cruz	Santa Cruz-Rio Magdalena-Rio Sonoyta
35	SBI	Secure Border Initiative
36	SCS	Soil Conservation Service
37	SEA	Supplemental Environmental Assessment
38	SHPO	State Historic Preservation Office
39	SO ₂	sulfur dioxide
40	SPCCP	Spill Prevention Control and Countermeasure Plan
41	SST	self standing tower
42	SWMP	stormwater management plan
43	SWPPP	Stormwater Pollution Prevention Plan
44	TI	tactical infrastructure
45	U.S.	United States
46	U.S.C.	U.S. Code

1	USACE	U.S. Army Corps of Engineers
2	USBP	U.S. Border Patrol
3	USDA	U.S. Department of Agriculture
4	USEPA	U.S. Environmental Protection Agency
5	USFS	U.S. Forest Service
6	USFWS	U.S. Fish and Wildlife Service
7	USGS	U.S. Geological Survey
8	USIBWC	U.S. Section, International Boundary and Water Commission
9	VF 300	Vehicle Fence 300
10	v/m	Volts per meter
11	WUS	waters of the U.S.
12	WSC	wildlife of special concern

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SECTION 8.0
LIST OF PREPARERS

8.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Patience E. Patterson, RPA	Customs and Border Protection, SBI/Net	Archaeology	30 years professional archaeologist/cultural resource and NEPA manager	EA review
Suna Adam Knaus	Gulf South Research Corporation	Forestry/Wildlife	20 years of natural resources studies and NEPA	EA review
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	32 years EA/EIS studies	EA review
Eric Webb, PhD	Gulf South Research Corporation	Wetland Ecology	17 years of natural resources study and NEPA compliance	EA review
Howard Nass	Gulf South Research Corporation	Forestry/Wildlife	19 years of natural resources studies and NEPA	Project Manager (EA preparation and review)
Shanna McCarty	Gulf South Research Corporation	Forestry	3 years natural resource studies, 2 years NEPA	Co-project Manager (EA preparation: Socioeconomics, Aesthetics, Land Use and review)
Denise Rousseau Ford	Gulf South Research Corporation	Environmental Engineering	Over 15 years of environmental experience	Hazardous Waste
John Lindemuth	Gulf South Research Corporation	Archaeology	16 years professional archaeologist/cultural resources	EA preparation (Cultural Resources)
Steve Kolian	Gulf South Research Corporation	Environmental Studies	10 years experience environmental science	EA preparation (Noise, Water Resources, Floodplains, Air Quality, Roadways and Traffic)
Maria Bernard Reid	Gulf South Research Corporation	Environmental Studies	5 years NEPA and natural resources	EA review
Greg Lacy	Gulf South Research Corporation	Biology/Wildlife	10 years NEPA and natural resources	EA preparation (Soils, Vegetation, Wildlife, and Protected Species) and biological surveys
Chris Cothron	Gulf South Research Corporation	GIS/graphics	3 years GIS/graphics experience	GIS/graphics

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APPENDIX A
CORRESPONDENCE



Comment Response Matrix
Draft Supplemental Environmental Assessment
For the Proposed SBInet Tucson West Tower Project
U.S. Border Patrol, Tucson Sector

#	Comment	Reviewer	Response
1	We have communicated with representatives from the Department of Security (DHS), Customs and Border Patrol (CBP), and SBInet several times over the course of the last year to raise awareness of the potential impact of their proposed facilities on the research enabled by our observatories. We have appreciated the willingness of CBP and DHS staff to meet with us in the past and look forward to further meetings. See Appendix 2 for references to past meetings.	NOAO	SBInet appreciates your participation in the planning of this project.
2	During previous meetings with CBP and DHS personnel, we have discussed useful strategies to minimize the adverse impact of artificial light at night on astronomy. We are pleased to see that the draft EA (under section 2.3, Proposed Action, p. 27, lines 3-5) cites lighting guidelines that indirectly address these issues. We feel the lighting associated with proposed towers during their construction, operation, and maintenance should be assessed for its impact on astronomy activities. An analysis should be based on the proximity and line of sight of individual towers to specific telescopes and arrays used for astronomy.	NOAO	<p>None of the towers proposed require lighting to meet FAA regulations and all proposed lighting would follow USFWS (2000) <i>guidance Siting, Construction, Operation and Decommissioning of Communications Towers</i> to reduce night-time atmospheric lighting and the potential adverse effects of night-time lighting to migratory and nocturnal flying species.</p> <p>Although we did not explicitly address lighting with regards to the astronomical observatories we feel that by following similar practices to limit night-time atmospheric lighting for birds would also in turn limit artificial lighting impact on the observatories. Additionally, when lighting is required for CBP operational needs, such as the installation of infrared lighting, or for CBP security purposes, then tower perimeter lighting would: utilize low sodium bulbs, not illuminate outside the footprint of the tower site, and when possible, be activated by motion detectors. Through the implementation of these USFWS guidelines through the use of the lighting measures mentioned above, SBInet believes this would also mitigate any possible effects on the observatories from artificial lighting (Section 2.3).</p>
3	The placement of towers and associated activity by CBP could channel illegal border traffic closer to our observatory sites. A resultant impact that is not assessed in the draft EA is the potential for CBP search vehicles and aircraft to illuminate areas and inadvertently damage or destroy sensitive observatory detectors or observations. (See Appendix 3 for a recent example.) This issue was discussed during the October 22, 2007 visit to our observatories by Frank Woelfle and colleagues from DHS but does not appear in the draft EA.	NOAO	The Tucson West SEA does not include analysis of any search and rescue vehicles but only tower installation and maintenance; however, we understand your concerns with the movement of illegal traffic and the proposed tower sites. Although we acknowledge that there could be indirect impacts on the observatories from illegal traffic attempting to avoid the proposed tower sites, CBP cannot predict where the shift in illegal traffic may occur. However, the overall Common Operating Picture (COP) would provide greater response time and flexibility in deploying CBP agents to most of the areas in the Tucson Sector western region where the observatories are concentrated.

Comment Response Matrix
Draft Supplemental Environmental Assessment
For the Proposed SBInet Tucson West Tower Project
U.S. Border Patrol, Tucson Sector

#	Comment	Reviewer	Response
4	When towers are located near observatories (within a few miles), radio transmissions can impact optical as well as radio telescopes since they can affect electronic circuits that read signals from sensitive detectors used for astronomy. The EA should identify this issue as it relates to additionally planned towers (e.g. those on the Tohono O’odham Nation) if their proposed locations are near observatories. One tower is within the Mt. Hopkins observatory site. Frequencies, transmitter power, antenna geometry, and beam patterns should be assessed to calculate the effect on observatory equipment.	NOAO	Radio Frequency emissions will be limited as specified by the National Telecommunications and Information Administration (NTIA) frequency assignments. SBInet will communicate frequency assignments with the National Optical Astronomy Observatory/NSF through the NTIA process.
5	The draft EA does not identify and assess the possibility of inadvertent radio frequency interference (RFI) to radio astronomy equipment at the National Science Foundation/National Radio Astronomy Observatory (NSF/NRAO) Very Long Baseline Array site at Kitt Peak (VLBA-KP), or at the Arizona Radio Observatory sites (ARO) on Mount Graham and Kitt Peak. Due to their concern, the NSF/NRAO initiated extensive discussions with Frank Woelfle of DHS and Phil Smith, the SBInet Chief Engineer in August of 2007 (Ref. Appendix 2). A detailed propagation analysis of the radar, motion-sensing equipment, and data transmission links to be used on-site during normal operations would determine possible interference. (See Appendix 4 for an example.) We feel that the NSF should be included in this process.	NOAO	Transmitters and sensors will operate below 30 GHz and all frequencies will be coordinated through the NTIA as required by regulation. As part of the overall spectrum management process, the NTIA and the Federal Communications Commission (FCC) have developed radio regulations to help ensure that the various radio services operate compatibly in the same environment without unacceptable levels of radio frequency interference and emissions.
6	We have received and reviewed the information regarding the Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations Area of Responsibilities, U.S. Border Patrol Tucson Sector, Arizona, and we’ve determined the proposed actions <i>will not have an effect</i> on the White Mountain Apache tribe’s Cultural Heritage Resources and/or historic properties and that Alternative 1 would be appropriate selection for the project. The project may proceed with the understanding that any ground disturbance should be monitored <i>if</i> there are reasons to believe that human remains and/or funerary objects are present, if such remains and/or objects are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.	White Mountain Apache Tribe Heritage Program	SBInet appreciates your participation in the planning of this project.

Comment Response Matrix
Draft Supplemental Environmental Assessment
For the Proposed SBInet Tucson West Tower Project
U.S. Border Patrol, Tucson Sector

#	Comment	Reviewer	Response
7	Thank you for the opportunity to comment on the Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the U.S. Customs and Border Protection's project to construct, operate, and maintain three new sensor towers, as part of the communications network in support of the SBInet Tucson West common operating picture. The Arizona Department of Environmental Quality, Water Quality Division (ADEQ) appreciates the opportunity to assist in the review of this project. After reviewing the SEA, ADEQ does not see an environmental impact related to water that the SEA did not address.	AZ Department of Environmental Quality	SBInet appreciates your participation in the planning of this project.

White Mountain Apache Tribe Heritage Program
PO Box 507 Fort Apache,AZ 85926
1 (928) 338-3033 Fax: (928) 338-6055

To: NGLSONSEA U.S. Department of Homeland Security / Customs and Border Protection
Date: November 25, 2009
Project: Proposed SBInet Tucson West Tower Project, Nogales & Sonoita Stations, Tucson Sector

.....

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated November 13, 2009. In regards to this, please attend to the checked items below.

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

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

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

We have received and reviewed the information regarding the Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations Area of Responsibilities, U.S. Border Patrol Tucson Sector, Arizona, and we've determined the proposed actions **will not have an effect** on the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties and that **Alternative 1** would be appropriate selection for the project. The project may proceed with the understanding that any ground disturbance should be monitored **if** there are reasons to believe that human remains and/or funerary objects are present, if such remains and/or objects are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

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

Sincerely,

Mark T. Altaha
White Mountain Apache Tribe
Historic Preservation Officer
Email: markaltaha@wmat.nsn.us



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

December 8, 2009

Ms. Patience E. Patterson, RPA
U.S. Department of Homeland Security
U.S. Customs and Border Protection
SBInet Program Management Office
1901 S. Bell Street, Room 7-090
Arlington, VA 22202

SENT VIA E-MAIL: NGLSONSEAccomments@cbp.dhs.gov

Re: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for SBInet Tucson West Tower Project

Dear Ms. Patterson:

Thank you for the opportunity to comment on the Draft Supplemental Environmental Assessment (SEA) and Proposed Finding of No Significant Impact for the U.S. Customs and Border Protection's project to construct, operate, and maintain three new sensor towers, as part of the communications network in support of the SBInet Tucson West common operating picture. The Arizona Department of Environmental Quality, Water Quality Division (ADEQ) appreciates the opportunity to assist in the review of this project. After reviewing the SEA, ADEQ does not see an environmental impact related to water that the SEA did not address.

If you need further information, please contact Wendy LeStarge of my staff at (602) 771-4836 or via e-mail at w11@azdeq.gov, or myself at (602) 771-4416 or via e-mail at lc1@azdeq.gov.

Sincerely,

Linda Taunt, Deputy Director
Water Quality Division

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

BW1 FOIA CBP 006298



Buell T. Jannuzi, Director
Kitt Peak National Observatory
950 N. Cherry Ave., P.O. Box 26732
Tucson, AZ 85726-6732
Ph: 520-318-8353
Fax: 520-318-8487
jannuzi@noao.edu

National Optical Astronomy Observatory

Kitt Peak National Observatory • Cerro Tololo Inter-American Observatory • NOAO Gemini Science Center

June 30, 2008

Ms. Patience E. Patterson, RPA
U.S. Department of Homeland Security
SBInet Program Management Office
U.S. Customs and Border Protection, Headquarters
1300 Pennsylvania Avenue, NW, Room 7.5B
Washington, D.C. 20229

Dear Ms. Patterson,

In response to the Tucson West Draft Environmental Assessment (EA) and Proposed FONSI, the following comments are submitted on behalf of numerous astronomical observatories in the area affected by the proposed Tucson West Project. (See Appendix 1 for a list of institutions.) The premier astronomy observatories in the continental USA are in Arizona, California, New Mexico, and Texas. They represent a substantial investment by our federal and state governments as well as private enterprises and are a key component of our nation's research infrastructure. The Arizona Arts, Sciences, and Technology Academy recently published an economic impact report citing that by the end of 2006, investment in capital facilities and land in Arizona for astronomy, planetary and space sciences (APSS) had reached well over \$1 billion and that in 2006, APSS research returned a total economic impact of well over \$250 million in Arizona alone (Ref. <http://www.simginc.com/AASTA/>).

We are concerned about the potential for harm to our optical and radio astronomy observations and loss of value from that considerable investment because of SBInet-produced artificial light at night, degraded air quality, and radio emissions. The SBInet radio emissions could cause direct interference with the instruments of both radio and optical telescopes due to the proximity of SBInet towers to our facilities. We feel that the EA is incomplete without addressing these previously communicated concerns.

Our submission identifies issues that we feel still need to be addressed.

We have communicated with representatives from the Department of Homeland Security (DHS), Customs and Border Patrol (CBP), and SBInet several times over

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BW1 FOIA CBP 006299

the course of the last year to raise awareness of the potential impact of their proposed facilities on the research enabled by our observatories. We have appreciated the willingness of CBP and DHS staff to meet with us in the past and look forward to further meetings. See Appendix 2 for references to past meetings.

During previous meetings with CBP and DHS personnel, we have discussed useful strategies to minimize the adverse impact of artificial light at night on astronomy. We are pleased to see that the draft EA (under section 2.3, Proposed Action, p. 27, lines 3-5) cites lighting guidelines that indirectly address these issues. We feel the lighting associated with proposed towers during their construction, operation, and maintenance should be assessed for its impact on astronomy activities. An analysis should be based on the proximity and line of sight of individual towers to specific telescopes and arrays used for astronomy.

The placement of towers and associated activity by CBP could channel illegal border traffic closer to our observatory sites. A resultant impact that is not assessed in the draft EA is the potential for CBP search vehicles and aircraft to illuminate areas and inadvertently damage or destroy sensitive observatory detectors or observations. (See Appendix 3 for a recent example.) This issue was discussed during the October 22, 2007 visit to our observatories by Frank Woelfle and colleagues from DHS but does not appear in the draft EA.

When towers are located near observatories (within a few miles), radio transmissions can impact optical as well as radio telescopes since they can affect electronic circuits that read signals from sensitive detectors used for astronomy. The EA should identify this issue as it relates to additionally planned towers (e.g. those on the Tohono O'odham Nation) if their proposed locations are near observatories. One tower is within the Mt. Hopkins observatory site. Frequencies, transmitter power, antenna geometry, and beam patterns should be assessed to calculate the effect on observatory equipment.

The draft EA does not identify and assess the possibility of inadvertent radio frequency interference (RFI) to radio astronomy equipment at the National Science Foundation/National Radio Astronomy Observatory (NSF/NRAO) Very Long Baseline Array site at Kitt Peak (VLBA-KP), or at the Arizona Radio Observatory sites (ARO) on Mount Graham and Kitt Peak. Due to their concern, the NSF/NRAO initiated extensive discussions with Frank Woelfle of DHS and Phil Smith, the *SBI*net Chief Engineer in August of 2007 (Ref. Appendix 2). A detailed propagation analysis of the radar, motion-sensing equipment, and data transmission links to be used on-site during normal operations would determine possible interference. (See Appendix 4 for an example.) We feel that the NSF should be included in this process.

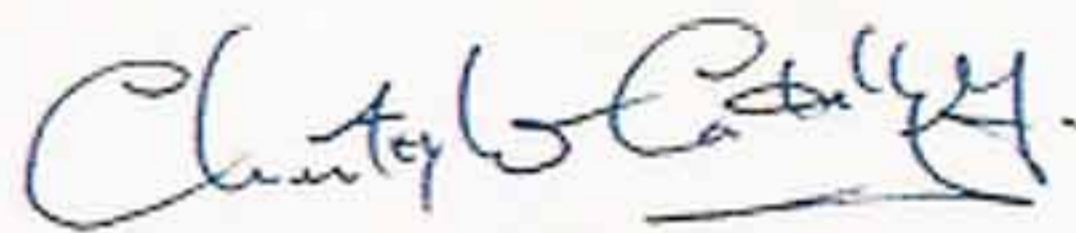
Our observatories have extensive experience working with our neighbors to address lighting and radio frequency interference issues. We offer our assistance

in assessing the issues, but are extremely concerned that they are not identified and assessed as necessary in the current Tucson West Draft Environmental Assessment (EA) and Proposed FONSI. Buell Jannuzi (contact information at the top of this letter) will serve as the single point of contact for questions or comments based on this submission.

Sincerely,



Buell T. Jannuzi, Director
Kitt Peak National Observatory



Christopher J. Corbally, S.J.
Vice Director, Vatican Observatory



Emilio E. Falco, Project Head
Fred Lawrence Whipple Observatory



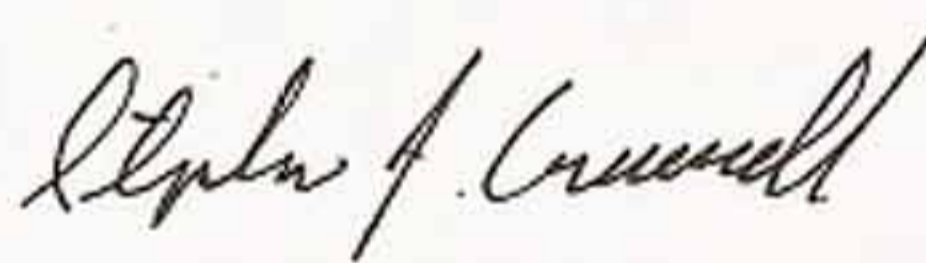
Jeffrey S. Kingsley
Associate Director
Steward Observatory
The University of Arizona



Robert L. Dickman
Assistant Director for New Mexico Operations
National Radio Astronomy Observatory
(VLA/VLBA)



Faith Vilas, Director
MMT Observatory



Stephen J. Criswell, Project Manager
VERITAS



Richard F. Green, Director
Large Binocular Telescope Observatory

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Appendix 1

Observatories on Kitt Peak

National Optical Astronomy Observatory / Kitt Peak National Observatory and National Solar Observatory

Both are operated by the Association of Universities for Research in Astronomy, Inc. under cooperative agreement with the National Science Foundation.

NOAO telescopes include: 4-meter Mayall, 2.1-meter, 0.9-meter Coude Feed

NSO telescopes include: 1.6-meter McMath-Pierce Solar telescope, 2x 0.9-meter east and west auxiliaries, and the SOLIS (Synoptic Optical Long-term Investigations of the Sun) facility

Public outreach telescopes include: 2x 0.4-meters, 0.5-meter, 0.1-meter Solar telescope

National Radio Astronomy Observatory (25-m Very Long Baseline Array)

A facility of the National Science Foundation operated under cooperative agreement by Associated Universities, Inc.

Burrell-Schmidt Telescope, CWRU (0.6-meter)

Case Western Reserve University, Cleveland, OH

Calypso Observatory, Edgar O. Smith (1.2-meter)

Private observatory founded in 1992

Michigan/Dartmouth/MIT Observatory (1.3-meter and 2.4-meter)

The consortium includes the University of Michigan, Dartmouth College, the Ohio State University, Columbia University, and Ohio University.

RCT (1.3-meter Robotically Controlled Telescope)

Consortium universities and research institutions are The Planetary Science Institute, Western Kentucky University, South Carolina State University, Villanova University, and Fayetteville State University.

Southeastern Association for Research in Astronomy (0.9-meter)

The consortium includes Florida Institute of Technology, East Tennessee State University, Florida International University, University of Georgia, Valdosta State University, Clemson University, Ball State University, Agnes Scott College, University of Alabama, and Valparaiso University.

ARO (Arizona Radio Observatory) 12-meter Telescope

Spacewatch (1.8-meter and 0.9-meter) Telescopes

Bok (2.3-meter) Telescope

University of Arizona, Arizona State University, Northern Arizona University (ARO includes the Academia Sinica Institute of Astronomy and Astrophysics.)

WIYN Observatory (3.5-meter)

The consortium includes the University of Wisconsin, Indiana University, Yale University, and the National Optical Astronomy Observatory.

WIYN Observatory (0.9-meter)

The consortium includes the University of Wisconsin (Madison, Oshkosh, Stevens Point, Whitewater), Indiana University, Bowling Green State University, Wesleyan University, University of Florida, San Francisco State University, and the Wisconsin Space Grant Consortium.

Observatories on Mt. Hopkins

Fred Lawrence Whipple Observatory, operated by the Smithsonian Astrophysical Observatory, has the following facilities.

MMT 6.5-meter

A joint facility of the Smithsonian Astrophysical Observatory, the University of Arizona, Arizona State University, and Northern Arizona University.

1.5-meter Tillinghast telescope

1.2-meter telescope

PAIRITEL (Peters Automated IR Imaging Telescope) 1.3-meter

VERITAS (Very Energetic Radiation Imaging Telescope Array System)

Member institutions include the Smithsonian Astrophysical Observatory, Purdue University, Iowa State University, Washington University in St. Louis, University of Chicago, University of Utah, University of California, Los Angeles, McGill University, University College Dublin, University of Leeds, Adler Planetarium, Argonne National Lab, Barnard College, DePauw University, Grinnell College, University of California, Santa Cruz, University of Iowa, University of Massachusetts, Cork Institute of Technology, Galway-Mayo Institute of Technology, National University of Ireland, Galway, and the University of Delaware/Bartol Research Institute.

HAT (Hungarian Automated Telescope) network of telescopes

Operated by the Harvard-Smithsonian Center for Astrophysics

Observatories on Mt. Graham

The Mount Graham International Observatory, operated by the University of Arizona, has the following facilities.

The Vatican Observatory (1.8-meter Alice P. Lennon Telescope)

Large Binocular Telescope Observatory (2x 8.4-meter telescope)

The consortium includes the University of Arizona, Arizona State University, Northern Arizona University, Istituto Nazionale di Astrofisica, Osservatorio Astrofisico di Arcetri (Florence), Osservatorio Astronomico di Bologna, Osservatorio Astronomico di Roma, Osservatorio Astronomico di Padova, Osservatorio Astronomico di Brera (Milan), Max-Planck-Institut für Astronomie (Heidelberg, Landessternwarte), Astrophysikalisches Institut Potsdam, Max-Planck-Institut für Extraterrestrische Physik (Munich), Max-Planck-Institut für Radioastronomie (Bonn), the Ohio State University, and Research Corporation (on behalf of the Ohio State University, University of Notre Dame, University of Minnesota, and University of Virginia).

Arizona Radio Observatory (ARO) – 10-meter Heinrich Hertz Submillimeter Telescope

University of Arizona, Arizona State University, Northern Arizona University
(ARO includes the Academia Sinica Institute of Astronomy and Astrophysics.)

Observatories in the Catalinas

1.6-meter Kuiper Telescope

1.5-meter NASA Telescope

1.5-meter Mount Lemmon Observing Facility Telescope

0.4-meter Schmidt Camera

University of Arizona, Arizona State University, Northern Arizona University

The Korean Astronomy and Space Science Institute 1-meter Telescope

University of Minnesota 1.5-meter Telescope

Public outreach telescopes include: 1.0-meter telescope

Appendix 2

Partial List of related meetings / communications

1. A series of email communications were initiated by Dan Brocious on behalf of numerous southern Arizona observatories to make SBI personnel aware of our concerns about potential adverse effects on astronomy research activities.
 - a. From: Dan Brocious [<mailto:brocious@carpincho.sao.arizona.edu>]
Sent: Wednesday, April 11, 2007 4:07 PM
To: Giddens, Gregory
Subject: SBI effects on research sites
[This email outlined the issues. Mr. Giddens referred us to Mr. Smith.]
 - b. From: "Dan Brocious" <brocious@carpincho.sao.arizona.edu>
To: Charles.P.Smith2@cbp.dhs.gov
Received: 4/24/2007 2:50:58 PM
Subject: SBI effects on research sites
 - c. From: Dan Mertely dmertely@oc.nrao.edu,
To: dfinley@nrao.edu, CHARLES.P.Smith@dhs.gov
Date: Fri, 11 May 2007 10:23:53 -0600
Subject: RE: Secure Border Initiative effects on research sites,

2. 19 June 2007, at Fred Lawrence Whipple Observatory offices
Meeting with observatory personnel associated with Mt. Hopkins and Tucson Sector Customs and Border Patrol agents (Lisa Reed - Community Relations Officer, John Fitzpatrick - Assistant Chief Patrol Agent, Tucson Sector, and Chris Petrazack - Nogales Station agent)

3. 23 July 2007, at National Optical Astronomy Observatory headquarters
Meeting with observatory personnel associated with Kitt Peak and Tucson Sector Customs and Border Patrol agents (Lisa Reed- Community Relations Officer and six additional specialists in attendance to answer specific questions)

4. 17 July 2007, Holiday Inn Palo Verde, Tucson, AZ
Public Scoping Meeting for the siting, construction, and operation of a technology-based border security system along a portion of the international border in eastern Arizona.
Attended by observatory personnel representing the Fred Lawrence Whipple Observatory (Mt. Hopkins), the National Optical Astronomy Observatory/Kitt Peak National Observatory, the Mount Graham International Observatory, and the University of Arizona observatories.

5. 22 October 2007, Visit to Mt. Hopkins facilities
Frank J. Woelfle (CBP/DHS) and colleagues meeting with observatory personnel representing Fred Lawrence Whipple Observatory (Mt. Hopkins), the Mount Graham International Observatory, and the National Optical Astronomy Observatory/Kitt Peak National Observatory

Appendix 3

VERITAS is a major, new gamma-ray observatory with an array of four 12-m diameter, optical reflectors located adjacent to the Fred Lawrence Whipple Observatory's offices at the base of Mt. Hopkins. During its first year of operation, VERITAS is already seeing an increase in CBP agent enforcement activity. If all four VERITAS cameras were overloaded by a helicopter or truck-mounted searchlight, the replacement of the array's cameras would be \$800,000. Each night of observing lost to such damage would cost the collaboration about \$10,000. Helicopter flights over the VERITAS array prompted a meeting by observatory personnel with local CBP agents on June 19, 2007. The same flight illuminated the summit and interrupted observing at the telescopes there as well.

Appendix 4 Propagation analysis example

Subject: Re: SBInet EA review: NRAO, ref VLBA-KP RA site
Date: Tue, 17 Jun 2008 14:52:48 -0600
From: Dan Mertely <dmertely@ao.nrao.edu>
Organization: NRAO
To: Elizabeth Alvarez del Castillo ealvarez@noao.edu

...

I have reviewed the information ... and have the following comments and concerns relating to RF protection of the NSF/NRAO VLBA site at Kitt Peak (VLBA-KP).

... no detailed information is provided in the EA on spectrum usage, so detailed propagation analyses cannot be performed...

As hypothetical examples, Longley-Rice propagation analyses were performed using approximate Latitude and Longitude values for 2 towers (TCA-TUS-103, TCA-TUS-035), at a harmonic of a common federal 2-way communications band (406 - 420 MHz). The latitude and longitude of the two towers were estimated graphically from the maps included in the EA. The results showed the existence of line-of-sight (LOS) propagation from either of the two proposed sites and the VLBA-KP station. Making engineering assumptions as to the power levels and height of any antenna used with a UHF repeater base station on the tower, one finds likely interference to 1665 MHz OH- observing (x4 harmonic of the federal 2-way band) at levels from 11 to 31 dB over the ITU-R-RA.769 recommended levels for VLBI observing at 1665 MHz. Even assuming only mobile radio units in the same band (ground level, 4 W power output), harmonic RFI over the ITU-R-RA.769 recommended levels is still likely.

The above is just one example of the potential for RFI to the VLBA-KP station during construction, and perhaps maintenance. Many other possible RFI situations at primary or harmonic frequencies of SBInet tower equipment exist. Lack of information in the EA prevents the analysis of possible interference due to radar, motion-sensing, and data transmission links that would be expected to be used on-site during normal operations.

As a result, I would strongly urge the DHS and SBInet planning and engineering project teams to coordinate any and all proposed RF devices planned for each tower with the NSF and NRAO. We are available for detailed RFI analyses once information on site spectrum usage is forwarded, or included in an addendum to the draft EA.

Sincerely;
-Mert

~~~~~

Daniel J. (Mert) Mertely  
National Radio Astronomy Observatory  
Interference Protection Office Engineer  
P.O. Box o  
Socorro, NM 87801  
(505) 835-7128  
[dmertely@nrao.edu](mailto:dmertely@nrao.edu)  
[nrao-rfi@nrao.edu](mailto:nrao-rfi@nrao.edu)

## NOTICE OF AVAILABILITY

### DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED *SBI*net TUCSON WEST TOWER PROJECT, NOGALES AND SONOITA STATIONS' AREAS OF RESPONSIBILITY, U.S. BORDER PATROL, TUCSON SECTOR

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the *SBI*net Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 *et seq.*, CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers, and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the *SBI*net Tucson West Tower Project, is the Nogales and Sonoita Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500–1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link *SBI NEPA Documents for Public Review and Comment*. Additionally, copies will be available in the following libraries for public review:

Nogales-Rochlin Public Library, 518 North Grand Avenue, Nogales, Arizona 85621 (520) 287-3343  
Sierra Vista Library, 2600 E. Tacoma Street, Sierra Vista, Arizona 85635 (520) 458-4225  
Sonoita Community Library, 3147 State Highway 83, Sonoita, Arizona 85637 (520) 455-5517  
Pima County Public Library, 17050 W. Arivaca Rd., Arivaca, Arizona 85701 (520) 594-5600

Pursuant to the NEPA regulations, CBP invites public participation in the NEPA process. The public may participate by reviewing and submitting comments on the draft SEA and proposed FONSI. The public may submit comments by one of three methods described below. CBP will consider all applicable and pertinent comments submitted during the public comment period, and subsequently will prepare the final SEA. CBP will announce the availability of the final EA and FONSI.

Comments on the draft SEA and proposed FONSI should be received no later than December 21, 2009. Please use only one of the following methods:

- (1) By Email to: [NGLSONSEAComments@cbp.dhs.gov](mailto:NGLSONSEAComments@cbp.dhs.gov)
- (2) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, *SBI*net Program Management, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 22202
- (3) By fax to: (571) 468-7390 (Attention: Ms. Patience E. Patterson)

When submitting comments, please include your name and address, and identify your comments as being for the *SBI*net Tucson West Tower Project draft SEA. To request a hard copy of the draft SEA, please use one of the aforementioned contact methods.



# Homeland Security

November 13, 2009

Mr. Steere  
Manager  
Tohono O'odham Nation  
Cultural Affairs Office  
Tohono O'odham Nation Administration Building  
Sells, Arizona 85634

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Manager Steere:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.


The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, *SBI*net Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Ivan Smith  
Chairman  
Tonto Apache Tribe  
Tonto Apache Tribe Reservation # 30  
Payson, Arizona 85541

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairman Smith:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

The Honorable Ronnie Lupe  
Chairman  
White Mountain Apache Tribe  
Attn: Mr. Mark Atalha, THPO  
White Mountain Apache Tribe Historic Preservation Office  
Whiteriver, Arizona 85941

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairman Lupe:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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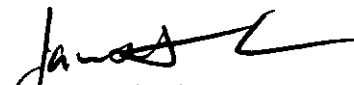
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Ned Norris, Jr.  
Chairman  
Tohono O'odham Nation  
Attn: Mr. Peter Steere, Cultural Affairs Program Manager  
Main Tribal Building Business Loop  
Sells, Arizona 85634

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairman Norris:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Wendsler Nosie, Sr.  
Chairperson  
San Carlos Apache Tribe  
Attn: Ms. Vernelda Grant, THPO  
Historic Preservation & Archaeology Department  
San Carlos, Arizona 85550

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairperson Nosie:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Diane Enos  
President  
Salt River Pima-Maricopa Indian Community  
Attn: Mr. Dan Daggett, Cultural Programs Supervisor or Ms. Dezbah Hatathli  
10005 East Osborn Road  
Scottsdale, Arizona 85256

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear President Enos:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

The Honorable Peter Yucupicio  
Chairman  
Pascua Yaqui Tribe  
Attn: Ms. Amalia Reyes, Language and Cultural Preservation Specialist  
7474 South Camino de Oeste  
Tucson, Arizona 85746

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairman Yucupicio:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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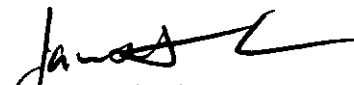
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Benjamin H. Nuvamsa  
Chairman  
Hopi Tribal Council  
Attn: Marvin Lalo, Acting Director  
Hopi Cultural Preservation Office  
Kykotsmovi, Arizona 86039

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairman Nuvamsa:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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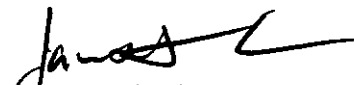
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable William Rhodes  
Governor  
Gila River Indian Community  
Attn: Mr. Barnaby Lewis, Cultural Resource Specialist  
315 West Casa Blanco Road  
Sacaton, Arizona 85247

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Governor Rhodes:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Sherry Cordova  
Chairperson  
Cocopah Tribal Council  
Attn: Lisa Wanstall, Museum Director  
Cocopah Museum  
Somerton, Arizona 85350

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairperson Cordova:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

The Honorable Louis Manuel  
Chairperson  
Ak-Chin Indian Community Council  
Attn: Ms. Caroline Anton, Cultural Resource Manager  
Ak-Chin Him Dak Eco Museum & Archives  
Maricopa, Arizona 85239

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chairperson Manuel:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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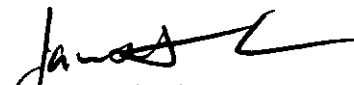
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

National Optical Astronomy Observatory  
Dr. Buell Jannuzi  
P.O. Box 26732  
Tucson, Arizona 85726

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Dr. Buell:

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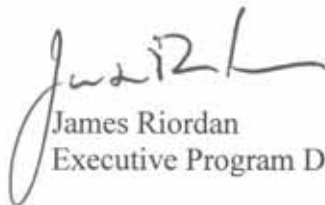
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Sierra Club  
Attn: Sean Sullivan  
758 N. 5th Ave., Suite 214  
Tucson, Arizona 85705

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Sullivan:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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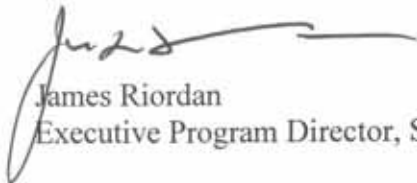
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

David Redmond  
7037 S. Camino del Garanon  
Tucson, Arizona 85747

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Redmond:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

Gary Haynes  
1251 S Quail Pt. St.  
Tucson, Arizona 85745

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Haynes:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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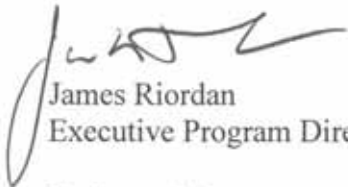
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Terry Siggins  
3123 S. Calle Pocar  
Tucson, Arizona 85730

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Terry:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Steve Hise  
P.O. Box 1105  
Tucson, Arizona 85702

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Hise:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Center for Biological Diversity  
Attn: Greta Anderson  
P.O. Box 710  
Tucson, Arizona 85702

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Anderson:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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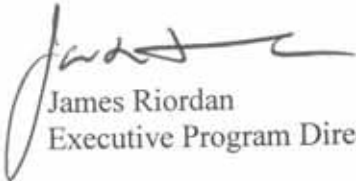
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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)





# Homeland Security

November 13, 2009

International Dark-Sky Association  
Robert L. Gent  
4204 South Hohokam Drive  
Sierra Vista, Arizona 85650

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Gent:

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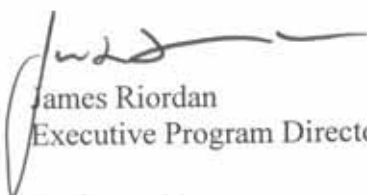
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Sincerely,



James Riordan  
Executive Program Director, SBI*net*

Enclosure(s)



# Homeland Security

November 13, 2009

Astronomical League  
Robert L. Gent  
9201 Ward Parkway, Suite 100  
Kansas City, Missouri 64114

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBlnet* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Gent:

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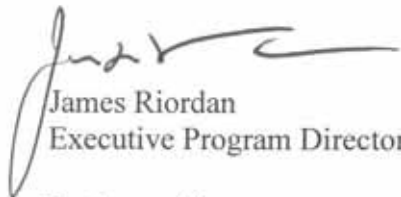
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Paul J. Winger  
9131 N. Overlook Drive  
Tucson, Arizona 85704

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Winger:

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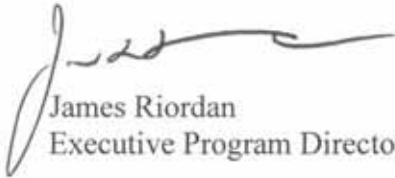
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Vatican Observatory  
Attn: Chris Corbally  
University of Arizona  
Tucson, Arizona 85721

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Chris:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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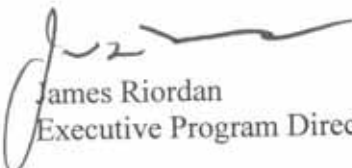
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Sincerely,



James Riordan  
Executive Program Director, SBI*net*

Enclosure(s)





# Homeland Security

November 13, 2009

Jake Elkins  
1309 E. Lee Street  
Tucson, Arizona 85719

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Elkins:

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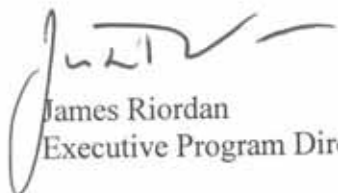
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, *SBI*net Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Border Action Network  
Attn: Jennifer Allen  
P.O. Box 384  
Tucson, Arizona 85702

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Allen:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Kitt Peak National Observatory  
Elizabeth Alvarez del Castillo  
950 North Cherry Avenue  
Tucson, Arizona 85719

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBinet* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Alvarez del Castillo:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Northern Jaguar Project  
Attn: Craig Miller  
110 Church Street, Suite 4292  
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Miller:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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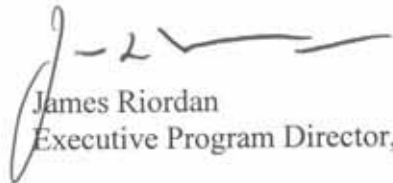
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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,

A handwritten signature in black ink, appearing to read 'James Riordan', with a stylized flourish extending to the right.

James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

Dawn & Shane Johnson and John C. & Tami Blount  
6130 NW Michaelbrook Ln  
Camas, Washington, 98607

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Dawn, Shane, John, and Tami:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Paul A. and Earlene H. Hathaway  
164 Duquesne Road, Unit 5  
Nogales, Arizona 85621-9627

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. and Mrs. Hathaway:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Frank Patania, Spokesperson for the beneficiaries of Trust 6356-T  
Lawyers Title of AZ 6356  
POBox 12646  
Tucson, AZ 857352-2646 B006

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Patania:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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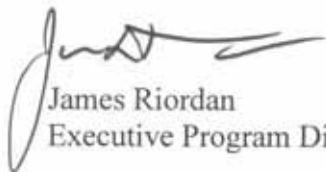
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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Nygaard Family LLC  
P.O. Box 636  
Amado, AZ 85645

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Nygaard Family LLC:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

Pima County Library  
Attn: Librarian  
17050 W Arivaca Road  
Arivaca, Arizona 85701  
(520) 594-5600

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Librarian:

U.S. Customs and Border Protection (CBP) requests that your library make available to the public the enclosed *Draft Supplemental Environmental Assessment for the Proposed SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona, and the related proposed *Finding of No Significant Impact*, for a 30-day public review period. Please place a copy of this letter and the draft Supplemental Environmental Assessment (SEA) in a location that facilitates public review. The public comment period begins November 20, 2009 and all comments must be received no later than December 21, 2009.

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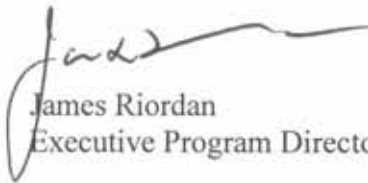
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U.S. Customs and Border Protection, *SBI*net Program Management Office, 1901  
S. Bell Street, Room 7-090, Arlington, VA 22202
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I appreciate your assistance with our efforts to invite public involvement in our decision making process.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Sonoita Community Library  
Attn: Librarian  
3147 State Highway 83  
Sonoita, Arizona 85637  
(520) 455-5517

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Librarian:

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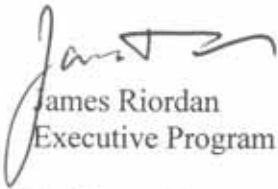
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I appreciate your assistance with our efforts to invite public involvement in our decision making process.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Sierra Vista Library  
Attn: Librarian  
2600 E Tacoma Street  
Sierra Vista, Arizona 85635  
(520) 458-4225

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Nogales-Rochin Public Library  
Attn: Librarian  
518 North Grand Avenue  
Nogales, Arizona, 85621  
(520) 287-3343

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Librarian:

U.S. Customs and Border Protection (CBP) requests that your library make available to the public the enclosed *Draft Supplemental Environmental Assessment for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona*, and the related proposed *Finding of No Significant Impact*, for a 30-day public review period. Please place a copy of this letter and the draft Supplemental Environmental Assessment (SEA) in a location that facilitates public review. The public comment period begins November 20, 2009 and all comments must be received no later than December 21, 2009.

In support of the Secure Border Initiative program, on November 20, 2009, CBP is publishing a Notice of Availability for the draft SEA. The draft SEA identifies and assesses the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communications towers, vehicles, supporting infrastructure components, and technological improvements to existing facilities within the Tucson Sector. The location for the Proposed Action is along approximately 56 miles of the U.S./Mexico international border within the Tucson Sector, Arizona.

The enclosed document is also available to the public by:

- (a) Downloading from the Internet at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link SBI NEPA Documents for Public Review and Comment
- (b) E-mailing a request to [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
- (c) Writing to Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBInet Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202

(d) Faxing a request to (571) 468-7390, Attn: Ms. Patience Patterson  
Public comments on the enclosed documents, or questions about them can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

I appreciate your assistance with our efforts to invite public involvement in our decision making process.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

Ms. Jody Latimer  
Manager  
Arizona State Land Department  
Natural Resource Conservation Division  
1616 West Adams Street  
Phoenix, Arizona 85007

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Latimer:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

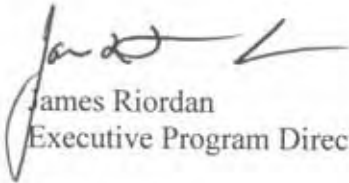
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



Homeland  
Security

November 13, 2009

Ms. Laura Canaca  
Project Evaluation Program Supervisor  
Arizona Game and Fish  
Habitat Branch-Project Evaluation Program  
2221 West Greenway Road  
Phoenix, Arizona 85023

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Canaca:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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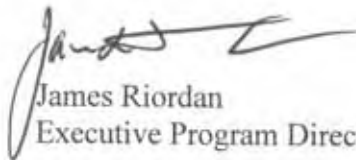
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Ms. Leesa Morrison  
Homeland Security Advisor - Arizona  
Arizona Department of Homeland Security  
1700 West Washington  
Phoenix, Arizona 85007

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Morrison:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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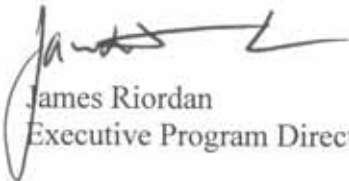
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



## Homeland Security

November 13, 2009

Mr. Steve Owens  
ADEQ Director  
Arizona Department of Environmental Quality  
Southern Region Office  
400 West Congress  
Suite 433  
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Owens:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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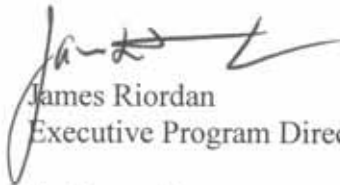
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)





# Homeland Security

November 13, 2009

The Honorable Ignacio Barrazo  
Mayor  
City of Nogales  
777 North Grand Avenue  
Nogales, Arizona 85621

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mayor Barrazo:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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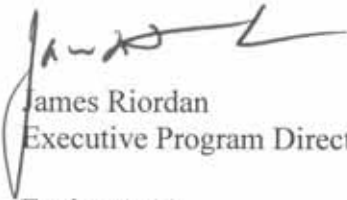
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Mr. Kent Ellet  
Acting District Ranger  
U.S. Forest Service  
Nogales Ranger District  
303 Old Tucson Road  
Nogales, Arizona 85621

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Ellet:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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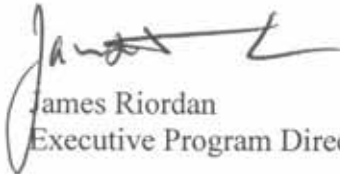
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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Mr. Garrison  
SHPO  
Arizona State Parks  
Attn: Ms. JoAnne Medley  
1300 West Washington Street  
Phoenix, Arizona 85007

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Garrison:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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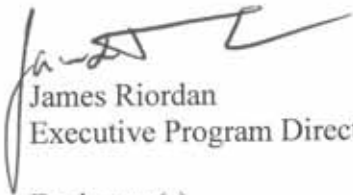
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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBI*net*

Enclosure(s)



## Homeland Security

November 13, 2009

Ms. Sherry Barrett  
Assistant Field Supervisor for Southern Arizona  
U.S. Fish and Wildlife Service  
110 South Church Avenue  
Suite 3450  
Tucson, Arizona 85701

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Barrett:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)





## Homeland Security

November 13, 2009

The Honorable John McCain  
Senator (Arizona)  
United States Senate  
241 Russell Senate Building  
Washington, DC 20510-0303

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBlnet* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Senator McCain:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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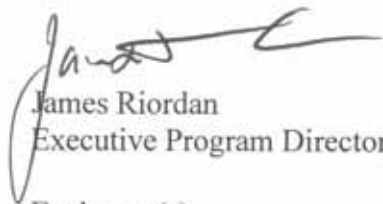
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Jon Kyl  
Senator (Arizona)  
United States Senate  
730 Hart Senate Office Building  
Washington, DC 20510-0304

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Senator Kyl:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

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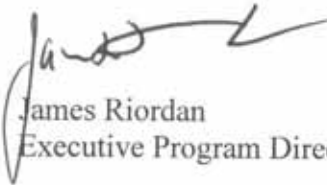
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Sincerely,



James Riordan  
Executive Program Director, SBI<sup>net</sup>

Enclosure(s)



# Homeland Security

November 13, 2009

The Honorable Raul Grijavla  
Representative (Arizona - 7th)  
United States House of Representatives  
1440 Longworth House Office Building  
Washington, DC 20510-0307

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Representative Grijalva:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

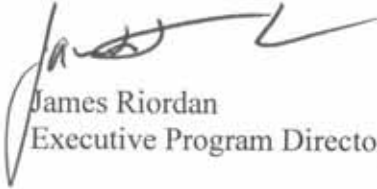
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



## Homeland Security

November 13, 2009

The Honorable Gabrielle Giffords  
Representative (Arizona - 8th)  
United States House of Representatives  
502 Cannon House Office Building  
Washington, DC 20510-0308

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Representative Giffords:

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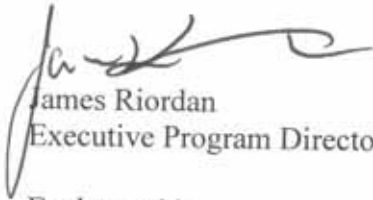
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James Riordan  
Executive Program Director, SBInet

Enclosure(s)





## Homeland Security

November 13, 2009

Mr. Greg Lucero  
County Manager  
Santa Cruz County  
2150 N. Congress Drive, Nogales, AZ 85621

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Lucero:

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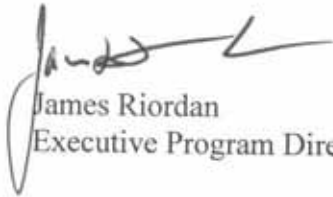
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Mr. Herb Guenther  
Director  
Santa Cruz Active Management Area  
857 West Bell Road  
Suite 3  
Nogales, Arizona 85621

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Guenther:

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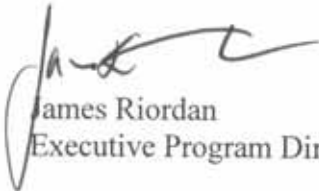
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Sincerely,



James Riordan  
Executive Program Director, SBI*net*

Enclosure(s)



Homeland  
Security

November 13, 2009

Ms. Karen Vitulano  
U.S. Environmental Protection Agency  
Region 9  
Environmental Review Office, Mail Code CED-2  
75 Hawthorne Street  
San Francisco, California 94105-3901

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBlnet* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Vitulano:

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Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



Homeland  
Security

November 13, 2009

Mr. Nova Blazej  
Manager Environmental Review Office Coordinator  
U.S. Environmental Protection Agency  
Region 9  
75 Hawthorne Street  
San Francisco, California 94105

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Blazej:

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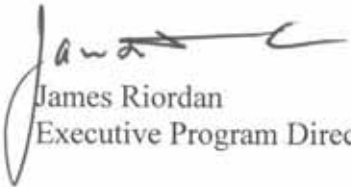
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)





**Homeland  
Security**

November 13, 2009

Ms. Laura Yoshii  
Acting Regional Administrator  
U.S. Environmental Protection Agency  
Region 9  
75 Hawthorne Street  
San Francisco, California 94105

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Yoshii:

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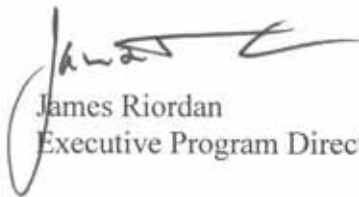
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Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Mr. Steve Spangle  
Field Supervisor  
U.S. Fish and Wildlife Service  
2321 West Royal Palm Road  
Suite 103  
Phoenix, Arizona 85021-4951

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI*net Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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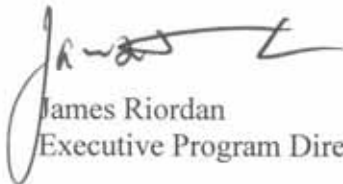
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Sincerely,

A handwritten signature in black ink, appearing to read "James Riordan", with a large, stylized flourish extending from the end of the signature.

James Riordan  
Executive Program Director, SBInet

Enclosure(s)



## Homeland Security

November 13, 2009

Mr. Michael Horton  
National Section 7 Coordinator  
U.S. Fish and Wildlife Service  
4401 North Fairfax Drive  
Suite 420  
Arlington, Virginia 22203

**Subject:** Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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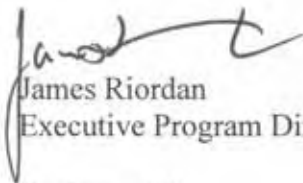
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James Riordan  
Executive Program Director, SBInet

Enclosure(s)



Homeland  
Security

November 13, 2009

Dr. Benjamin Tuggle  
Regional Director  
U.S. Fish and Wildlife Service  
Southwest Region (Region 2)  
P.O. Box 1306  
Albuquerque, New Mexico 87103-1306

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Dr. Tuggle:

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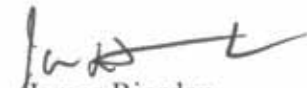
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Sincerely,



James Riordan  
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Enclosure(s)





# Homeland Security

November 13, 2009

Mr. Benjamin H. Grumbles  
Director  
Arizona Department of Environmental Quality  
1110 West Washington Street  
Phoenix, Arizona 85007

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

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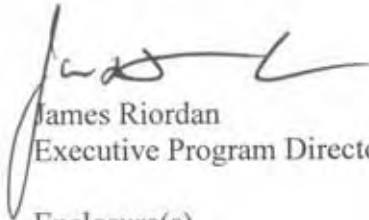
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CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBInet Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



## Homeland Security

November 13, 2009

Mr. Keith Graves  
Border Liason-Coronado N.F.  
U.S. Forest Service  
Secure Border Initiative/SBInet  
300 W. Congress  
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Graves:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

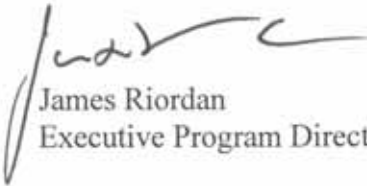
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

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- (a) E-mail to: [NGLSONSEAComments@cbp.dhs.gov](mailto:NGLSONSEAComments@cbp.dhs.gov)
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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Ms. Kathy Pedrick  
Special Assistant for International Programs  
Bureau of Land Management, U.S. Department of Interior  
Federal Building, CNF Sixth Floor, #6V3  
300 West Congress  
Tucson, Arizona 85701

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBlnet* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Pedrick:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

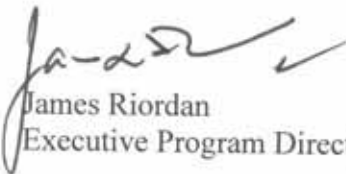
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAccomments@cbp.dhs.gov](mailto:NGLSONSEAccomments@cbp.dhs.gov)
- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, *SBI*net Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



# Homeland Security

November 13, 2009

Mr. Brian Bellow  
Field Manager  
Bureau of Land Management, U.S. Department of Interior  
12661 East Broadway  
Tucson, Arizona 85748

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Bellow:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

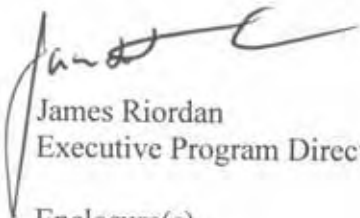
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBI<sup>net</sup> Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBI<sup>net</sup>

Enclosure(s)





# Homeland Security

November 13, 2009

Commissioner C.W. "Bill" Ruth  
International Boundary and Water Commission  
U.S. Section  
4171 North Mesa  
Suite C-100  
El Paso, Texas 79902-1441

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Commissioner Ruth:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

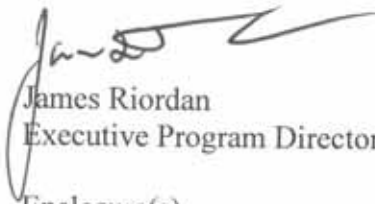
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBInet Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosure(s)



# Homeland Security

November 13, 2009

Colonel Thomas H. Magness, IV  
District Commander  
U.S. Army Corps of Engineers  
Los Angeles District  
915 Wilshire Boulevard  
Suite 980  
Los Angeles, California 90017

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Colonel Magness:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

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CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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- (b) Mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, *SBI*net Program Management Office, 1901 S. Bell Street, Room 7-090, Arlington, VA 22202
- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



## Homeland Security

November 13, 2009

Ms. Marjorie Blaine  
Senior Project Manager  
U.S. Army Corps of Engineers  
Los Angeles District, Arizona Regulatory Branch  
5205 East Comanche Street  
Tucson, Arizona 85707

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBInet Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Blaine:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

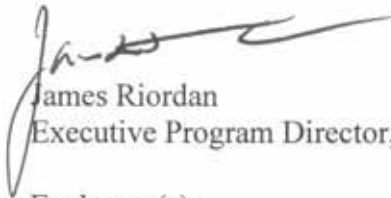
The draft SEA was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 United State Code 4321, et seq.), the Council on Environmental Quality's NEPA implementing regulations at 40 Code of Federal Regulations Part 1500 et seq., and the U.S. Department of Homeland Security's *Management Directive 023-01, Environmental Planning Program*.

CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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- (c) Fax to: (571) 468-7390, Attn: Ms. Patience Patterson

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)



## Homeland Security

November 13, 2009

Mr. Bernie Kruse  
Supervisory General Engineer  
International Boundary and Water Commission  
U.S. Section, Operations and Maintenance Division  
4171 North Mesa  
Building C, Suite 310  
El Paso, Texas 79902

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed *SBI<sub>net</sub>* Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Mr. Kruse:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

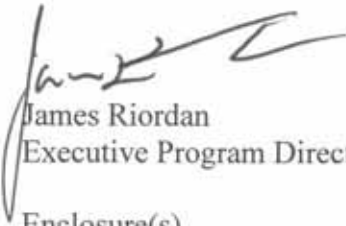
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CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

- (a) E-mail to: [NGLSONSEAcumments@cbp.dhs.gov](mailto:NGLSONSEAcumments@cbp.dhs.gov)
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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, SBI*net*

Enclosure(s)





# Homeland Security

November 13, 2009

Ms. Lisa Hanf  
Office of Federal Activities  
U.S. Environmental Protection Agency  
Region 9, Federal Activities Office (CMD-2)  
75 Hawthorne Street  
San Francisco, California 94105

Subject: Draft Supplemental Environmental Assessment and Proposed Finding of No Significant Impact for the Proposed SBI<sup>net</sup> Tucson West Tower Project, Nogales and Sonoita Stations' Area of Responsibility, U.S. Border Patrol Tucson Sector, Arizona

Dear Ms. Hanf:

Enclosed for your review and comment is the above referenced document. The 30-day review period begins on November 20, 2009 and ends on December 21, 2009. U.S. Customs and Border Protection (CBP) has prepared the draft Supplemental Environmental Assessment (SEA) to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor and communication towers; vehicles; supporting infrastructure components; and technological improvements to existing facilities for CBP along approximately 56 miles of the U.S./Mexico international border, within the Tucson Sector, Arizona (the Proposed Action).

The purpose of the Proposed Action is to further CBP's ability to gain operational control of the Nation's borders by providing 24-hour, year-round surveillance capabilities that will help deter illegal entry attempts into the U.S., and enable CBP agents to detect, analyze, and rapidly respond to illegal cross border activity.

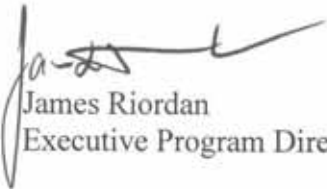
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CBP invites your participation in this public process. Comments must be received by December 21, 2009. When submitting your comments, please include name and address, and identify comments as intended for the Tucson West Draft SEA and Proposed Finding of No Significance Impact (FONSI). Comments on the enclosed documents, or questions about them, can be submitted by:

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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Ms. Patterson via E-mail or the postal address listed above.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosure(s)

**AFFIDAVIT OF PUBLICATION**

STATE OF ARIZONA )  
 )  
 ) ss.  
COUNTY OF COCHISE )

PAMELA M. MCELROY

*Pamela M. McElroy*  
being first  
duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the

A HERALD and the BISBEE DAILY REVIEW newspapers printed and  
lays a week in the County of Cochise, State of Arizona, and of general  
the cities of Sierra Vista and Bisbee, County of Cochise, State of Arizona  
and hereto attached

**NOTICE OF AVAILABILITY  
FOR THE  
DRAFT SBINET  
WEST TOWER**

published correctly in the regular and entire issue of said SIERRA VISTA  
BISBEE DAILY REVIEW for 1 issues, that the first was

20th day of NOVEMBER 20 09

publication thereof was made on the 20th day of

NOVEMBER 20 09 that said publication

each of the following dates, to wit:

20 09

**PUBLIC NOTICE**  
NOTICE OF AVAILABILITY  
Draft SUPPLEMENTAL  
Environmental  
Assessment (SEA) and  
Proposed Finding of No  
Significant Impact (FONSI)  
for the Proposed SBinet  
Tucson West Tower  
Project, Nogales and  
Sonoita Stations' Areas of  
Responsibility, U.S.  
BORDER PATROL, Tucson  
Sector, U.S. Customs and  
Border Protection (CBP), a  
component of the  
Department of Homeland  
Security (DHS), announces  
the availability of and  
invites public comments  
on a draft SEA and  
proposed FONSI for the  
SBinet Tucson West Tower  
Project. Pursuant to the  
National Environmental  
Policy Act (NEPA) of 1969,  
42 United States Code  
(U.S.C.) 4321 et seq., CBP  
has prepared the draft  
SEA and proposed FONSI  
to identify and assess the  
potential impacts  
associated with the  
proposed siting,  
construction, operation,  
and maintenance of  
sensor towers, and  
supporting infrastructure  
components within the  
Tucson Sector. The  
location for the Proposed  
Action, which is known as  
the SBinet Tucson West  
Tower Project, is the  
Nogales and Sonoita  
Stations' areas of  
responsibility within the  
Tucson Sector, Santa Cruz  
County, Arizona.  
The draft SEA will be  
available November 20,  
2009 and was prepared in  
accordance with CBP's  
obligations under NEPA,  
the Council on  
Environmental Quality  
(CEQ) implementing  
regulations at 40 Code of  
Federal Regulations (CFR)  
Parts 1500-1508, and  
DHS Management  
Directive 023-01  
(Environmental Planning  
Program). Copies of the  
draft SEA and proposed  
FONSI can be downloaded  
from the project website  
at www.cbp.gov/sbi under  
the link SBI NEPA  
Documents for Public  
Review and Comment.  
Additionally, copies will be  
available in the following  
libraries for public review:  
Nogales-Rochlin Public  
Library, 518 North Grand  
Avenue, Nogales, Arizona  
85621 (520) 287-3343,  
Sierra Vista Library, 2600  
E. Tacoma Street, Sierra  
Vista, Arizona 85635 (520)  
458-4225; Sonoita  
Community Library, 3147  
State Highway 83,  
Sonoita, Arizona 85637  
(520) 455-5517; Pima  
County Public Library,  
17050 W. Arivaca Rd.,  
Arivaca, Arizona 85701  
(520) 594-5600. Pursuant  
to the NEPA regulations,  
CBP invites public  
participation in the NEPA  
process. The public may  
participate by reviewing  
and submitting comments  
of the draft SEA and  
proposed FONSI. The  
public may submit  
comments by one of three  
methods described below.  
CBP will consider all  
applicable and pertinent  
comments submitted  
during the public  
comment period, and  
subsequently will prepare  
the final SEA. CBP will  
announce the availability  
of the final EA and FONSI.  
Comments on the draft  
SEA and proposed FONSI  
should be received no  
later than December 21,  
2009. Please use only  
one of the following  
methods:  
(1) By Email to:  
WGLSONSEACOMMENTS@cbp.dhs.gov  
(2) By mail to: Ms.  
Patience E. Patterson,  
RPA, U.S. Department of  
Homeland Security, U.S.  
Customs and Border  
Protection, SBinet  
Program Management,  
1901 S. Bell Street, Room  
7-090, Arlington, Virginia  
22202  
(3) By fax to: (571) 468-  
7390 (Attention: Ms.  
Patience E. Patterson)  
When submitting  
comments, please include  
your name and address,  
and identify your  
comments as being for the  
SBinet Tucson West Tower  
Project draft SEA. To  
request a hard copy of the  
draft SEA, please use one  
of the aforementioned  
contact methods.  
PUBLISH: November 20  
2009

Sierra Vista Herald  
Bisbee Daily Review

By

*[Signature]*

Subscribed sworn to before me this 20th day of NOVEMBER

20 09




Notary Public in and for the County of Cochise, State of Arizona

My Commission Expires:

*5/21/12*

STATE OF ARIZONA )  
 : SS  
COUNTY OF SANTA CRUZ )

**AFFIDAVIT OF PUBLICATION**  
KIMBERLY L. HICKS



being first  
Duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the NOGALES INTERNATIONAL newspaper printed and published two days week in the City of Nogales, County of Santa Cruz, State of Arizona. That the notice, a copy of which is hereto attached, described as follows:

**LEGAL NOTICE**

**NOTICE OF AVAILABILITY**

DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED SBI/TUCSON WEST TOWER PROJECT, NOGALES AND SONORA STATIONS' AREAS OF RESPONSIBILITY, U.S. BORDER PATROL, TUCSON SECTOR

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the SBI/Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 et seq., CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers,

and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the SBI/Tucson West Tower Project, is the Nogales and Sonora Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link *SBI NEPA Documents for Public Review and Comment*. Additionally, copies will be

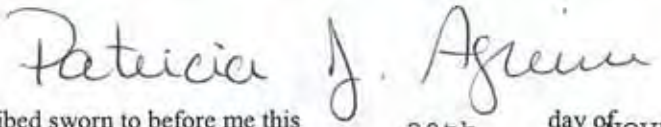
**NOTICE OF AVAILABILITY  
DRAFT SUPPLEMENTAL ENVIRONMENTAL**

was printed and published in the regular and entire issue of said NOGALES INTERNATIONAL for 1 issues, that the first was made on the 20th day of NOVEMBER 2009 and the last publication thereof was made on the 20th day of NOVEMBER 2009 that said publication was made on each of the following dates, to wit:

11/20/09

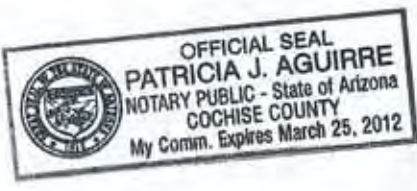
Request of GSRC ATTN: SHANNA MCCARTY

**NOGALES INTERNATIONAL**  
268 W VIEW POINT, NOGALES, AZ 85621 (520)281-9706  
By



Subscribed sworn to before me this 20th day of NOVEMBER

20 09



Notary Public in and for the County of Santa Cruz, State of Arizona

My Commission Expires:

March 25, 2012

RESPONSIBILITY, U.S. BORDER CONTROL, TUCSON SECTOR

S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the SBI/Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 et seq., CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers, and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the SBI/Tucson West Tower Project, is the Nogales and Sonoita Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

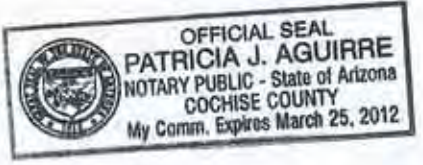
made on the 20th day of NOVEMBER 2009 and the last publication thereof was made on the 20th day of

NOVEMBER 2009 that said publication was made on each of the following dates, to wit:  
11/20/09

Request of GSRC ATTN: SHANNA MCCARTY

**NOGALES INTERNATIONAL**  
268 W VIEW POINT, NOGALES, AZ 85621 (520)281-9706

By *Patricia J. Aguirre*  
Subscribed sworn to before me this 20th day of NOVEMBER 2009



Notary Public in and for the County of Santa Cruz, State of Arizona

My Commission Expires: *March 25, 2012*

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link *SBI NEPA Documents for Public Review and Comment*. Additionally, copies will be available in the following libraries for public review:

Nogales-Rochlin Public Library, 518 North Grand Avenue, Nogales, Arizona 85621 (520) 287-3343

Sierra Vista Library, 2600 E. Tacoma Street, Sierra Vista, Arizona 85635 (520) 458-4225

Sonoita Community Library, 3147 State Highway 83, Sonoita, Arizona 85637 (520) 455-5517

Pima County Public Library, 17050 W. Arivaca Rd., Arivaca, Arizona 85701 (520) 594-5600

Pursuant to the NEPA regulations, CBP invites public participation in the NEPA process. The public may participate by reviewing and submitting comments on the draft SEA and proposed FONSI. The public may submit comments by one of three methods described below. CBP will consider all applicable and pertinent comments submitted during the public comment period, and subsequently will prepare the final SEA. CBP will announce the availability of the final EA and FONSI.

Comments on the draft SEA and proposed FONSI should be received no later than December 21, 2009. Please use only one of the following methods:

- (1) By Email to: [NGLSONSEA-comments@cbp.dhs.gov](mailto:NGLSONSEA-comments@cbp.dhs.gov)
- (2) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBI/Tucson Program Management, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 22202
- (3) By fax to: (571) 468-7390 (Attention: Ms. Patience E. Patterson)

When submitting comments, please include your name and address, and identify your comments as being for the SBI/Tucson West Tower Project draft SEA. To request a hard copy of the draft SEA, please use one of the aforementioned contact methods.

TUCSON NEWSPAPERS

Tucson, Arizona

STATE OF ARIZONA)
COUNTY OF PIMA)

Debbie Capanear, being first duly sworn deposes and says: that she is the Legal Advertising Representative of TNI PARTNERS, commonly known as TUCSON NEWSPAPERS, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached

Legal Notice

was printed and published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

NOVEMBER 20, 2009

Debbie Capanear (handwritten signature)

Subscribed and sworn to before me this 4 day of December, 2009

Silvia H Valdez (handwritten signature)
Notary Public



SILVIA H VALDEZ
Notary Public - Arizona
Pima County
Expires 12/15/09

My commission expires

TNI AD NO. 6956956

NOTICE OF AVAILABILITY

DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED SBINET TUCSON WEST TOWER PROJECT, NOGALES AND SONOITA STATIONS' AREAS OF RESPONSIBILITY, U.S. BORDER PATROL, TUCSON SECTOR

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the SBINET Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 et seq., CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers, and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the SBINET Tucson West Tower Project, is the Nogales and Sonoita Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at www.cbp.gov/sbi under the link SBI NEPA Documents for Public Review and Comment. Additionally, copies will be available in the following libraries for public review:

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Sierra Vista Library, 2600 E. Tacoma Street, Sierra Vista, Arizona 85635 (520) 458-4225
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- (1) By Email to: NGLSONSEAcomments@cbp.dhs.gov
(2) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBINET Program Management, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 22202
(3) By fax to: (571) 468-7390 (Attention: Ms. Patience E. Patterson)

When submitting comments, please include your name and address, and identify your comments as being for the SBINET Tucson West Tower Project draft SEA. To request a hard copy of the draft SEA, please use one of the aforementioned contact methods.



U.S. Fish and Wildlife Service  
ATTN: Mr. Steven Spangle  
2321 West Royal Palm Road, Suite 103  
Phoenix, Arizona 85021-4951

RE: Reinitiation of Consultation for the Biological Opinion on Secure Border Initiative (SBInet) Tucson West Tower Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations' Area of Operation, U.S. Border Patrol, Tucson Sector, Arizona

Dear Mr. Spangle,

In 2004, the Department of Homeland Security, United States (U.S) Customs and Border Protection (CBP) entered into formal consultation with U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (ESA) for the Secure Border Initiative Net (SBInet) Tucson West Tower Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations' Area of Operation, U.S. Border Patrol, Tucson Sector, Arizona (Tucson West Project). The Proposed Action included the construction or retrofit, operation, and maintenance of 54 communication and sensor towers; construction of 29 new road segments and repair of 19 roads; use of mobile surveillance systems; and deployment of unattended ground sensors. Twelve of the 54 towers are existing towers that will be upgraded. On September 4, 2008, USFWS issued the final Biological Opinion (AESO/SE 22410-2008-F-0373) for the Tucson West Project.

After further analysis of technical and operational needs, SBInet has determined that three additional towers and modification of one previously analyzed tower were needed to enhance the operational and technical capabilities of the SBInet Tucson West Project. The Proposed Action includes the construction, operation, and maintenance of three new sensor towers (TCA-NGL-141, TCA-NGL-316, and TCA-SON-314 [TCA-SON-323 is an alternate to TCA-SON-314) and modification of one previously analyzed sensor tower (TCA-SON-057), which creates a communications network in support of the SBInet Tucson West common operating picture (COP) among components of CBP and other Federal, state, and local partners outside CBP (Attachment 1).

Proposed tower TCA-NGL-316 would replace tower TCA-NGL-048 (original Proposed Action) and the elimination of TCA-NGL-048 would negate the need for towers TCA-NGL-210 and 211 (original Proposed Action). TCA-NGL-048 is being replaced because a real estate agreement cannot be completed with the landowner at this time. Proposed tower TCA-SON-314 would replace TCA-SON-055 (original Proposed Action) to enhance the spatial coverage in this area. The view from TCA-SON-055 is partially obstructed by a mountain. Tower TCA-SON-057 was originally proposed as an 80-foot rapidly deployed tower with a permanent impact footprint of 50- x 50-foot. After further technical and operational analyses, the proposed tower for site TCA-SON-057 would require construction of a 100-foot self standing tower with a permanent impact

footprint of 80- x 80-foot. Modifications are needed to enhance the spatial coverage of tower TCA-SON-057.

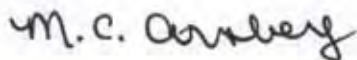
The Proposed Action also includes the construction of new access roads, and repair or improvement to existing approach roads associated with construction and operation of the proposed towers. Maintenance of associated access roads and approach roads is also included as part of the Proposed Action. The Proposed Action would result in a total of 53 towers being constructed as part of the Tucson West Project.


The original Proposed Action included a total of 6,529 feet of new road construction and 65,134 feet of road repairs. The elimination of towers TCA-NGL- 210 and 211, and TCA-SON-055, as part of the current Proposed Action, reduces new road construction by 496 feet and road repairs by 4,014 feet. Construction of the three proposed towers would result in 531 feet of new road construction and 6,794 feet of road repair and improvement. Therefore, the Proposed Action would result in 6,564 feet of new road construction and 67,914 feet of road repair and improvement. The net increase of new road construction and road repair and improvement is 35 feet and 2,780 feet, respectively.

Through discussions with USFWS, *SBI*net has determined that the Proposed Action does not require reinitiation of formal consultation based on the four general conditions for reinitiating formal consultation pursuant to Section 7 of the ESA. The Proposed Action would not exceed the amount or extent of incidental take set in the original BO and the Proposed Action would not affect listed species or critical habitat beyond those previously considered in the original consultation. No additional effects to listed species or critical habitat would occur beyond those previously considered in the original consultation. Additionally, no new species have been listed or critical habitat designated within project area and would not be affected by the Proposed Action.

If you have any questions or require additional information, please do not hesitate to contact Ms. Patience E. Patterson at (571) 468-7290.

Sincerely,



 James Riordan  
Executive Program Director, *SBI*net

cc: Ms. Susan Sferra  
Mr. Jim Rorabaugh  
Ms. Sherry Barrett



SHPO-2009-0639 (40256)

U.S. Department of Homeland Security  
Washington, DC 20229



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

June 11, 2009

RECEIVED

JUN 17 2009

6/22/09  
ARIZONA STATE PARKS/S.H.P.

Mr. James Garrison, State Historic Preservation Officer  
ATTN: Ms. JoAnne Medley  
Arizona State Parks  
1300 West Washington  
Phoenix, Arizona 85007

Subject: Section 106 Consultation and Determinations of Eligibility for the results of "A Cultural Resources Survey of Four Proposed Customs and Border Protection Tower Locations (TCA-NGL-316, TCA-NGL-141, TCA-SON-323, TCA-SON-314) and Associated Road Access Near Nogales, Santa Cruz County, Arizona"

Dear Mr. Garrison:

Our previous Section 106 consultation on the Tucson West Tower Project occurred in 2008. The archaeological monitoring and other stipulated work are going on at the present time. Since then we have begun the process of producing a Supplemental Environmental Assessment for four newly proposed towers to be placed in the Nogales and Sonoita Border Patrol station areas of responsibility (within the Tucson Sector).

In order to complete the NEPA and NHPA processes, a Class III cultural resources survey was completed for the four towers noted above. The results of that survey effort are detailed in the enclosed report, "A Cultural Resources Survey of Four Proposed Customs and Border Protection Tower Locations (TCA-NGL-316, TCA-NGL-141, TCA-SON-323, TCA-SON-314) and Associated Road Access Near Nogales, Santa Cruz County, Arizona".

The completion of the Class III survey of approximately 50.6 acres, including tower sites and access road areas resulted in the identification of two new sites, AZ EE:9:260(ASM) and AZ EE:10:181(ASM)/AR03-05-03-465, and 27 isolated occurrences (IOs). AZ EE:9:260(ASM) consists of a destroyed kiln or kilns located on private land on an access road west of TCA-NGL-141. AZ EE:10:181(ASM)/AR03-05-03-465 consists of the Benton Mine, which is located on Coronado National Forest land and encompasses both tower sites TCA-SON-323 and 314. Only a small portion of the mine is historic, while the majority is the product of modern operations. Given the paucity of findings of the survey and the archival research, we have determined that this site is not considered eligible for the National Register of Historic Places (NRHP) under any criteria. Although there are recorded sites in the vicinity of tower TCA-NGL-141, none of those sites are within



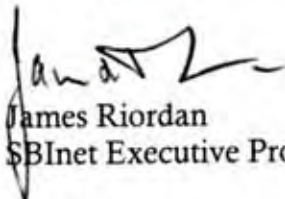
**U.S. Customs and  
Border Protection**

the APE of 141 and therefore will not be affected by its construction. AZ EE:9:260(ASM) consists of a destroyed kiln or kilns located on private land on an access road west of TCA-NGL-141. This site appears to have been destroyed in the recent past. There is evidence of three distinct brick concentrations and a low-density scatter of bricks and brick fragments across the site area. Due to the fact that the site has been bulldozed and bladed, it is unclear as to when the structure was built or how long it was in use. We have determined that given the absence of associated artifacts, lack of evidence for subsurface depth and the fact that the site has been destroyed leaving no intact features; this site is not eligible for the NRHP.

In accordance with 36 CFR Part 800.4(d)(1), we have determined that No historic properties will be affected by our proposed action. We ask for concurrence from Coronado National Forest and from you with our determination and look forward to your immediate responses.

If you have any questions concerning this project or the report, please contact Ms. Patience Patterson, (202) 344-1131 or (202) 870-7422 or via email, [patience.patterson@dhs.gov](mailto:patience.patterson@dhs.gov).

Sincerely,



James Riordan  
SBI-net Executive Program Director

Enclosure

CC:

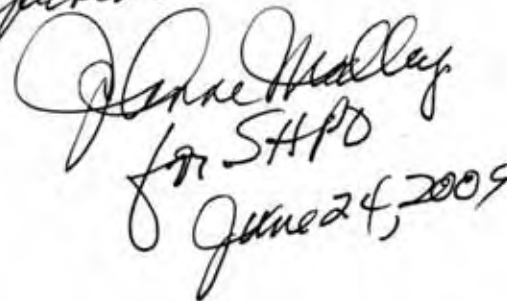
Ms. Mary Farrell, Mr. Bill Gillespie and Mr. Dave Mehalic  
Forest Archaeologists  
Region 3, Coronado National Forest Supervisor's Office  
300 W. congress St.  
Tucson, Arizona 85701

Mr. Steven K. Ross, Cultural Resources Manager  
Arizona State Land Department  
1616 West Adams Street  
Phoenix, Arizona 85007

*Concur:*

*① Sites AZ EE: 9:260(ASM)  
and AZ EE: 10:181(ASM)  
each not Register-eligible.*

*② No historic properties  
affected.*



*James Malley  
for SHPO  
June 24, 2009*

**Maria Reid**

---

**From:** PATTERSON, PATIENCE E [patience.patterson@dhs.gov]

**Sent:** Monday, June 22, 2009 2:36 PM

**To:** Howard Nass; Maria Reid

**Subject:** FW: Proposed SEA on SBInet Tucson West Project

**From:** Wendy S. LeStarge [mailto:LeStarge.Wendy@azdeq.gov]

**Sent:** Thursday, June 04, 2009 5:52 PM

**To:** PATTERSON, PATIENCE E

**Cc:** Linda C. Taunt

**Subject:** Proposed SEA on SBInet Tucson West Project

Ms. Patterson,

On behalf of Linda Taunt, Deputy Division Director, we thank you for the May 6, 2009 notice on the intent to prepare a Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector. The Arizona Department of Environmental Quality, Water Quality Division has no comments at this time, but we look forward to reviewing the Supplemental Environmental Assessment. Please note that our contact information is changing as we are in the process of changing administration. Please address future notices to Mr. Benjamin H. Grumbles, who will be the agency director beginning June 22, 2009.

Thank you.

*Wendy LeStarge  
Environmental Rules Specialist  
Arizona Department of Environmental Quality  
Water Quality Division  
(602) 771-4836*





THE STATE OF ARIZONA  
**GAME AND FISH DEPARTMENT**

5000 W. CAREFREE HIGHWAY  
PHOENIX, AZ 85086-5000  
(602) 942-3000 • WWW.AZGFD.GOV

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LARRY D. VOYLES  
**DEPUTY DIRECTORS**  
GARY R. HOVATTER  
ROBERT D. BROSCHEID



June 5, 2009

Mr. James Riordan  
US Department of Homeland Security  
SBInet Program Management Office  
US Customs and Border Protection, Headquarters  
1300 Pennsylvania Ave., NW Room 7.5B  
Washington, DC 20229

Re: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project,  
U.S. Border Patrol Tucson Sector

Dear Mr. Riordan:

The Arizona Game and Fish Department (Department) appreciates the opportunity to review the proposed siting, construction, operation, and maintenance of sensor and communication systems and their associated access roads along the US/Mexico border, Tucson Sector, Arizona. The Department understands the proposed action would include approximately 4 fixed, sensor and communication towers and associated access roads.

The Department supports the efforts of the U.S. Customs and Border Protection (CBP) and the reduction of illegal traffic along the border where illegal traffic can be reduced as a result of project activities. However, the Department believes the loss or degradation of habitat for ESA-listed and other wildlife species should be mitigated by implementing local or regional habitat improvements and/or providing funding for state and federal wildlife management and monitoring needs for species affected. The Department has the following recommendations at this time:

1. Tower sites TCA-SON-314 and 323 are within Designated Critical Habitat for Mexican spotted owl.
2. Tower site TCA-NGL-316 is within the Santa Rita – Tumacacori Wildlife Corridor. The corridor is critical in maintaining connectivity between the sky islands of the Santa Rita Mountain Complex and the Tumacacori-Atascosa-Pajarito Mountain Complex as well as Sonoran semidesert wildlands. The Department recommends limiting construction to the bare minimum required for the project.
3. All the towers will need new roads or have roads improved. An improved road network attracts motorized recreationists which will increase disturbance to all wildlife, increase spread of noxious weeds, provide an enhanced vector for pathogens and introduced

Mr. James Riordan

June 5, 2009

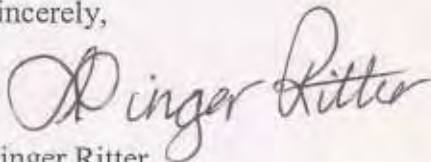
2

predators/competitors, increase direct mortality from motor vehicle collision, and increased exposure to intentional illegal take of wildlife. The Department recommends limiting construction of new roads and improvement of roads to the extent possible.

4. Staging areas and construction sites should be located in previously disturbed areas and revegetated with native species that approximate pre-disturbance plant community composition or native, as all efforts should be made to minimize impacts on vegetative communities.
5. Water needed for construction activities should be trucked in when practical, and must not directly drain into existing surface waters to prevent potential spread of pathogens, such as chytrid fungus, tiger salamander virus, Asian tapeworm, etc. Use of water from existing livestock tanks and impoundments should be minimized to ensure those resources remain available for livestock and wildlife during dry periods especially during summer months.

Close coordination with the Department on projects such as this is vital to ensure adequate coordination and analysis of impacts to the state's wildlife resources. The Department proposes quarterly meetings with CPB to coordinate on activities which may have an effect on the Department's responsibility to manage wildlife. In doing so, it may be possible to avoid some negative impacts to wildlife while meeting the project needs of the border patrol agencies. The Department appreciates the opportunity to coordinate with and provide comments to the CPB. For further coordination or if you have questions regarding this letter, please contact me at (623) 236-7606.

Sincerely,



Ginger Ritter  
Project Evaluation Program Specialist, Habitat Branch

cc: Laura Canaca, Project Evaluation Program Supervisor  
Joan Scott, Habitat Program Manager, Region V

AGFD # M09-05214903

Arizona's On-line Environmental Review Tool

Search ID: 20090505008750  
 Project Name: TCA-NGL-316  
 Date: 5/5/2009 12:16:09 PM

**Project Location**



**Project Name:** TCA-NGL-316  
**Submitted By:** PEP Project Evaluation Program  
**On behalf of:** USBP  
**Project Search ID:** 20090505008750  
**Date:** 5/5/2009 12:15:59 PM  
**Project Category:** Law Enforcement Activities Associated with the Border, Beacons, buildings, runways, water towers and other features  
**Project Coordinates (UTM Zone 12-NAD 83):** 493635.924, 3501349.863 meter  
**County:** SANTA CRUZ  
**USGS 7.5 Minute Quadrangle ID:** 1897  
**Quadrangle Name:** AMADO  
**Project locality is not anticipated to change**

**Location Accuracy Disclaimer**

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

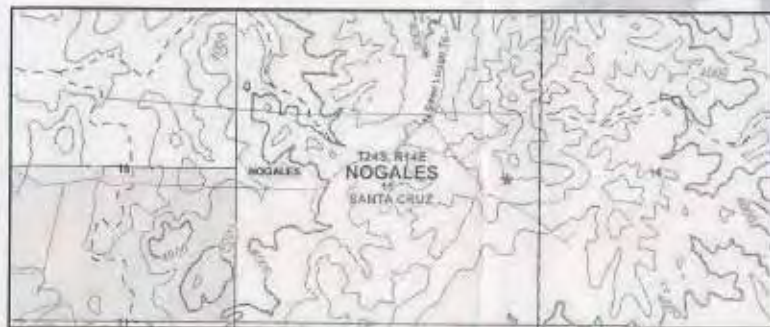
**Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:**

| Name                                                | Common Name                             | ESA | USFS | BLM | State |
|-----------------------------------------------------|-----------------------------------------|-----|------|-----|-------|
| <i>Agosia chrysogaster chrysogaster</i>             | Gila Longfin Dace                       | SC  |      | S   |       |
| <i>Coccyzus americanus</i>                          | Yellow-billed Cuckoo (Western U.S. DPS) | C   |      |     | WSC   |
| <i>Coryphantha scheeri</i> var. <i>robustispina</i> | Pima Pineapple Cactus                   | LE  |      |     | HS    |
| <i>Physalis latiphysa</i>                           | Broad-leaf Ground-cherry                |     | S    |     |       |
| <i>Poecilopais occidentalis occidentalis</i>        | Gila Topminnow                          | LE  |      |     | WSC   |
| Santa Rita - Tumacacori Linkage Design              | Wildlife Corridor                       |     |      |     |       |
| <i>Sigmodon ochrognathus</i>                        | Yellow-nosed Cotton Rat                 | SC  |      |     |       |
| <i>Tyrannus crassirostris</i>                       | Thick-billed Kingbird                   |     |      |     | WSC   |
| <i>Tyrannus melancholicus</i>                       | Tropical Kingbird                       |     |      |     | WSC   |

Arizona's On-line Environmental Review Tool

Search ID: 20090505008751  
Project Name: TCA-NGL-141  
Date: 5/5/2009 12:21:25 PM

Project Location



The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

| Name                                                | Common Name               | ESA | USFS | BLM | State |
|-----------------------------------------------------|---------------------------|-----|------|-----|-------|
| <i>Amsonia grandiflora</i>                          | Large-flowered Blue Star  | SC  | S    |     |       |
| <i>Buteo nitidus maxima</i>                         | Northern Gray Hawk        | SC  | S    |     | WSC   |
| <i>Coryphantha recurvata</i>                        | Santa Cruz Beehive Cactus |     | S    |     | HS    |
| <i>Coryphantha scheeri</i> var. <i>robustispina</i> | Pima Pineapple Cactus     | LE  |      |     | HS    |
| <i>Macropitium supinum</i>                          | Supine Bean               | SC  | S    |     | SR    |
| Santa Rita -- Tumacacón Linkage Design              | Wildlife Corridor         |     |      |     |       |
| <i>Sigmodon ochrognathus</i>                        | Yellow-nosed Cotton Rat   | SC  |      |     |       |
| <i>Solanum lumholtzianum</i>                        | Lumholtz Nighthshade      |     | S    |     |       |

**Project Name:** TCA-NGL-141  
**Submitted By:** PEP Project Evaluation Program  
**On behalf of:** USBP  
**Project Search ID:** 20090505008751  
**Date:** 5/5/2009 12:21:18 PM  
**Project Category:** Law Enforcement Activities Associated with the Border, Beacons, buildings, runways, water towers and other features  
**Project Coordinates (UTM Zone 12-NAD 83):** 510085.418, 3467360.661 meter  
**County:** SANTA CRUZ  
**USGS 7.5 Minute Quadrangle ID:** 1961  
**Quadrangle Name:** NOGALES  
**Project locality is not anticipated to change**

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.



Arizona's On-line Environmental Review Tool

Search ID: 20090505008752

Project Name: TCA-SON-314

Date: 5/5/2009 12:27:38 PM

**Project Location**



**Project Name:** TCA-SON-314

**Submitted By:** PEP Project Evaluation Program

**On behalf of:** USBP

**Project Search ID:** 20090505008752

**Date:** 5/5/2009 12:27:29 PM

**Project Category:** Law Enforcement Activities Associated with the Border, Beacons, buildings, runways, water towers and other features

**Project Coordinates (UTM Zone 12-NAD 83):** 529151.664, 3467414.862 meter

**County:** SANTA CRUZ

**USGS 7.5 Minute Quadrangle ID:** 1957

**Quadrangle Name:** DUQUESNE

**Project locality is not anticipated to change**

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

**Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:**

| Name                                            | Common Name                                         | ESA | USFS | BLM | State |
|-------------------------------------------------|-----------------------------------------------------|-----|------|-----|-------|
| <i>Ambystoma tigrinum stebbinsi</i>             | Sonora Tiger Salamander                             | LE  |      |     | WSC   |
| CH for <i>Strix occidentalis lucida</i>         | Designated Critical Habitat for Mexican spotted owl |     |      |     |       |
| <i>Corynorhinus townsendii pallascens</i>       | Pale Townsend's Big-eared Bat                       | SC  |      |     |       |
| <i>Euphorbia macropus</i>                       | Woodland Spurge                                     | SC  |      |     | SR    |
| <i>Ipomoea plummerae</i> var. <i>cuneifolia</i> | Huachuca Morning Glory                              |     | S    |     |       |
| <i>Lithobates chiricahuensis</i>                | Chiricahua Leopard Frog                             | LT  | S    |     | WSC   |
| <i>Myotis velifer</i>                           | Cave Myotis                                         | SC  |      | S   |       |
| <i>Oxybelis aeneus</i>                          | Brown Vinesnake                                     |     |      |     | WSC   |
| <i>Sigmodon ochrognathus</i>                    | Yellow-nosed Cotton Rat                             | SC  |      |     |       |
| <i>Thamnophis eques megalops</i>                | Northern Mexican Gartersnake                        | C   | S    |     | WSC   |

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**Project Location**



**Project Name:** TCA-SON-323  
**Submitted By:** PEP Project Evaluation Program  
**On behalf of:** USBP  
**Project Search ID:** 20090505008753  
**Date:** 5/5/2009 12:30:51 PM  
**Project Category:** Law Enforcement Activities Associated with the Border, Beacons, buildings, runways, water towers and other features  
**Project Coordinates (UTM Zone 12-NAD 83):** 528682.646, 3467532.348 meter  
**County:** SANTA CRUZ  
**USGS 7.5 Minute Quadrangle ID:** 1957  
**Quadrangle Name:** DUQUESNE  
**Project locality is not anticipated to change**

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

**Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:**

| Name                                            | Common Name                                         | ESA | USFS | BLM | State |
|-------------------------------------------------|-----------------------------------------------------|-----|------|-----|-------|
| <i>Ambystoma tigrinum stebbinsi</i>             | Sonora Tiger Salamander                             | LE  |      |     | WSC   |
| CH for <i>Strix occidentalis lucida</i>         | Designated Critical Habitat for Mexican spotted owl |     |      |     |       |
| <i>Corynorhinus townsendii pallascens</i>       | Pale Townsend's Big-eared Bat                       | SC  |      |     |       |
| <i>Euphorbia macropus</i>                       | Woodland Spurge                                     | SC  |      |     | SR    |
| <i>Ipomoea plummerae</i> var. <i>cuneifolia</i> | Huachuca Morning Glory                              |     | S    |     |       |
| <i>Lithobates chiricahuensis</i>                | Chiricahua Leopard Frog                             | LT  | S    |     | WSC   |
| <i>Myotis velifer</i>                           | Cave Myotis                                         | SC  |      | S   |       |
| <i>Oxybelis aeneus</i>                          | Brown Vinesnake                                     |     |      |     | WSC   |
| <i>Sigmodon ochrognathus</i>                    | Yellow-nosed Cotton Rat                             | SC  |      |     |       |
| <i>Thamnophis eques megalops</i>                | Northern Mexican Gartersnake                        | C   | S    |     | WSC   |

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

May 6, 2009

U.S. Fish and Wildlife Service  
Arizona Ecological Services Field Office  
ATTN: Steve Spangle, Field Supervisor  
2321 West Royal Palm Road, Suite 103  
Phoenix, AZ 85021-4915

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Spangle,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. At the present time, the proposed action includes the construction of up to four sensor and communication towers. Access road construction, improvement, repair, and maintenance would be required as part of the proposed action.

Enclosed is a map showing the tower sites proposed as part of the proposed action (Figure 2). The table below shows the location (latitude and longitude in decimal degrees) for each proposed activity area.

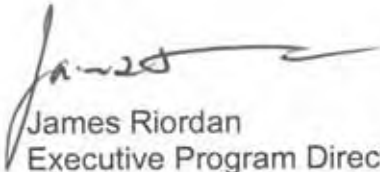
| Tower Number | Latitude  | Longitude   |
|--------------|-----------|-------------|
| TCA-NGL-141  | 31.341650 | -110.893716 |
| TCA-NGL-316  | 31.647080 | -111.067849 |
| TCA-SON-314  | 31.341714 | -110.695274 |
| TCA-SON-323  | 32.342020 | -110.698410 |

We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's IPac system will be used in the preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the SBInet Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosures

cc: Ms. Sherry Barrett  
Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

Coronado National Forest  
Nogales Ranger District  
ATTN: Mr. Keith Graves, District Ranger  
303 Old Tucson Road  
Nogales, AZ 85621

SUBJECT: Proposed Supplemental Environmental Assessment for the *SBI<sub>net</sub>* Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Graves,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (*SBI<sub>net</sub>*) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original *SBI<sub>net</sub>* Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBI<sub>net</sub> Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. At the present time, the proposed action includes the construction of up to four sensor and communication towers. Access road construction, improvement, repair, and maintenance would be required as part of the proposed action.

Enclosed is a map showing the tower sites proposed as part of the proposed action (Figure 2). The table below shows the location (latitude and longitude in decimal degrees) for each proposed activity area.

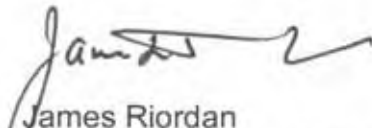
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We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), Forest Service sensitive species, and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's IPac system will be used in the preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosures

cc: Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

Arizona Game and Fish Department  
WMHB – Project Evaluation Program  
ATTN: Project Evaluation Program Supervisor  
5000 W. Carefree Highway  
Phoenix, AZ 85086-5000

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Sir/Madam,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

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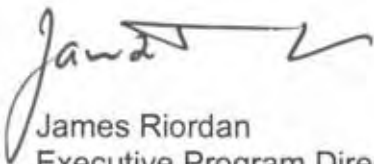
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Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosures

cc: Mr. Robert Miller  
Mr. Steve Carhart





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

May 6, 2009

Santa Cruz County  
ATTN: Mr. Greg Lucero, County Manager  
2150 N. Congress Drive, #119  
Nogales, AZ 85621

**SUBJECT:** Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Lucero,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

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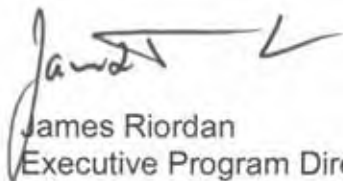
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We are currently in the process of gathering the most current data and input from Federal, state and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your office may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any state and local restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosures

cc: Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

Arizona Department of Environmental Quality  
ATTN: Mr. Steve Owens, Director  
1110 West Washington Street  
Phoenix, AZ 85007

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Owens,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

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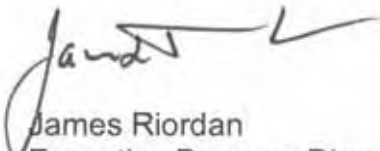
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Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosures

cc: Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

Arizona Department of Environmental Quality  
ATTN: Water Quality Division  
Ms. Joan Card, Director  
1110 West Washington Street  
Phoenix, AZ 85007

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Ms. Card,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

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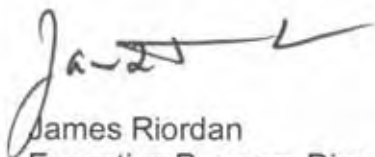
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Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosures

cc: Mr. Steve Owens  
Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

Arizona State Land Department  
ATTN: Mr. Mark Winkleman  
State Land Commissioner  
1616 West Adam Street  
Phoenix, AZ 85007

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Winkleman,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. At the present time, the proposed action includes the construction of up to four sensor and communication towers. Access road construction, improvement, repair, and maintenance would be required as part of the proposed action.

Enclosed is a map showing the tower sites proposed as part of the proposed action (Figure 2). The table below shows the location (latitude and longitude in decimal degrees) for each proposed activity area.

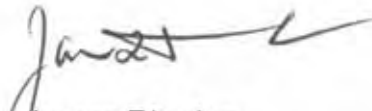
| Tower Number | Latitude  | Longitude   |
|--------------|-----------|-------------|
| TCA-NGL-141  | 31.341650 | -110.893716 |
| TCA-NGL-316  | 31.647080 | -111.067849 |
| TCA-SON-314  | 31.341714 | -110.695274 |
| TCA-SON-323  | 32.342020 | -110.698410 |

We are currently in the process of gathering the most current data and input from Federal, state and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your agency may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any state and local restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBI

Enclosures

cc: Mr. Robert Miller  
Mr. Steve Carhart





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

May 6, 2009

U.S. International Boundary and Water Commission  
ATTN: Mr. Bill Ruth, Commissioner  
4171 North Mesa Street  
Suite C100  
El Paso, TX 79902

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Mr. Ruth,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations' areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

The SEA will analyze the potential for significant adverse or beneficial impacts of the proposed actions. At the present time, the proposed action includes the construction of up to four sensor and communication towers. Access road construction, improvement, repair, and maintenance would be required as part of the proposed action.

Enclosed is a map showing the tower sites proposed as part of the proposed action (Figure 2). The table below shows the location (latitude and longitude in decimal degrees) for each proposed activity area.


| Tower Number | Latitude  | Longitude   |
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| TCA-SON-323  | 32.342020 | -110.698410 |

We are currently in the process of gathering the most current data and input from Federal, state, and local governmental agencies, departments, and bureaus that may be affected by or otherwise have an interest in this proposed action. Since your agency may have particular knowledge and expertise regarding potential environmental impacts from CBP's proposed action, your input is sought regarding the likely or anticipated environmental effects of this proposed action. Your response should include any U.S. International Border & Water Commission restrictions, permitting or other requirements with which CBP would have to comply during project siting, construction, and operation.

We intend to provide your agency with a copy of the Draft SEA for the *SBI*net Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, *SBI*net

Enclosures

cc: Mr. John Merino  
Mr. Al Riera  
Mr. Jose Nunez  
Mr. Tony Solo  
Mr. Robert Miller  
Mr. Steve Carhart



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

May 6, 2009

U.S. Fish and Wildlife Service  
Arizona Ecological Services Field Office  
ATTN: Sherry Barrett, Assistant Field Supervisor  
201 N. Bonita Ave.  
Suite 141  
Tucson, AZ 85745

SUBJECT: Proposed Supplemental Environmental Assessment for the SBInet Tucson West Project, U.S. Border Patrol Tucson Sector

Dear Ms. Barrett,

On behalf of the U.S. Customs and Border Protection (CBP) and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE), Fort Worth District intends to prepare a Supplemental Environmental Assessment (SEA) for the Secure Border Initiative (SBInet) Tucson West Project in the U.S. Border Patrol (USBP) Tucson Sector. This SEA will address the construction, operation, and maintenance of up to four sensor and communication systems and associated access roads. The proposed action is located in the Nogales and Sonoita Stations areas of responsibility (AOR) (Figure 1). This system of towers and access roads creates a communications network in support of a Common Operating Picture (COP) among components of CBP and other Federal, state, and local partners outside CBP. The four towers proposed in this project would add to the surveillance capabilities of the original SBInet Tucson West Project, which was approved in September 2008 in the *Final Environmental Assessment and Finding of No Significant Impact for the Proposed SBInet Tucson West Project, Ajo, Tucson, Casa Grande, Nogales, and Sonoita Stations Areas of Responsibility, U.S. Border Patrol, Tucson Sector, Arizona*. The intent of the proposed action is to make USBP enforcement actions more efficient and effective.

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Enclosed is a map showing the tower sites proposed as part of the proposed action (Figure 2). The table below shows the location (latitude and longitude in decimal degrees) for each proposed activity area.

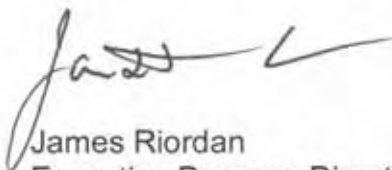
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| TCA-SON-314  | 31.341714 | -110.695274 |
| TCA-SON-323  | 32.342020 | -110.698410 |

We are currently in the process of gathering the most current information available regarding Federal and state listed species potentially occurring within this area. CBP respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (e.g., rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed USBP activities. Threatened and Endangered species and best management practices information from the U.S. Fish and Wildlife Service's IPac system will be used in the preparation of the Draft SEA.

We intend to provide your agency with a copy of the Draft SEA for the SBInet Tucson West Project once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Patience Patterson at (202) 344-1131.

Sincerely,



James Riordan  
Executive Program Director, SBInet

Enclosures

cc: Mr. Steve Spangle  
Ms. Erin Fernandez  
Mr. Jim Rorabaugh  
Mr. Robert Miller  
Mr. Steve Carhart

# TUCSON NEWSPAPERS

Tucson, Arizona

STATE OF ARIZONA)  
COUNTY OF PIMA)

Debbie Capanear, being first duly sworn deposes and says: that she is the Legal Advertising Representative of **TNI PARTNERS, commonly known as TUCSON NEWSPAPERS**, a General Partnership organized and existing under the laws of the State of Arizona, and that it prints and publishes the Arizona Daily Star, a daily newspaper printed and published in the City of Tucson, Pima County, State of Arizona, and having a general circulation in said City, County, State and elsewhere, and that the attached

### Legal Notice

was printed and published correctly in the entire issue of the said Arizona Daily Star on each of the following dates, to-wit:

NOVEMBER 20, 2009

Debbie Capanear

Subscribed and sworn to before me this 4 day of December, 2009

Silvia H Valdez  
Notary Public



SILVIA H VALDEZ  
Notary Public - Arizona  
Pima County  
Expires 12/15/09

My commission expires \_\_\_\_\_

TNI AD NO. 6956956

### NOTICE OF AVAILABILITY

DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED SBINET TUCSON WEST TOWER PROJECT, NOGALES AND SONOITA STATIONS' AREAS OF RESPONSIBILITY, U.S. BORDER PATROL, TUCSON SECTOR

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the SBINET Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 et seq., CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers, and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the SBINET Tucson West Tower Project, is the Nogales and Sonoita Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link SBINET NEPA Documents for Public Review and Comment. Additionally, copies will be available in the following libraries for public review:

Nogales-Rochlin Public Library, 518 North Grand Avenue, Nogales, Arizona 85621 (520) 287-3343

Sierra Vista Library, 2600 E. Tacoma Street, Sierra Vista, Arizona 85635 (520) 458-4225  
Sonoita Community Library, 3147 State Highway 83, Sonoita, Arizona 85637 (520) 455-5517

Pima County Public Library, 17050 W. Arivaca Rd., Arivaca, Arizona 85701 (520) 594-5600

Pursuant to the NEPA regulations, CBP invites public participation in the NEPA process. The public may participate by reviewing and submitting comments on the draft SEA and proposed FONSI. The public may submit comments by one of three methods described below. CBP will consider all applicable and pertinent comments submitted during the public comment period, and subsequently will prepare the final SEA. CBP will announce the availability of the final EA and FONSI.

Comments on the draft SEA and proposed FONSI should be received no later than December 21, 2009. Please use only one of the following methods:

- (1) By Email to: [RGLSONSEAcomments@cbp.dhs.gov](mailto:RGLSONSEAcomments@cbp.dhs.gov)
- (2) By mail to: Ms. Patience E. Patterson, RPA, U.S. Department of Homeland Security, U.S. Customs and Border Protection, SBINET Program Management, 1901 S. Bell Street, Room 7-090, Arlington, Virginia 22202
- (3) By fax to: (571) 468-7390 (Attention: Ms. Patience E. Patterson)

When submitting comments, please include your name and address, and identify your comments as being for the SBINET Tucson West Tower Project draft SEA. To request a hard copy of the draft SEA, please use one of the aforementioned contact methods.

Publish November 20, 2009  
Arizona Daily Star

AFFIDAVIT OF PUBLICATION

STATE OF ARIZONA )
:SS.
COUNTY OF COCHISE )

PAMELA M. MCELROY

being first
duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the

PUBLIC NOTICE

NOTICE OF AVAILABILITY
Draft SUPPLEMENTAL
Environmental
Assessment (SEA) and
Proposed Finding of No
Significant Impact (FONSI)
for the Proposed SBInet
Tucson West Tower
Project, Nogales and
Sonoita Stations' Areas of
Responsibility, u.s.
BORDER PATROL, Tucson
Sector, U.S. Customs and
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Stations' areas of
responsibility within the
Tucson Sector, Santa Cruz
County, Arizona.
The draft SEA will be

available November 20,
2009 and was prepared in
accordance with CBP's
obligations under NEPA,
the Council on
Environmental Quality
(CEQ) Implementing
regulations at 40 Code of
Federal Regulations (CFR)
Parts 1500-1508, and
DHS Management
Directive 023-01
(Environmental Planning
Program). Copies of the
draft SEA and proposed
FONSI can be downloaded
from the project website
at www.cbp.gov/sbi under
the link SBI NEPA
Documents for Public
Review and Comment.
Additionally, copies will be
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Avenue, Nogales, Arizona
85621 (520) 287-3343,
Sierra Vista Library, 2600
E. Tacoma Street, Sierra
Vista, Arizona 85635 (520)
458-4225; Sonoita
Community Library, 3147
State Highway 83,
Sonoita, Arizona 85637
(520) 455-5517; Pima
County Public Library,
17050 W. Arivaca Rd.,
Arivaca, Arizona 85701
(520) 594-5600. Pursuant
to the NEPA regulations,
CBP invites public
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Patience E. Patterson,
RPA, U.S. Department of
Homeland Security, U.S.
Customs and Border
Protection, SBInet
Program Management,
1901 S. Bell Street, Room
7-090, Arlington, Virginia
22202
(3) By fax to: (571) 468-
7390 (Attention: Ms.
Patience E. Patterson)
When submitting
comments, please include
your name and address,
and identify your
comments as being for the
SBInet Tucson West Tower
Project draft SEA. To
request a hard copy of the
draft SEA, please use one
of the aforementioned
contact methods.
PUBLISH: November 20
2009

A HERALD and the BISBEE DAILY REVIEW newspapers printed and
lays a week in the County of Cochise, State of Arizona, and of general
the cities of Sierra Vista and Bisbee, County of Cochise, State of Arizona
and hereto attached

NOTICE OF AVAILABILITY FOR THE D SBINET WEST TOWER

published correctly in the regular and entire issue of said SIERRA VISTA
BISBEE DAILY REVIEW for 1 issues, that the first was
20th day of NOVEMBER 20 09
publication thereof was made on the 20th day of
NOVEMBER 20 09 that said publication
each of the following dates, to wit:

Sierra Vista Herald
Bisbee Daily Review

By [Signature]

Subscribed sworn to before me this 20th day of NOVEMBER
20 09




Notary Public in and for the County of Cochise, State of Arizona

My Commission Expires:

5/21/12

STATE OF ARIZONA )  
 : SS  
COUNTY OF SANTA CRUZ )

**AFFIDAVIT OF PUBLICATION**  
KIMBERLY L. HICKS



being first  
Duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the NOGALES INTERNATIONAL newspaper printed and published two days week in the City of Nogales, County of Santa Cruz, State of Arizona. That the notice, a copy of which is hereto attached, described as follows:

**LEGAL NOTICE**  
**NOTICE OF AVAILABILITY**  
DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE PROPOSED SBInet TUCSON WEST TOWER PROJECT, NOGALES AND SONOITA STATIONS' AREAS OF RESPONSIBILITY, U.S. BORDER PATROL, TUCSON SECTOR  
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The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link *SBInet NEPA Documents for Public Review and Comment*. Additionally, copies will be

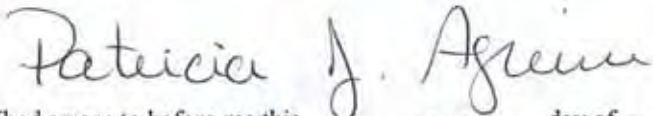
**NOTICE OF AVAILABILITY  
DRAFT SUPPLEMENTAL ENVIRONMENTAL**

was printed and published in the regular and entire issue of said  
NOGALES INTERNATIONAL for 1 issues, that the first was  
made on the 20th day of NOVEMBER 2009  
and the last publication thereof was made on the 20th day of  
NOVEMBER 2009 that said publication  
was made on each of the following dates, to wit:

11/20/09

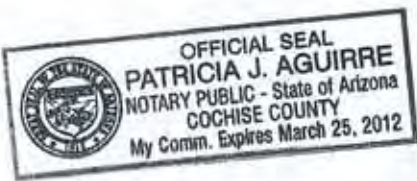
Request of  
GSRC ATTN: SHANNA MCCARTY

**NOGALES INTERNATIONAL**  
**268 W VIEW POINT, NOGALES, AZ 85621 (520)281-9706**  
By



Subscribed sworn to before me this 20th day of NOVEMBER

20 09



Notary Public in and for the County of Santa Cruz, State of Arizona

My Commission Expires:

March 25, 2012





RESPONSIBILITY, U.S. BORDER CONTROL, TUCSON SECTOR

5. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a draft SEA and proposed FONSI for the SBI/Tucson West Tower Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) 4321 et seq., CBP has prepared the draft SEA and proposed FONSI to identify and assess the potential impacts associated with the proposed siting, construction, operation, and maintenance of sensor towers, and supporting infrastructure components within the Tucson Sector. The location for the Proposed Action, which is known as the SBI/Tucson West Tower Project, is the Nogales and Sonoita Stations' areas of responsibility within the Tucson Sector, Santa Cruz County, Arizona.

made on the 20th day of NOVEMBER 2009  
and the last publication thereof was made on the 20th day of

NOVEMBER 2009 that said publication  
was made on each of the following dates, to wit:

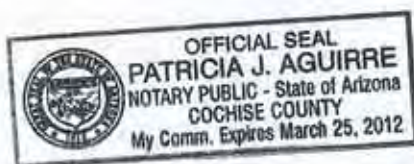
11/20/09

Request of GSRC ATTN: SHANNA MCCARTY

**NOGALES INTERNATIONAL**  
268 W VIEW POINT, NOGALES, AZ 85621 (520)281-9706

By *Patricia J. Aguirre*  
Subscribed sworn to before me this 20th day of NOVEMBER

20 09



Notary Public in and for the County of Santa Cruz, State of Arizona

My Commission Expires:

*March 25, 2012*

The draft SEA will be available November 20, 2009 and was prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and DHS Management Directive 023-01 (Environmental Planning Program). Copies of the draft SEA and proposed FONSI can be downloaded from the project website at [www.cbp.gov/sbi](http://www.cbp.gov/sbi) under the link *SBI NEPA Documents for Public Review and Comment*. Additionally, copies will be available in the following libraries for public review:

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(3) By fax to: (571) 468-7390 (Attention: Ms. Patience E. Patterson)

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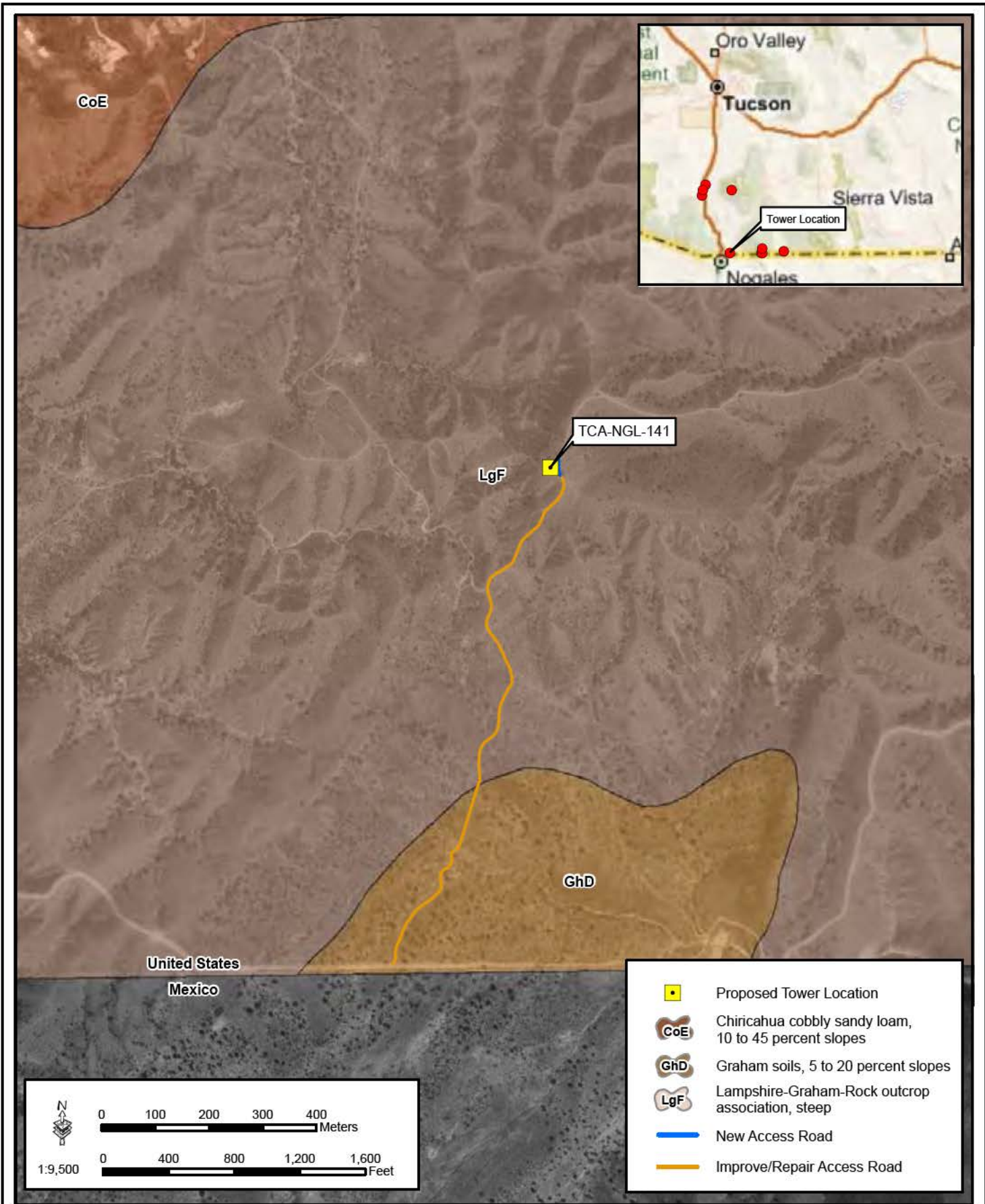
Req: Tucson sea noa  
Pub: 11/20/2009



*APPENDIX B*  
*SOIL SURVEY MAPS*

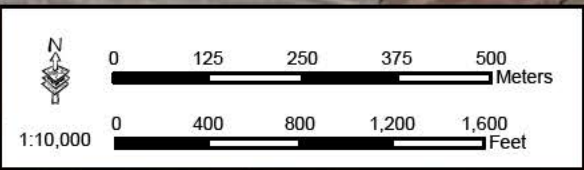
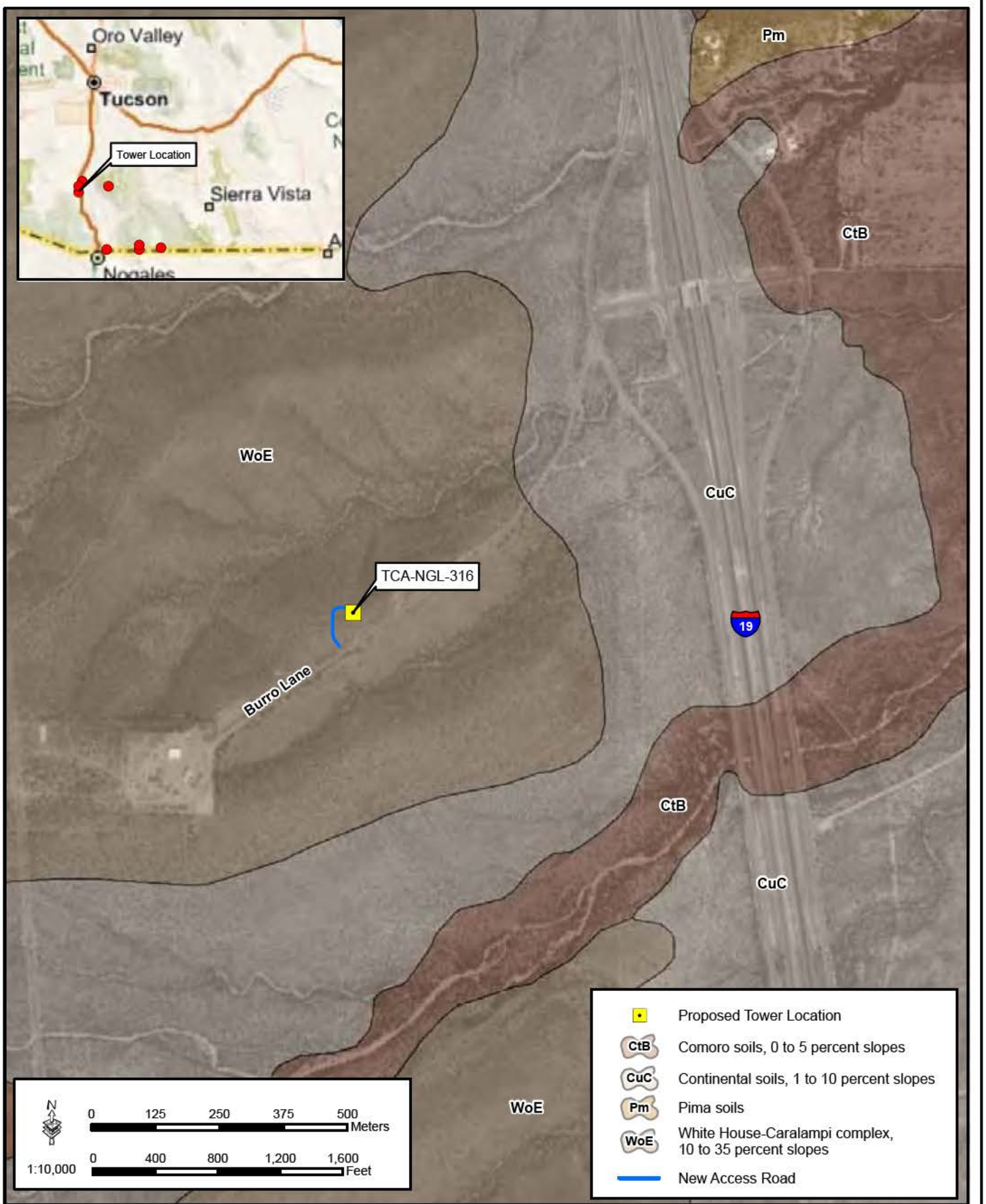






TCA-NGL-141 Soil Survey Map

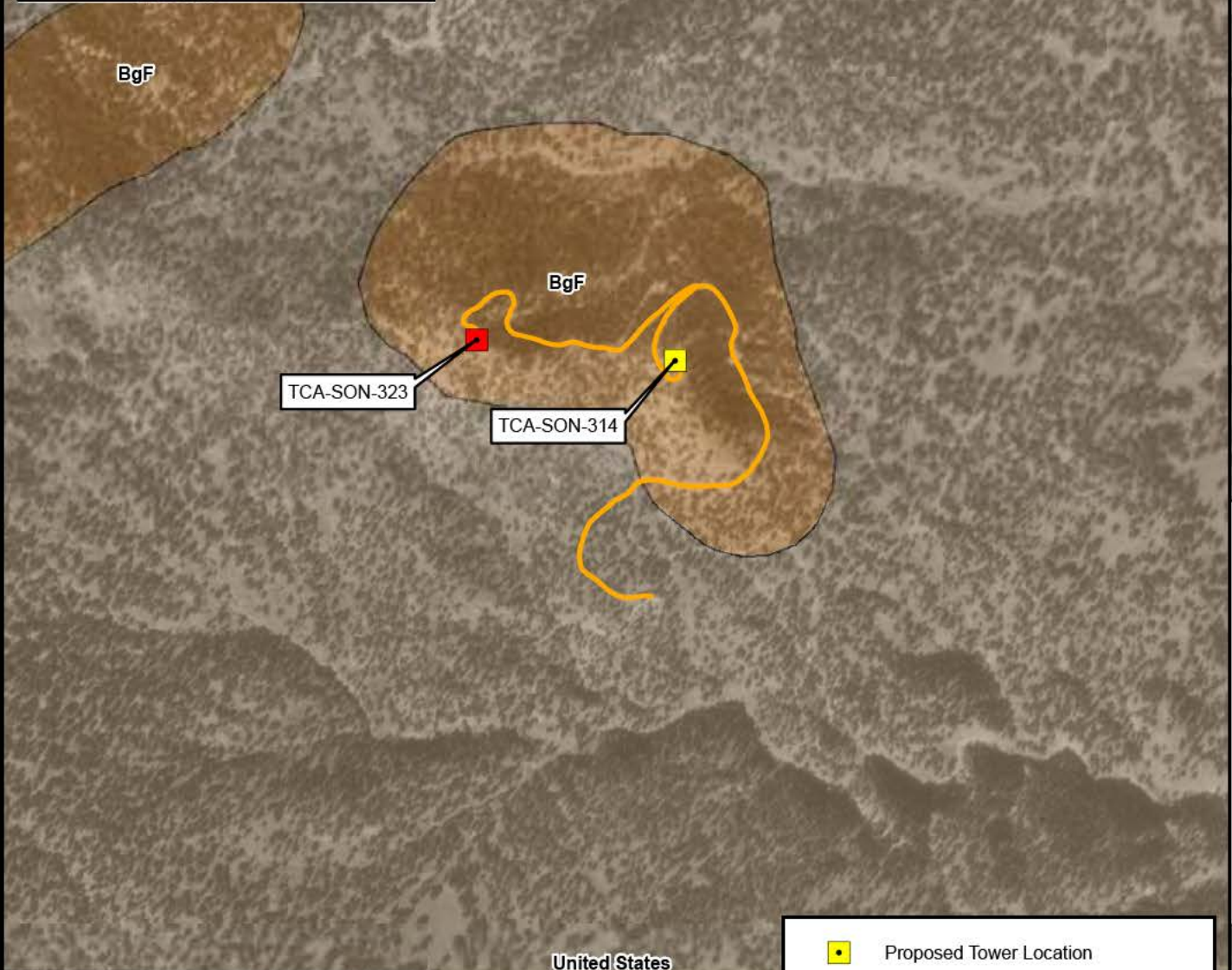




- Proposed Tower Location
- CtB Comoro soils, 0 to 5 percent slopes
- CuC Continental soils, 1 to 10 percent slopes
- Pm Pima soils
- WoE White House-Caralampi complex, 10 to 35 percent slopes
- New Access Road

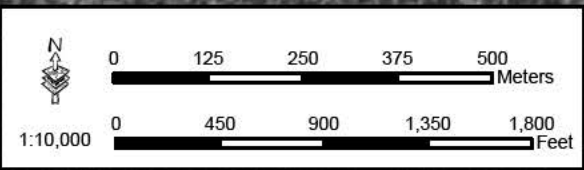
TCA-NGL-316 Soil Survey Map





United States  
Mexico

- Proposed Tower Location
- Alternate Tower
- BaE Barkerville-Gaddes complex, 10 to 30 percent slopes
- BgF Barkerville-Gaddes association, steep
- Tower Access Road



TCA-SON-314 and TCA-SON-323 Soil Survey Map







*APPENDIX C*  
*THREATENED AND ENDANGERED SPECIES*

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# Santa Cruz County

| COMMON NAME                  | SCIENTIFIC NAME                               | STATUS     | DESCRIPTION                                                                                                                                                                                                                          | COUNTY                                                                               | ELEVATION      | HABITAT                                                                                                                 | COMMENTS                                                                                                                                                                                                                                                                             |
|------------------------------|-----------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canelo Hills ladies' tresses | <i>Spiranthes delitescens</i>                 | Endangered | Slender, erect member of the orchid family (Orchidaceae). Flower stalk 20 inches tall, may contain 40 white flowers spirally arranged on the flowering stalk.                                                                        | Cochise, Santa Cruz                                                                  | ~ 5,000 ft     | Finely grained, highly organic, saturated soils of cienegas.                                                            | Found in the San Pedro watershed. Potential habitat occurs in Sonora, Mexico, but no populations have been found.                                                                                                                                                                    |
| Chiricahua leopard frog      | <i>Lithobates [Rana] chiricahuensis</i>       | Threatened | Cream colored tubercles (spots) on a dark background on the rear of the thigh, dorsolateral folds that are interrupted and deflected medially, and a call given out of water distinguish this spotted frog from other leopard frogs. | Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Pima, Santa Cruz, Yavapai | 3,300-8,900 ft | Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs. | Require permanent or nearly permanent water sources. Populations north of the Gila River may be a closely-related, but distinct, undescribed species. A special rule allows take of frogs due to operation and maintenance of livestock tanks on State and private lands.            |
| Desert pupfish               | <i>Cyprinodon macularius</i>                  | Endangered | Small (2 inches) smoothly rounded body shape with narrow vertical bars on the sides. Breeding males blue on head and sides with yellow on tail. Females and juveniles tan to olive colored back and silvery sides.                   | Cochise, Graham, Maricopa, Pima, Santa Cruz, Yavapai                                 | < 4,000 ft     | Shallow springs, small streams, and marshes. Tolerates saline and warm water.                                           | Two subspecies are recognized: Desert Pupfish ( <i>C.m. macularius</i> ) and Quitobaquito Pupfish ( <i>C.m. eremus</i> ). Critical habitat includes Quitobaquito Springs, Pima County, portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. |
| Gila chub                    | <i>Gila intermedia</i>                        | Endangered | Deep compressed body, flat head. Dark olive-gray color above, silver sides. Endemic to Gila River Basin.                                                                                                                             | Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, Yavapai                    | 2,000-5,500 ft | Pools, springs, cienegas, and streams.                                                                                  | Found on multiple private lands, including the Nature Conservancy and the Audubon Society. Also occurs on Federal and state lands and in Sonora, Mexico. Critical habitat occurs in Cochise, Gila, Graham, Greenlee, Pima, Pinal, Santa Cruz, and Yavapai counties.                  |
| Gila topminnow               | <i>Poeciliopsis occidentalis occidentalis</i> | Endangered | Small (2 inches), guppy-like, live bearing, lacks dark spots on its fins. Breeding males are jet black with yellow fins.                                                                                                             | Cochise, Gila, Graham, Maricopa, Pima, Santa Cruz, Yavapai                           | < 4,500 ft     | Small streams, springs, and cienegas vegetated shallows.                                                                | Species historically also occurred in backwaters of large rivers but is currently isolated to small streams and springs.                                                                                                                                                             |

| COMMON NAME           | SCIENTIFIC NAME                              | STATUS     | DESCRIPTION                                                                                                                                                                                                             | COUNTY                                                                                                        | ELEVATION       | HABITAT                                                                                                   | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|----------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Huachuca water umbel  | <i>Lilaeopsis schaffneriana ssp. recurva</i> | Endangered | Herbaceous, semi-aquatic perennial in the parsley family (Umbelliferae) with slender erect, hollow, leaves that grow from the nodes of creeping rhizomes. Flower: 3 to 10 flowered umbels arise from root nodes.        | Cochise, Pima, Santa Cruz                                                                                     | 3,500-6,500 ft  | Cienegas, perennial low gradient streams, wetlands.                                                       | Species also occurs in adjacent Sonora, Mexico, west of the continental divide. Critical habitat in Cochise and Santa Cruz counties (64 FR 37441, July 12, 1999).                                                                                                                                                                                                                                                      |
| Jaguar                | <i>Panthera onca</i>                         | Endangered | Largest species of cat native to Southwest. Muscular, with relatively short, massive limbs, and a deep-chested body. Usually cinnamon-buff in color with many black spots. Weights ranges from 90-300 lbs.              | Cochise, Santa Cruz, Pima                                                                                     | 1,600-9,000 ft  | Found in Sonoran desertscrub up through subalpine conifer forest.                                         | Also occurs in New Mexico. A Jaguar conservation team is being formed that is being led by Arizona and New Mexico state entities along with private organizations.                                                                                                                                                                                                                                                     |
| Lesser long-nosed bat | <i>Leptonycteris curasoae yerbabuena</i>     | Endangered | Elongated muzzle, small leaf nose, and long tongue. Yellowish brown or gray above and cinnamon brown below. Tail minute and appears to be lacking. Easily disturbed.                                                    | Cochise, Gila, Graham, Greenlee, Pima, Pinal, Maricopa, Santa Cruz, Yuma                                      | 1,600-11,500 ft | Desert scrub habitat with agave and columnar cacti present as food plants.                                | Day roosts in caves and abandoned tunnels. Forages at night on nectar, pollen, and fruit of paniculate agaves and columnar cacti. This species is migratory and is present in Arizona usually from April to September and south of the border the remainder of the year.                                                                                                                                               |
| Mexican spotted owl   | <i>Strix occidentalis lucida</i>             | Threatened | Medium sized with dark eyes and no ear tufts. Brownish and heavily spotted with white or beige.                                                                                                                         | Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai | 4,100-9,000 ft  | Nests in canyons and dense forests with multi-layered foliage structure.                                  | Generally nest in older forests of mixed conifer or ponderosa pine/gambel oak type, in canyons, and use variety of habitats for foraging. Sites with cool microclimates appear to be of importance or are preferred. Critical habitat was finalized on August 31, 2004 (69 FR 53182) in Arizona in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties. |
| Ocelot                | <i>Leopardus (=Felis) pardalis</i>           | Endangered | Medium-sized spotted cat that is yellowish with black streaks and stripes running from front to back. Tail is spotted and about 1/2 the length of head and body. Face is less heavily streaked than the back and sides. | Cochise, Pima, Santa Cruz                                                                                     | < 8,000 ft      | Desert scrub in Arizona. Humid tropical and subtropical forests, and savannahs in areas south of the U.S. | May persist in partly-cleared forests, second-growth woodland, and abandoned cultivated areas reverted to brush. Universal component is presence of dense cover. Unconfirmed reports of individuals in the southern part of the State continue to be received.                                                                                                                                                         |

| COMMON NAME                    | SCIENTIFIC NAME                                     | STATUS     | DESCRIPTION                                                                                                                                                                                                                       | COUNTY                                                                                                                      | ELEVATION      | HABITAT                                                                                       | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|-----------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pima pineapple cactus          | <i>Coryphantha scheeri</i> var. <i>robustispina</i> | Endangered | Hemispherical stems 4-7 inches tall 3-4 inches diameter. Central spine 1 inch long straw colored hooked surrounded by 6-15 radial spines. Flower: yellow, salmon, or rarely white narrow floral tube.                             | Pima, Santa Cruz                                                                                                            | 2,300-5,000 ft | Sonoran desertscrub or semi-desert grassland communities.                                     | Occurs in alluvial valleys or on hillsides in rocky to sandy or silty soils. This species can be confused with juvenile barrel cactus ( <i>Ferocactus</i> ). However, the spines of the later are flattened, in contrast with the round cross-section of the <i>Coryphantha</i> spines. About 80-90% of individuals occur on state or private land.                                                                                                                                                                                                   |
| Sonora chub                    | <i>Gila ditaenia</i>                                | Threatened | Minnow (<5 inches long) moderately chubby, dark-colored fish with two prominent black lateral bands on the sides and a dark oval spot at the base of the tail. Breeding males have red lower fins and a orange belly.             | Santa Cruz                                                                                                                  | 3,900 ft       | Perennial and intermittent, small to moderate sized streams with boulders and cliffs.         | Critical habitat includes Sycamore Creek (Santa Cruz County) and a 15 meter buffer from the U.S.- Mexico border to approximately 8 km upstream; Yank Spring; lowermost 2 km of Penasco Creek; and lowermost 0.4 km of an unnamed Sycamore Creek tributary. Species extends into Mexico (Altar and Magdalena rivers).                                                                                                                                                                                                                                  |
| Sonoran tiger salamander       | <i>Ambystoma mavortium stebbinsi</i>                | Endangered | Large, light-colored blotches or reticulations on a dark background. Metamorphosed individuals are 1.8 to 5.9 inches in snout-vent length. Aquatic larvae are uniform dark colored with plume-like gills and developed tail fins. | Cochise, Santa Cruz                                                                                                         | 4,000-6,300 ft | Stock tanks and impounded cienegas; rodent burrows, rotted logs, and other moist cover sites. | Populations occur within the headwaters of the Santa Cruz and San Pedro Rivers. These include San Rafael Valley and in the foothills of the east slope of the Patagonia and Huachuca Mountains and Fort Huachuca.                                                                                                                                                                                                                                                                                                                                     |
| Southwestern willow flycatcher | <i>Empidonax traillii extimus</i>                   | Endangered | Small passerine (about 6 inches) grayish-green back and wings, whitish throat, light olive-gray breast and pale yellowish belly. Two wingbars visible. Eye-ring faint or absent.                                                  | Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma | < 8,500 ft     | Cottonwood/willow and tamarisk vegetation communities along rivers and streams.               | Migratory riparian-obligate species that occupies breeding habitat from late April to September. Distribution within its range is restricted to riparian corridors. Difficult to distinguish from other members of the <i>Empidonax</i> complex by sight alone. Training seminar required for those conducting flycatcher surveys. Critical habitat was finalized on October 19, 2005 (50 CFR 60886). In Arizona there are critical habitat segments in Apache, Cochise, Gila, Graham, Greenlee, Maricopa, Mohave, Pima, Pinal, and Yavapai counties. |

| COMMON NAME                                 | SCIENTIFIC NAME                  | STATUS    | DESCRIPTION                                                                                                                                                                                                                                                                                                                                    | COUNTY                                                                            | ELEVATION      | HABITAT                                                                                        | COMMENTS                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------|----------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Arizona trefrog<br>(Huachuca/Canelo<br>DPS) | <i>Hyla wrightorum</i>           | Candidate | Small (1.8 inches in length) green frog; dark eye stripe extends past shoulder onto the sides of the body, may break into spots or dashes past shoulder, throat on males dusky green or tan; larger tadpoles golden brown above and below with mottled black tails.                                                                            | Cochise, Santa Cruz                                                               | 5,000-8,500 ft | Madrean oak woodlands, savannah, pine-oak woodlands, and mixed conifer forests.                | Known from less than 20 localities in the Huachuca Mountains and adjacent Canelo Hills. Believed this population is geographically disjunct from the other known locality in the wetlands at Rancho Los Fresnos, Sonora, Mexico.                                                                                                                                           |
| Huachuca<br>springsnail                     | <i>Pyrgulopsis thompsoni</i>     | Candidate | Very small (.06-.12 inches) conical shell. Identification must be verified by characteristics of reproductive organs.                                                                                                                                                                                                                          | Cochise, Santa Cruz                                                               | 4,500-7,200 ft | Aquatic areas, small springs with vegetation and slow to moderate flow.                        | Individuals found on firm substances (roots, wood, and rocks). Other populations found on Fort Huachuca.                                                                                                                                                                                                                                                                   |
| Northern Mexican<br>Gartersnake             | <i>Thamnophis eques megalops</i> | Candidate | Background color ranges from olive, olive-brown, to olive-gray. Body has three yellow or light colored stripes running down the length of the body, darker towards tail. Species distinguished from other native gartersnakes by the lateral stripes reaching the 3rd and 4th scale rows. Paired black spots extend along dorsolateral fields. | Apache, Coconino, Cochise, Gila, Graham, Navajo, Pima, Pinal, Santa Cruz, Yavapai | 130-8,500 ft   | Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests. | Core population areas in the U.S. include mid/upper Verde River drainage, mid/lower Tonto Creek, and the San Rafael Valley and surrounding area. Status on tribal lands unknown. Distributed south into Mexico along the Sierra Madre Occidental and Mexican Plateau. Strongly associated with the presence of a native prey base including leopard frogs and native fish. |
| Stephan's riffle<br>beetle                  | <i>Heterelmis stephani</i>       | Candidate | Small aquatic beetle, typically less than 0.11 inches in total length.                                                                                                                                                                                                                                                                         | Santa Cruz                                                                        | 5,100-6,600 ft | Free-flowing springs and seeps, commonly referred to as rheocrenes.                            | Current distribution is limited to Sylvester Spring. Historically known from Bog Springs, the type locality. Both springs located in Madera Canyon on the Coronado National Forest.                                                                                                                                                                                        |

| COMMON NAME               | SCIENTIFIC NAME                | STATUS    | DESCRIPTION                                                                                                                                                                                                                                                                                       | COUNTY                                                                                                                      | ELEVATION      | HABITAT                                                                                                                                                                                                                                                          | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------|--------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yellow-billed cuckoo      | <i>Coccyzus americanus</i>     | Candidate | Medium-sized bird with a slender, long-tailed profile, slightly down-curved bill that is blue-black with yellow on the lower half. Plumage is grayish-brown above and white below, with rufous primary flight feathers.                                                                           | Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma | < 6,500 ft     | Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).                                                                                                                                                                                  | Neotropical migrant that winters primarily in South America and breeds primarily in the U.S. (but also in southern Canada and northern Mexico). As a migrant it is rarely detected; can occur outside of riparian areas. Cuckoos are found nesting statewide, mostly below 5,000 feet in central, western, and southeastern Arizona. Concern for cuckoos are primarily focused upon alterations to its nesting and foraging habitat. Nesting cuckoos are associated with relatively dense, wooded, streamside riparian habitat, with varying combinations of Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk. Some cuckoos have also been detected nesting in velvet mesquite, netleaf hackberry, Arizona sycamore, Arizona alder, and some exotic neighborhood shade trees. |
| American peregrine falcon | <i>Falco peregrinus anatum</i> | Delisted  | A crow-sized falcon with slate blue-gray on the back and wings, and white on the underside; a black head with vertical "bandit's mask" pattern over the eyes; long pointed wings; and a long wailing call made during breeding. Very adept flyers and hunters, reaching diving speeds of 200 mph. | Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, Yavapai, Yuma | 3,500-9,000 ft | Areas with rocky, steep cliffs, primarily near water, where prey (primarily shorebirds, songbirds, and waterfowl) concentrations are high. Nests are found on ledges of cliffs, and sometimes on man-made structures such as office towers and bridge abutments. | Species recovered with over 1,650 breeding birds in the US and Canada.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |





## Special Status Species by County, Taxon, Scientific Name

Arizona Game and Fish Department, Heritage Data management System

Updated: **June 01, 2009**

| COUNTY | TAXON     | SCIENTIFIC NAME                           | COMMON NAME                             | ELCODE     | ESA    | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK    |
|--------|-----------|-------------------------------------------|-----------------------------------------|------------|--------|-----|------|------|--------|-------|--------|-----------|
| Apache | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                            | AAABB01110 | SC     |     | S    |      |        |       | G3G4   | S3S4      |
| Apache | AMPHIBIAN | Lithobates chiricahuensis                 | Chiricahua Leopard Frog                 | AAABH01080 | LT     |     | S    |      | A      | WSC   | G3     | S2        |
| Apache | AMPHIBIAN | Lithobates pipiens                        | Northern Leopard Frog                   | AAABH01170 |        | S   | S    | 2    |        | WSC   | G5     | S2        |
| Apache | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog                    | AAABH01250 | SC     | S   | S    |      | PR     | WSC   | G4     | S3        |
| Apache | BIRD      | Accipiter gentilis                        | Northern Goshawk                        | ABNKC12060 | SC     | S   | S    | 4    | A      | WSC   | G5     | S3B       |
| Apache | BIRD      | Athene cunicularia hypugaea               | Western Burrowing Owl                   | ABNSB10012 | SC     | S   |      | 4    | A      |       | G4T4   | S3        |
| Apache | BIRD      | Catharus fuscescens                       | Veery                                   | ABPBJ18080 |        |     |      |      |        | WSC   | G5     | S1        |
| Apache | BIRD      | Charadrius montanus                       | Mountain Plover                         | ABNNB03100 | SC     |     | S    | 4    |        |       | G2     | S1B,S2N   |
| Apache | BIRD      | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C      |     |      | 2    |        | WSC   | G5     | S3        |
| Apache | BIRD      | Dolichonyx oryzivorus                     | Bobolink                                | ABPBXA9010 |        |     |      |      |        | WSC   | G5     | S1        |
| Apache | BIRD      | Dumetella carolinensis                    | Gray Catbird                            | ABPBK01010 |        |     |      |      |        | WSC   | G5     | S1        |
| Apache | BIRD      | Empidonax traillii extimus                | Southwestern Willow Flycatcher          | ABPAE33043 | LE     |     | S    | 2    |        | WSC   | G5T1T2 | S1        |
| Apache | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon               | ABNKD06071 | SC     | S   | S    | 4    | A      | WSC   | G4T4   | S4        |
| Apache | BIRD      | Haliaeetus leucocephalus                  | Bald Eagle                              | ABNKC10010 | LT,DPS | S   | S    | 2    | P      | WSC   | G5     | S2S3B,S4N |
| Apache | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population          | ABNKC10015 | SC     | S   | S    | 2    | P      | WSC   | G5TNR  | S4N       |
| Apache | BIRD      | Megaceryle alcyon                         | Belted Kingfisher                       | ABNXD01020 |        |     |      | 4    |        | WSC   | G5     | S2B,S5N   |
| Apache | BIRD      | Pandion haliaetus                         | Osprey                                  | ABNKC01010 |        | S   |      |      |        | WSC   | G5     | S2B,S4N   |
| Apache | BIRD      | Pica hudsonia                             | Black-billed Magpie                     | ABPAV09010 |        |     |      |      |        | WSC   | G5     | S3        |
| Apache | BIRD      | Pinicola enucleator                       | Pine Grosbeak                           | ABPBY03010 |        |     |      |      |        | WSC   | G5     | S1        |
| Apache | BIRD      | Setophaga ruticilla                       | American Redstart                       | ABPBX06010 |        |     |      |      |        | WSC   | G5     | S1        |
| Apache | BIRD      | Strix occidentalis lucida                 | Mexican Spotted Owl                     | ABNSB12012 | LT     |     | S    | 3    | A      | WSC   | G3T3   | S3S4      |
| Apache | FISH      | Catostomus clarkii                        | Desert Sucker                           | AFCJC02040 | SC     | S   |      |      |        |       | G3G4   | S3S4      |
| Apache | FISH      | Catostomus discobolus discobolus          | Bluehead Sucker                         | AFCJC02072 |        |     | S    | 4    |        |       | G4T4   | S3        |
| Apache | FISH      | Catostomus discobolus yarrowi             | Zuni Bluehead (Mountain) Sucker         | AFCJC02071 | C      |     | S    | 4    |        | WSC   | G4T1   | S1        |
| Apache | FISH      | Catostomus insignis                       | Sonora Sucker                           | AFCJC02100 | SC     | S   |      |      | P      |       | G3     | S3        |
| Apache | FISH      | Catostomus sp. 3                          | Little Colorado Sucker                  | AFCJC02250 | SC     | S   | S    |      |        | WSC   | G2     | S2        |
| Apache | FISH      | Gila robusta                              | Roundtail Chub                          | AFCJB13150 | SC     | S   | S    | 2    | PR     | WSC   | G3     | S2        |

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| COUNTY | TAXON        | SCIENTIFIC NAME                         | COMMON NAME                        | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK | S RANK |
|--------|--------------|-----------------------------------------|------------------------------------|------------|-----|-----|------|------|--------|-------|-------|--------|
| Apache | FISH         | Lepidomeda vittata                      | Little Colorado Spinedace          | AFCJB20040 | LT  |     | S    |      |        | WSC   | G1G2  | S1S2   |
| Apache | FISH         | Oncorhynchus apache                     | Apache Trout                       | AFCHA02102 | LT  |     | S    |      |        | WSC   | G3T3  | S3     |
| Apache | FISH         | Rhinichthys osculus                     | Speckled Dace                      | AFCJB37050 | SC  | S   |      |      | P      |       | G5    | S3S4   |
| Apache | FISH         | Tiaroga cobitis                         | Loach Minnow                       | AFCJB37140 | LT  |     | S    |      | P      | WSC   | G2    | S1     |
| Apache | INVERTEBRATE | Anodonta californiensis                 | California Floater                 | IMBIV04020 | SC  |     | S    |      |        |       | G3Q   | S1     |
| Apache | INVERTEBRATE | Daihinibaenetes arizonensis             | Arizona Giant Sand Treader Cricket | IHORT21010 | SC  |     | S    |      |        |       | G1G3  | S1S3   |
| Apache | INVERTEBRATE | Psephenus montanus                      | White Mountains Water Penny Beetle | IICOL63020 | SC  |     | S    |      |        |       | G2?   | S2?    |
| Apache | INVERTEBRATE | Pyrgulopsis trivialis                   | Three Forks Springsnail            | IMGASJ0560 | C   | S   | S    |      |        |       | G1    | S1     |
| Apache | INVERTEBRATE | Speyeria nokomis nitocris               | Mountain Silverspot Butterfly      | IILEPJ6052 |     |     | S    |      |        |       | G3T3  | S3     |
| Apache | MAMMAL       | Euderma maculatum                       | Spotted Bat                        | AMACC07010 | SC  | S   |      |      | PR     | WSC   | G4    | S1S2   |
| Apache | MAMMAL       | Idionycteris phyllotis                  | Allen's Big-eared Bat              | AMACC09010 | SC  |     |      |      |        |       | G3G4  | S2S3   |
| Apache | MAMMAL       | Microtus mexicanus navaho               | Navajo Mexican Vole                | AMAFF11213 | SC  |     | S    | 4    |        | WSC   | G5T2Q | S1     |
| Apache | MAMMAL       | Myotis occultus                         | Arizona Myotis                     | AMACC01160 | SC  |     |      |      |        |       | G3G4  | S3     |
| Apache | MAMMAL       | Myotis volans                           | Long-legged Myotis                 | AMACC01110 | SC  |     |      |      |        |       | G5    | S3S4   |
| Apache | MAMMAL       | Perognathus flavus goodpasteri          | Springerville Pocket Mouse         | AMAFD01031 | SC  |     | S    |      |        |       | G5T3  | S2     |
| Apache | MAMMAL       | Sorex palustris                         | American Water Shrew               | AMABA01150 |     |     |      |      |        | WSC   | G5    | S1     |
| Apache | MAMMAL       | Spermophilus tridecemlineatus monticola | White Mountains Ground Squirrel    | AMAFB05092 |     |     | S    |      |        |       | G5T3  | S1S2   |
| Apache | MAMMAL       | Zapus hudsonius luteus                  | New Mexican Jumping Mouse          | AMAFH01014 | C   |     | S    |      |        | WSC   | G5T2  | S1     |
| Apache | PLANT        | Allium gooddingii                       | Goodding Onion                     | PMLIL02120 | SC  |     | S    | 3    |        | HS    | G4    | S3S4   |
| Apache | PLANT        | Astragalus nutriosensis                 | Nutrioso Milk-vetch                | PDFAB0FB70 | SC  |     |      |      |        | SR    | G3?   | S3?    |
| Apache | PLANT        | Astragalus xiphoides                    | Gladiator Milk Vetch               | PDFAB0F9T0 | SC  |     |      |      |        | SR    | G3    | S3     |
| Apache | PLANT        | Botrychium crenulatum                   | Crenulate Moonwort                 | PPOPH010L0 | SC  |     | S    |      |        |       | G3    | S1     |
| Apache | PLANT        | Calypso bulbosa                         | Western Fairy Slipper              | PMORC0D010 |     |     |      |      |        | SR    | G5    | S3     |
| Apache | PLANT        | Carex chihuahuensis                     | A Sedge                            | PMCYP032T0 |     |     | S    |      |        |       | G3G4  | S2S3   |
| Apache | PLANT        | Carex specuicola                        | Navajo Sedge                       | PMCYP03CQ0 | LT  |     |      | 3    |        | HS    | G2    | S2     |
| Apache | PLANT        | Castilleja mogollonica                  | White Mountains Paintbrush         | PDSCR0D3Q0 | SC  |     | S    |      |        | SR    | G1Q   | S1     |
| Apache | PLANT        | Chrysothamnus molestus                  | Tusayan Rabbitbrush                | PDAST2C060 | SC  |     | S    |      |        |       | G3    | S3     |
| Apache | PLANT        | Cypripedium parviflorum var. pubescens  | Yellow Lady's-slipper              | PMORC0Q092 |     |     |      | 4    |        | HS    | G5T5  | S1     |
| Apache | PLANT        | Draba standleyi                         | Standley Whitlow-grass             | PDBRA112G0 | SC  |     |      |      |        |       | G2G3  | S2S3   |

| COUNTY  | TAXON     | SCIENTIFIC NAME                               | COMMON NAME                     | ELCODE     | ESA   | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK |
|---------|-----------|-----------------------------------------------|---------------------------------|------------|-------|-----|------|------|--------|-------|--------|--------|
| Apache  | PLANT     | Eremocrinum albomarginatum                    | Utah Solitaire Lily             | PMLIL0T010 |       |     | S    |      |        | SR    | G3     | S2     |
| Apache  | PLANT     | Erigeron rhizomatus                           | Zuni (Rhizome) Fleabane         | PDAST3M3N0 | LT    |     |      | 2    |        |       | G2     | S1     |
| Apache  | PLANT     | Goodyera repens                               | Lesser Rattlesnake Plantain     | PMORC17030 |       |     |      |      |        | SR    | G5     | S2     |
| Apache  | PLANT     | Ipomoea plummerae var. cuneifolia             | Huachuca Morning Glory          | PDCON0A141 |       |     | S    |      |        |       | G4T3   | S3     |
| Apache  | PLANT     | Malaxis porphyrea                             | Purple Adder's Mouth            | PMORC1R0Q0 |       |     |      |      |        | SR    | G4     | S2     |
| Apache  | PLANT     | Mammillaria wrightii var. wrightii            | Wright Fishhook Cactus          | PDCAC0A0E2 |       |     |      |      |        | SR    | G4T3   | S1     |
| Apache  | PLANT     | Platanthera hyperborea                        | Boreal Bog Orchid               | PMORC1Y0B0 |       |     |      |      |        | SR    | G5     | S3S4   |
| Apache  | PLANT     | Platanthera purpurascens                      | Slender Bog Orchid              | PMORC1Y0P0 |       |     |      |      |        | SR    | G5     | S4     |
| Apache  | PLANT     | Puccinellia parishii                          | Parish Alkali Grass             | PMPOA530T0 | SC    |     |      | 4    |        | HS    | G2G3   | S2     |
| Apache  | PLANT     | Rumex orthoneurus                             | Blumer's Dock                   | PDPGN0P0Z0 | SC    |     | S    |      |        | HS    | G3     | S3     |
| Apache  | PLANT     | Salix arizonica                               | Arizona Willow                  | PDSAL02080 |       |     | S    |      |        | HS    | G2G3   | S2     |
| Apache  | PLANT     | Senecio quaerens                              | Gila Groundsel                  | PDAST8H2L0 | SC    |     | S    |      |        | SR    | G2     | S2     |
| Apache  | PLANT     | Stellaria porsildii                           | Porsild's Starwort              | PDCAR0X160 |       |     | S    |      |        |       | G1     | S1     |
| Apache  | PLANT     | Streptopus amplexifolius                      | White Mandarin Twisted Stalk    | PMLIL1X010 |       |     |      |      |        | SR    | G5     | S2S3   |
| Apache  | PLANT     | Trifolium neurophyllum                        | White Mountains Clover          | PDFAB401N0 | SC    |     | S    |      |        |       | G2     | S2     |
| Apache  | PLANT     | Zigadenus virescens                           | Green Death Camas               | PMLIL280E0 |       |     |      |      |        | SR    | G4     | S4     |
| Apache  | REPTILE   | Thamnophis eques megalops                     | Northern Mexican Gartersnake    | ARADB36061 | C     |     | S    |      | A      | WSC   | G5T5   | S1     |
| Apache  | REPTILE   | Thamnophis rufipunctatus                      | Narrow-headed Gartersnake       | ARADB36110 | SC    | S   | S    |      |        | WSC   | G3G4   | S1     |
| Cochise | AMPHIBIAN | Ambystoma tigrinum stebbinsi                  | Sonora Tiger Salamander         | AAAAA01145 | LE    |     |      |      | PR     | WSC   | G5T1T2 | S1     |
| Cochise | AMPHIBIAN | Eleutherodactylus augusti cactorum            | Western Barking Frog            | AAABD04171 |       | S   | S    |      |        | WSC   | G5T5   | S2     |
| Cochise | AMPHIBIAN | Hyla wrightorum (Huachucas/Canelo Hills Pop.) | Huachucas/Canelo Hills Treefrog | AAABC02082 | C,DPS |     |      |      |        |       | G4T2   | S1     |
| Cochise | AMPHIBIAN | Lithobates blairi                             | Plains Leopard Frog             | AAABH01040 |       |     |      |      |        | WSC   | G5     | S1     |
| Cochise | AMPHIBIAN | Lithobates chiricahuensis                     | Chiricahua Leopard Frog         | AAABH01080 | LT    |     | S    |      | A      | WSC   | G3     | S2     |
| Cochise | AMPHIBIAN | Lithobates subaquavocalis                     | Ramsey Canyon Leopard Frog      | AAABH01280 | SC    | S   | S    |      |        |       | G1Q    | S1     |
| Cochise | AMPHIBIAN | Lithobates yavapaiensis                       | Lowland Leopard Frog            | AAABH01250 | SC    | S   | S    |      | PR     | WSC   | G4     | S3     |
| Cochise | BIRD      | Accipiter gentilis                            | Northern Goshawk                | ABNKC12060 | SC    | S   | S    | 4    | A      | WSC   | G5     | S3B    |
| Cochise | BIRD      | Amazilia violiceps                            | Violet-crowned Hummingbird      | ABNUC29150 |       |     |      |      |        | WSC   | G5     | S3     |
| Cochise | BIRD      | Ammodramus bairdii                            | Baird's Sparrow                 | ABPBXA0010 | SC    | S   |      |      |        | WSC   | G4     | S2N    |
| Cochise | BIRD      | Anthus spragueii                              | Sprague's Pipit                 | ABPBM02060 |       |     |      |      |        | WSC   | G4     | S2N    |

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| Cochise | BIRD  | Athene cunicularia hypugaea               | Western Burrowing Owl                   | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3        |
| Cochise | BIRD  | Buteo nitidus maxima                      | Northern Gray Hawk                      | ABNKC19011 | SC  | S   | S    |      | PR     | WSC   | G5T4Q  | S3        |
| Cochise | BIRD  | Buteo swainsoni                           | Swainson's Hawk                         | ABNKC19070 |     | S   |      |      |        |       | G5     | S3        |
| Cochise | BIRD  | Buteogallus anthracinus                   | Common Black-Hawk                       | ABNKC15010 |     | S   | S    |      | A      | WSC   | G4G5   | S3        |
| Cochise | BIRD  | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3        |
| Cochise | BIRD  | Dendrocygna autumnalis                    | Black-bellied Whistling-Duck            | ABNJB01040 |     |     |      |      |        | WSC   | G5     | S3        |
| Cochise | BIRD  | Dumetella carolinensis                    | Gray Catbird                            | ABPBK01010 |     |     |      |      |        | WSC   | G5     | S1        |
| Cochise | BIRD  | Empidonax fulvifrons pygmaeus             | Northern Buff-breasted Flycatcher       | ABPAE33141 | SC  |     |      |      |        | WSC   | G5T5   | S1        |
| Cochise | BIRD  | Empidonax traillii extimus                | Southwestern Willow Flycatcher          | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1        |
| Cochise | BIRD  | Euptilotis neoxenus                       | Eared Quetzal                           | ABNWA03010 |     |     | S    |      | A      |       | G3     | SAB,S1N   |
| Cochise | BIRD  | Falco peregrinus anatum                   | American Peregrine Falcon               | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4        |
| Cochise | BIRD  | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population          | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N       |
| Cochise | BIRD  | Ictinia mississippiensis                  | Mississippi Kite                        | ABNKC09010 |     | S   |      |      | A      | WSC   | G5     | S3        |
| Cochise | BIRD  | Plegadis chihi                            | White-faced Ibis                        | ABNGE02020 | SC  |     |      |      |        |       | G5     | S?B,S2S3N |
| Cochise | BIRD  | Polioptila nigriceps                      | Black-capped Gnatcatcher                | ABPBJ08040 |     |     |      |      |        | WSC   | G5     | S1        |
| Cochise | BIRD  | Strix occidentalis lucida                 | Mexican Spotted Owl                     | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4      |
| Cochise | BIRD  | Trogon elegans                            | Elegant Trogon                          | ABNWA02070 |     |     |      |      |        | WSC   | G5     | S3        |
| Cochise | BIRD  | Tyrannus crassirostris                    | Thick-billed Kingbird                   | ABPAE52040 |     | S   |      |      |        | WSC   | G5     | S2        |
| Cochise | BIRD  | Tyrannus melancholicus                    | Tropical Kingbird                       | ABPAE52010 |     |     |      |      |        | WSC   | G5     | S3        |
| Cochise | FISH  | Agosia chrysogaster chrysogaster          | Gila Longfin Dace                       | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4      |
| Cochise | FISH  | Agosia chrysogaster ssp. 1                | Yaqui Longfin Dace                      | AFCJB37152 | SC  | S   |      |      | A      |       | G4T1   | S1        |
| Cochise | FISH  | Campostoma ornatum                        | Mexican Stoneroller                     | AFCJB03030 | SC  |     | S    |      | P      | WSC   | G3     | S1        |
| Cochise | FISH  | Catostomus clarkii                        | Desert Sucker                           | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4      |
| Cochise | FISH  | Catostomus insignis                       | Sonora Sucker                           | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3        |
| Cochise | FISH  | Cyprinella formosa                        | Beautiful Shiner                        | AFCJB49080 | LT  |     |      |      | A      | WSC   | G2     | S1        |
| Cochise | FISH  | Gila intermedia                           | Gila Chub                               | AFCJB13160 | LE  |     | S    |      | P      | WSC   | G2     | S2        |
| Cochise | FISH  | Gila purpurea                             | Yaqui Chub                              | AFCJB13140 | LE  |     |      |      | P      | WSC   | G1     | S1        |
| Cochise | FISH  | Ictalurus pricei                          | Yaqui Catfish                           | AFCKA01090 | LT  |     |      |      | PR     | WSC   | G2     | S1        |
| Cochise | FISH  | Poeciliopsis occidentalis sonoriensis     | Yaqui Topminnow                         | AFCNC05022 | LE  |     |      |      | A      | WSC   | G3T3   | S1        |

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| Cochise | FISH         | Rhinichthys osculus                   | Speckled Dace                 | AFCJB37050  | SC  | S   |      |      | P      |       | G5    | S3S4   |
| Cochise | INVERTEBRATE | Agathymus aryxna                      | Arizona Giant Skipper         | IILEP87080  |     |     | S    |      |        |       | G4G5  | S5     |
| Cochise | INVERTEBRATE | Agathymus evansi                      | Huachuca Giant-skipper        | IILEP87110  |     |     | S    |      |        |       | G2G3  | S3     |
| Cochise | INVERTEBRATE | Agathymus neumogeni                   | Neumogen's Giant Skipper      | IILEP87010  |     |     | S    |      |        |       | G4G5  | S3     |
| Cochise | INVERTEBRATE | Anthocharis cethura                   | Desert Orangetip              | IILEPA6010  |     |     | S    |      |        |       | G4G5  | S4     |
| Cochise | INVERTEBRATE | Cicindela oregona maricopa            | Maricopa Tiger Beetle         | IICOL02362  | SC  |     | S    |      |        |       | G5T3  | S3     |
| Cochise | INVERTEBRATE | Discus shimekii                       | Striate Disc                  | IMGAS54120  | SC  |     |      |      |        |       | G5    | S2?    |
| Cochise | INVERTEBRATE | Erynnis scudderi                      | Scudder's Dusky Wing          | IILEP37070  |     |     | S    |      |        |       | G4G5  | S1S2   |
| Cochise | INVERTEBRATE | Neophasia terlooii                    | Chiricahua Pine White         | IILEP99020  |     |     | S    |      |        |       | G3G4  | S4     |
| Cochise | INVERTEBRATE | Psephenus arizonensis                 | Arizona Water Penny Beetle    | IICOL63010  | SC  |     | S    |      |        |       | G2?   | S2?    |
| Cochise | INVERTEBRATE | Pyrgulopsis bernardina                | San Bernardino Springsnail    | IMGASJ0950  | C   | S   | S    |      |        |       | G1    | S1     |
| Cochise | INVERTEBRATE | Pyrgulopsis thompsoni                 | Huachuca Springsnail          | IMGASJ0230  | C   | S   | S    |      |        |       | G2    | S2     |
| Cochise | INVERTEBRATE | Stygobromus arizonensis               | Arizona Cave Amphipod         | ICMAL05360  | SC  |     | S    |      |        |       | G1    | S1?    |
| Cochise | INVERTEBRATE | Sympetrum signiferum                  | Mexican Meadowfly             | IIDOD061150 |     |     | S    |      |        |       | G2G3  | S2     |
| Cochise | MAMMAL       | Choeronycteris mexicana               | Mexican Long-tongued Bat      | AMACB02010  | SC  | S   |      |      | A      | WSC   | G4    | S3     |
| Cochise | MAMMAL       | Corynorhinus townsendii<br>pallascens | Pale Townsend's Big-eared Bat | AMACC08014  | SC  | S   |      | 4    |        |       | G4T4  | S3S4   |
| Cochise | MAMMAL       | Eumops perotis californicus           | Greater Western Bonneted Bat  | AMACD02011  | SC  | S   |      |      |        |       | G5T4  | S3     |
| Cochise | MAMMAL       | Idionycteris phyllotis                | Allen's Big-eared Bat         | AMACC09010  | SC  |     |      |      |        |       | G3G4  | S2S3   |
| Cochise | MAMMAL       | Lasiurus blossevillei                 | Western Red Bat               | AMACC05060  |     | S   |      |      |        | WSC   | G5    | S3     |
| Cochise | MAMMAL       | Lasiurus xanthinus                    | Western Yellow Bat            | AMACC05070  |     | S   |      |      |        | WSC   | G5    | S2S3   |
| Cochise | MAMMAL       | Leptonycteris curasoae<br>yerbabuena  | Lesser Long-nosed Bat         | AMACB03030  | LE  |     | S    |      |        | WSC   | G4    | S2S3   |
| Cochise | MAMMAL       | Myotis ciliolabrum                    | Western Small-footed Myotis   | AMACC01140  | SC  |     |      |      |        |       | G5    | S3S4   |
| Cochise | MAMMAL       | Myotis occultus                       | Arizona Myotis                | AMACC01160  | SC  |     |      |      |        |       | G3G4  | S3     |
| Cochise | MAMMAL       | Myotis thysanodes                     | Fringed Myotis                | AMACC01090  | SC  |     |      |      |        |       | G4G5  | S3S4   |
| Cochise | MAMMAL       | Myotis velifer                        | Cave Myotis                   | AMACC01050  | SC  |     |      |      |        |       | G5    | S3S4   |
| Cochise | MAMMAL       | Myotis volans                         | Long-legged Myotis            | AMACC01110  | SC  |     |      |      |        |       | G5    | S3S4   |
| Cochise | MAMMAL       | Nyctinomops macrotis                  | Big Free-tailed Bat           | AMACD04020  | SC  |     |      |      |        |       | G5    | S3     |
| Cochise | MAMMAL       | Panthera onca                         | Jaguar                        | AMAJH02010  | LE  |     | S    |      | P      | WSC   | G3    | S1     |
| Cochise | MAMMAL       | Sciurus nayaritensis chiricahuae      | Chiricahua Fox Squirrel       | AMAFB07051  | SC  |     | S    |      |        |       | G5T2  | S2     |

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| Cochise | MAMMAL | <i>Sigmodon ochrognathus</i>                                | Yellow-nosed Cotton Rat        | AMAFF07040 | SC  |     |      |      |        |       | G4G5   | S4     |
| Cochise | MAMMAL | <i>Sorex arizonae</i>                                       | Arizona Shrew                  | AMABA01240 | SC  |     | S    |      | P      | WSC   | G3     | S2     |
| Cochise | MAMMAL | <i>Thomomys bottae mearnsi</i>                              | Mearns' Southern Pocket Gopher | AMAF0102G  | SC  |     |      |      |        |       | G5T5   | S5     |
| Cochise | PLANT  | <i>Allium plummerae</i>                                     | Plummer Onion                  | PMLIL021V0 |     |     |      |      |        | SR    | G4     | S3     |
| Cochise | PLANT  | <i>Allium rhizomatum</i>                                    | Redflower Onion                | PMLIL02320 |     |     | S    |      |        | SR    | G3?Q   | S1     |
| Cochise | PLANT  | <i>Apacheria chiricahuensis</i>                             | Chiricahua Rock Flower         | PDCRO01010 |     |     |      |      |        | SR    | G2     | S2     |
| Cochise | PLANT  | <i>Arabis tricornuta</i>                                    | Chiricahua Rock Cress          | PDBRA06200 |     |     | S    |      |        |       | G1?    | S1?    |
| Cochise | PLANT  | <i>Asclepias lemmonii</i>                                   | Lemmon Milkweed                | PDASC020Z0 |     |     | S    |      |        |       | G4?    | S2     |
| Cochise | PLANT  | <i>Asplenium dalhousiae</i>                                 | Dalhouse Spleenwort            | PPASP020A0 |     | S   |      |      |        |       | GNR    | S1     |
| Cochise | PLANT  | <i>Astragalus cobrensis</i> var. <i>maguirei</i>            | Coppermine Milk-vetch          | PDFAB0F262 | SC  |     | S    |      |        | SR    | G4T2   | S1     |
| Cochise | PLANT  | <i>Astragalus hypoxylus</i>                                 | Huachuca Milk-vetch            | PDFAB0F470 | SC  | S   | S    |      |        | SR    | G1     | S1     |
| Cochise | PLANT  | <i>Carex chihuahuensis</i>                                  | A Sedge                        | PMCYP032T0 |     |     | S    |      |        |       | G3G4   | S2S3   |
| Cochise | PLANT  | <i>Carex ultra</i>                                          | Arizona Giant Sedge            | PMCYP03E50 |     | S   | S    |      |        |       | G3?    | S2     |
| Cochise | PLANT  | <i>Castilleja nervata</i>                                   | Trans-pecos Indian-paintbrush  | PDSCR0D270 |     |     | S    |      |        |       | G3Q    | S1     |
| Cochise | PLANT  | <i>Cleome multicaulis</i>                                   | Playa Spider Plant             | PDCPP03080 | SC  |     |      |      |        | SR    | G2G3   | S1     |
| Cochise | PLANT  | <i>Coryphantha robbinsorum</i>                              | Cochise Pincushion Cactus      | PDCAC0X0C0 | LT  |     |      |      |        | HS    | G1     | S1     |
| Cochise | PLANT  | <i>Coryphantha scheeri</i> var. <i>valida</i>               | Slender Needle Corycactus      | PDCAC040C4 |     |     |      |      |        | SR    | G4T4   | S3?    |
| Cochise | PLANT  | <i>Coursetia glabella</i>                                   |                                | PDFAB140B0 | SC  |     | S    |      |        |       | G3?    | S1     |
| Cochise | PLANT  | <i>Draba standleyi</i>                                      | Standley Whitlow-grass         | PDBRA112G0 | SC  |     |      |      |        |       | G2G3   | S2S3   |
| Cochise | PLANT  | <i>Echinocereus ledingii</i>                                | Pinaleno Hedgehog Cactus       | PDCAC06066 |     |     |      |      |        | SR    | G4G5T4 | S4     |
| Cochise | PLANT  | <i>Echinocereus pectinatus</i> var. <i>pectinatus</i>       | Texas Rainbow Cactus           | PDCAC060A3 |     |     |      |      |        | SR    | G5T4   | S4     |
| Cochise | PLANT  | <i>Echinomastus erectocentrus</i> var. <i>erectocentrus</i> | Needle-spined Pineapple Cactus | PDCAC0J0E2 | SC  |     | S    |      |        | SR    | G3T3Q  | S3     |
| Cochise | PLANT  | <i>Epithelantha micromeris</i>                              | Button Cactus                  | PDCAC07020 |     |     |      |      | PR     | SR    | G4     | S1     |
| Cochise | PLANT  | <i>Erigeron arisolius</i>                                   |                                | PDAST3M510 |     |     | S    |      |        |       | G2     | S2     |
| Cochise | PLANT  | <i>Erigeron kuschei</i>                                     | Chiricahua Fleabane            | PDAST3M240 | SC  |     | S    |      |        | SR    | G1     | S1     |
| Cochise | PLANT  | <i>Erigeron lemmonii</i>                                    | Lemmon Fleabane                | PDAST3M2A0 | C   |     |      |      |        | HS    | G1     | S1     |
| Cochise | PLANT  | <i>Eriogonum capillare</i>                                  | San Carlos Wild-buckwheat      | PDPGN08100 | SC  |     |      |      |        | SR    | G4     | S4     |
| Cochise | PLANT  | <i>Eriogonum terrenatum</i>                                 | San Pedro River Wild Buckwheat | PDPGN08760 |     | S   |      |      |        |       | G1     | S1     |
| Cochise | PLANT  | <i>Escobaria tuberculosa</i>                                | Incense Corycactus             | PDCAC0X0F0 |     |     |      |      |        | SR    | G4     | S1     |

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| Cochise | PLANT | Euphorbia macropus                    | Woodland Spurge            | PDEUP0Q2U0 | SC  |     |      |      |        | SR    | G4    | S2     |
| Cochise | PLANT | Gentianella wislizeni                 | Wislizeni Gentian          | PDGEN07090 | SC  |     | S    |      |        | SR    | G2    | S1     |
| Cochise | PLANT | Graptopetalum bartramii               | Bartram Stonecrop          | PDCRA06010 | SC  | S   | S    |      |        | SR    | G3    | S3     |
| Cochise | PLANT | Hedeoma costatum                      | Chiricahua Mock Pennyroyal | PDLAM0M0L0 |     |     | S    |      |        |       | G5    | S1     |
| Cochise | PLANT | Hedeoma dentatum                      | Mock-pennyroyal            | PDLAM0M0M0 |     |     | S    |      |        |       | G3    | S3     |
| Cochise | PLANT | Heterotheca rutteri                   | Huachuca Golden Aster      | PDAST4V0J0 | SC  | S   | S    |      |        |       | G2    | S2     |
| Cochise | PLANT | Heuchera glomerulata                  | Arizona Alum Root          | PDSAX0E0F0 |     |     | S    |      |        |       | G3    | S3     |
| Cochise | PLANT | Hexalectris revoluta                  | Chisos Coral-root          | PMORC1C030 |     |     | S    |      |        | SR    | G1G2  | S1     |
| Cochise | PLANT | Hexalectris spicata                   | Crested Coral Root         | PMORC1C040 |     |     |      |      |        | SR    | G5    | S3S4   |
| Cochise | PLANT | Hexalectris warnockii                 | Texas Purple Spike         | PMORC1C050 | SC  | S   | S    |      |        | HS    | G2G3  | S1     |
| Cochise | PLANT | Hieracium pringlei                    | Pringle Hawkweed           | PDAST4W170 | SC  |     | S    |      |        |       | G2Q   | S1     |
| Cochise | PLANT | Hieracium rusbyi                      | Rusby Hawkweed             | PDAST4W1A0 |     |     | S    |      |        |       | G2?   | S1     |
| Cochise | PLANT | Ipomoea plummerae var. cuneifolia     | Huachuca Morning Glory     | PDCON0A141 |     |     | S    |      |        |       | G4T3  | S3     |
| Cochise | PLANT | Ipomoea thurberi                      | Thurber's Morning-glory    | PDCON0A1K0 |     |     | S    |      |        |       | G3    | S1     |
| Cochise | PLANT | Laennecia eriophylla                  | Woolly Fleabane            | PDASTDL020 |     |     | S    |      |        |       | G3    | S2     |
| Cochise | PLANT | Lilaeopsis schaffneriana var. recurva | Huachuca Water Umbel       | PDAPI19051 | LE  |     |      |      |        | HS    | G4T2  | S2     |
| Cochise | PLANT | Lilium parryi                         | Lemmon Lily                | PMLIL1A0J0 | SC  |     | S    |      |        | SR    | G3    | S2     |
| Cochise | PLANT | Lobelia fenestralis                   | Leafy Lobelia              | PDCAM0E0H0 |     |     |      |      |        | SR    | G4    | S1     |
| Cochise | PLANT | Lupinus huachucanus                   | Huachuca Mountain Lupine   | PDFAB2B210 |     |     | S    |      |        |       | G2    | S2     |
| Cochise | PLANT | Lupinus lemmonii                      | Lemmon's Lupine            | PDFAB2B2A0 |     |     | S    |      |        |       | G1G2Q | S1S2Q  |
| Cochise | PLANT | Malaxis corymbosa                     | Madrean Adders Mouth       | PMORC1R020 |     |     |      |      |        | SR    | G4    | S3S4   |
| Cochise | PLANT | Malaxis porphyrea                     | Purple Adder's Mouth       | PMORC1R0Q0 |     |     |      |      |        | SR    | G4    | S2     |
| Cochise | PLANT | Malaxis tenuis                        | Slender Adders Mouth       | PMORC1R090 |     |     |      |      |        | SR    | G4    | S1     |
| Cochise | PLANT | Mammillaria viridiflora               | Varied Fishhook Cactus     | PDCAC0A0D0 |     |     |      |      |        | SR    | G4    | S4     |
| Cochise | PLANT | Mammillaria wrightii var. wilcoxii    | Wilcox Fishhook Cactus     | PDCAC0A0E1 |     |     |      |      |        | SR    | G4T4  | S4     |
| Cochise | PLANT | Metastelma mexicanum                  | Wiggins Milkweed Vine      | PDASC050P0 | SC  |     | S    |      |        |       | G3G4  | S1S2   |
| Cochise | PLANT | Muhlenbergia dubioides                | Box Canyon Muhly           | PMPOA480G0 |     |     | S    |      |        |       | G1Q   | S1     |
| Cochise | PLANT | Pectis imberbis                       | Beardless Chinch Weed      | PDAST6W0A0 | SC  |     | S    |      |        |       | G3    | S1     |
| Cochise | PLANT | Pediomelum pentaphyllum               | Three-nerved Scurf-pea     | PDFAB5L070 | SC  |     | S    |      |        |       | G1    | S1     |

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| Cochise | PLANT   | Peniocereus greggii var. greggii        | Night-blooming Cereus              | PDCAC0V011 | SC  |     |      |      | PR     | SR    | G3G4T2  | S1     |
| Cochise | PLANT   | Penstemon discolor                      | Catalina Beardtongue               | PDSCR1L210 |     |     | S    |      |        | HS    | G2      | S2     |
| Cochise | PLANT   | Penstemon ramosus                       | Branching Penstemon                | PDSCR1L7L0 |     |     | S    |      |        |       | G3G4Q   | S1     |
| Cochise | PLANT   | Penstemon superbus                      | Superb Beardtongue                 | PDSCR1L630 |     |     | S    |      |        |       | G3?     | S2?    |
| Cochise | PLANT   | Perityle cochisensis                    | Chiricahua Rock Daisy              | PDAST70080 |     |     | S    |      |        | SR    | G1G2    | S1S2   |
| Cochise | PLANT   | Physalis latiphysa                      | Broad-leaf Ground-cherry           | PDSOL0S0H0 |     |     | S    |      |        |       | G1      | S1     |
| Cochise | PLANT   | Platanthera limosa                      | Thurber's Bog Orchid               | PMORC1Y0G0 |     |     |      |      |        | SR    | G4      | S4     |
| Cochise | PLANT   | Polemonium flavum                       | Pinaleno Jacobs Ladder             | PDPLM0E0B2 |     |     | S    |      |        |       | G5T3?   | S2     |
| Cochise | PLANT   | Polemonium pauciflorum ssp. hinckleyi   | Hinckley's Ladder                  | PDPLM0E0G1 | SC  |     | S    |      |        |       | G3G5T2Q | S1     |
| Cochise | PLANT   | Psilactis gentryi                       | Mexican Bare-ray-aster             | PDASTE7010 |     |     | S    |      |        |       | G3      | S1     |
| Cochise | PLANT   | Rumex orthoneurus                       | Blumer's Dock                      | PDPGN0P0Z0 | SC  |     | S    |      |        | HS    | G3      | S3     |
| Cochise | PLANT   | Salvia amissa                           | Aravaipa Sage                      | PDLAM1S020 | SC  | S   | S    |      |        |       | G2      | S2     |
| Cochise | PLANT   | Samolus vagans                          | Chiricahua Mountain Brookweed      | PDPRI09040 |     |     | S    |      |        |       | G2?     | S2     |
| Cochise | PLANT   | Schiedeella arizonica                   | Fallen Ladies'-tresses             | PMORC67020 |     |     |      |      |        | SR    | GNR     | S4     |
| Cochise | PLANT   | Senecio carlomasonii                    | Seemann Groundsel                  | PDAST8H3W0 |     |     | S    |      |        |       | G4?Q    | S2S3   |
| Cochise | PLANT   | Senecio multidentatus var. huachucanus  | Huachuca Groundsel                 | PDAST8H411 |     |     | S    |      |        | HS    | G2G4T2  | S2     |
| Cochise | PLANT   | Senecio neomexicanus var. toumeyi       | Toumey Groundsel                   | PDAST8H274 |     |     | S    |      |        |       | G5T2Q   | S2     |
| Cochise | PLANT   | Sisyrinchium cernuum                    | Nodding Blue-eyed Grass            | PMIRI0D0B0 |     |     | S    |      |        |       | G5      | S2     |
| Cochise | PLANT   | Spiranthes delitescens                  | Madrean Ladies'-tresses            | PMORC2B140 | LE  |     |      |      |        | HS    | G1      | S1     |
| Cochise | PLANT   | Stellaria porsildii                     | Porsild's Starwort                 | PDCAR0X160 |     |     | S    |      |        |       | G1      | S1     |
| Cochise | PLANT   | Stenorrhynchos michuacanum              | Michoacan Ladies'-tresses          | PMORC2B0L0 |     |     |      |      |        | SR    | G4      | S3     |
| Cochise | PLANT   | Talinum marginatum                      | Tepic Flame Flower                 | PDPOR080N0 | SC  |     | S    |      |        | SR    | G2      | S1     |
| Cochise | PLANT   | Tephrosia thurberi                      | Thurber Hoary Pea                  | PDFAB3X0M0 |     |     | S    |      |        |       | G4G5    | S3     |
| Cochise | PLANT   | Tragia laciniata                        | Sonoran Noseburn                   | PDEUP1D060 |     |     | S    |      |        |       | G3G4    | S3?    |
| Cochise | PLANT   | Vauquelinia californica ssp. pauciflora | Limestone Arizona Rosewood         | PDROS1R022 | SC  |     |      |      |        | SR    | G4T3    | S1     |
| Cochise | PLANT   | Viola umbraticola                       | Shade Violet                       | PDVIO042E0 |     |     | S    |      |        |       | G3G4    | S2?    |
| Cochise | PLANT   | Zigadenus virescens                     | Green Death Camas                  | PMLIL280E0 |     |     |      |      |        | SR    | G4      | S4     |
| Cochise | REPTILE | Aspidoscelis burti stictogrammus        | Giant Spotted Whiptail             | ARACJ02011 | SC  |     | S    |      |        |       | G4T4    | S2     |
| Cochise | REPTILE | Crotalus willardi obscurus              | New Mexico Ridge-nosed Rattlesnake | ARADE02131 | LT  |     | S    |      | PR     |       | G5T1T2  | S1     |



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| Cochise  | REPTILE   | Crotalus willardi willardi                | Arizona Ridge-nosed Rattlesnake | ARADE02132 |        |     | S    |      | PR     | WSC   | G5T4          | S1S2      |
| Cochise  | REPTILE   | Gopherus agassizii (Sonoran Population)   | Sonoran Desert Tortoise         | ARAAF01013 | SC     | S   |      |      | A      | WSC   | G4T4          | S4        |
| Cochise  | REPTILE   | Phrynosoma cornutum                       | Texas Horned Lizard             | ARACF12010 | SC     |     |      |      | A      |       | G4G5          | S3S4      |
| Cochise  | REPTILE   | Sistrurus catenatus edwardsii             | Desert Massasauga               | ARADE03012 |        |     | S    |      | PR     | WSC   | G3G4T3T4<br>Q | S1        |
| Cochise  | REPTILE   | Thamnophis eques megalops                 | Northern Mexican Gartersnake    | ARADB36061 | C      |     | S    |      | A      | WSC   | G5T5          | S1        |
| Coconino | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                    | AAABB01110 | SC     |     | S    |      |        |       | G3G4          | S3S4      |
| Coconino | AMPHIBIAN | Lithobates chiricahuensis                 | Chiricahua Leopard Frog         | AAABH01080 | LT     |     | S    |      | A      | WSC   | G3            | S2        |
| Coconino | AMPHIBIAN | Lithobates pipiens                        | Northern Leopard Frog           | AAABH01170 |        | S   | S    | 2    |        | WSC   | G5            | S2        |
| Coconino | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog            | AAABH01250 | SC     | S   | S    |      | PR     | WSC   | G4            | S3        |
| Coconino | BIRD      | Accipiter gentilis                        | Northern Goshawk                | ABNKC12060 | SC     | S   | S    | 4    | A      | WSC   | G5            | S3B       |
| Coconino | BIRD      | Athene cunicularia hypugaea               | Western Burrowing Owl           | ABNSB10012 | SC     | S   |      | 4    | A      |       | G4T4          | S3        |
| Coconino | BIRD      | Buteo regalis                             | Ferruginous Hawk                | ABNKC19120 | SC     | S   |      | 3    |        | WSC   | G4            | S2B,S4N   |
| Coconino | BIRD      | Buteo swainsoni                           | Swainson's Hawk                 | ABNKC19070 |        | S   |      |      |        |       | G5            | S3        |
| Coconino | BIRD      | Buteogallus anthracinus                   | Common Black-Hawk               | ABNKC15010 |        | S   | S    |      | A      | WSC   | G4G5          | S3        |
| Coconino | BIRD      | Empidonax traillii extimus                | Southwestern Willow Flycatcher  | ABPAE33043 | LE     |     | S    | 2    |        | WSC   | G5T1T2        | S1        |
| Coconino | BIRD      | Euptilotis neoxenus                       | Eared Quetzal                   | ABNWA03010 |        |     | S    |      | A      |       | G3            | SAB,S1N   |
| Coconino | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon       | ABNKD06071 | SC     | S   | S    | 4    | A      | WSC   | G4T4          | S4        |
| Coconino | BIRD      | Haliaeetus leucocephalus                  | Bald Eagle                      | ABNKC10010 | LT,DPS | S   | S    | 2    | P      | WSC   | G5            | S2S3B,S4N |
| Coconino | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population  | ABNKC10015 | SC     | S   | S    | 2    | P      | WSC   | G5TNR         | S4N       |
| Coconino | BIRD      | Megaceryle alcyon                         | Belted Kingfisher               | ABNXD01020 |        |     |      | 4    |        | WSC   | G5            | S2B,S5N   |
| Coconino | BIRD      | Pandion haliaetus                         | Osprey                          | ABNKC01010 |        | S   |      |      |        | WSC   | G5            | S2B,S4N   |
| Coconino | BIRD      | Pinicola enucleator                       | Pine Grosbeak                   | ABPBY03010 |        |     |      |      |        | WSC   | G5            | S1        |
| Coconino | BIRD      | Plegadis chihi                            | White-faced Ibis                | ABNGE02020 | SC     |     |      |      |        |       | G5            | S?B,S2S3N |
| Coconino | BIRD      | Strix occidentalis lucida                 | Mexican Spotted Owl             | ABNSB12012 | LT     |     | S    | 3    | A      | WSC   | G3T3          | S3S4      |
| Coconino | FISH      | Catostomus clarkii                        | Desert Sucker                   | AFCJC02040 | SC     | S   |      |      |        |       | G3G4          | S3S4      |
| Coconino | FISH      | Catostomus insignis                       | Sonora Sucker                   | AFCJC02100 | SC     | S   |      |      | P      |       | G3            | S3        |
| Coconino | FISH      | Catostomus latipinnis                     | Flannelmouth Sucker             | AFCJC02110 | SC     | S   | S    |      |        |       | G3G4          | S2        |
| Coconino | FISH      | Catostomus sp. 3                          | Little Colorado Sucker          | AFCJC02250 | SC     | S   | S    |      |        | WSC   | G2            | S2        |
| Coconino | FISH      | Gila cypha                                | Humpback Chub                   | AFCJB13080 | LE     |     |      | 2    |        | WSC   | G1            | S1        |

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|----------|--------------|-------------------------------------------|----------------------------------------------|------------|-----|-----|------|------|--------|-------|-------|--------|
| Coconino | FISH         | <i>Gila robusta</i>                       | Roundtail Chub                               | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3    | S2     |
| Coconino | FISH         | <i>Lepidomeda vittata</i>                 | Little Colorado Spinedace                    | AFCJB20040 | LT  |     | S    |      |        | WSC   | G1G2  | S1S2   |
| Coconino | FISH         | <i>Oncorhynchus apache</i>                | Apache Trout                                 | AFCHA02102 | LT  |     | S    |      |        | WSC   | G3T3  | S3     |
| Coconino | FISH         | <i>Rhinichthys ocululus</i>               | Speckled Dace                                | AFCJB37050 | SC  | S   |      |      | P      |       | G5    | S3S4   |
| Coconino | FISH         | <i>Xyrauchen texanus</i>                  | Razorback Sucker                             | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1    | S1     |
| Coconino | INVERTEBRATE | <i>Anodonta californiensis</i>            | California Floater                           | IMBIV04020 | SC  |     | S    |      |        |       | G3Q   | S1     |
| Coconino | INVERTEBRATE | <i>Archeolarca cavicola</i>               | Grand Canyon Cave pseudoscorpion             | ILARA38020 | SC  |     |      |      |        |       | G1G2  | S?     |
| Coconino | INVERTEBRATE | <i>Cicindela oregona maricopa</i>         | Maricopa Tiger Beetle                        | IICOL02362 | SC  |     | S    |      |        |       | G5T3  | S3     |
| Coconino | INVERTEBRATE | <i>Discus shimekii</i>                    | Striate Disc                                 | IMGAS54120 | SC  |     |      |      |        |       | G5    | S2?    |
| Coconino | INVERTEBRATE | <i>Metrichia nigritta</i>                 | Page Spring Micro Caddisfly                  | ITRI97010  | SC  |     |      |      |        |       | G5    | S1     |
| Coconino | INVERTEBRATE | <i>Oxyloma haydeni haydeni</i>            | Niobrara Ambersnail                          | IMGAS67152 |     | S   | S    |      |        |       | G3?T1 | S1     |
| Coconino | INVERTEBRATE | <i>Oxyloma haydeni kanabensis</i>         | Kanab Ambersnail                             | IMGAS67151 | LE  | S   | S    | 4    |        |       | G3T1Q | S1     |
| Coconino | INVERTEBRATE | <i>Stenopelmatus navajo</i>               | Navajo Jerusalem Cricket                     | IHORT26020 | SC  |     | S    |      |        |       | G1G3  | S1S3   |
| Coconino | MAMMAL       | <i>Choeronycteris mexicana</i>            | Mexican Long-tongued Bat                     | AMACB02010 | SC  | S   |      |      | A      | WSC   | G4    | S3     |
| Coconino | MAMMAL       | <i>Corynorhinus townsendii pallascens</i> | Pale Townsend's Big-eared Bat                | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4  | S3S4   |
| Coconino | MAMMAL       | <i>Dipodomys microps leucotis</i>         | Houserock Valley Chisel-toothed Kangaroo Rat | AMAFD03024 | SC  | S   |      | 4    |        | WSC   | G5T2Q | S2     |
| Coconino | MAMMAL       | <i>Euderma maculatum</i>                  | Spotted Bat                                  | AMACC07010 | SC  | S   |      |      | PR     | WSC   | G4    | S1S2   |
| Coconino | MAMMAL       | <i>Eumops perotis californicus</i>        | Greater Western Bonneted Bat                 | AMACD02011 | SC  | S   |      |      |        |       | G5T4  | S3     |
| Coconino | MAMMAL       | <i>Idionycteris phyllotis</i>             | Allen's Big-eared Bat                        | AMACC09010 | SC  |     |      |      |        |       | G3G4  | S2S3   |
| Coconino | MAMMAL       | <i>Lasiurus blossevillii</i>              | Western Red Bat                              | AMACC05060 |     | S   |      |      |        | WSC   | G5    | S3     |
| Coconino | MAMMAL       | <i>Microtus mexicanus hualpaiensis</i>    | Hualapai Mexican Vole                        | AMAFF11212 | LE  |     |      |      |        | WSC   | G5T1Q | S1     |
| Coconino | MAMMAL       | <i>Microtus mexicanus navaho</i>          | Navajo Mexican Vole                          | AMAFF11213 | SC  |     | S    | 4    |        | WSC   | G5T2Q | S1     |
| Coconino | MAMMAL       | <i>Myotis ciliolabrum</i>                 | Western Small-footed Myotis                  | AMACC01140 | SC  |     |      |      |        |       | G5    | S3S4   |
| Coconino | MAMMAL       | <i>Myotis evotis</i>                      | Long-eared Myotis                            | AMACC01070 | SC  |     |      |      |        |       | G5    | S3     |
| Coconino | MAMMAL       | <i>Myotis occultus</i>                    | Arizona Myotis                               | AMACC01160 | SC  |     |      |      |        |       | G3G4  | S3     |
| Coconino | MAMMAL       | <i>Myotis thysanodes</i>                  | Fringed Myotis                               | AMACC01090 | SC  |     |      |      |        |       | G4G5  | S3S4   |
| Coconino | MAMMAL       | <i>Myotis velifer</i>                     | Cave Myotis                                  | AMACC01050 | SC  |     |      |      |        |       | G5    | S3S4   |
| Coconino | MAMMAL       | <i>Myotis volans</i>                      | Long-legged Myotis                           | AMACC01110 | SC  |     |      |      |        |       | G5    | S3S4   |
| Coconino | MAMMAL       | <i>Nyctinomops macrotis</i>               | Big Free-tailed Bat                          | AMACD04020 | SC  |     |      |      |        |       | G5    | S3     |

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| Coconino | MAMMAL | Perognathus amplus cineris                    | Wupatki Arizona Pocket Mouse  | AMAFD01053 | SC  |     | S    | 4    |        |       | G5T3Q    | S2S3   |
| Coconino | PLANT  | Aconitum infectum                             | Arizona Monkshood             | PDRAN01030 |     |     | S    |      |        |       | G1       | S1     |
| Coconino | PLANT  | Allium bigelovii                              | Bigelow Onion                 | PMLIL02070 |     |     |      |      |        | SR    | G3       | S2S3   |
| Coconino | PLANT  | Aquilegia desertorum                          | Mogollon Columbine            | PDRAN05070 |     |     |      |      |        | SR    | G4       | S4     |
| Coconino | PLANT  | Argemone arizonica                            | Roaring Springs Prickly-poppy | PDPAP03030 | SC  |     |      |      |        |       | G1       | S1     |
| Coconino | PLANT  | Asclepias welshii                             | Welsh's Milkweed              | PDASC02290 | LT  |     |      | 3    |        | HS    | G1       | S1     |
| Coconino | PLANT  | Astragalus ampullarius                        | Gumbo Milk-vetch              | PDFAB0F0L0 | SC  |     | S    |      |        |       | G2       | S1     |
| Coconino | PLANT  | Astragalus beathii                            | Beath Milk-vetch              | PDFAB0F160 |     |     |      | 4    |        |       | G2       | S2     |
| Coconino | PLANT  | Astragalus cremnophylax var. cremnophylax     | Sentry Milk-vetch             | PDFAB0F2H1 | LE  |     |      |      |        | HS    | G1T1     | S1     |
| Coconino | PLANT  | Astragalus cremnophylax var. hevronii         | Marble Canyon Milk-vetch      | PDFAB0F2H3 |     | S   | S    | 3    |        |       | G1T1     | S1     |
| Coconino | PLANT  | Astragalus cremnophylax var. myriorrhaphis    | Cliff Milk-vetch              | PDFAB0F2H2 | SC  | S   | S    |      |        | SR    | G1T1     | S1     |
| Coconino | PLANT  | Astragalus rusbyi                             | Rusby's Milk-vetch            | PDFAB0F7Q0 |     |     | S    |      |        |       | G3       | S3     |
| Coconino | PLANT  | Astragalus xiphoides                          | Gladiator Milk Vetch          | PDFAB0F9T0 | SC  |     |      |      |        | SR    | G3       | S3     |
| Coconino | PLANT  | Botrychium crenulatum                         | Crenulate Moonwort            | PPOPH010L0 | SC  |     | S    |      |        |       | G3       | S1     |
| Coconino | PLANT  | Calypso bulbosa                               | Western Fairy Slipper         | PMORC0D010 |     |     |      |      |        | SR    | G5       | S3     |
| Coconino | PLANT  | Camissonia exilis                             | Slender Evening-primrose      | PDONA030J0 | SC  |     |      |      |        | SR    | G1       | S1     |
| Coconino | PLANT  | Camissonia specuicola ssp. hesperia           | Grand Canyon Evening-primrose | PDONA031J1 | SC  |     |      |      |        |       | G2T1     | S1     |
| Coconino | PLANT  | Carex specuicola                              | Navajo Sedge                  | PMCYP03CQ0 | LT  |     |      | 3    |        | HS    | G2       | S2     |
| Coconino | PLANT  | Castilleja kaibabensis                        | Kaibab Paintbrush             | PDSCR0D1J0 |     |     | S    |      |        |       | G2       | S2     |
| Coconino | PLANT  | Chrysothamnus molestus                        | Tusayan Rabbitbrush           | PDAST2C060 | SC  |     | S    |      |        |       | G3       | S3     |
| Coconino | PLANT  | Cimicifuga arizonica                          | Arizona Bugbane               | PDRAN07020 | SC  |     | S    |      |        | HS    | G2       | S2     |
| Coconino | PLANT  | Cirsium parryi ssp. mogollonicum              | Mogollon Thistle              | PDAST2E261 | SC  |     | S    |      |        | SR    | G4T1     | S1     |
| Coconino | PLANT  | Coryphantha missouriensis                     | Missouri Corycactus           | PDCAC0X020 |     |     |      |      |        | SR    | G5       | S3     |
| Coconino | PLANT  | Cymopterus megacephalus                       | Cameron Water-parsley         | PDAPI0U0M0 | SC  |     | S    |      |        |       | G3       | S3     |
| Coconino | PLANT  | Echinocactus polycephalus var. polycephalus   | Clustered Barrel Cactus       | PDCAC05033 |     |     |      |      |        | SR    | G3G4T3T4 | S2     |
| Coconino | PLANT  | Echinocactus polycephalus var. xeranthemoides | Grand Canyon Cottontop Cactus | PDCAC05032 |     |     |      |      |        | SR    | G3G4T1T3 | S2S3   |
| Coconino | PLANT  | Erigeron saxatilis                            | Rock Fleabane                 | PDAST3M560 |     |     | S    |      |        |       | G3       | S3     |
| Coconino | PLANT  | Eriogonum ericifolium var. ericifolium        | Heathleaf Wild-buckwheat      | PDPGN08231 |     |     | S    |      |        |       | G3T2     | S2     |
| Coconino | PLANT  | Eriogonum ripleyi                             | Ripley Wild-buckwheat         | PDPGN08520 | SC  |     | S    |      |        | SR    | G2       | S2     |

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| Coconino | PLANT | Errazurizia rotundata                      | Roundleaf Errazurizia           | PDFAB1L010 |     | S   |      | 3    |        | SR    | G2       | S2     |
| Coconino | PLANT | Ferocactus cylindraceus var. eastwoodiae   | Golden Barrel Cactus            | PDCAC08084 |     |     |      |      |        | SR    | G5T1     | S1     |
| Coconino | PLANT | Flaveria mcdougallii                       | Grand Canyon Flaveria           | PDAST3V070 |     |     |      |      |        | SR    | G2       | S2     |
| Coconino | PLANT | Gentianopsis barbellata                    | Bearded Gentian                 | PDGEN08010 |     |     | S    |      |        |       | G3G4     | S1     |
| Coconino | PLANT | Hedeoma diffusum                           | Flagstaff Pennyroyal            | PDLAM0M0N0 |     |     | S    |      |        | SR    | G3       | S3     |
| Coconino | PLANT | Heuchera eastwoodiae                       | Eastwood Alum Root              | PDSAX0E0B0 |     |     | S    |      |        |       | G3       | S3     |
| Coconino | PLANT | Lesquerella kaibabensis                    | Kaibab Bladderpod               | PDBRA1N1R0 | SC  |     | S    |      |        |       | G1G2     | S1S2   |
| Coconino | PLANT | Listera convallarioides                    | Broadleaf Twayblade             | PMORC1N050 |     |     |      |      |        | SR    | G5       | S1     |
| Coconino | PLANT | Malaxis porphyrea                          | Purple Adder's Mouth            | PMORC1R0Q0 |     |     |      |      |        | SR    | G4       | S2     |
| Coconino | PLANT | Opuntia basilaris var. aurea               | Yellow Beavertail               | PDCAC0D300 |     |     |      |      |        | SR    | G3       | S3     |
| Coconino | PLANT | Opuntia basilaris var. longiareolata       | Grand Canyon Beavertail Cactus  | PDCAC0D054 |     |     |      |      |        | SR    | G5T2Q    | S2     |
| Coconino | PLANT | Opuntia nicholii                           | Navajo Bridge Cactus            | PDCAC0D0W0 |     |     |      |      |        | SR    | G4Q      | S4     |
| Coconino | PLANT | Pediocactus bradyi                         | Brady Pincushion Cactus         | PDCAC0E010 | LE  |     |      | 2    |        | HS    | G1       | S1     |
| Coconino | PLANT | Pediocactus paradinei                      | Kaibab Pincushion Cactus        | PDCAC0E040 | SC  | S   | S    |      |        | HS    | G2       | S2     |
| Coconino | PLANT | Pediocactus peeblesianus var. fickeiseniae | Fickeisen Plains Cactus         | PDCAC0E051 | C   |     | S    | 3    |        | HS    | G1G2T1T2 | S1S2   |
| Coconino | PLANT | Pediocactus sileri                         | Siler Pincushion Cactus         | PDCAC0E060 | LT  | S   |      |      |        | HS    | G3       | S3     |
| Coconino | PLANT | Pediocactus simpsonii                      | Simpson Plains Cactus           | PDCAC0E070 |     |     |      |      |        | SR    | G4       | S1     |
| Coconino | PLANT | Penstemon clutei                           | Sunset Crater Beardtongue       | PDSCR1L1E0 | SC  |     | S    |      |        | SR    | G2       | S2     |
| Coconino | PLANT | Penstemon nudiflorus                       | Flagstaff Beardtongue           | PDSCR1L4A0 |     |     | S    |      |        |       | G2G3     | S2S3   |
| Coconino | PLANT | Phacelia serrata                           | Cinder Phacelia                 | PDHYD0C4B0 | SC  |     |      |      |        |       | G3       | S3     |
| Coconino | PLANT | Phacelia welshii                           | Welsh Phacelia                  | PDHYD0C4U0 | SC  |     |      |      |        |       | G2       | S2     |
| Coconino | PLANT | Pinus aristata                             | Rocky Mountain Bristlecone Pine | PGPIN04020 |     |     |      |      |        | SR    | G3       | S2     |
| Coconino | PLANT | Platanthera zothecina                      | Alcove Bog-orchid               | PMORC1Y130 | SC  |     |      | 3    |        |       | G2       | S2     |
| Coconino | PLANT | Polemonium flavum                          | Pinaleno Jacobs Ladder          | PDPLM0E0B2 |     |     | S    |      |        |       | G5T3?    | S2     |
| Coconino | PLANT | Primula specuicola                         | Grand Canyon Primrose           | PDPRI080H0 |     |     |      | 4    |        | SR    | G4Q      | S2     |
| Coconino | PLANT | Psorothamnus arborescens var. pubescens    | Mohave Indigo Bush              | PDFAB3C013 |     | S   |      | 4    |        |       | G5T2     | S2     |
| Coconino | PLANT | Psorothamnus thompsonae var. whitingii     | Whiting Indigo Bush             | PDFAB3C092 | SC  |     |      |      |        |       | G3?T2    | S1     |
| Coconino | PLANT | Puccinellia parishii                       | Parish Alkali Grass             | PMPOA530T0 | SC  |     |      | 4    |        | HS    | G2G3     | S2     |
| Coconino | PLANT | Rosa stellata ssp. abyssa                  | Grand Canyon Rose               | PDROS1J153 | SC  | S   | S    |      |        | SR    | G4T2     | S2     |

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| Coconino | PLANT     | Rumex orthoneurus                         | Blumer's Dock                               | PDPGN0P0Z0 | SC  |     | S    |      |        | HS    | G3     | S3      |
| Coconino | PLANT     | Salvia pachyphylla ssp. erempictus        | Arizona Rose Sage                           | PDLAM1S2F1 |     |     |      | 4    |        |       | G4T1   | S1      |
| Coconino | PLANT     | Sclerocactus parviflorus ssp. intermedius | Intermediate Fishhook Cactus                | PDCAC0J041 |     |     |      |      |        | SR    | G4T3?  | S2      |
| Coconino | PLANT     | Sclerocactus parviflorus ssp. parviflorus | Smallflower Fishhook Cactus                 | PDCAC0J042 |     |     |      |      |        | SR    | G4T4?  | S1      |
| Coconino | PLANT     | Sclerocactus sileri                       | House Rock Fishhook Cactus                  | PDCAC0J0T0 |     | S   |      |      |        | SR    | G1     | S1      |
| Coconino | PLANT     | Senecio franciscanus                      | San Francisco Peaks Groundsel               | PDAST8H1C0 | LT  |     |      |      |        | HS    | G1     | S1      |
| Coconino | PLANT     | Silene rectiramea                         | Grand Canyon Catchfly                       | PDCAR0U1F0 | SC  |     |      |      |        |       | G1     | S1      |
| Coconino | PLANT     | Talinum validulum                         | Tusayan Flame Flower                        | PDPOR080M0 | SC  |     |      |      |        | SR    | G3     | S3      |
| Coconino | PLANT     | Thelypteris puberula var. sonorensis      | Aravaipa Wood Fern                          | PPTHE05192 |     | S   |      |      |        |       | G5T3   | S2      |
| Coconino | PLANT     | Triteleia lemmoniae                       | Mazatzal Tritoleia                          | PMLIL210C0 |     |     |      |      |        | SR    | G3     | S3      |
| Coconino | PLANT     | Yucca whipplei                            | Our Lords Candle                            | PMAGA0B0X0 |     |     |      |      |        | SR    | G4G5   | S3S4    |
| Coconino | PLANT     | Zigadenus virescens                       | Green Death Camas                           | PMLIL280E0 |     |     |      |      |        | SR    | G4     | S4      |
| Coconino | REPTILE   | Crotalus oreganus abyssus                 | Grand Canyon Rattlesnake                    | ARADE02121 |     |     | S    |      |        |       | G5T4   | S4      |
| Coconino | REPTILE   | Thamnophis eques megalops                 | Northern Mexican Gartersnake                | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1      |
| Coconino | REPTILE   | Thamnophis rufipunctatus                  | Narrow-headed Gartersnake                   | ARADB36110 | SC  | S   | S    |      |        | WSC   | G3G4   | S1      |
| Gila     | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                                | AAABB01110 | SC  |     | S    |      |        |       | G3G4   | S3S4    |
| Gila     | AMPHIBIAN | Eleutherodactylus augusti cactorum        | Western Barking Frog                        | AAABD04171 |     | S   | S    |      |        | WSC   | G5T5   | S2      |
| Gila     | AMPHIBIAN | Lithobates chiricahuensis                 | Chiricahua Leopard Frog                     | AAABH01080 | LT  |     | S    |      | A      | WSC   | G3     | S2      |
| Gila     | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog                        | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3      |
| Gila     | BIRD      | Accipiter gentilis                        | Northern Goshawk                            | ABNKC12060 | SC  | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Gila     | BIRD      | Buteo nitidus maxima                      | Northern Gray Hawk                          | ABNKC19011 | SC  | S   | S    |      | PR     | WSC   | G5T4Q  | S3      |
| Gila     | BIRD      | Buteogallus anthracinus                   | Common Black-Hawk                           | ABNKC15010 |     | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Gila     | BIRD      | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Gila     | BIRD      | Dolichonyx oryzivorus                     | Bobolink                                    | ABPBXA9010 |     |     |      |      |        | WSC   | G5     | S1      |
| Gila     | BIRD      | Empidonax traillii extimus                | Southwestern Willow Flycatcher              | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Gila     | BIRD      | Euptilotis neoxenus                       | Eared Quetzal                               | ABNWA03010 |     |     | S    |      | A      |       | G3     | SAB,S1N |
| Gila     | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon                   | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Gila     | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population              | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Gila     | BIRD      | Haliaeetus leucocephalus pop. 3           | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT  | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |

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| Gila   | BIRD         | Megaceryle alcyon                      | Belted Kingfisher             | ABNXD01020 |     |     |      | 4    |        | WSC   | G5     | S2B,S5N |
| Gila   | BIRD         | Pandion haliaetus                      | Osprey                        | ABNKC01010 |     | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Gila   | BIRD         | Rallus longirostris yumanensis         | Yuma Clapper Rail             | ABNME0501A | LE  |     |      |      | P      | WSC   | G5T3   | S3      |
| Gila   | BIRD         | Strix occidentalis lucida              | Mexican Spotted Owl           | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Gila   | FISH         | Agosia chrysogaster chrysogaster       | Gila Longfin Dace             | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Gila   | FISH         | Catostomus clarkii                     | Desert Sucker                 | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4    |
| Gila   | FISH         | Catostomus insignis                    | Sonora Sucker                 | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3      |
| Gila   | FISH         | Gila intermedia                        | Gila Chub                     | AFCJB13160 | LE  |     | S    |      | P      | WSC   | G2     | S2      |
| Gila   | FISH         | Gila nigra                             | Headwater Chub                | AFCJB13180 | C   |     |      |      |        |       | G2Q    | S2      |
| Gila   | FISH         | Gila robusta                           | Roundtail Chub                | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Gila   | FISH         | Poeciliopsis occidentalis occidentalis | Gila Topminnow                | AFCNC05021 | LE  |     |      |      | A      | WSC   | G3T3   | S1S2    |
| Gila   | FISH         | Rhinichthys osculus                    | Speckled Dace                 | AFCJB37050 | SC  | S   |      |      | P      |       | G5     | S3S4    |
| Gila   | FISH         | Xyrauchen texanus                      | Razorback Sucker              | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1     | S1      |
| Gila   | INVERTEBRATE | Agathon arizonicus                     |                               | IIDIP46010 |     |     | S    |      |        |       | G1     | S?      |
| Gila   | INVERTEBRATE | Anodonta californiensis                | California Floater            | IMBIV04020 | SC  |     | S    |      |        |       | G3Q    | S1      |
| Gila   | INVERTEBRATE | Cicindela oregona maricopa             | Maricopa Tiger Beetle         | IICOL02362 | SC  |     | S    |      |        |       | G5T3   | S3      |
| Gila   | INVERTEBRATE | Pyrgulopsis simplex                    | Fossil Springsnail            | IMGASJ0210 | SC  | S   | S    |      |        |       | G1G2   | S1      |
| Gila   | INVERTEBRATE | Pyrgulopsis sola                       | Brown Springsnail             | IMGASJ0220 | SC  | S   | S    |      |        |       | G1     | S1      |
| Gila   | MAMMAL       | Corynorhinus townsendii pallascens     | Pale Townsend's Big-eared Bat | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4    |
| Gila   | MAMMAL       | Eumops perotis californicus            | Greater Western Bonneted Bat  | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3      |
| Gila   | MAMMAL       | Idionycteris phyllotis                 | Allen's Big-eared Bat         | AMACC09010 | SC  |     |      |      |        |       | G3G4   | S2S3    |
| Gila   | MAMMAL       | Lasiurus blossevillii                  | Western Red Bat               | AMACC05060 |     | S   |      |      |        | WSC   | G5     | S3      |
| Gila   | MAMMAL       | Macrotus californicus                  | California Leaf-nosed Bat     | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3      |
| Gila   | MAMMAL       | Myotis occultus                        | Arizona Myotis                | AMACC01160 | SC  |     |      |      |        |       | G3G4   | S3      |
| Gila   | MAMMAL       | Myotis thysanodes                      | Fringed Myotis                | AMACC01090 | SC  |     |      |      |        |       | G4G5   | S3S4    |
| Gila   | MAMMAL       | Myotis velifer                         | Cave Myotis                   | AMACC01050 | SC  |     |      |      |        |       | G5     | S3S4    |
| Gila   | MAMMAL       | Myotis volans                          | Long-legged Myotis            | AMACC01110 | SC  |     |      |      |        |       | G5     | S3S4    |
| Gila   | MAMMAL       | Myotis yumanensis                      | Yuma Myotis                   | AMACC01020 | SC  |     |      |      |        |       | G5     | S3S4    |
| Gila   | MAMMAL       | Nyctinomops macrotis                   | Big Free-tailed Bat           | AMACD04020 | SC  |     |      |      |        |       | G5     | S3      |

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| Gila   | PLANT     | Abutilon parishii                            | Pima Indian Mallow           | PDMAL020E0 | SC        | S   | S    |      |        | SR    | G2     | S2     |
| Gila   | PLANT     | Agave arizonica                              | Arizona Agave                | PMAGA01030 | No status |     |      |      |        | HS    | G1Q    | SHYB   |
| Gila   | PLANT     | Agave delamateri                             | Tonto Basin Agave            | PMAGA010W0 | SC        |     | S    |      |        | HS    | G2     | S2     |
| Gila   | PLANT     | Agave murpheyi                               | Hohokam Agave                | PMAGA010F0 | SC        | S   | S    |      |        | HS    | G2     | S2     |
| Gila   | PLANT     | Agave toumeyana var. bella                   | Toumey Agave                 | PMAGA010R1 |           |     |      |      |        | SR    | G3T3   | S3     |
| Gila   | PLANT     | Arenaria aberrans                            | Mt. Dellenbaugh Sandwort     | PDCAR04010 |           |     | S    |      |        |       | G2     | S2     |
| Gila   | PLANT     | Carex chihuahuensis                          | A Sedge                      | PMCYP032T0 |           |     | S    |      |        |       | G3G4   | S2S3   |
| Gila   | PLANT     | Cimicifuga arizonica                         | Arizona Bugbane              | PDRAN07020 | SC        |     | S    |      |        | HS    | G2     | S2     |
| Gila   | PLANT     | Echinocereus triglochidiatus var. arizonicus | Arizona Hedgehog Cactus      | PDCAC060K1 | LE        |     | S    |      |        | HS    | G5T2   | S2     |
| Gila   | PLANT     | Erigeron anchana                             | Mogollon Fleabane            | PDAST3M580 | SC        |     | S    |      |        |       | G2     | S2     |
| Gila   | PLANT     | Eriogonum capillare                          | San Carlos Wild-buckwheat    | PDPGN08100 | SC        |     |      |      |        | SR    | G4     | S4     |
| Gila   | PLANT     | Ferocactus cylindraceus var. cylindraceus    | California Barrel Cactus     | PDCAC08081 |           |     |      |      | PR     | SR    | G5T4   | S3     |
| Gila   | PLANT     | Fremontodendron californicum                 | Flannel Bush                 | PDSTE03010 |           | S   |      |      |        | SR    | G4     | S2S3   |
| Gila   | PLANT     | Heuchera eastwoodiae                         | Eastwood Alum Root           | PDSAX0E0B0 |           |     | S    |      |        |       | G3     | S3     |
| Gila   | PLANT     | Heuchera glomerulata                         | Arizona Alum Root            | PDSAX0E0F0 |           |     | S    |      |        |       | G3     | S3     |
| Gila   | PLANT     | Mammillaria viridiflora                      | Varied Fishhook Cactus       | PDCAC0A0D0 |           |     |      |      |        | SR    | G4     | S4     |
| Gila   | PLANT     | Osmorhiza brachypoda                         | Sweet Cicely                 | PDAPI1K020 |           |     | S    |      |        |       | G4     | S1     |
| Gila   | PLANT     | Penstemon nudiflorus                         | Flagstaff Beardtongue        | PDSCR1L4A0 |           |     | S    |      |        |       | G2G3   | S2S3   |
| Gila   | PLANT     | Penstemon superbus                           | Superb Beardtongue           | PDSCR1L630 |           |     | S    |      |        |       | G3?    | S2?    |
| Gila   | PLANT     | Perityle gilensis var. salensis              | Gila Rock Daisy              | PDAST700D2 |           |     | S    |      |        |       | G2?T2? | S2?    |
| Gila   | PLANT     | Perityle saxicola                            | Fish Creek Rock Daisy        | PDAST700P0 | SC        |     | S    |      |        |       | G1     | S1     |
| Gila   | PLANT     | Phlox amabilis                               | Arizona Phlox                | PDPLM0D050 |           |     | S    |      |        |       | G2     | S2     |
| Gila   | PLANT     | Rumex orthoneurus                            | Blumer's Dock                | PDPGN0P0Z0 | SC        |     | S    |      |        | HS    | G3     | S3     |
| Gila   | PLANT     | Salvia amissa                                | Aravaipa Sage                | PDLAM1S020 | SC        | S   | S    |      |        |       | G2     | S2     |
| Gila   | PLANT     | Triteleia lemmoniae                          | Mazatzal Tritelleia          | PMLIL210C0 |           |     |      |      |        | SR    | G3     | S3     |
| Gila   | REPTILE   | Gopherus agassizii (Sonoran Population)      | Sonoran Desert Tortoise      | ARAAF01013 | SC        | S   |      |      | A      | WSC   | G4T4   | S4     |
| Gila   | REPTILE   | Thamnophis eques megalops                    | Northern Mexican Gartersnake | ARADB36061 | C         |     | S    |      | A      | WSC   | G5T5   | S1     |
| Gila   | REPTILE   | Thamnophis rufipunctatus                     | Narrow-headed Gartersnake    | ARADB36110 | SC        | S   | S    |      |        | WSC   | G3G4   | S1     |
| Graham | AMPHIBIAN | Bufo microscaphus                            | Arizona Toad                 | AAABB01110 | SC        |     | S    |      |        |       | G3G4   | S3S4   |

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| Graham | AMPHIBIAN    | Lithobates chiricahuensis              | Chiricahua Leopard Frog                     | AAABH01080 | LT  |     | S    |      | A      | WSC   | G3     | S2      |
| Graham | AMPHIBIAN    | Lithobates yavapaiensis                | Lowland Leopard Frog                        | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3      |
| Graham | BIRD         | Accipiter gentilis                     | Northern Goshawk                            | ABNKC12060 | SC  | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Graham | BIRD         | Amazilia violiceps                     | Violet-crowned Hummingbird                  | ABNUC29150 |     |     |      |      |        | WSC   | G5     | S3      |
| Graham | BIRD         | Athene cunicularia hypugaea            | Western Burrowing Owl                       | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3      |
| Graham | BIRD         | Buteo nitidus maxima                   | Northern Gray Hawk                          | ABNKC19011 | SC  | S   | S    |      | PR     | WSC   | G5T4Q  | S3      |
| Graham | BIRD         | Buteo swainsoni                        | Swainson's Hawk                             | ABNKC19070 |     | S   |      |      |        |       | G5     | S3      |
| Graham | BIRD         | Buteogallus anthracinus                | Common Black-Hawk                           | ABNKC15010 |     | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Graham | BIRD         | Coccyzus americanus                    | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Graham | BIRD         | Empidonax traillii extimus             | Southwestern Willow Flycatcher              | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Graham | BIRD         | Falco peregrinus anatum                | American Peregrine Falcon                   | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Graham | BIRD         | Haliaeetus leucocephalus               | Bald Eagle - Winter Population              | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Graham | BIRD         | Haliaeetus leucocephalus pop. 3        | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT  | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |
| Graham | BIRD         | Megaceryle alcyon                      | Belted Kingfisher                           | ABNXD01020 |     |     |      | 4    |        | WSC   | G5     | S2B,S5N |
| Graham | BIRD         | Strix occidentalis lucida              | Mexican Spotted Owl                         | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Graham | FISH         | Agosia chrysogaster chrysogaster       | Gila Longfin Dace                           | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Graham | FISH         | Catostomus clarkii                     | Desert Sucker                               | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4    |
| Graham | FISH         | Catostomus insignis                    | Sonora Sucker                               | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3      |
| Graham | FISH         | Cyprinodon macularius                  | Desert Pupfish                              | AFCNB02060 | LE  |     |      |      | P      | WSC   | G1     | S1      |
| Graham | FISH         | Gila intermedia                        | Gila Chub                                   | AFCJB13160 | LE  |     | S    |      | P      | WSC   | G2     | S2      |
| Graham | FISH         | Gila nigra                             | Headwater Chub                              | AFCJB13180 | C   |     |      |      |        |       | G2Q    | S2      |
| Graham | FISH         | Gila robusta                           | Roundtail Chub                              | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Graham | FISH         | Meda fulgida                           | Spikedace                                   | AFCJB22010 | LT  |     | S    |      |        | WSC   | G2     | S1      |
| Graham | FISH         | Oncorhynchus apache                    | Apache Trout                                | AFCHA02102 | LT  |     | S    |      |        | WSC   | G3T3   | S3      |
| Graham | FISH         | Poeciliopsis occidentalis occidentalis | Gila Topminnow                              | AFCNC05021 | LE  |     |      |      | A      | WSC   | G3T3   | S1S2    |
| Graham | FISH         | Rhinichthys osculus                    | Speckled Dace                               | AFCJB37050 | SC  | S   |      |      | P      |       | G5     | S3S4    |
| Graham | FISH         | Tiaroga cobitis                        | Loach Minnow                                | AFCJB37140 | LT  |     | S    |      | P      | WSC   | G2     | S1      |
| Graham | FISH         | Xyrauchen texanus                      | Razorback Sucker                            | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1     | S1      |
| Graham | INVERTEBRATE | Anodonta californiensis                | California Floater                          | IMBIV04020 | SC  |     | S    |      |        |       | G3Q    | S1      |



| COUNTY | TAXON        | SCIENTIFIC NAME                        | COMMON NAME                    | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK |
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| Graham | INVERTEBRATE | Cicindela oregona maricopa             | Maricopa Tiger Beetle          | IICOL02362 | SC  |     | S    |      |        |       | G5T3   | S3     |
| Graham | INVERTEBRATE | Eumorsea pinaleno                      | Pinaleno Monkey Grasshopper    | IHORT14010 | SC  |     | S    |      |        |       | G1G3   | S1S3   |
| Graham | INVERTEBRATE | Limenitis archippus obsoleta           | Obsolete Viceroy Butterfly     | IILEPL3024 |     |     | S    |      |        |       | G5T3T4 | S4     |
| Graham | INVERTEBRATE | Oreohelix grahamensis                  | Pinaleno Mountainsnail         | IMGASB5120 |     |     | S    |      |        |       | G2     | S2     |
| Graham | INVERTEBRATE | Pyrgulopsis arizonae                   | Bylas Springsnail              | IMGASJ0770 | SC  | S   | S    |      |        |       | G1     | S1     |
| Graham | INVERTEBRATE | Sonorella christenseni                 | Clark Peak Talussnail          | IMGASC9150 | SC  |     | S    |      |        |       | G1     | S1     |
| Graham | INVERTEBRATE | Sonorella grahamensis                  | Pinaleno Talussnail            | IMGASC9280 | SC  |     | S    |      |        |       | G1     | S1     |
| Graham | INVERTEBRATE | Sonorella imitator                     | Mimic Talussnail               | IMGASC9320 |     |     | S    |      |        |       | G2     | S2     |
| Graham | INVERTEBRATE | Sonorella macrophallus                 | Wet Canyon Talussnail          | IMGASC9360 | SC  |     | S    |      |        |       | G1     | S1     |
| Graham | INVERTEBRATE | Tryonia gilae                          | Gila Tryonia                   | IMGASJ7160 | SC  | S   | S    |      |        |       | G1     | S1     |
| Graham | MAMMAL       | Choeronycteris mexicana                | Mexican Long-tongued Bat       | AMACB02010 | SC  | S   |      |      | A      | WSC   | G4     | S3     |
| Graham | MAMMAL       | Corynorhinus townsendii<br>pallascens  | Pale Townsend's Big-eared Bat  | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4   |
| Graham | MAMMAL       | Eumops perotis californicus            | Greater Western Bonneted Bat   | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3     |
| Graham | MAMMAL       | Idionycteris phyllotis                 | Allen's Big-eared Bat          | AMACC09010 | SC  |     |      |      |        |       | G3G4   | S2S3   |
| Graham | MAMMAL       | Lasiurus blossevillii                  | Western Red Bat                | AMACC05060 |     | S   |      |      |        | WSC   | G5     | S3     |
| Graham | MAMMAL       | Lasiurus xanthinus                     | Western Yellow Bat             | AMACC05070 |     | S   |      |      |        | WSC   | G5     | S2S3   |
| Graham | MAMMAL       | Leptonycteris curasoae<br>yerbabuena   | Lesser Long-nosed Bat          | AMACB03030 | LE  |     | S    |      |        | WSC   | G4     | S2S3   |
| Graham | MAMMAL       | Macrotus californicus                  | California Leaf-nosed Bat      | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3     |
| Graham | MAMMAL       | Microtus longicaudus leucophaeus       | White-bellied Long-tailed Vole | AMAFF11061 |     |     | S    |      |        |       | G5T3   | S2     |
| Graham | MAMMAL       | Myotis velifer                         | Cave Myotis                    | AMACC01050 | SC  |     |      |      |        |       | G5     | S3S4   |
| Graham | MAMMAL       | Myotis yumanensis                      | Yuma Myotis                    | AMACC01020 | SC  |     |      |      |        |       | G5     | S3S4   |
| Graham | MAMMAL       | Nyctinomops macrotis                   | Big Free-tailed Bat            | AMACD04020 | SC  |     |      |      |        |       | G5     | S3     |
| Graham | MAMMAL       | Sigmodon ochrognathus                  | Yellow-nosed Cotton Rat        | AMAFF07040 | SC  |     |      |      |        |       | G4G5   | S4     |
| Graham | MAMMAL       | Tamiasciurus hudsonicus<br>grahamensis | Mt Graham Red Squirrel         | AMAFB08011 | LE  |     |      |      |        | WSC   | G5T1   | S1     |
| Graham | MAMMAL       | Thomomys bottae mearnsi                | Mearns' Southern Pocket Gopher | AMAF0102G  | SC  |     |      |      |        |       | G5T5   | S5     |
| Graham | PLANT        | Abutilon parishii                      | Pima Indian Mallow             | PDMAL020E0 | SC  | S   | S    |      |        | SR    | G2     | S2     |
| Graham | PLANT        | Allium bigelovii                       | Bigelow Onion                  | PMLIL02070 |     |     |      |      |        | SR    | G3     | S2S3   |
| Graham | PLANT        | Carex chihuahuensis                    | A Sedge                        | PMCYP032T0 |     |     | S    |      |        |       | G3G4   | S2S3   |
| Graham | PLANT        | Carex ultra                            | Arizona Giant Sedge            | PMCYP03E50 |     | S   | S    |      |        |       | G3?    | S2     |

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| Graham   | PLANT     | Echinocereus ledingii                   | Pinaleno Hedgehog Cactus     | PDCAC06066 |     |     |      |      |        | SR    | G4G5T4 | S4     |
| Graham   | PLANT     | Erigeron heliographis                   | Pinalenos Fleabane           | PDAST3M500 | SC  |     |      |      |        |       | G1     | S1     |
| Graham   | PLANT     | Erigeron piscaticus                     | Fish Creek Fleabane          | PDAST3M4X0 | SC  | S   | S    |      |        | SR    | G1     | S1     |
| Graham   | PLANT     | Eriogonum capillare                     | San Carlos Wild-buckwheat    | PDPGN08100 | SC  |     |      |      |        | SR    | G4     | S4     |
| Graham   | PLANT     | Eupatorium bigelovii                    | Bigelow Thoroughwort         | PDAST3P080 |     |     | S    |      |        |       | G2?    | S1     |
| Graham   | PLANT     | Hackelia ursina                         | Chihuahuan Stickseed         | PDBOR0G0R0 |     |     | S    |      |        |       | G3?    | S2     |
| Graham   | PLANT     | Heuchera glomerulata                    | Arizona Alum Root            | PDSAX0E0F0 |     |     | S    |      |        |       | G3     | S3     |
| Graham   | PLANT     | Hieracium rusbyi                        | Rusby Hawkweed               | PDAST4W1A0 |     |     | S    |      |        |       | G2?    | S1     |
| Graham   | PLANT     | Mammillaria viridiflora                 | Varied Fishhook Cactus       | PDCAC0A0D0 |     |     |      |      |        | SR    | G4     | S4     |
| Graham   | PLANT     | Mammillaria wrightii var. wilcoxii      | Wilcox Fishhook Cactus       | PDCAC0A0E1 |     |     |      |      |        | SR    | G4T4   | S4     |
| Graham   | PLANT     | Penstemon discolor                      | Catalina Beardtongue         | PDSCR1L210 |     |     | S    |      |        | HS    | G2     | S2     |
| Graham   | PLANT     | Penstemon ramosus                       | Branching Penstemon          | PDSCR1L7L0 |     |     | S    |      |        |       | G3G4Q  | S1     |
| Graham   | PLANT     | Penstemon superbus                      | Superb Beardtongue           | PDSCR1L630 |     |     | S    |      |        |       | G3?    | S2?    |
| Graham   | PLANT     | Physalis latiphysa                      | Broad-leaf Ground-cherry     | PDSOL0S0H0 |     |     | S    |      |        |       | G1     | S1     |
| Graham   | PLANT     | Platanthera hyperborea                  | Boreal Bog Orchid            | PMORC1Y0B0 |     |     |      |      |        | SR    | G5     | S3S4   |
| Graham   | PLANT     | Platanthera purpurascens                | Slender Bog Orchid           | PMORC1Y0P0 |     |     |      |      |        | SR    | G5     | S4     |
| Graham   | PLANT     | Polemonium flavum                       | Pinaleno Jacobs Ladder       | PDPLM0E0B2 |     |     | S    |      |        |       | G5T3?  | S2     |
| Graham   | PLANT     | Potentilla albiflora                    | White-flowered Cinquefoil    | PDROS1B010 |     |     | S    |      |        |       | G1G2   | S1S2   |
| Graham   | PLANT     | Purshia subintegra                      | Arizona Cliff Rose           | PDROS1E080 | LE  |     |      |      |        | HS    | GNA    | S1     |
| Graham   | PLANT     | Rumex orthoneurus                       | Blumer's Dock                | PDPGN0P0Z0 | SC  |     | S    |      |        | HS    | G3     | S3     |
| Graham   | PLANT     | Salvia amissa                           | Aravaipa Sage                | PDLAM1S020 | SC  | S   | S    |      |        |       | G2     | S2     |
| Graham   | PLANT     | Schiedeella arizonica                   | Fallen Ladies'-tresses       | PMORC67020 |     |     |      |      |        | SR    | GNR    | S4     |
| Graham   | REPTILE   | Aspidoscelis burti stictogrammus        | Giant Spotted Whiptail       | ARACJ02011 | SC  |     | S    |      |        |       | G4T4   | S2     |
| Graham   | REPTILE   | Gopherus agassizii (Sonoran Population) | Sonoran Desert Tortoise      | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4   | S4     |
| Graham   | REPTILE   | Phrynosoma cornutum                     | Texas Horned Lizard          | ARACF12010 | SC  |     |      |      | A      |       | G4G5   | S3S4   |
| Graham   | REPTILE   | Thamnophis eques megalops               | Northern Mexican Gartersnake | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1     |
| Graham   | REPTILE   | Thamnophis rufipunctatus                | Narrow-headed Gartersnake    | ARADB36110 | SC  | S   | S    |      |        | WSC   | G3G4   | S1     |
| Greenlee | AMPHIBIAN | Bufo microscaphus                       | Arizona Toad                 | AAABB01110 | SC  |     | S    |      |        |       | G3G4   | S3S4   |
| Greenlee | AMPHIBIAN | Lithobates chiricahuensis               | Chiricahua Leopard Frog      | AAABH01080 | LT  |     | S    |      | A      | WSC   | G3     | S2     |

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| Greenlee | AMPHIBIAN    | Lithobates pipiens                        | Northern Leopard Frog                   | AAABH01170 |     | S   | S    | 2    |        | WSC   | G5     | S2      |
| Greenlee | AMPHIBIAN    | Lithobates yavapaiensis                   | Lowland Leopard Frog                    | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3      |
| Greenlee | BIRD         | Accipiter gentilis                        | Northern Goshawk                        | ABNKC12060 | SC  | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Greenlee | BIRD         | Buteogallus anthracinus                   | Common Black-Hawk                       | ABNKC15010 |     | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Greenlee | BIRD         | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Greenlee | BIRD         | Empidonax traillii extimus                | Southwestern Willow Flycatcher          | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Greenlee | BIRD         | Euptilotis neoxenus                       | Eared Quetzal                           | ABNWA03010 |     |     | S    |      | A      |       | G3     | SAB,S1N |
| Greenlee | BIRD         | Falco peregrinus anatum                   | American Peregrine Falcon               | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Greenlee | BIRD         | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population          | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Greenlee | BIRD         | Pandion haliaetus                         | Osprey                                  | ABNKC01010 |     | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Greenlee | BIRD         | Strix occidentalis lucida                 | Mexican Spotted Owl                     | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Greenlee | FISH         | Agosia chrysgaster chrysgaster            | Gila Longfin Dace                       | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Greenlee | FISH         | Catostomus clarkii                        | Desert Sucker                           | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4    |
| Greenlee | FISH         | Catostomus insignis                       | Sonora Sucker                           | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3      |
| Greenlee | FISH         | Gila intermedia                           | Gila Chub                               | AFCJB13160 | LE  |     | S    |      | P      | WSC   | G2     | S2      |
| Greenlee | FISH         | Gila robusta                              | Roundtail Chub                          | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Greenlee | FISH         | Meda fulgida                              | Spikedace                               | AFCJB22010 | LT  |     | S    |      |        | WSC   | G2     | S1      |
| Greenlee | FISH         | Oncorhynchus apache                       | Apache Trout                            | AFCHA02102 | LT  |     | S    |      |        | WSC   | G3T3   | S3      |
| Greenlee | FISH         | Oncorhynchus gilae                        | Gila Trout                              | AFCHA02100 | LT  |     | S    |      |        | WSC   | G3     | S1      |
| Greenlee | FISH         | Rhinichthys osculus                       | Speckled Dace                           | AFCJB37050 | SC  | S   |      |      | P      |       | G5     | S3S4    |
| Greenlee | FISH         | Tiaroga cobitis                           | Loach Minnow                            | AFCJB37140 | LT  |     | S    |      | P      | WSC   | G2     | S1      |
| Greenlee | FISH         | Xyrauchen texanus                         | Razorback Sucker                        | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1     | S1      |
| Greenlee | INVERTEBRATE | Anodonta californiensis                   | California Floater                      | IMBIV04020 | SC  |     | S    |      |        |       | G3Q    | S1      |
| Greenlee | INVERTEBRATE | Cicindela oregona maricopa                | Maricopa Tiger Beetle                   | IICOL02362 | SC  |     | S    |      |        |       | G5T3   | S3      |
| Greenlee | INVERTEBRATE | Psephenus montanus                        | White Mountains Water Penny Beetle      | IICOL63020 | SC  |     | S    |      |        |       | G2?    | S2?     |
| Greenlee | INVERTEBRATE | Speyeria nokomis nitocris                 | Mountain Silverspot Butterfly           | IILEPJ6052 |     |     | S    |      |        |       | G3T3   | S3      |
| Greenlee | MAMMAL       | Eumops perotis californicus               | Greater Western Bonneted Bat            | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3      |
| Greenlee | MAMMAL       | Myotis evotis                             | Long-eared Myotis                       | AMACC01070 | SC  |     |      |      |        |       | G5     | S3      |
| Greenlee | MAMMAL       | Myotis occultus                           | Arizona Myotis                          | AMACC01160 | SC  |     |      |      |        |       | G3G4   | S3      |

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| Greenlee | MAMMAL    | Myotis volans                          | Long-legged Myotis             | AMACC01110 | SC  |     |      |      |        |       | G5       | S3S4   |
| Greenlee | MAMMAL    | Zapus hudsonius luteus                 | New Mexican Jumping Mouse      | AMAFH01014 | C   |     | S    |      |        | WSC   | G5T2     | S1     |
| Greenlee | PLANT     | Allium bigelovii                       | Bigelow Onion                  | PMLIL02070 |     |     |      |      |        | SR    | G3       | S2S3   |
| Greenlee | PLANT     | Allium gooddingii                      | Goodding Onion                 | PMLIL02120 | SC  |     | S    | 3    |        | HS    | G4       | S3S4   |
| Greenlee | PLANT     | Calypso bulbosa                        | Western Fairy Slipper          | PMORC0D010 |     |     |      |      |        | SR    | G5       | S3     |
| Greenlee | PLANT     | Coeloglossum viride var. virescens     | American Frog Orchid           | PMORC0K011 |     |     |      |      |        | SR    | G5T5     | S1     |
| Greenlee | PLANT     | Conioselinum mexicanum                 | Mexican Hemlock Parsley        | PDAPI0P030 | SC  |     | S    |      |        |       | G2?      | S1     |
| Greenlee | PLANT     | Cypripedium parviflorum var. pubescens | Yellow Lady's-slipper          | PMORC0Q092 |     |     |      | 4    |        | HS    | G5T5     | S1     |
| Greenlee | PLANT     | Echinocereus fasciculatus              | Magenta-flower Hedgehog-cactus | PDCAC06065 |     |     |      |      |        | SR    | G4G5T4T5 | S?     |
| Greenlee | PLANT     | Eriogonum capillare                    | San Carlos Wild-buckwheat      | PDPGN08100 | SC  |     |      |      |        | SR    | G4       | S4     |
| Greenlee | PLANT     | Gentianella wislizeni                  | Wislizeni Gentian              | PDGEN07090 | SC  |     | S    |      |        | SR    | G2       | S1     |
| Greenlee | PLANT     | Goodyera repens                        | Lesser Rattlesnake Plantain    | PMORC17030 |     |     |      |      |        | SR    | G5       | S2     |
| Greenlee | PLANT     | Hackelia ursina                        | Chihuahuan Stickseed           | PDBOR0G0R0 |     |     | S    |      |        |       | G3?      | S2     |
| Greenlee | PLANT     | Heuchera glomerulata                   | Arizona Alum Root              | PDSAX0E0F0 |     |     | S    |      |        |       | G3       | S3     |
| Greenlee | PLANT     | Lupinus lemmonii                       | Lemmon's Lupine                | PDFAB2B2A0 |     |     | S    |      |        |       | G1G2Q    | S1S2Q  |
| Greenlee | PLANT     | Malaxis porphyrea                      | Purple Adder's Mouth           | PMORC1R0Q0 |     |     |      |      |        | SR    | G4       | S2     |
| Greenlee | PLANT     | Penstemon linarioides ssp. maguirei    | Maguire's Penstemon            | PDSCR1L3S1 |     |     |      |      |        | SR    | G5T1     | S1     |
| Greenlee | PLANT     | Penstemon ramosus                      | Branching Penstemon            | PDSCR1L7L0 |     |     | S    |      |        |       | G3G4Q    | S1     |
| Greenlee | PLANT     | Penstemon superbus                     | Superb Beardtongue             | PDSCR1L630 |     |     | S    |      |        |       | G3?      | S2?    |
| Greenlee | PLANT     | Perityle ambrosiifolia                 | Lace-leaf Rockdaisy            | PDAST70120 |     | S   |      |      |        |       | G1       | S1     |
| Greenlee | PLANT     | Platanthera hyperborea                 | Boreal Bog Orchid              | PMORC1Y0B0 |     |     |      |      |        | SR    | G5       | S3S4   |
| Greenlee | PLANT     | Platanthera purpurascens               | Slender Bog Orchid             | PMORC1Y0P0 |     |     |      |      |        | SR    | G5       | S4     |
| Greenlee | PLANT     | Rumex orthoneurus                      | Blumer's Dock                  | PDPGN0P0Z0 | SC  |     | S    |      |        | HS    | G3       | S3     |
| Greenlee | PLANT     | Schiedeella arizonica                  | Fallen Ladies'-tresses         | PMORC67020 |     |     |      |      |        | SR    | GNR      | S4     |
| Greenlee | PLANT     | Senecio quaerens                       | Gila Groundsel                 | PDAST8H2L0 | SC  |     | S    |      |        | SR    | G2       | S2     |
| Greenlee | PLANT     | Trifolium neurophyllum                 | White Mountains Clover         | PDFAB401N0 | SC  |     | S    |      |        |       | G2       | S2     |
| Greenlee | PLANT     | Zigadenus virescens                    | Green Death Camas              | PMLIL280E0 |     |     |      |      |        | SR    | G4       | S4     |
| Greenlee | REPTILE   | Thamnophis rufipunctatus               | Narrow-headed Gartersnake      | ARADB36110 | SC  | S   | S    |      |        | WSC   | G3G4     | S1     |
| La Paz   | AMPHIBIAN | Bufo microscaphus                      | Arizona Toad                   | AAABB01110 | SC  |     | S    |      |        |       | G3G4     | S3S4   |

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| La Paz | AMPHIBIAN | Lithobates yavapaiensis                 | Lowland Leopard Frog                        | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3        |
| La Paz | BIRD      | Aechmophorus clarkii                    | Clark's Grebe                               | ABNCA04020 |     | S   |      | 4    |        | WSC   | G5     | S3        |
| La Paz | BIRD      | Ardea alba                              | Great Egret                                 | ABNGA04040 |     | S   |      |      |        | WSC   | G5     | S1B,S4N   |
| La Paz | BIRD      | Athene cunicularia hypugaea             | Western Burrowing Owl                       | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3        |
| La Paz | BIRD      | Coccyzus americanus                     | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3        |
| La Paz | BIRD      | Empidonax traillii extimus              | Southwestern Willow Flycatcher              | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1        |
| La Paz | BIRD      | Falco peregrinus anatum                 | American Peregrine Falcon                   | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4        |
| La Paz | BIRD      | Haliaeetus leucocephalus                | Bald Eagle - Winter Population              | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N       |
| La Paz | BIRD      | Haliaeetus leucocephalus pop. 3         | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT  | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3      |
| La Paz | BIRD      | Ixobrychus exilis                       | Least Bittern                               | ABNGA02010 |     | S   |      |      | A      | WSC   | G5     | S3        |
| La Paz | BIRD      | Laterallus jamaicensis coturniculus     | California Black Rail                       | ABNME03041 | SC  | S   | S    |      | PR     | WSC   | G4T1   | S1        |
| La Paz | BIRD      | Plegadis chihi                          | White-faced Ibis                            | ABNGE02020 | SC  |     |      |      |        |       | G5     | S?B,S2S3N |
| La Paz | BIRD      | Rallus longirostris yumanensis          | Yuma Clapper Rail                           | ABNME0501A | LE  |     |      |      | P      | WSC   | G5T3   | S3        |
| La Paz | FISH      | Cyprinodon macularius                   | Desert Pupfish                              | AFCNB02060 | LE  |     |      |      | P      | WSC   | G1     | S1        |
| La Paz | FISH      | Gila elegans                            | Bonytail                                    | AFCJB13100 | LE  |     |      | 1    | P      | WSC   | G1     | S1        |
| La Paz | FISH      | Poeciliopsis occidentalis occidentalis  | Gila Topminnow                              | AFCNC05021 | LE  |     |      |      | A      | WSC   | G3T3   | S1S2      |
| La Paz | FISH      | Xyrauchen texanus                       | Razorback Sucker                            | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1     | S1        |
| La Paz | MAMMAL    | Corynorhinus townsendii pallescens      | Pale Townsend's Big-eared Bat               | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4      |
| La Paz | MAMMAL    | Eumops perotis californicus             | Greater Western Bonneted Bat                | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3        |
| La Paz | MAMMAL    | Lasiurus blossevillii                   | Western Red Bat                             | AMACC05060 |     | S   |      |      |        | WSC   | G5     | S3        |
| La Paz | MAMMAL    | Lasiurus xanthinus                      | Western Yellow Bat                          | AMACC05070 |     | S   |      |      |        | WSC   | G5     | S2S3      |
| La Paz | MAMMAL    | Macrotus californicus                   | California Leaf-nosed Bat                   | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3        |
| La Paz | MAMMAL    | Myotis velifer                          | Cave Myotis                                 | AMACC01050 | SC  |     |      |      |        |       | G5     | S3S4      |
| La Paz | MAMMAL    | Myotis yumanensis                       | Yuma Myotis                                 | AMACC01020 | SC  |     |      |      |        |       | G5     | S3S4      |
| La Paz | PLANT     | Mammillaria viridiflora                 | Varied Fishhook Cactus                      | PDCAC0A0D0 |     |     |      |      |        | SR    | G4     | S4        |
| La Paz | PLANT     | Opuntia echinocarpa                     | Straw-top Cholla                            | PDCAC0D2W0 |     |     |      |      |        | SR    | G5     | S5        |
| La Paz | PLANT     | Pholisma arenarium                      | Scaly Sandplant                             | PDLNN02010 |     | S   |      |      |        | HS    | G3     | S2        |
| La Paz | REPTILE   | Charina trivirgata gracia               | Desert Rosy Boa                             | ARADA01021 | SC  | S   | S    |      |        |       | G4G5T3 | S3S4      |
| La Paz | REPTILE   | Gopherus agassizii (Sonoran Population) | Sonoran Desert Tortoise                     | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4   | S4        |

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| La Paz   | REPTILE   | Heloderma suspectum cinctum               | Banded Gila Monster                         | ARACE01011 | SC        |     |      |      | A      |       | G4T4   | S4      |
| La Paz   | REPTILE   | Uma scoparia                              | Mojave Fringe-toed Lizard                   | ARACF15030 |           | S   |      |      |        | WSC   | G3G4   | S1      |
| Maricopa | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                                | AAABB01110 | SC        |     | S    |      |        |       | G3G4   | S3S4    |
| Maricopa | AMPHIBIAN | Gastrophryne olivacea                     | Great Plains Narrow-mouthed Toad            | AAABE01020 |           | S   |      |      | PR     | WSC   | G5     | S3      |
| Maricopa | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog                        | AAABH01250 | SC        | S   | S    |      | PR     | WSC   | G4     | S3      |
| Maricopa | AMPHIBIAN | Pterohyla fodiens                         | Lowland Burrowing Treefrog                  | AAABC06010 |           | S   |      |      |        | WSC   | G4     | S2      |
| Maricopa | BIRD      | Ardea alba                                | Great Egret                                 | ABNGA04040 |           | S   |      |      |        | WSC   | G5     | S1B,S4N |
| Maricopa | BIRD      | Athene cunicularia hypugaea               | Western Burrowing Owl                       | ABNSB10012 | SC        | S   |      | 4    | A      |       | G4T4   | S3      |
| Maricopa | BIRD      | Buteogallus anthracinus                   | Common Black-Hawk                           | ABNKC15010 |           | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Maricopa | BIRD      | Charadrius alexandrinus nivosus           | Western Snowy Plover                        | ABNNB03031 | No Status |     | S    |      |        | WSC   | G4T3   | S1      |
| Maricopa | BIRD      | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C         |     |      | 2    |        | WSC   | G5     | S3      |
| Maricopa | BIRD      | Dendrocygna autumnalis                    | Black-bellied Whistling-Duck                | ABNJB01040 |           |     |      |      |        | WSC   | G5     | S3      |
| Maricopa | BIRD      | Egretta thula                             | Snowy Egret                                 | ABNGA06030 |           | S   |      |      |        | WSC   | G5     | S1B,S4N |
| Maricopa | BIRD      | Empidonax traillii extimus                | Southwestern Willow Flycatcher              | ABPAE33043 | LE        |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Maricopa | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon                   | ABNKD06071 | SC        | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Maricopa | BIRD      | Glaucidium brasilianum cactorum           | Cactus Ferruginous Pygmy-owl                | ABNSB08041 | SC        | S   |      |      | A      | WSC   | G5T3   | S1      |
| Maricopa | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population              | ABNKC10015 | SC        | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Maricopa | BIRD      | Haliaeetus leucocephalus pop. 3           | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT        | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |
| Maricopa | BIRD      | Ictinia mississippiensis                  | Mississippi Kite                            | ABNKC09010 |           | S   |      |      | A      | WSC   | G5     | S3      |
| Maricopa | BIRD      | Ixobrychus exilis                         | Least Bittern                               | ABNGA02010 |           | S   |      |      | A      | WSC   | G5     | S3      |
| Maricopa | BIRD      | Megaceryle alcyon                         | Belted Kingfisher                           | ABNXD01020 |           |     |      | 4    |        | WSC   | G5     | S2B,S5N |
| Maricopa | BIRD      | Pandion haliaetus                         | Osprey                                      | ABNKC01010 |           | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Maricopa | BIRD      | Rallus longirostris yumanensis            | Yuma Clapper Rail                           | ABNME0501A | LE        |     |      |      | P      | WSC   | G5T3   | S3      |
| Maricopa | BIRD      | Strix occidentalis lucida                 | Mexican Spotted Owl                         | ABNSB12012 | LT        |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Maricopa | FISH      | Agosia chrysogaster chrysogaster          | Gila Longfin Dace                           | AFCJB37151 | SC        | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Maricopa | FISH      | Catostomus clarkii                        | Desert Sucker                               | AFCJC02040 | SC        | S   |      |      |        |       | G3G4   | S3S4    |
| Maricopa | FISH      | Catostomus insignis                       | Sonora Sucker                               | AFCJC02100 | SC        | S   |      |      | P      |       | G3     | S3      |
| Maricopa | FISH      | Catostomus sp. 3                          | Little Colorado Sucker                      | AFCJC02250 | SC        | S   | S    |      |        | WSC   | G2     | S2      |
| Maricopa | FISH      | Cyprinodon macularius                     | Desert Pupfish                              | AFCNB02060 | LE        |     |      |      | P      | WSC   | G1     | S1      |

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|----------|--------------|---------------------------------------------------------|-------------------------------|------------|-----------|-----|------|------|--------|-------|---------|--------|
| Maricopa | FISH         | <i>Gila elegans</i>                                     | Bonytail                      | AFCJB13100 | LE        |     |      | 1    | P      | WSC   | G1      | S1     |
| Maricopa | FISH         | <i>Gila robusta</i>                                     | Roundtail Chub                | AFCJB13150 | SC        | S   | S    | 2    | PR     | WSC   | G3      | S2     |
| Maricopa | FISH         | <i>Poeciliopsis occidentalis occidentalis</i>           | Gila Topminnow                | AFCNC05021 | LE        |     |      |      | A      | WSC   | G3T3    | S1S2   |
| Maricopa | FISH         | <i>Ptychocheilus lucius</i>                             | Colorado Pikeminnow           | AFCJB35020 | LE,XN     |     |      | 2    | P      | WSC   | G1      | S1     |
| Maricopa | FISH         | <i>Rhinichthys osculus</i>                              | Speckled Dace                 | AFCJB37050 | SC        | S   |      |      | P      |       | G5      | S3S4   |
| Maricopa | FISH         | <i>Xyrauchen texanus</i>                                | Razorback Sucker              | AFCJC11010 | LE        |     | S    | 2    | P      | WSC   | G1      | S1     |
| Maricopa | INVERTEBRATE | <i>Cicindela oregona maricopa</i>                       | Maricopa Tiger Beetle         | IICOL02362 | SC        |     | S    |      |        |       | G5T3    | S3     |
| Maricopa | INVERTEBRATE | <i>Limenitis archippus obsoleta</i>                     | Obsolete Viceroy Butterfly    | IILEPL3024 |           |     | S    |      |        |       | G5T3T4  | S4     |
| Maricopa | INVERTEBRATE | <i>Maricopella allynsmithi</i>                          | Squaw Park Talussnail         | IMGASC9010 | SC        |     | S    |      |        |       | G1      | S1     |
| Maricopa | MAMMAL       | <i>Antilocapra americana sonoriensis</i>                | Sonoran Pronghorn             | AMALD01012 | LE        |     | S    |      | P      | WSC   | G5T1    | S1     |
| Maricopa | MAMMAL       | <i>Corynorhinus townsendii pallascens</i>               | Pale Townsend's Big-eared Bat | AMACC08014 | SC        | S   |      | 4    |        |       | G4T4    | S3S4   |
| Maricopa | MAMMAL       | <i>Eumops perotis californicus</i>                      | Greater Western Bonneted Bat  | AMACD02011 | SC        | S   |      |      |        |       | G5T4    | S3     |
| Maricopa | MAMMAL       | <i>Lasiurus blossevillii</i>                            | Western Red Bat               | AMACC05060 |           | S   |      |      |        | WSC   | G5      | S3     |
| Maricopa | MAMMAL       | <i>Lasiurus xanthinus</i>                               | Western Yellow Bat            | AMACC05070 |           | S   |      |      |        | WSC   | G5      | S2S3   |
| Maricopa | MAMMAL       | <i>Leptonycteris curasoae yerbabuena</i>                | Lesser Long-nosed Bat         | AMACB03030 | LE        |     | S    |      |        | WSC   | G4      | S2S3   |
| Maricopa | MAMMAL       | <i>Macrotus californicus</i>                            | California Leaf-nosed Bat     | AMACB01010 | SC        | S   |      |      |        | WSC   | G4      | S3     |
| Maricopa | MAMMAL       | <i>Myotis velifer</i>                                   | Cave Myotis                   | AMACC01050 | SC        |     |      |      |        |       | G5      | S3S4   |
| Maricopa | MAMMAL       | <i>Myotis yumanensis</i>                                | Yuma Myotis                   | AMACC01020 | SC        |     |      |      |        |       | G5      | S3S4   |
| Maricopa | PLANT        | <i>Abutilon parishii</i>                                | Pima Indian Mallow            | PDMAL020E0 | SC        | S   | S    |      |        | SR    | G2      | S2     |
| Maricopa | PLANT        | <i>Acacia farnesiana</i>                                | Sweet Acacia                  | PDFAB020D0 |           |     | S    |      |        |       | G5      | S1S2   |
| Maricopa | PLANT        | <i>Agave arizonica</i>                                  | Arizona Agave                 | PMAGA01030 | No status |     |      |      |        | HS    | G1Q     | SHYB   |
| Maricopa | PLANT        | <i>Agave delamateri</i>                                 | Tonto Basin Agave             | PMAGA010W0 | SC        |     | S    |      |        | HS    | G2      | S2     |
| Maricopa | PLANT        | <i>Agave murpheyi</i>                                   | Hohokam Agave                 | PMAGA010F0 | SC        | S   | S    |      |        | HS    | G2      | S2     |
| Maricopa | PLANT        | <i>Agave toumeyana</i> var. <i>bella</i>                | Toumey Agave                  | PMAGA010R1 |           |     |      |      |        | SR    | G3T3    | S3     |
| Maricopa | PLANT        | <i>Allium bigelovii</i>                                 | Bigelow Onion                 | PMLIL02070 |           |     |      |      |        | SR    | G3      | S2S3   |
| Maricopa | PLANT        | <i>Berberis harrisoniana</i>                            | Kofa Mt Barberry              | PDBER02030 |           | S   |      |      |        |       | G1G2    | S1S2   |
| Maricopa | PLANT        | <i>Echinomastus erectocentrus</i> var. <i>acunensis</i> | Acuna Cactus                  | PDCAC0J0E1 | C         |     |      |      | P      | HS    | G3T1T2Q | S1     |
| Maricopa | PLANT        | <i>Erigeron piscaticus</i>                              | Fish Creek Fleabane           | PDAST3M4X0 | SC        | S   | S    |      |        | SR    | G1      | S1     |
| Maricopa | PLANT        | <i>Eriogonum ripleyi</i>                                | Ripley Wild-buckwheat         | PDPGN08520 | SC        |     | S    |      |        | SR    | G2      | S2     |

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| Maricopa | PLANT     | Ferocactus cylindraceus var. cylindraceus | California Barrel Cactus     | PDCAC08081 |     |     |      |      | PR     | SR    | G5T4   | S3     |
| Maricopa | PLANT     | Ferocactus cylindraceus var. eastwoodiae  | Golden Barrel Cactus         | PDCAC08084 |     |     |      |      |        | SR    | G5T1   | S1     |
| Maricopa | PLANT     | Ferocactus emoryi                         | Emory's Barrel-cactus        | PDCAC08090 |     |     |      |      |        | SR    | G4     | S1S2   |
| Maricopa | PLANT     | Fremontodendron californicum              | Flannel Bush                 | PDSTE03010 |     | S   |      |      |        | SR    | G4     | S2S3   |
| Maricopa | PLANT     | Heuchera eastwoodiae                      | Eastwood Alum Root           | PDSAX0E0B0 |     |     | S    |      |        |       | G3     | S3     |
| Maricopa | PLANT     | Lotus alamosanus                          | Alamos Deer Vetch            | PDFAB2A020 |     |     | S    |      |        |       | G3G4   | S1     |
| Maricopa | PLANT     | Mabrya acerifolia                         | Mapleleaf False Snapdragon   | PDSCR2L010 |     |     | S    |      |        |       | G2     | S2     |
| Maricopa | PLANT     | Mammillaria viridiflora                   | Varied Fishhook Cactus       | PDCAC0A0D0 |     |     |      |      |        | SR    | G4     | S4     |
| Maricopa | PLANT     | Opuntia echinocarpa                       | Straw-top Cholla             | PDCAC0D2W0 |     |     |      |      |        | SR    | G5     | S5     |
| Maricopa | PLANT     | Opuntia engelmannii var. flavispina       |                              | PDCAC0D224 |     |     |      |      |        | SR    | G5T3?  | S3?    |
| Maricopa | PLANT     | Perityle saxicola                         | Fish Creek Rock Daisy        | PDAST700P0 | SC  |     | S    |      |        |       | G1     | S1     |
| Maricopa | PLANT     | Purshia subintegra                        | Arizona Cliff Rose           | PDR0S1E080 | LE  |     |      |      |        | HS    | GNA    | S1     |
| Maricopa | PLANT     | Stenocereus thurberi                      | Organ Pipe Cactus            | PDCAC10020 |     |     |      |      |        | SR    | G5     | S4     |
| Maricopa | PLANT     | Tumamoca macedougali                      | Tumamoc Globeberry           | PDCUC0S010 |     | S   | S    |      |        | SR    | G4     | S3     |
| Maricopa | PLANT     | Vauquelinia californica ssp. sonorensis   | Arizona Sonoran Rosewood     | PDR0S1R024 |     | S   |      |      |        |       | G4T1   | S1     |
| Maricopa | REPTILE   | Aspidoscelis xanthonota                   | Redback Whiptail             | ARACJ02012 | SC  |     | S    |      |        |       | G4T2   | S2     |
| Maricopa | REPTILE   | Charina trivirgata gracia                 | Desert Rosy Boa              | ARADA01021 | SC  | S   | S    |      |        |       | G4G5T3 | S3S4   |
| Maricopa | REPTILE   | Charina trivirgata trivirgata             | Mexican Rosy Boa             | ARADA01023 | SC  | S   |      |      |        |       | G4G5T3 | S1S2   |
| Maricopa | REPTILE   | Chionactis occipitalis klauberi           | Tucson Shovel-nosed Snake    | ARADB05012 |     | S   |      |      |        |       | G5T3Q  | S1     |
| Maricopa | REPTILE   | Eumeces gilberti arizonensis              | Arizona Skink                | ARACH01061 | SC  |     | S    |      | PR     | WSC   | G5T1Q  | S1     |
| Maricopa | REPTILE   | Gopherus agassizii (Sonoran Population)   | Sonoran Desert Tortoise      | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4   | S4     |
| Maricopa | REPTILE   | Heloderma suspectum cinctum               | Banded Gila Monster          | ARACE01011 | SC  |     |      |      | A      |       | G4T4   | S4     |
| Maricopa | REPTILE   | Sauromalus ater (Arizona Population)      | Arizona Chuckwalla           | ARACF13013 | SC  | S   |      |      | A      |       | G5T4Q  | S4     |
| Maricopa | REPTILE   | Sauromalus ater (Western Population)      | Western Chuckwalla           | ARACF13012 | SC  | S   |      | 4    | A      |       | G5T4Q  | S4     |
| Maricopa | REPTILE   | Thamnophis eques megalops                 | Northern Mexican Gartersnake | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1     |
| Mohave   | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                 | AAABB01110 | SC  |     | S    |      |        |       | G3G4   | S3S4   |
| Mohave   | AMPHIBIAN | Lithobates onca                           | Relict Leopard Frog          | AAABH01150 | C   |     | S    |      |        | WSC   | G1     | S1     |
| Mohave   | AMPHIBIAN | Lithobates pipiens                        | Northern Leopard Frog        | AAABH01170 |     | S   | S    | 2    |        | WSC   | G5     | S2     |
| Mohave   | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog         | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3     |



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|--------|--------------|-------------------------------------------|---------------------------------------------|------------|-------|-----|------|------|--------|-------|--------|---------|
| Mohave | BIRD         | Accipiter gentilis                        | Northern Goshawk                            | ABNKC12060 | SC    | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Mohave | BIRD         | Aechmophorus clarkii                      | Clark's Grebe                               | ABNCA04020 |       | S   |      | 4    |        | WSC   | G5     | S3      |
| Mohave | BIRD         | Athene cunicularia hypugaea               | Western Burrowing Owl                       | ABNSB10012 | SC    | S   |      | 4    | A      |       | G4T4   | S3      |
| Mohave | BIRD         | Buteo regalis                             | Ferruginous Hawk                            | ABNKC19120 | SC    | S   |      | 3    |        | WSC   | G4     | S2B,S4N |
| Mohave | BIRD         | Buteo swainsoni                           | Swainson's Hawk                             | ABNKC19070 |       | S   |      |      |        |       | G5     | S3      |
| Mohave | BIRD         | Buteogallus anthracinus                   | Common Black-Hawk                           | ABNKC15010 |       | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Mohave | BIRD         | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C     |     |      | 2    |        | WSC   | G5     | S3      |
| Mohave | BIRD         | Empidonax traillii extimus                | Southwestern Willow Flycatcher              | ABPAE33043 | LE    |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Mohave | BIRD         | Falco peregrinus anatum                   | American Peregrine Falcon                   | ABNKD06071 | SC    | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Mohave | BIRD         | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population              | ABNKC10015 | SC    | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Mohave | BIRD         | Haliaeetus leucocephalus pop. 3           | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT    | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |
| Mohave | BIRD         | Laterallus jamaicensis coturniculus       | California Black Rail                       | ABNME03041 | SC    | S   | S    |      | PR     | WSC   | G4T1   | S1      |
| Mohave | BIRD         | Rallus longirostris yumanensis            | Yuma Clapper Rail                           | ABNME0501A | LE    |     |      |      | P      | WSC   | G5T3   | S3      |
| Mohave | BIRD         | Strix occidentalis lucida                 | Mexican Spotted Owl                         | ABNSB12012 | LT    |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Mohave | FISH         | Agosia chrysogaster chrysogaster          | Gila Longfin Dace                           | AFCJB37151 | SC    | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Mohave | FISH         | Catostomus clarkii                        | Desert Sucker                               | AFCJC02040 | SC    | S   |      |      |        |       | G3G4   | S3S4    |
| Mohave | FISH         | Catostomus insignis                       | Sonora Sucker                               | AFCJC02100 | SC    | S   |      |      | P      |       | G3     | S3      |
| Mohave | FISH         | Catostomus latipinnis                     | Flannelmouth Sucker                         | AFCJC02110 | SC    | S   | S    |      |        |       | G3G4   | S2      |
| Mohave | FISH         | Cyprinodon macularius                     | Desert Pupfish                              | AFCNB02060 | LE    |     |      |      | P      | WSC   | G1     | S1      |
| Mohave | FISH         | Gila cypha                                | Humpback Chub                               | AFCJB13080 | LE    |     |      | 2    |        | WSC   | G1     | S1      |
| Mohave | FISH         | Gila elegans                              | Bonytail                                    | AFCJB13100 | LE    |     |      | 1    | P      | WSC   | G1     | S1      |
| Mohave | FISH         | Gila robusta                              | Roundtail Chub                              | AFCJB13150 | SC    | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Mohave | FISH         | Gila seminuda                             | Virgin River Chub                           | AFCJB13170 | LE    |     | S    |      |        | WSC   | G1     | S1      |
| Mohave | FISH         | Lepidomeda mollispinis mollispinis        | Virgin Spinedace                            | AFCJB20031 | SC    | S   |      |      |        | WSC   | G1G2T1 | S1      |
| Mohave | FISH         | Plagopterus argentissimus                 | Woundfin                                    | AFCJB33010 | LE,XN |     |      |      |        | WSC   | G1     | S1      |
| Mohave | FISH         | Rhinichthys osculus                       | Speckled Dace                               | AFCJB37050 | SC    | S   |      |      | P      |       | G5     | S3S4    |
| Mohave | FISH         | Xyrauchen texanus                         | Razorback Sucker                            | AFCJC11010 | LE    |     | S    | 2    | P      | WSC   | G1     | S1      |
| Mohave | INVERTEBRATE | Cicindela oregona maricopa                | Maricopa Tiger Beetle                       | IICOL02362 | SC    |     | S    |      |        |       | G5T3   | S3      |
| Mohave | INVERTEBRATE | Pyrgulopsis bacchus                       | Grand Wash Springsnail                      | IMGASJ0150 | SC    | S   | S    |      |        |       | G1     | S1      |

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| Mohave | INVERTEBRATE | Pyrgulopsis conica                       | Kingman Springsnail           | IMGASJ0160 | SC  | S   | S    |      |        |       | G1       | S1     |
| Mohave | INVERTEBRATE | Pyrgulopsis deserta                      | Desert Springsnail            | IMGASJ0390 |     | S   | S    |      |        |       | G2       | S1     |
| Mohave | MAMMAL       | Corynorhinus townsendii<br>pallascens    | Pale Townsend's Big-eared Bat | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4     | S3S4   |
| Mohave | MAMMAL       | Euderma maculatum                        | Spotted Bat                   | AMACC07010 | SC  | S   |      |      | PR     | WSC   | G4       | S1S2   |
| Mohave | MAMMAL       | Eumops perotis californicus              | Greater Western Bonneted Bat  | AMACD02011 | SC  | S   |      |      |        |       | G5T4     | S3     |
| Mohave | MAMMAL       | Idionycteris phyllotis                   | Allen's Big-eared Bat         | AMACC09010 | SC  |     |      |      |        |       | G3G4     | S2S3   |
| Mohave | MAMMAL       | Lasiurus blossevillei                    | Western Red Bat               | AMACC05060 |     | S   |      |      |        | WSC   | G5       | S3     |
| Mohave | MAMMAL       | Macrotus californicus                    | California Leaf-nosed Bat     | AMACB01010 | SC  | S   |      |      |        | WSC   | G4       | S3     |
| Mohave | MAMMAL       | Microtus mexicanus hualpaiensis          | Hualapai Mexican Vole         | AMAFF11212 | LE  |     |      |      |        | WSC   | G5T1Q    | S1     |
| Mohave | MAMMAL       | Myotis ciliolabrum                       | Western Small-footed Myotis   | AMACC01140 | SC  |     |      |      |        |       | G5       | S3S4   |
| Mohave | MAMMAL       | Myotis occultus                          | Arizona Myotis                | AMACC01160 | SC  |     |      |      |        |       | G3G4     | S3     |
| Mohave | MAMMAL       | Myotis thysanodes                        | Fringed Myotis                | AMACC01090 | SC  |     |      |      |        |       | G4G5     | S3S4   |
| Mohave | MAMMAL       | Myotis velifer                           | Cave Myotis                   | AMACC01050 | SC  |     |      |      |        |       | G5       | S3S4   |
| Mohave | MAMMAL       | Myotis volans                            | Long-legged Myotis            | AMACC01110 | SC  |     |      |      |        |       | G5       | S3S4   |
| Mohave | MAMMAL       | Myotis yumanensis                        | Yuma Myotis                   | AMACC01020 | SC  |     |      |      |        |       | G5       | S3S4   |
| Mohave | MAMMAL       | Nyctinomops macrotis                     | Big Free-tailed Bat           | AMACD04020 | SC  |     |      |      |        |       | G5       | S3     |
| Mohave | PLANT        | Allium bigelovii                         | Bigelow Onion                 | PMLIL02070 |     |     |      |      |        | SR    | G3       | S2S3   |
| Mohave | PLANT        | Arctomecon californica                   | Las Vegas Bearpoppy           | PDPAP02010 | SC  |     |      |      |        | SR    | G3       | S2     |
| Mohave | PLANT        | Astragalus ampullarius                   | Gumbo Milk-vetch              | PDFAB0F0L0 | SC  |     | S    |      |        |       | G2       | S1     |
| Mohave | PLANT        | Astragalus geyeri var. triquetrus        | Beaver Dam Milk-vetch         | PDFAB0F3M2 | SC  | S   |      |      |        |       | G4T2T3   | S1     |
| Mohave | PLANT        | Astragalus holmgreniorum                 | Holmgren (Paradox) Milk-vetch | PDFAB0F9Z0 | LE  |     |      |      |        | HS    | G1       | S1     |
| Mohave | PLANT        | Astragalus lentiginosus var.<br>ambiguus | Freckled Milk-vetch           | PDFAB0FB91 | SC  |     |      |      |        |       | G5T1Q    | S1     |
| Mohave | PLANT        | Astragalus newberryi var. aquarii        | Aquarius Milkvetch            | PDFAB0F5Y5 |     | S   |      |      |        |       | G5T1     | S1     |
| Mohave | PLANT        | Astragalus toanus var. scidulus          | Diamond Butte Milkvetch       | PDFAB0F8Z1 |     | S   |      |      |        |       | G4G5T1T3 | S1     |
| Mohave | PLANT        | Camissonia brevipes                      | Golden Suncup                 | PDONA03070 | SC  |     |      |      |        |       | G4G5     | S1     |
| Mohave | PLANT        | Camissonia exilis                        | Slender Evening-primrose      | PDONA030J0 | SC  |     |      |      |        | SR    | G1       | S1     |
| Mohave | PLANT        | Camissonia specuicola ssp.<br>hesperia   | Grand Canyon Evening-primrose | PDONA031J1 | SC  |     |      |      |        |       | G2T1     | S1     |
| Mohave | PLANT        | Cirsium virginense                       | Virgin Thistle                | PDAST2E3F0 | SC  |     |      |      |        | SR    | G2       | S1     |
| Mohave | PLANT        | Coryphantha missouriensis                | Missouri Corycactus           | PDCAC0X020 |     |     |      |      |        | SR    | G5       | S3     |

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| Mohave | PLANT | Cycladenia humilis var. jonesii               | Jones' Cycladenia              | PDAPO09012 | LT  |     |      |      |        | HS    | G3G4T2   | S1     |
| Mohave | PLANT | Echinocactus polycephalus var. polycephalus   | Clustered Barrel Cactus        | PDCAC05033 |     |     |      |      |        | SR    | G3G4T3T4 | S2     |
| Mohave | PLANT | Echinocactus polycephalus var. xeranthemoides | Grand Canyon Cottontop Cactus  | PDCAC05032 |     |     |      |      |        | SR    | G3G4T1T3 | S2S3   |
| Mohave | PLANT | Enceliopsis argophylla                        | Silverleaf Sunray              | PDAST3G010 |     | S   |      |      |        |       | G2G3     | S2     |
| Mohave | PLANT | Eriogonum mortonianum                         | Morton Wild-buckwheat          | PDPGN083Z0 | SC  |     | S    |      |        | SR    | G1       | S1     |
| Mohave | PLANT | Eriogonum thompsoniae var. atwoodii           | Atwood Wild-buckwheat          | PDPGN085T2 | SC  |     | S    |      |        | SR    | G4T1     | S1     |
| Mohave | PLANT | Eriogonum viscidulum                          | Sticky Buckwheat               | PDPGN08690 | SC  | S   |      |      |        |       | G2       | S1     |
| Mohave | PLANT | Escobaria vivipara var. rosea                 | Viviparous Foxtail Cactus      | PDCAC0X0G8 |     |     |      |      |        | SR    | G5T3     | S3     |
| Mohave | PLANT | Flaveria mcdougallii                          | Grand Canyon Flaveria          | PDAST3V070 |     |     |      |      |        | SR    | G2       | S2     |
| Mohave | PLANT | Fremontodendron californicum                  | Flannel Bush                   | PDSTE03010 |     | S   |      |      |        | SR    | G4       | S2S3   |
| Mohave | PLANT | Lupinus latifolius ssp. leucanthus            | Broadleaf Lupine               | PDFAB2B29D |     |     | S    |      |        |       | G5T1T2   | S1     |
| Mohave | PLANT | Mammillaria viridiflora                       | Varied Fishhook Cactus         | PDCAC0A0D0 |     |     |      |      |        | SR    | G4       | S4     |
| Mohave | PLANT | Mentzelia memorabilis                         | September 11 Stickleaf         | PDLOA03290 |     | S   |      |      |        |       | G1       | S1     |
| Mohave | PLANT | Opuntia basilaris var. aurea                  | Yellow Beavertail              | PDCAC0D300 |     |     |      |      |        | SR    | G3       | S3     |
| Mohave | PLANT | Opuntia basilaris var. longiareolata          | Grand Canyon Beavertail Cactus | PDCAC0D054 |     |     |      |      |        | SR    | G5T2Q    | S2     |
| Mohave | PLANT | Opuntia echinocarpa                           | Straw-top Cholla               | PDCAC0D2W0 |     |     |      |      |        | SR    | G5       | S5     |
| Mohave | PLANT | Opuntia nicholii                              | Navajo Bridge Cactus           | PDCAC0D0W0 |     |     |      |      |        | SR    | G4Q      | S4     |
| Mohave | PLANT | Opuntia superbospina                          | Kingman's Prickly-pear         | PDCAC0D1Q0 |     |     |      |      |        | SR    | GHQ      | SH     |
| Mohave | PLANT | Opuntia whipplei var. multigeniculata         | Blue Diamond Cholla            | PDCAC0D1N1 | SC  |     |      |      |        | SR    | G4?T1Q   | S1     |
| Mohave | PLANT | Opuntia whipplei var. whipplei                | Whipple Cholla                 | PDCAC0D1N3 |     |     |      |      |        | SR    | G4?T4?   | S1     |
| Mohave | PLANT | Pediocactus peeblesianus var. fickeiseniae    | Fickeisen Plains Cactus        | PDCAC0E051 | C   |     | S    | 3    |        | HS    | G1G2T1T2 | S1S2   |
| Mohave | PLANT | Pediocactus sileri                            | Siler Pincushion Cactus        | PDCAC0E060 | LT  | S   |      |      |        | HS    | G3       | S3     |
| Mohave | PLANT | Pediomelum castoreum                          | Beaver Dam Scurf Pea           | PDFAB5L050 | SC  |     |      |      |        |       | G3       | S1     |
| Mohave | PLANT | Pediomelum epipsilum                          | Kane Scurf-pea                 | PDFAB5L0F1 | SC  |     |      |      |        |       | G4?T1    | S1     |
| Mohave | PLANT | Penstemon albomarginatus                      | White-margined Penstemon       | PDSCR1L070 | SC  | S   |      |      |        | SR    | G2       | S2     |
| Mohave | PLANT | Penstemon bicolor ssp. roseus                 | Cerbat Beardtongue             | PDSCR1L0S2 | SC  | S   |      |      |        | SR    | G3?T3Q   | S2     |
| Mohave | PLANT | Penstemon distans                             | Mt. Trumbull Beardtongue       | PDSCR1L6W0 | SC  | S   | S    |      |        | SR    | G2       | S2     |
| Mohave | PLANT | Phacelia parishii                             | Parish's Phacelia              | PDHYD0C3G0 |     | S   |      |      |        |       | G2G3     | S1     |
| Mohave | PLANT | Polygala rusbyi                               | Hualapai Milkwort              | PDPGL021H0 |     |     | S    |      |        |       | G3       | S3     |

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| Mohave | PLANT     | Psorothamnus arborescens var. pubescens   | Mohave Indigo Bush             | PDFAB3C013 |     | S   |      | 4    |        |       | G5T2   | S2      |
| Mohave | PLANT     | Purshia subintegra                        | Arizona Cliff Rose             | PDROS1E080 | LE  |     |      |      |        | HS    | GNA    | S1      |
| Mohave | PLANT     | Rosa stellata ssp. abyssa                 | Grand Canyon Rose              | PDROS1J153 | SC  | S   | S    |      |        | SR    | G4T2   | S2      |
| Mohave | PLANT     | Salvia pachyphylla ssp. eremopictus       | Arizona Rose Sage              | PDLAM1S2F1 |     |     |      | 4    |        |       | G4T1   | S1      |
| Mohave | PLANT     | Sclerocactus parviflorus ssp. intermedius | Intermediate Fishhook Cactus   | PDCAC0J041 |     |     |      |      |        | SR    | G4T3?  | S2      |
| Mohave | PLANT     | Sphaeralcea gierischii                    | Gierisch Globemallow           | PDMAL140T0 | C   |     |      |      |        |       | G1     | S1      |
| Mohave | PLANT     | Thelypteris puberula var. sonorensis      | Aravaipa Wood Fern             | PPTHE05192 |     | S   |      |      |        |       | G5T3   | S2      |
| Mohave | PLANT     | Yucca whipplei                            | Our Lords Candle               | PMAGA0B0X0 |     |     |      |      |        | SR    | G4G5   | S3S4    |
| Mohave | REPTILE   | Charina trivirgata gracia                 | Desert Rosy Boa                | ARADA01021 | SC  | S   | S    |      |        |       | G4G5T3 | S3S4    |
| Mohave | REPTILE   | Crotalus oreganus abyssus                 | Grand Canyon Rattlesnake       | ARADE02121 |     |     | S    |      |        |       | G5T4   | S4      |
| Mohave | REPTILE   | Gopherus agassizii (Mohave Population)    | Mohave Desert Tortoise         | ARAAF01012 | LT  |     |      |      | A      | WSC   | G4T3Q  | S2      |
| Mohave | REPTILE   | Gopherus agassizii (Sonoran Population)   | Sonoran Desert Tortoise        | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4   | S4      |
| Mohave | REPTILE   | Heloderma suspectum cinctum               | Banded Gila Monster            | ARACE01011 | SC  |     |      |      | A      |       | G4T4   | S4      |
| Mohave | REPTILE   | Lampropeltis pyromelana infralabialis     | Utah Mountain Kingsnake        | ARADB19041 |     |     | S    |      |        |       | G4G5T3 | S1      |
| Navajo | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                   | AAABB01110 | SC  |     | S    |      |        |       | G3G4   | S3S4    |
| Navajo | AMPHIBIAN | Lithobates chiricahuensis                 | Chiricahua Leopard Frog        | AAABH01080 | LT  |     | S    |      | A      | WSC   | G3     | S2      |
| Navajo | AMPHIBIAN | Lithobates pipiens                        | Northern Leopard Frog          | AAABH01170 |     | S   | S    | 2    |        | WSC   | G5     | S2      |
| Navajo | BIRD      | Accipiter gentilis                        | Northern Goshawk               | ABNKC12060 | SC  | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Navajo | BIRD      | Athene cucularia hypugaea                 | Western Burrowing Owl          | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3      |
| Navajo | BIRD      | Buteo regalis                             | Ferruginous Hawk               | ABNKC19120 | SC  | S   |      | 3    |        | WSC   | G4     | S2B,S4N |
| Navajo | BIRD      | Buteo swainsoni                           | Swainson's Hawk                | ABNKC19070 |     | S   |      |      |        |       | G5     | S3      |
| Navajo | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon      | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Navajo | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Navajo | BIRD      | Pandion haliaetus                         | Osprey                         | ABNKC01010 |     | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Navajo | BIRD      | Strix occidentalis lucida                 | Mexican Spotted Owl            | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Navajo | FISH      | Catostomus sp. 3                          | Little Colorado Sucker         | AFCJC02250 | SC  | S   | S    |      |        | WSC   | G2     | S2      |
| Navajo | FISH      | Gila robusta                              | Roundtail Chub                 | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Navajo | FISH      | Lepidomeda vittata                        | Little Colorado Spinedace      | AFCJB20040 | LT  |     | S    |      |        | WSC   | G1G2   | S1S2    |
| Navajo | FISH      | Rhinichthys osculus                       | Speckled Dace                  | AFCJB37050 | SC  | S   |      |      | P      |       | G5     | S3S4    |

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| COUNTY | TAXON        | SCIENTIFIC NAME                            | COMMON NAME                      | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK |
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| Navajo | INVERTEBRATE | Anodonta californiensis                    | California Floater               | IMBIV04020 | SC  |     | S    |      |        |       | G3Q    | S1     |
| Navajo | INVERTEBRATE | Cicindela oregona maricopa                 | Maricopa Tiger Beetle            | IICOL02362 | SC  |     | S    |      |        |       | G5T3   | S3     |
| Navajo | MAMMAL       | Corynorhinus townsendii pallescens         | Pale Townsend's Big-eared Bat    | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4   |
| Navajo | MAMMAL       | Idionycteris phyllotis                     | Allen's Big-eared Bat            | AMACC09010 | SC  |     |      |      |        |       | G3G4   | S2S3   |
| Navajo | MAMMAL       | Microtus mexicanus navaho                  | Navajo Mexican Vole              | AMAFF11213 | SC  |     | S    | 4    |        | WSC   | G5T2Q  | S1     |
| Navajo | MAMMAL       | Myotis evotis                              | Long-eared Myotis                | AMACC01070 | SC  |     |      |      |        |       | G5     | S3     |
| Navajo | MAMMAL       | Myotis occultus                            | Arizona Myotis                   | AMACC01160 | SC  |     |      |      |        |       | G3G4   | S3     |
| Navajo | MAMMAL       | Myotis thysanodes                          | Fringed Myotis                   | AMACC01090 | SC  |     |      |      |        |       | G4G5   | S3S4   |
| Navajo | MAMMAL       | Myotis volans                              | Long-legged Myotis               | AMACC01110 | SC  |     |      |      |        |       | G5     | S3S4   |
| Navajo | MAMMAL       | Panthera onca                              | Jaguar                           | AMAJH02010 | LE  |     | S    |      | P      | WSC   | G3     | S1     |
| Navajo | MAMMAL       | Perognathus flavus goodpasteri             | Springerville Pocket Mouse       | AMAFD01031 | SC  |     | S    |      |        |       | G5T3   | S2     |
| Navajo | PLANT        | Asclepias welshii                          | Welsh's Milkweed                 | PDASC02290 | LT  |     |      | 3    |        | HS    | G1     | S1     |
| Navajo | PLANT        | Astragalus xiphoides                       | Gladiator Milk Vetch             | PDFAB0F9T0 | SC  |     |      |      |        | SR    | G3     | S3     |
| Navajo | PLANT        | Carex specuicola                           | Navajo Sedge                     | PMCYP03CQ0 | LT  |     |      | 3    |        | HS    | G2     | S2     |
| Navajo | PLANT        | Chrysothamnus molestus                     | Tusayan Rabbitbrush              | PDAST2C060 | SC  |     | S    |      |        |       | G3     | S3     |
| Navajo | PLANT        | Errazurizia rotundata                      | Roundleaf Errazurizia            | PDFAB1L010 |     | S   |      | 3    |        | SR    | G2     | S2     |
| Navajo | PLANT        | Pediocactus papyracanthus                  | Paper-spined Cactus              | PDCAC0J0K0 | SC  |     |      |      |        | SR    | G4     | S2S3   |
| Navajo | PLANT        | Pediocactus peeblesianus var. peeblesianus | Peebles Navajo Cactus            | PDCAC0E053 | LE  |     |      |      |        | HS    | G1G2T1 | S1     |
| Navajo | PLANT        | Penstemon nudiflorus                       | Flagstaff Beardtongue            | PDSCR1L4A0 |     |     | S    |      |        |       | G2G3   | S2S3   |
| Navajo | PLANT        | Platanthera zothecina                      | Alcove Bog-orchid                | PMORC1Y130 | SC  |     |      | 3    |        |       | G2     | S2     |
| Navajo | REPTILE      | Thamnophis eques megalops                  | Northern Mexican Gartersnake     | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1     |
| Navajo | REPTILE      | Thamnophis rufipunctatus                   | Narrow-headed Gartersnake        | ARADB36110 | SC  | S   | S    |      |        | WSC   | G3G4   | S1     |
| Pima   | AMPHIBIAN    | Eleutherodactylus augusti cactorum         | Western Barking Frog             | AAABD04171 |     | S   | S    |      |        | WSC   | G5T5   | S2     |
| Pima   | AMPHIBIAN    | Gastrophryne olivacea                      | Great Plains Narrow-mouthed Toad | AAABE01020 |     | S   |      |      | PR     | WSC   | G5     | S3     |
| Pima   | AMPHIBIAN    | Lithobates chiricahuensis                  | Chiricahua Leopard Frog          | AAABH01080 | LT  |     | S    |      | A      | WSC   | G3     | S2     |
| Pima   | AMPHIBIAN    | Lithobates yavapaiensis                    | Lowland Leopard Frog             | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3     |
| Pima   | AMPHIBIAN    | Pternohyala fodiens                        | Lowland Burrowing Treefrog       | AAABC06010 |     | S   |      |      |        | WSC   | G4     | S2     |
| Pima   | BIRD         | Accipiter gentilis                         | Northern Goshawk                 | ABNKC12060 | SC  | S   | S    | 4    | A      | WSC   | G5     | S3B    |
| Pima   | BIRD         | Ammodramus bairdii                         | Baird's Sparrow                  | ABPBXA0010 | SC  | S   |      |      |        | WSC   | G4     | S2N    |

| COUNTY | TAXON        | SCIENTIFIC NAME                        | COMMON NAME                             | ELCODE     | ESA       | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK  |
|--------|--------------|----------------------------------------|-----------------------------------------|------------|-----------|-----|------|------|--------|-------|--------|---------|
| Pima   | BIRD         | Athene cunicularia hypugaea            | Western Burrowing Owl                   | ABNSB10012 | SC        | S   |      | 4    | A      |       | G4T4   | S3      |
| Pima   | BIRD         | Buteo nitidus maxima                   | Northern Gray Hawk                      | ABNKC19011 | SC        | S   | S    |      | PR     | WSC   | G5T4Q  | S3      |
| Pima   | BIRD         | Buteo swainsoni                        | Swainson's Hawk                         | ABNKC19070 |           | S   |      |      |        |       | G5     | S3      |
| Pima   | BIRD         | Buteogallus anthracinus                | Common Black-Hawk                       | ABNKC15010 |           | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Pima   | BIRD         | Caracara cheriway                      | Crested Caracara                        | ABNKD02020 | No Status |     |      |      |        | WSC   | G5     | S1S2    |
| Pima   | BIRD         | Coccyzus americanus                    | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C         |     |      | 2    |        | WSC   | G5     | S3      |
| Pima   | BIRD         | Colinus virginianus ridgwayi           | Masked Bobwhite                         | ABNLC21022 | LE        |     |      |      | P      | WSC   | G5T1   | S1      |
| Pima   | BIRD         | Dendrocygna autumnalis                 | Black-bellied Whistling-Duck            | ABNJB01040 |           |     |      |      |        | WSC   | G5     | S3      |
| Pima   | BIRD         | Dendrocygna bicolor                    | Fulvous Whistling-Duck                  | ABNJB01010 | SC        |     |      |      |        |       | G5     | SAN     |
| Pima   | BIRD         | Empidonax fulvifrons pygmaeus          | Northern Buff-breasted Flycatcher       | ABPAE33141 | SC        |     |      |      |        | WSC   | G5T5   | S1      |
| Pima   | BIRD         | Empidonax traillii extimus             | Southwestern Willow Flycatcher          | ABPAE33043 | LE        |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Pima   | BIRD         | Falco peregrinus anatum                | American Peregrine Falcon               | ABNKD06071 | SC        | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Pima   | BIRD         | Glaucidium brasilianum cactorum        | Cactus Ferruginous Pygmy-owl            | ABNSB08041 | SC        | S   |      |      | A      | WSC   | G5T3   | S1      |
| Pima   | BIRD         | Pachyramphus aglaiae                   | Rose-throated Becard                    | ABPAE53070 |           |     |      |      |        | WSC   | G4G5   | S1      |
| Pima   | BIRD         | Pandion haliaetus                      | Osprey                                  | ABNKC01010 |           | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Pima   | BIRD         | Poliophtila nigriceps                  | Black-capped Gnatcatcher                | ABPBJ08040 |           |     |      |      |        | WSC   | G5     | S1      |
| Pima   | BIRD         | Rallus longirostris yumanensis         | Yuma Clapper Rail                       | ABNME0501A | LE        |     |      |      | P      | WSC   | G5T3   | S3      |
| Pima   | BIRD         | Strix occidentalis lucida              | Mexican Spotted Owl                     | ABNSB12012 | LT        |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Pima   | BIRD         | Trogon elegans                         | Elegant Trogon                          | ABNWA02070 |           |     |      |      |        | WSC   | G5     | S3      |
| Pima   | BIRD         | Tyrannus crassirostris                 | Thick-billed Kingbird                   | ABPAE52040 |           | S   |      |      |        | WSC   | G5     | S2      |
| Pima   | BIRD         | Tyrannus melancholicus                 | Tropical Kingbird                       | ABPAE52010 |           |     |      |      |        | WSC   | G5     | S3      |
| Pima   | FISH         | Agosia chrysoaster chrysoaster         | Gila Longfin Dace                       | AFCJB37151 | SC        | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Pima   | FISH         | Catostomus clarkii                     | Desert Sucker                           | AFCJC02040 | SC        | S   |      |      |        |       | G3G4   | S3S4    |
| Pima   | FISH         | Cyprinodon eremus                      | Quitobaquito Desert Pupfish             | AFCNB02140 | LE        |     |      |      |        | WSC   | G1     | S1      |
| Pima   | FISH         | Cyprinodon macularius                  | Desert Pupfish                          | AFCNB02060 | LE        |     |      |      | P      | WSC   | G1     | S1      |
| Pima   | FISH         | Gila intermedia                        | Gila Chub                               | AFCJB13160 | LE        |     | S    |      | P      | WSC   | G2     | S2      |
| Pima   | FISH         | Poeciliopsis occidentalis occidentalis | Gila Topminnow                          | AFCNC05021 | LE        |     |      |      | A      | WSC   | G3T3   | S1S2    |
| Pima   | INVERTEBRATE | Agathymus aryxna                       | Arizona Giant Skipper                   | IILEP87080 |           |     | S    |      |        |       | G4G5   | S5      |
| Pima   | INVERTEBRATE | Agathymus polingi                      | Poling's Giant Skipper                  | IILEP87190 |           |     | S    |      |        |       | G4     | S2      |

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|--------|--------------|------------------------------------|-------------------------------|------------|-----|-----|------|------|--------|-------|--------|--------|
| Pima   | INVERTEBRATE | Anthocharis cethura                | Desert Orangetip              | IILEPA6010 |     |     | S    |      |        |       | G4G5   | S4     |
| Pima   | INVERTEBRATE | Argia sabino                       | Sabino Canyon Dancer          | IIDO68100  | SC  |     | S    |      |        |       | G1G2   | S2     |
| Pima   | INVERTEBRATE | Calephelis arizonensis             | Arizona Metalmark             | IILEPH2073 |     |     | S    |      |        |       | G3G4   | S2     |
| Pima   | INVERTEBRATE | Limenitis archippus obsoleta       | Obsolete Viceroy Butterfly    | IILEPL3024 |     |     | S    |      |        |       | G5T3T4 | S4     |
| Pima   | INVERTEBRATE | Neophasia terlooii                 | Chiricahua Pine White         | IILEP99020 |     |     | S    |      |        |       | G3G4   | S4     |
| Pima   | INVERTEBRATE | Sonorella eremita                  | San Xavier Talussnail         | IMGASC9240 | SC  |     |      |      |        |       | G1     | S1     |
| Pima   | INVERTEBRATE | Sonorella papagorum                | Black Mountain Talussnail     | IMGASC9480 |     |     | S    |      |        |       | G1     | S1     |
| Pima   | INVERTEBRATE | Tryonia quitobaquita               | Quitobaquito Tryonia          | IMGASJ7130 | SC  |     | S    |      |        |       | G1     | S1     |
| Pima   | MAMMAL       | Antilocapra americana sonoriensis  | Sonoran Pronghorn             | AMALD01012 | LE  |     | S    |      | P      | WSC   | G5T1   | S1     |
| Pima   | MAMMAL       | Choeronycteris mexicana            | Mexican Long-tongued Bat      | AMACB02010 | SC  | S   |      |      | A      | WSC   | G4     | S3     |
| Pima   | MAMMAL       | Corynorhinus townsendii pallescens | Pale Townsend's Big-eared Bat | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4   |
| Pima   | MAMMAL       | Eumops perotis californicus        | Greater Western Bonneted Bat  | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3     |
| Pima   | MAMMAL       | Eumops underwoodi                  | Underwood's Bonneted Bat      | AMACD02020 | SC  |     |      |      |        |       | G4     | S1     |
| Pima   | MAMMAL       | Lasiurus blossevillii              | Western Red Bat               | AMACC05060 |     | S   |      |      |        | WSC   | G5     | S3     |
| Pima   | MAMMAL       | Lasiurus xanthinus                 | Western Yellow Bat            | AMACC05070 |     | S   |      |      |        | WSC   | G5     | S2S3   |
| Pima   | MAMMAL       | Leptonycteris curasoae yerbabuena  | Lesser Long-nosed Bat         | AMACB03030 | LE  |     | S    |      |        | WSC   | G4     | S2S3   |
| Pima   | MAMMAL       | Macrotus californicus              | California Leaf-nosed Bat     | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3     |
| Pima   | MAMMAL       | Myotis occultus                    | Arizona Myotis                | AMACC01160 | SC  |     |      |      |        |       | G3G4   | S3     |
| Pima   | MAMMAL       | Myotis velifer                     | Cave Myotis                   | AMACC01050 | SC  |     |      |      |        |       | G5     | S3S4   |
| Pima   | MAMMAL       | Nyctinomops macrotis               | Big Free-tailed Bat           | AMACD04020 | SC  |     |      |      |        |       | G5     | S3     |
| Pima   | MAMMAL       | Panthera onca                      | Jaguar                        | AMAJH02010 | LE  |     | S    |      | P      | WSC   | G3     | S1     |
| Pima   | MAMMAL       | Sigmodon ochrognathus              | Yellow-nosed Cotton Rat       | AMAFF07040 | SC  |     |      |      |        |       | G4G5   | S4     |
| Pima   | PLANT        | Abutilon parishii                  | Pima Indian Mallow            | PDMAL020E0 | SC  | S   | S    |      |        | SR    | G2     | S2     |
| Pima   | PLANT        | Abutilon thurberi                  | Thurber Indian Mallow         | PDMAL020P0 |     |     |      |      |        | SR    | G2?    | S1     |
| Pima   | PLANT        | Acacia farnesiana                  | Sweet Acacia                  | PDFAB020D0 |     |     | S    |      |        |       | G5     | S1S2   |
| Pima   | PLANT        | Agave parviflora ssp. parviflora   | Santa Cruz Striped Agave      | PMAGA010L2 | SC  |     | S    |      | A      | HS    | G3T3   | S3     |
| Pima   | PLANT        | Agave schottii var. treleasei      | Trelease Agave                | PMAGA010N2 | SC  |     | S    |      |        | HS    | G5T1Q  | S1     |
| Pima   | PLANT        | Allium gooddingii                  | Goodding Onion                | PMLIL02120 | SC  |     | S    | 3    |        | HS    | G4     | S3S4   |
| Pima   | PLANT        | Allium plummerae                   | Plummer Onion                 | PMLIL021V0 |     |     |      |      |        | SR    | G4     | S3     |

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|--------|-------|-----------------------------------------------|--------------------------------|------------|-----|-----|------|------|--------|-------|----------|--------|
| Pima   | PLANT | Amoreuxia gonzalezii                          | Saiya                          | PDBIX01010 | SC  |     | S    |      |        | HS    | G1       | S1     |
| Pima   | PLANT | Amsonia grandiflora                           | Large-flowered Blue Star       | PDAP003060 | SC  |     | S    |      |        |       | G2       | S2     |
| Pima   | PLANT | Amsonia kearneyana                            | Kearney's Blue Star            | PDAP0030M0 | LE  |     |      |      |        | HS    | G1       | S1     |
| Pima   | PLANT | Arabis tricornuta                             | Chiricahua Rock Cress          | PDBRA06200 |     |     | S    |      |        |       | G1?      | S1?    |
| Pima   | PLANT | Asclepias lemmonii                            | Lemmon Milkweed                | PDASC020Z0 |     |     | S    |      |        |       | G4?      | S2     |
| Pima   | PLANT | Asplenium dalhousiae                          | Dalhousie Spleenwort           | PPASP020A0 |     | S   |      |      |        |       | GNR      | S1     |
| Pima   | PLANT | Berberis harrisoniana                         | Kofa Mt Barberry               | PDBER02030 |     | S   |      |      |        |       | G1G2     | S1S2   |
| Pima   | PLANT | Boerhavia megaptera                           | Tucson Mountain Spiderling     | PDNYC06090 |     |     | S    |      |        |       | G3       | S3     |
| Pima   | PLANT | Capsicum annuum var. glabriusculum            | Chiltepin                      | PDSOL06012 |     |     | S    |      |        |       | G5T5     | S2     |
| Pima   | PLANT | Carex chihuahuensis                           | A Sedge                        | PMCYP032T0 |     |     | S    |      |        |       | G3G4     | S2S3   |
| Pima   | PLANT | Carex ultra                                   | Arizona Giant Sedge            | PMCYP03E50 |     | S   | S    |      |        |       | G3?      | S2     |
| Pima   | PLANT | Coryphantha scheeri var. robustispina         | Pima Pineapple Cactus          | PDCAC040C1 | LE  |     |      |      |        | HS    | G4T2     | S2     |
| Pima   | PLANT | Dalea tentaculoides                           | Gentry Indigo Bush             | PDFAB1A1K0 | SC  | S   | S    |      |        | HS    | G1       | S1     |
| Pima   | PLANT | Desmanthus covillei                           | Coville Bundleflower           | PDFAB1C030 |     |     | S    |      |        |       | G3G4     | S1     |
| Pima   | PLANT | Echinocactus horzonthalonius var. nicholii    | Nichol Turk's Head Cactus      | PDCAC05022 | LE  |     |      |      |        | HS    | G4T2     | S2     |
| Pima   | PLANT | Echinocereus fasciculatus                     | Magenta-flower Hedgehog-cactus | PDCAC06065 |     |     |      |      |        | SR    | G4G5T4T5 | S?     |
| Pima   | PLANT | Echinomastus erectocentrus var. acunensis     | Acuna Cactus                   | PDCAC0J0E1 | C   |     |      |      | P      | HS    | G3T1T2Q  | S1     |
| Pima   | PLANT | Echinomastus erectocentrus var. erectocentrus | Needle-spined Pineapple Cactus | PDCAC0J0E2 | SC  |     | S    |      |        | SR    | G3T3Q    | S3     |
| Pima   | PLANT | Erigeron arisolius                            |                                | PDAST3M510 |     |     | S    |      |        |       | G2       | S2     |
| Pima   | PLANT | Eriogonum capillare                           | San Carlos Wild-buckwheat      | PDPGN08100 | SC  |     |      |      |        | SR    | G4       | S4     |
| Pima   | PLANT | Eriogonum ericifolium var. ericifolium        | Heathleaf Wild-buckwheat       | PDPGN08231 |     |     | S    |      |        |       | G3T2     | S2     |
| Pima   | PLANT | Eriogonum terrenatum                          | San Pedro River Wild Buckwheat | PDPGN08760 |     | S   |      |      |        |       | G1       | S1     |
| Pima   | PLANT | Euphorbia gracillima                          | Mexican Broomspurge            | PDEUP0D110 |     |     | S    |      |        |       | G4?      | S3     |
| Pima   | PLANT | Ferocactus cylindraceus var. eastwoodiae      | Golden Barrel Cactus           | PDCAC08084 |     |     |      |      |        | SR    | G5T1     | S1     |
| Pima   | PLANT | Ferocactus emoryi                             | Emory's Barrel-cactus          | PDCAC08090 |     |     |      |      |        | SR    | G4       | S1S2   |
| Pima   | PLANT | Graptopetalum bartramii                       | Bartram Stonecrop              | PDCRA06010 | SC  | S   | S    |      |        | SR    | G3       | S3     |
| Pima   | PLANT | Hackelia ursina                               | Chihuahuan Stickseed           | PDBOR0G0R0 |     |     | S    |      |        |       | G3?      | S2     |
| Pima   | PLANT | Hedeoma dentatum                              | Mock-pennyroyal                | PDLAM0M0M0 |     |     | S    |      |        |       | G3       | S3     |
| Pima   | PLANT | Hermannia pauciflora                          | Sparseleaf Hermannia           | PDSTE06010 |     |     | S    |      |        |       | G2?      | S1     |



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|--------|-------|----------------------------------------|-----------------------------------|------------|-----|-----|------|------|--------|-------|----------|--------|
| Pima   | PLANT | Heterotheca rutteri                    | Huachuca Golden Aster             | PDAST4V0J0 | SC  | S   | S    |      |        |       | G2       | S2     |
| Pima   | PLANT | Hexalectris revoluta                   | Chisos Coral-root                 | PMORC1C030 |     |     | S    |      |        | SR    | G1G2     | S1     |
| Pima   | PLANT | Hexalectris spicata                    | Crested Coral Root                | PMORC1C040 |     |     |      |      |        | SR    | G5       | S3S4   |
| Pima   | PLANT | Hieracium pringlei                     | Pringle Hawkweed                  | PDAST4W170 | SC  |     | S    |      |        |       | G2Q      | S1     |
| Pima   | PLANT | Lilaeopsis schaffneriana var. recurva  | Huachuca Water Umbel              | PDAPI19051 | LE  |     |      |      |        | HS    | G4T2     | S2     |
| Pima   | PLANT | Lilium parryi                          | Lemmon Lily                       | PMLIL1A0J0 | SC  |     | S    |      |        | SR    | G3       | S2     |
| Pima   | PLANT | Listera convallarioides                | Broadleaf Twayblade               | PMORC1N050 |     |     |      |      |        | SR    | G5       | S1     |
| Pima   | PLANT | Lophocereus schottii                   | Senita                            | PDCAC14010 |     |     |      |      |        | SR    | G4       | S2     |
| Pima   | PLANT | Lupinus huachucanus                    | Huachuca Mountain Lupine          | PDFAB2B210 |     |     | S    |      |        |       | G2       | S2     |
| Pima   | PLANT | Lysiloma watsonii                      | Littleleaf False Tamarind         | PDFAB2C040 |     |     |      |      |        | SR    | G4?      | S1     |
| Pima   | PLANT | Malaxis tenuis                         | Slender Adders Mouth              | PMORC1R090 |     |     |      |      |        | SR    | G4       | S1     |
| Pima   | PLANT | Mammillaria mainiae                    | Counter Clockwise Fishhook Cactus | PDCAC0A060 |     |     | S    |      |        | SR    | G3       | S1     |
| Pima   | PLANT | Mammillaria thornberi                  | Thornber Fishhook Cactus          | PDCAC0A0C0 |     |     |      |      |        | SR    | G4       | S4     |
| Pima   | PLANT | Mammillaria viridiflora                | Varied Fishhook Cactus            | PDCAC0A0D0 |     |     |      |      |        | SR    | G4       | S4     |
| Pima   | PLANT | Manihot davisiae                       | Arizona Manihot                   | PDEUP0Z010 |     |     | S    |      |        |       | G4       | S2     |
| Pima   | PLANT | Matelea cordifolia                     | Sonoran Milkweed Vine             | PDASC0A080 |     |     | S    |      |        |       | G4       | S1     |
| Pima   | PLANT | Metastelma mexicanum                   | Wiggins Milkweed Vine             | PDASC050P0 | SC  |     | S    |      |        |       | G3G4     | S1S2   |
| Pima   | PLANT | Muhlenbergia dubioides                 | Box Canyon Muhly                  | PMPOA480G0 |     |     | S    |      |        |       | G1Q      | S1     |
| Pima   | PLANT | Muhlenbergia xerophila                 | Weeping Muhly                     | PMPOA48220 |     |     | S    |      |        |       | G3       | S1     |
| Pima   | PLANT | Notholaena lemmonii                    | Lemmon Cloak Fern                 | PPADI0G0D0 | SC  |     |      |      |        |       | G3?      | S1S2   |
| Pima   | PLANT | Opuntia engelmannii var. flavispina    |                                   | PDCAC0D224 |     |     |      |      |        | SR    | G5T3?    | S3?    |
| Pima   | PLANT | Opuntia versicolor                     | Stag-horn Cholla                  | PDCAC0D1K0 |     |     |      |      |        | SR    | G4       | S2S3   |
| Pima   | PLANT | Opuntia x kelvinensis                  | Kelvin Cholla                     | PDCAC0D2M0 |     |     |      |      |        | SR    | GNA      | SHYB   |
| Pima   | PLANT | Passiflora arizonica                   | Arizona Passionflower             | PDPAS01073 |     |     | S    |      |        |       | G5T3T5   | S2     |
| Pima   | PLANT | Pectis imberbis                        | Beardless Chinch Weed             | PDAST6W0A0 | SC  |     | S    |      |        |       | G3       | S1     |
| Pima   | PLANT | Peniocereus greggii var. transmontanus | Desert Night-blooming Cereus      | PDCAC0V012 |     |     |      |      | PR     | SR    | G3G4T3T4 | S3S4   |
| Pima   | PLANT | Peniocereus striatus                   | Dahlia Rooted Cereus              | PDCAC0V020 |     |     |      |      |        | SR    | G4       | S1     |
| Pima   | PLANT | Penstemon discolor                     | Catalina Beardtongue              | PDSCR1L210 |     |     | S    |      |        | HS    | G2       | S2     |
| Pima   | PLANT | Penstemon superbus                     | Superb Beardtongue                | PDSCR1L630 |     |     | S    |      |        |       | G3?      | S2?    |

| COUNTY | TAXON   | SCIENTIFIC NAME                         | COMMON NAME                   | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK   | S RANK |
|--------|---------|-----------------------------------------|-------------------------------|------------|-----|-----|------|------|--------|-------|---------|--------|
| Pima   | PLANT   | Perityle ajoensis                       | Ajo Rock Daisy                | PDAST700Y0 |     |     |      |      |        | SR    | G1      | S1     |
| Pima   | PLANT   | Physalis latiphysa                      | Broad-leaf Ground-cherry      | PDSOL0S0H0 |     |     | S    |      |        |       | G1      | S1     |
| Pima   | PLANT   | Platanthera limosa                      | Thurber's Bog Orchid          | PMORC1Y0G0 |     |     |      |      |        | SR    | G4      | S4     |
| Pima   | PLANT   | Psilotum nudum                          | Whisk Fern                    | PPPSI01020 |     |     |      |      |        | HS    | G5      | S1     |
| Pima   | PLANT   | Samolus vagans                          | Chiricahua Mountain Brookweed | PDPRI09040 |     |     | S    |      |        |       | G2?     | S2     |
| Pima   | PLANT   | Schiedeella arizonica                   | Fallen Ladies'-tresses        | PMORC67020 |     |     |      |      |        | SR    | GNR     | S4     |
| Pima   | PLANT   | Senecio carlomasonii                    | Seemann Groundsel             | PDAST8H3W0 |     |     | S    |      |        |       | G4?Q    | S2S3   |
| Pima   | PLANT   | Senecio neomexicanus var. toumeyi       | Toumey Groundsel              | PDAST8H274 |     |     | S    |      |        |       | G5T2Q   | S2     |
| Pima   | PLANT   | Sisyrinchium cernuum                    | Nodding Blue-eyed Grass       | PMIRI0D0B0 |     |     | S    |      |        |       | G5      | S2     |
| Pima   | PLANT   | Solanum lumholtzianum                   | Lumholtz Nightshade           | PDSOL0Z180 |     |     | S    |      |        |       | G3G4    | S3     |
| Pima   | PLANT   | Stenocereus thurberi                    | Organ Pipe Cactus             | PDCAC10020 |     |     |      |      |        | SR    | G5      | S4     |
| Pima   | PLANT   | Stevia lemmonii                         | Lemmon's Stevia               | PDAST8V010 |     |     | S    |      |        |       | G3G4    | S2     |
| Pima   | PLANT   | Tephrosia thurberi                      | Thurber Hoary Pea             | PDFAB3X0M0 |     |     | S    |      |        |       | G4G5    | S3     |
| Pima   | PLANT   | Thelypteris puberula var. sonorensis    | Aravaipa Wood Fern            | PPTHE05192 |     | S   |      |      |        |       | G5T3    | S2     |
| Pima   | PLANT   | Tragia laciniata                        | Sonoran Noseburn              | PDEUP1D060 |     |     | S    |      |        |       | G3G4    | S3?    |
| Pima   | PLANT   | Triteleopsis palmeri                    | Blue Sand Lily                | PMLIL22010 |     | S   |      |      |        | SR    | G3      | S1     |
| Pima   | PLANT   | Tumamoca maccougali                     | Tumamoc Globeberry            | PDCUC0S010 |     | S   | S    |      |        | SR    | G4      | S3     |
| Pima   | PLANT   | Vauquelinia californica ssp. sonorensis | Arizona Sonoran Rosewood      | PDROS1R024 |     | S   |      |      |        |       | G4T1    | S1     |
| Pima   | PLANT   | Viola umbraticola                       | Shade Violet                  | PDVIO042E0 |     |     | S    |      |        |       | G3G4    | S2?    |
| Pima   | REPTILE | Aspidoscelis burti stictogrammus        | Giant Spotted Whiptail        | ARACJ02011 | SC  |     | S    |      |        |       | G4T4    | S2     |
| Pima   | REPTILE | Aspidoscelis xanthonota                 | Redback Whiptail              | ARACJ02012 | SC  |     | S    |      |        |       | G4T2    | S2     |
| Pima   | REPTILE | Charina trivirgata trivirgata           | Mexican Rosy Boa              | ARADA01023 | SC  | S   |      |      |        |       | G4G5T3  | S1S2   |
| Pima   | REPTILE | Chionactis occipitalis klauberi         | Tucson Shovel-nosed Snake     | ARADB05012 |     | S   |      |      |        |       | G5T3Q   | S1     |
| Pima   | REPTILE | Chionactis palarostris organica         | Organ Pipe Shovel-nosed Snake | ARADB05021 |     |     | S    |      |        |       | G3G4T2  | S1     |
| Pima   | REPTILE | Gopherus agassizii (Sonoran Population) | Sonoran Desert Tortoise       | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4    | S4     |
| Pima   | REPTILE | Kinosternon sonoriense longifemorale    | Sonoyta Mud Turtle            | ARAAE01041 | C   |     | S    |      |        |       | G4T1    | S1     |
| Pima   | REPTILE | Lampropeltis getula nigrata             | Western Black Kingsnake       | ARADB19026 |     |     | S    |      | A      |       | G5T3T4Q | S3     |
| Pima   | REPTILE | Oxybelis aeneus                         | Brown Vinesnake               | ARADB24010 |     |     |      |      |        | WSC   | G5      | S1     |
| Pima   | REPTILE | Phrynosoma cornutum                     | Texas Horned Lizard           | ARACF12010 | SC  |     |      |      | A      |       | G4G5    | S3S4   |

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| Pima   | REPTILE   | Thamnophis eques megalops              | Northern Mexican Gartersnake                    | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1      |
| Pima   | REPTILE   | Uma rufopunctata                       | Yuman Desert Fringe-toed Lizard                 | ARACF15040 | SC  | S   | S    |      | A      | WSC   | G3     | S2      |
| Pinal  | AMPHIBIAN | Gastrophryne olivacea                  | Great Plains Narrow-mouthed Toad                | AAABE01020 |     | S   |      |      | PR     | WSC   | G5     | S3      |
| Pinal  | AMPHIBIAN | Lithobates yavapaiensis                | Lowland Leopard Frog                            | AAABH01250 | SC  | S   | S    |      | PR     | WSC   | G4     | S3      |
| Pinal  | BIRD      | Ardea alba                             | Great Egret                                     | ABNGA04040 |     | S   |      |      |        | WSC   | G5     | S1B,S4N |
| Pinal  | BIRD      | Athene cucularia hypugaea              | Western Burrowing Owl                           | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3      |
| Pinal  | BIRD      | Buteo nitidus maxima                   | Northern Gray Hawk                              | ABNKC19011 | SC  | S   | S    |      | PR     | WSC   | G5T4Q  | S3      |
| Pinal  | BIRD      | Buteo swainsoni                        | Swainson's Hawk                                 | ABNKC19070 |     | S   |      |      |        |       | G5     | S3      |
| Pinal  | BIRD      | Buteogallus anthracinus                | Common Black-Hawk                               | ABNKC15010 |     | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Pinal  | BIRD      | Coccyzus americanus                    | Yellow-billed Cuckoo (Western U.S. DPS)         | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Pinal  | BIRD      | Dendrocygna autumnalis                 | Black-bellied Whistling-Duck                    | ABNJB01040 |     |     |      |      |        | WSC   | G5     | S3      |
| Pinal  | BIRD      | Empidonax traillii extimus             | Southwestern Willow Flycatcher                  | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Pinal  | BIRD      | Falco peregrinus anatum                | American Peregrine Falcon                       | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Pinal  | BIRD      | Glaucidium brasilianum cactorum        | Cactus Ferruginous Pygmy-owl                    | ABNSB08041 | SC  | S   |      |      | A      | WSC   | G5T3   | S1      |
| Pinal  | BIRD      | Haliaeetus leucocephalus               | Bald Eagle - Winter Population (wintering pop.) | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Pinal  | BIRD      | Haliaeetus leucocephalus pop. 3        | Bald Eagle - Sonoran Desert area Population     | ABNKC10014 | LT  | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |
| Pinal  | BIRD      | Ictinia mississippiensis               | Mississippi Kite                                | ABNKC09010 |     | S   |      |      | A      | WSC   | G5     | S3      |
| Pinal  | BIRD      | Ixobrychus exilis                      | Least Bittern                                   | ABNGA02010 |     | S   |      |      | A      | WSC   | G5     | S3      |
| Pinal  | BIRD      | Rallus longirostris yumanensis         | Yuma Clapper Rail                               | ABNME0501A | LE  |     |      |      | P      | WSC   | G5T3   | S3      |
| Pinal  | BIRD      | Strix occidentalis lucida              | Mexican Spotted Owl                             | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Pinal  | BIRD      | Tyrannus crassirostris                 | Thick-billed Kingbird                           | ABPAE52040 |     | S   |      |      |        | WSC   | G5     | S2      |
| Pinal  | BIRD      | Tyrannus melancholicus                 | Tropical Kingbird                               | ABPAE52010 |     |     |      |      |        | WSC   | G5     | S3      |
| Pinal  | FISH      | Agosia chrysogaster chrysogaster       | Gila Longfin Dace                               | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Pinal  | FISH      | Catostomus clarkii                     | Desert Sucker                                   | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4    |
| Pinal  | FISH      | Catostomus insignis                    | Sonora Sucker                                   | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3      |
| Pinal  | FISH      | Cyprinodon macularius                  | Desert Pupfish                                  | AFCNB02060 | LE  |     |      |      | P      | WSC   | G1     | S1      |
| Pinal  | FISH      | Gila robusta                           | Roundtail Chub                                  | AFCJB13150 | SC  | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Pinal  | FISH      | Meda fulgida                           | Spikedace                                       | AFCJB22010 | LT  |     | S    |      |        | WSC   | G2     | S1      |
| Pinal  | FISH      | Poeciliopsis occidentalis occidentalis | Gila Topminnow                                  | AFCNC05021 | LE  |     |      |      | A      | WSC   | G3T3   | S1S2    |

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| Pinal  | FISH         | Rhinichthys osculus                           | Speckled Dace                  | AFCJB37050 | SC  | S   |      |      | P      |       | G5      | S3S4   |
| Pinal  | FISH         | Tiaroga cobitis                               | Loach Minnow                   | AFCJB37140 | LT  |     | S    |      | P      | WSC   | G2      | S1     |
| Pinal  | INVERTEBRATE | Cicindela oregona maricopa                    | Maricopa Tiger Beetle          | IICOL02362 | SC  |     | S    |      |        |       | G5T3    | S3     |
| Pinal  | MAMMAL       | Choeronycteris mexicana                       | Mexican Long-tongued Bat       | AMACB02010 | SC  | S   |      |      | A      | WSC   | G4      | S3     |
| Pinal  | MAMMAL       | Corynorhinus townsendii pallescens            | Pale Townsend's Big-eared Bat  | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4    | S3S4   |
| Pinal  | MAMMAL       | Eumops perotis californicus                   | Greater Western Bonneted Bat   | AMACD02011 | SC  | S   |      |      |        |       | G5T4    | S3     |
| Pinal  | MAMMAL       | Lasiurus blossevillei                         | Western Red Bat                | AMACC05060 |     | S   |      |      |        | WSC   | G5      | S3     |
| Pinal  | MAMMAL       | Lasiurus xanthinus                            | Western Yellow Bat             | AMACC05070 |     | S   |      |      |        | WSC   | G5      | S2S3   |
| Pinal  | MAMMAL       | Leptonycteris curasoae yerbabuena             | Lesser Long-nosed Bat          | AMACB03030 | LE  |     | S    |      |        | WSC   | G4      | S2S3   |
| Pinal  | MAMMAL       | Macrotus californicus                         | California Leaf-nosed Bat      | AMACB01010 | SC  | S   |      |      |        | WSC   | G4      | S3     |
| Pinal  | MAMMAL       | Myotis ciliolabrum                            | Western Small-footed Myotis    | AMACC01140 | SC  |     |      |      |        |       | G5      | S3S4   |
| Pinal  | MAMMAL       | Myotis velifer                                | Cave Myotis                    | AMACC01050 | SC  |     |      |      |        |       | G5      | S3S4   |
| Pinal  | MAMMAL       | Myotis yumanensis                             | Yuma Myotis                    | AMACC01020 | SC  |     |      |      |        |       | G5      | S3S4   |
| Pinal  | PLANT        | Abutilon parishii                             | Pima Indian Mallow             | PDMAL020E0 | SC  | S   | S    |      |        | SR    | G2      | S2     |
| Pinal  | PLANT        | Agave murpheyi                                | Hohokam Agave                  | PMAGA010F0 | SC  | S   | S    |      |        | HS    | G2      | S2     |
| Pinal  | PLANT        | Agave toumeyana var. bella                    | Toumey Agave                   | PMAGA010R1 |     |     |      |      |        | SR    | G3T3    | S3     |
| Pinal  | PLANT        | Carex ultra                                   | Arizona Giant Sedge            | PMCYP03E50 |     | S   | S    |      |        |       | G3?     | S2     |
| Pinal  | PLANT        | Echinocactus horzonthalonius var. nicholii    | Nichol Turk's Head Cactus      | PDCAC05022 | LE  |     |      |      |        | HS    | G4T2    | S2     |
| Pinal  | PLANT        | Echinocereus triglochidiatus var. arizonicus  | Arizona Hedgehog Cactus        | PDCAC060K1 | LE  |     | S    |      |        | HS    | G5T2    | S2     |
| Pinal  | PLANT        | Echinomastus erectocentrus var. acunensis     | Acuna Cactus                   | PDCAC0J0E1 | C   |     |      |      | P      | HS    | G3T1T2Q | S1     |
| Pinal  | PLANT        | Echinomastus erectocentrus var. erectocentrus | Needle-spined Pineapple Cactus | PDCAC0J0E2 | SC  |     | S    |      |        | SR    | G3T3Q   | S3     |
| Pinal  | PLANT        | Erigeron anchana                              | Mogollon Fleabane              | PDAST3M580 | SC  |     | S    |      |        |       | G2      | S2     |
| Pinal  | PLANT        | Eriogonum capillare                           | San Carlos Wild-buckwheat      | PDPGN08100 | SC  |     |      |      |        | SR    | G4      | S4     |
| Pinal  | PLANT        | Euphorbia gracillima                          | Mexican Broomspurge            | PDEUP0D110 |     |     | S    |      |        |       | G4?     | S3     |
| Pinal  | PLANT        | Ferocactus cylindraceus var. eastwoodiae      | Golden Barrel Cactus           | PDCAC08084 |     |     |      |      |        | SR    | G5T1    | S1     |
| Pinal  | PLANT        | Fremontodendron californicum                  | Flannel Bush                   | PDSTE03010 |     | S   |      |      |        | SR    | G4      | S2S3   |
| Pinal  | PLANT        | Hedeoma dentatum                              | Mock-pennyroyal                | PDLAM0M0M0 |     |     | S    |      |        |       | G3      | S3     |
| Pinal  | PLANT        | Lilaeopsis schaffneriana var. recurva         | Huachuca Water Umbel           | PDAPI19051 | LE  |     |      |      |        | HS    | G4T2    | S2     |
| Pinal  | PLANT        | Lotus alamosanus                              | Alamos Deer Vetch              | PDFAB2A020 |     |     | S    |      |        |       | G3G4    | S1     |

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| Pinal      | PLANT     | Mabrya acerifolia                             | Mapleleaf False Snapdragon       | PDSCR2L010 |       |     | S    |      |        |       | G2      | S2     |
| Pinal      | PLANT     | Mammillaria thornberi                         | Thornber Fishhook Cactus         | PDCAC0A0C0 |       |     |      |      |        | SR    | G4      | S4     |
| Pinal      | PLANT     | Mammillaria viridiflora                       | Varied Fishhook Cactus           | PDCAC0A0D0 |       |     |      |      |        | SR    | G4      | S4     |
| Pinal      | PLANT     | Opuntia versicolor                            | Stag-horn Cholla                 | PDCAC0D1K0 |       |     |      |      |        | SR    | G4      | S2S3   |
| Pinal      | PLANT     | Penstemon discolor                            | Catalina Beardtongue             | PDSCR1L210 |       |     | S    |      |        | HS    | G2      | S2     |
| Pinal      | PLANT     | Perityle gilensis var. gilensis               | Gila Rock Daisy                  | PDAST700D1 |       |     | S    |      |        |       | G2?T2?  | S2?    |
| Pinal      | PLANT     | Salvia amissa                                 | Aravaipa Sage                    | PDLAM1S020 | SC    | S   | S    |      |        |       | G2      | S2     |
| Pinal      | PLANT     | Stenocereus thurberi                          | Organ Pipe Cactus                | PDCAC10020 |       |     |      |      |        | SR    | G5      | S4     |
| Pinal      | PLANT     | Thelypteris puberula var. sonorensis          | Aravaipa Wood Fern               | PPTHE05192 |       |     | S    |      |        |       | G5T3    | S2     |
| Pinal      | PLANT     | Tumamoca maccougali                           | Tumamoc Globeberry               | PDCUC0S010 |       |     | S    | S    |        | SR    | G4      | S3     |
| Pinal      | REPTILE   | Aspidoscelis burti stictogrammus              | Giant Spotted Whiptail           | ARACJ02011 | SC    |     | S    |      |        |       | G4T4    | S2     |
| Pinal      | REPTILE   | Aspidoscelis xanthonota                       | Redback Whiptail                 | ARACJ02012 | SC    |     | S    |      |        |       | G4T2    | S2     |
| Pinal      | REPTILE   | Chionactis occipitalis klauberi               | Tucson Shovel-nosed Snake        | ARADB05012 |       |     | S    |      |        |       | G5T3Q   | S1     |
| Pinal      | REPTILE   | Gopherus agassizii (Sonoran Population)       | Sonoran Desert Tortoise          | ARAAF01013 | SC    | S   |      |      | A      | WSC   | G4T4    | S4     |
| Pinal      | REPTILE   | Lampropeltis getula nigrita                   | Western Black Kingsnake          | ARADB19026 |       |     | S    |      | A      |       | G5T3T4Q | S3     |
| Santa Cruz | AMPHIBIAN | Ambystoma tigrinum stebbinsi                  | Sonora Tiger Salamander          | AAAAA01145 | LE    |     |      |      | PR     | WSC   | G5T1T2  | S1     |
| Santa Cruz | AMPHIBIAN | Eleutherodactylus augusti cactorum            | Western Barking Frog             | AAABD04171 |       |     | S    | S    |        | WSC   | G5T5    | S2     |
| Santa Cruz | AMPHIBIAN | Gastrophryne olivacea                         | Great Plains Narrow-mouthed Toad | AAABE01020 |       |     | S    |      | PR     | WSC   | G5      | S3     |
| Santa Cruz | AMPHIBIAN | Hyla wrightorum (Huachucas/Canelo Hills Pop.) | Huachucas/Canelo Hills Treefrog  | AAABC02082 | C,DPS |     |      |      |        |       | G4T2    | S1     |
| Santa Cruz | AMPHIBIAN | Lithobates chiricahuensis                     | Chiricahua Leopard Frog          | AAABH01080 | LT    |     | S    |      | A      | WSC   | G3      | S2     |
| Santa Cruz | AMPHIBIAN | Lithobates tarahumarae                        | Tarahumara Frog                  | AAABH01210 | SC    |     |      |      |        | WSC   | G3      | SXS1   |
| Santa Cruz | AMPHIBIAN | Lithobates yavapaiensis                       | Lowland Leopard Frog             | AAABH01250 | SC    | S   | S    |      | PR     | WSC   | G4      | S3     |
| Santa Cruz | BIRD      | Accipiter gentilis                            | Northern Goshawk                 | ABNKC12060 | SC    | S   | S    | 4    | A      | WSC   | G5      | S3B    |
| Santa Cruz | BIRD      | Amazilia violiceps                            | Violet-crowned Hummingbird       | ABNUC29150 |       |     |      |      |        | WSC   | G5      | S3     |
| Santa Cruz | BIRD      | Ammodramus bairdii                            | Baird's Sparrow                  | ABPBXA0010 | SC    | S   |      |      |        | WSC   | G4      | S2N    |
| Santa Cruz | BIRD      | Anthus spragueii                              | Sprague's Pipit                  | ABPBM02060 |       |     |      |      |        | WSC   | G4      | S2N    |
| Santa Cruz | BIRD      | Athene cunicularia hypugaea                   | Western Burrowing Owl            | ABNSB10012 | SC    | S   |      | 4    | A      |       | G4T4    | S3     |
| Santa Cruz | BIRD      | Buteo nitidus maxima                          | Northern Gray Hawk               | ABNKC19011 | SC    | S   | S    |      | PR     | WSC   | G5T4Q   | S3     |
| Santa Cruz | BIRD      | Buteogallus anthracinus                       | Common Black-Hawk                | ABNKC15010 |       |     | S    | S    | A      | WSC   | G4G5    | S3     |

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| Santa Cruz | BIRD         | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Santa Cruz | BIRD         | Dendrocygna autumnalis                    | Black-bellied Whistling-Duck            | ABNJB01040 |     |     |      |      |        | WSC   | G5     | S3      |
| Santa Cruz | BIRD         | Empidonax fulvifrons pygmaeus             | Northern Buff-breasted Flycatcher       | ABPAE33141 | SC  |     |      |      |        | WSC   | G5T5   | S1      |
| Santa Cruz | BIRD         | Empidonax traillii extimus                | Southwestern Willow Flycatcher          | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Santa Cruz | BIRD         | Falco peregrinus anatum                   | American Peregrine Falcon               | ABNKD06071 | SC  | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Santa Cruz | BIRD         | Glaucidium brasilianum cactorum           | Cactus Ferruginous Pygmy-owl            | ABNSB08041 | SC  | S   |      |      | A      | WSC   | G5T3   | S1      |
| Santa Cruz | BIRD         | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population          | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Santa Cruz | BIRD         | Pachyramphus aglaiae                      | Rose-throated Becard                    | ABPAE53070 |     |     |      |      |        | WSC   | G4G5   | S1      |
| Santa Cruz | BIRD         | Pandion haliaetus                         | Osprey                                  | ABNKC01010 |     | S   |      |      |        | WSC   | G5     | S2B,S4N |
| Santa Cruz | BIRD         | Poliophtila nigriceps                     | Black-capped Gnatcatcher                | ABPBJ08040 |     |     |      |      |        | WSC   | G5     | S1      |
| Santa Cruz | BIRD         | Strix occidentalis lucida                 | Mexican Spotted Owl                     | ABNSB12012 | LT  |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Santa Cruz | BIRD         | Trogon elegans                            | Elegant Trogon                          | ABNWA02070 |     |     |      |      |        | WSC   | G5     | S3      |
| Santa Cruz | BIRD         | Tyrannus crassirostris                    | Thick-billed Kingbird                   | ABPAE52040 |     | S   |      |      |        | WSC   | G5     | S2      |
| Santa Cruz | BIRD         | Tyrannus melancholicus                    | Tropical Kingbird                       | ABPAE52010 |     |     |      |      |        | WSC   | G5     | S3      |
| Santa Cruz | FISH         | Agosia chrysogaster chrysogaster          | Gila Longfin Dace                       | AFCJB37151 | SC  | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Santa Cruz | FISH         | Catostomus clarkii                        | Desert Sucker                           | AFCJC02040 | SC  | S   |      |      |        |       | G3G4   | S3S4    |
| Santa Cruz | FISH         | Catostomus insignis                       | Sonora Sucker                           | AFCJC02100 | SC  | S   |      |      | P      |       | G3     | S3      |
| Santa Cruz | FISH         | Cyprinodon macularius                     | Desert Pupfish                          | AFCNB02060 | LE  |     |      |      | P      | WSC   | G1     | S1      |
| Santa Cruz | FISH         | Gila ditaenia                             | Sonora Chub                             | AFCJB13090 | LT  |     |      |      | A      | WSC   | G2     | S1      |
| Santa Cruz | FISH         | Gila intermedia                           | Gila Chub                               | AFCJB13160 | LE  |     | S    |      | P      | WSC   | G2     | S2      |
| Santa Cruz | FISH         | Poeciliopsis occidentalis occidentalis    | Gila Topminnow                          | AFCNC05021 | LE  |     |      |      | A      | WSC   | G3T3   | S1S2    |
| Santa Cruz | FISH         | Rhinichthys osculus                       | Speckled Dace                           | AFCJB37050 | SC  | S   |      |      | P      |       | G5     | S3S4    |
| Santa Cruz | INVERTEBRATE | Agathymus aryxna                          | Arizona Giant Skipper                   | IILEP87080 |     |     | S    |      |        |       | G4G5   | S5      |
| Santa Cruz | INVERTEBRATE | Argia sabino                              | Sabino Canyon Dancer                    | IIODO68100 | SC  |     | S    |      |        |       | G1G2   | S2      |
| Santa Cruz | INVERTEBRATE | Calephelis arizonensis                    | Arizona Metalmark                       | IILEPH2073 |     |     | S    |      |        |       | G3G4   | S2      |
| Santa Cruz | INVERTEBRATE | Heterelmis stephani                       | Stephan's Heterelmis Riffle Beetle      | IICOL5B010 | C   |     | S    |      |        |       | G1     | S1      |
| Santa Cruz | INVERTEBRATE | Limenitis archippus obsoleta              | Obsolete Viceroy Butterfly              | IILEPL3024 |     |     | S    |      |        |       | G5T3T4 | S4      |
| Santa Cruz | INVERTEBRATE | Neophasia terlooii                        | Chiricahua Pine White                   | IILEP99020 |     |     | S    |      |        |       | G3G4   | S4      |
| Santa Cruz | INVERTEBRATE | Pyrgulopsis thompsoni                     | Huachuca Springsnail                    | IMGASJ0230 | C   | S   | S    |      |        |       | G2     | S2      |

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| Santa Cruz | INVERTEBRATE | Stygobromus arizonensis            | Arizona Cave Amphipod         | ICMAL05360 | SC  |     | S    |      |        |       | G1     | S1?    |
| Santa Cruz | INVERTEBRATE | Sympetrum signiferum               | Mexican Meadowfly             | IIDO61150  |     |     | S    |      |        |       | G2G3   | S2     |
| Santa Cruz | MAMMAL       | Choeronycteris mexicana            | Mexican Long-tongued Bat      | AMACB02010 | SC  | S   |      |      | A      | WSC   | G4     | S3     |
| Santa Cruz | MAMMAL       | Corynorhinus townsendii pallescens | Pale Townsend's Big-eared Bat | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4   |
| Santa Cruz | MAMMAL       | Lasiurus blossevillii              | Western Red Bat               | AMACC05060 |     | S   |      |      |        | WSC   | G5     | S3     |
| Santa Cruz | MAMMAL       | Leptonycteris curasoae yerbabuena  | Lesser Long-nosed Bat         | AMACB03030 | LE  |     | S    |      |        | WSC   | G4     | S2S3   |
| Santa Cruz | MAMMAL       | Macrotus californicus              | California Leaf-nosed Bat     | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3     |
| Santa Cruz | MAMMAL       | Myotis velifer                     | Cave Myotis                   | AMACC01050 | SC  |     |      |      |        |       | G5     | S3S4   |
| Santa Cruz | MAMMAL       | Panthera onca                      | Jaguar                        | AMAJH02010 | LE  |     | S    |      | P      | WSC   | G3     | S1     |
| Santa Cruz | MAMMAL       | Sigmodon ochrogathus               | Yellow-nosed Cotton Rat       | AMAFF07040 | SC  |     |      |      |        |       | G4G5   | S4     |
| Santa Cruz | MAMMAL       | Sorex arizonae                     | Arizona Shrew                 | AMABA01240 | SC  |     | S    |      | P      | WSC   | G3     | S2     |
| Santa Cruz | MAMMAL       | Thomomys umbrinus intermedius      | Southern Pocket Gopher        | AMAF01012  |     |     | S    |      |        |       | G5T3   | S3     |
| Santa Cruz | PLANT        | Abutilon parishii                  | Pima Indian Mallow            | PDMAL020E0 | SC  | S   | S    |      |        | SR    | G2     | S2     |
| Santa Cruz | PLANT        | Acacia farnesiana                  | Sweet Acacia                  | PDFAB020D0 |     |     | S    |      |        |       | G5     | S1S2   |
| Santa Cruz | PLANT        | Agave parviflora ssp. parviflora   | Santa Cruz Striped Agave      | PMAGA010L2 | SC  |     | S    |      | A      | HS    | G3T3   | S3     |
| Santa Cruz | PLANT        | Allium rhizomatum                  | Redflower Onion               | PMLIL02320 |     |     | S    |      |        | SR    | G3?Q   | S1     |
| Santa Cruz | PLANT        | Amoreuxia gonzalezii               | Saiya                         | PDBIX01010 | SC  |     | S    |      |        | HS    | G1     | S1     |
| Santa Cruz | PLANT        | Amsonia grandiflora                | Large-flowered Blue Star      | PDAP003060 | SC  |     | S    |      |        |       | G2     | S2     |
| Santa Cruz | PLANT        | Arabis tricornuta                  | Chiricahua Rock Cress         | PDBRA06200 |     |     | S    |      |        |       | G1?    | S1?    |
| Santa Cruz | PLANT        | Asclepias lemmonii                 | Lemmon Milkweed               | PDASC020Z0 |     |     | S    |      |        |       | G4?    | S2     |
| Santa Cruz | PLANT        | Asclepias uncialis                 | Greene Milkweed               | PDASC02220 | SC  |     | S    |      |        |       | G3G4   | S1?    |
| Santa Cruz | PLANT        | Astragalus hypoxylus               | Huachuca Milk-vetch           | PDFAB0F470 | SC  | S   | S    |      |        | SR    | G1     | S1     |
| Santa Cruz | PLANT        | Browallia eludens                  | Elusive New Browallia Species | PDSOL03030 | SC  |     | S    |      |        |       | G2?    | S1     |
| Santa Cruz | PLANT        | Capsicum annuum var. glabriusculum | Chiltepin                     | PDSOL06012 |     |     | S    |      |        |       | G5T5   | S2     |
| Santa Cruz | PLANT        | Carex chihuahuensis                | A Sedge                       | PMCYP032T0 |     |     | S    |      |        |       | G3G4   | S2S3   |
| Santa Cruz | PLANT        | Carex ultra                        | Arizona Giant Sedge           | PMCYP03E50 |     | S   | S    |      |        |       | G3?    | S2     |
| Santa Cruz | PLANT        | Choisya mollis                     | Santa Cruz Star Leaf          | PDRUT02022 | SC  |     | S    |      |        |       | G5?T2? | S2     |
| Santa Cruz | PLANT        | Conioselinum mexicanum             | Mexican Hemlock Parsley       | PDAP003030 | SC  |     | S    |      |        |       | G2?    | S1     |
| Santa Cruz | PLANT        | Coryphantha recurvata              | Santa Cruz Beehive Cactus     | PDCAC04090 |     |     | S    |      |        | HS    | G3     | S3     |

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| Santa Cruz | PLANT | <i>Coryphantha scheeri</i> var. <i>robustispina</i> | Pima Pineapple Cactus    | PDCAC040C1 | LE  |     |      |      |        | HS    | G4T2  | S2     |
| Santa Cruz | PLANT | <i>Coursetia glabella</i>                           |                          | PDFAB140B0 | SC  |     | S    |      |        |       | G3?   | S1     |
| Santa Cruz | PLANT | <i>Dalea tentaculoides</i>                          | Gentry Indigo Bush       | PDFAB1A1K0 | SC  | S   | S    |      |        | HS    | G1    | S1     |
| Santa Cruz | PLANT | <i>Erigeron arisolius</i>                           |                          | PDAST3M510 |     |     | S    |      |        |       | G2    | S2     |
| Santa Cruz | PLANT | <i>Euphorbia macropus</i>                           | Woodland Spurge          | PDEUP0Q2U0 | SC  |     |      |      |        | SR    | G4    | S2     |
| Santa Cruz | PLANT | <i>Graptopetalum bartramii</i>                      | Bartram Stonecrop        | PDCRA06010 | SC  | S   | S    |      |        | SR    | G3    | S3     |
| Santa Cruz | PLANT | <i>Hedeoma dentatum</i>                             | Mock-pennyroyal          | PDLAM0M0M0 |     |     | S    |      |        |       | G3    | S3     |
| Santa Cruz | PLANT | <i>Heterotheca rutteri</i>                          | Huachuca Golden Aster    | PDAST4V0J0 | SC  | S   | S    |      |        |       | G2    | S2     |
| Santa Cruz | PLANT | <i>Hexalectris revoluta</i>                         | Chisos Coral-root        | PMORC1C030 |     |     | S    |      |        | SR    | G1G2  | S1     |
| Santa Cruz | PLANT | <i>Hexalectris spicata</i>                          | Crested Coral Root       | PMORC1C040 |     |     |      |      |        | SR    | G5    | S3S4   |
| Santa Cruz | PLANT | <i>Hieracium pringlei</i>                           | Pringle Hawkweed         | PDAST4W170 | SC  |     | S    |      |        |       | G2Q   | S1     |
| Santa Cruz | PLANT | <i>Ipomoea plummerae</i> var. <i>cuneifolia</i>     | Huachuca Morning Glory   | PDCON0A141 |     |     | S    |      |        |       | G4T3  | S3     |
| Santa Cruz | PLANT | <i>Ipomoea thurberi</i>                             | Thurber's Morning-glory  | PDCON0A1K0 |     |     | S    |      |        |       | G3    | S1     |
| Santa Cruz | PLANT | <i>Laennecia eriophylla</i>                         | Woolly Fleabane          | PDASTDL020 |     |     | S    |      |        |       | G3    | S2     |
| Santa Cruz | PLANT | <i>Lilaeopsis schaffneriana</i> var. <i>recurva</i> | Huachuca Water Umbel     | PDAPI19051 | LE  |     |      |      |        | HS    | G4T2  | S2     |
| Santa Cruz | PLANT | <i>Lilium parryi</i>                                | Lemmon Lily              | PMLIL1A0J0 | SC  |     | S    |      |        | SR    | G3    | S2     |
| Santa Cruz | PLANT | <i>Lobelia fenestralis</i>                          | Leafy Lobelia            | PDCAM0E0H0 |     |     |      |      |        | SR    | G4    | S1     |
| Santa Cruz | PLANT | <i>Lobelia laxiflora</i>                            | Mexican Lobelia          | PDCAM0E0X0 |     |     |      |      |        | SR    | G4    | S1     |
| Santa Cruz | PLANT | <i>Lotus alamosanus</i>                             | Alamos Deer Vetch        | PDFAB2A020 |     |     | S    |      |        |       | G3G4  | S1     |
| Santa Cruz | PLANT | <i>Lupinus huachucanus</i>                          | Huachuca Mountain Lupine | PDFAB2B210 |     |     | S    |      |        |       | G2    | S2     |
| Santa Cruz | PLANT | <i>Macroptilium supinum</i>                         | Supine Bean              | PDFAB330L0 | SC  |     | S    |      |        | SR    | G2    | S1     |
| Santa Cruz | PLANT | <i>Malaxis corymbosa</i>                            | Madrean Adders Mouth     | PMORC1R020 |     |     |      |      |        | SR    | G4    | S3S4   |
| Santa Cruz | PLANT | <i>Malaxis porphyrea</i>                            | Purple Adder's Mouth     | PMORC1R0Q0 |     |     |      |      |        | SR    | G4    | S2     |
| Santa Cruz | PLANT | <i>Mammillaria wrightii</i> var. <i>wilcoxii</i>    | Wilcox Fishhook Cactus   | PDCAC0A0E1 |     |     |      |      |        | SR    | G4T4  | S4     |
| Santa Cruz | PLANT | <i>Manihot davisiae</i>                             | Arizona Manihot          | PDEUP0Z010 |     |     | S    |      |        |       | G4    | S2     |
| Santa Cruz | PLANT | <i>Marina diffusa</i>                               | Escoba                   | PDFAB2F020 |     |     | S    |      |        |       | G5?   | S1     |
| Santa Cruz | PLANT | <i>Metastelma mexicanum</i>                         | Wiggins Milkweed Vine    | PDASC050P0 | SC  |     | S    |      |        |       | G3G4  | S1S2   |
| Santa Cruz | PLANT | <i>Muhlenbergia dubioides</i>                       | Box Canyon Muhly         | PMPOA480G0 |     |     | S    |      |        |       | G1Q   | S1     |
| Santa Cruz | PLANT | <i>Muhlenbergia xerophila</i>                       | Weeping Muhly            | PMPOA48220 |     |     | S    |      |        |       | G3    | S1     |



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| Santa Cruz | PLANT   | Notholaena lemmonii                     | Lemmon Cloak Fern               | PPADI0G0D0 | SC  |     |      |      |        |       | G3?     | S1S2   |
| Santa Cruz | PLANT   | Opuntia versicolor                      | Stag-horn Cholla                | PDCAC0D1K0 |     |     |      |      |        | SR    | G4      | S2S3   |
| Santa Cruz | PLANT   | Paspalum virletii                       | Virlet Paspalum                 | PMPOA4P1L0 |     |     | S    |      |        |       | G3?     | S1     |
| Santa Cruz | PLANT   | Passiflora arizonica                    | Arizona Passionflower           | PDPAS01073 |     |     | S    |      |        |       | G5T3T5  | S2     |
| Santa Cruz | PLANT   | Pectis imberbis                         | Beardless Chinch Weed           | PDAST6W0A0 | SC  |     | S    |      |        |       | G3      | S1     |
| Santa Cruz | PLANT   | Penstemon discolor                      | Catalina Beardtongue            | PDSCR1L210 |     |     | S    |      |        | HS    | G2      | S2     |
| Santa Cruz | PLANT   | Penstemon superbus                      | Superb Beardtongue              | PDSCR1L630 |     |     | S    |      |        |       | G3?     | S2?    |
| Santa Cruz | PLANT   | Physalis latiphysa                      | Broad-leaf Ground-cherry        | PDSOL0S0H0 |     |     | S    |      |        |       | G1      | S1     |
| Santa Cruz | PLANT   | Psilotum nudum                          | Whisk Fern                      | PPPSI01020 |     |     |      |      |        | HS    | G5      | S1     |
| Santa Cruz | PLANT   | Samolus vagans                          | Chiricahua Mountain Brookweed   | PDPRI09040 |     |     | S    |      |        |       | G2?     | S2     |
| Santa Cruz | PLANT   | Schiedeella arizonica                   | Fallen Ladies'-tresses          | PMORC67020 |     |     |      |      |        | SR    | GNR     | S4     |
| Santa Cruz | PLANT   | Senecio carlomasonii                    | Seemann Groundsel               | PDAST8H3W0 |     |     | S    |      |        |       | G4?Q    | S2S3   |
| Santa Cruz | PLANT   | Senecio multidentatus var. huachucanus  | Huachuca Groundsel              | PDAST8H411 |     |     | S    |      |        | HS    | G2G4T2  | S2     |
| Santa Cruz | PLANT   | Sisyrinchium cernuum                    | Nodding Blue-eyed Grass         | PMIRI0D0B0 |     |     | S    |      |        |       | G5      | S2     |
| Santa Cruz | PLANT   | Solanum lumholtzianum                   | Lumholtz Nightshade             | PDSOL0Z180 |     |     | S    |      |        |       | G3G4    | S3     |
| Santa Cruz | PLANT   | Spiranthes delitescens                  | Madrean Ladies'-tresses         | PMORC2B140 | LE  |     |      |      |        | HS    | G1      | S1     |
| Santa Cruz | PLANT   | Stenorrhynchos michuacanum              | Michoacan Ladies'-tresses       | PMORC2B0L0 |     |     |      |      |        | SR    | G4      | S3     |
| Santa Cruz | PLANT   | Stevia lemmonii                         | Lemmon's Stevia                 | PDAST8V010 |     |     | S    |      |        |       | G3G4    | S2     |
| Santa Cruz | PLANT   | Talinum humile                          | Pinos Altos Flame Flower        | PDPOR080A0 | SC  |     | S    |      |        | SR    | G2      | S1     |
| Santa Cruz | PLANT   | Talinum marginatum                      | Tepic Flame Flower              | PDPOR080N0 | SC  |     | S    |      |        | SR    | G2      | S1     |
| Santa Cruz | PLANT   | Tephrosia thurberi                      | Thurber Hoary Pea               | PDFAB3X0M0 |     |     | S    |      |        |       | G4G5    | S3     |
| Santa Cruz | PLANT   | Tragia laciniata                        | Sonoran Noseburn                | PDEUP1D060 |     |     | S    |      |        |       | G3G4    | S3?    |
| Santa Cruz | PLANT   | Viola umbraticola                       | Shade Violet                    | PDVIO042E0 |     |     | S    |      |        |       | G3G4    | S2?    |
| Santa Cruz | REPTILE | Aspidoscelis burti stictogrammus        | Giant Spotted Whiptail          | ARACJ02011 | SC  |     | S    |      |        |       | G4T4    | S2     |
| Santa Cruz | REPTILE | Crotalus willardi willardi              | Arizona Ridge-nosed Rattlesnake | ARADE02132 |     |     | S    |      | PR     | WSC   | G5T4    | S1S2   |
| Santa Cruz | REPTILE | Gopherus agassizii (Sonoran Population) | Sonoran Desert Tortoise         | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4    | S4     |
| Santa Cruz | REPTILE | Lampropeltis getula nigrita             | Western Black Kingsnake         | ARADB19026 |     |     | S    |      | A      |       | G5T3T4Q | S3     |
| Santa Cruz | REPTILE | Oxybelis aeneus                         | Brown Vinesnake                 | ARADB24010 |     |     |      |      |        | WSC   | G5      | S1     |
| Santa Cruz | REPTILE | Thamnophis eques megalops               | Northern Mexican Gartersnake    | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5    | S1     |

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| Yavapai | AMPHIBIAN | Bufo microscaphus                         | Arizona Toad                                | AAABB01110 | SC    |     | S    |      |        |       | G3G4   | S3S4    |
| Yavapai | AMPHIBIAN | Lithobates chiricahuensis                 | Chiricahua Leopard Frog                     | AAABH01080 | LT    |     | S    |      | A      | WSC   | G3     | S2      |
| Yavapai | AMPHIBIAN | Lithobates pipiens                        | Northern Leopard Frog                       | AAABH01170 |       | S   | S    | 2    |        | WSC   | G5     | S2      |
| Yavapai | AMPHIBIAN | Lithobates yavapaiensis                   | Lowland Leopard Frog                        | AAABH01250 | SC    | S   | S    |      | PR     | WSC   | G4     | S3      |
| Yavapai | BIRD      | Accipiter gentilis                        | Northern Goshawk                            | ABNKC12060 | SC    | S   | S    | 4    | A      | WSC   | G5     | S3B     |
| Yavapai | BIRD      | Athene cunicularia hypugaea               | Western Burrowing Owl                       | ABNSB10012 | SC    | S   |      | 4    | A      |       | G4T4   | S3      |
| Yavapai | BIRD      | Buteo regalis                             | Ferruginous Hawk                            | ABNKC19120 | SC    | S   |      | 3    |        | WSC   | G4     | S2B,S4N |
| Yavapai | BIRD      | Buteo swainsoni                           | Swainson's Hawk                             | ABNKC19070 |       | S   |      |      |        |       | G5     | S3      |
| Yavapai | BIRD      | Buteogallus anthracinus                   | Common Black-Hawk                           | ABNKC15010 |       | S   | S    |      | A      | WSC   | G4G5   | S3      |
| Yavapai | BIRD      | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS)     | ABNRB02020 | C     |     |      | 2    |        | WSC   | G5     | S3      |
| Yavapai | BIRD      | Empidonax traillii extimus                | Southwestern Willow Flycatcher              | ABPAE33043 | LE    |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Yavapai | BIRD      | Falco peregrinus anatum                   | American Peregrine Falcon                   | ABNKD06071 | SC    | S   | S    | 4    | A      | WSC   | G4T4   | S4      |
| Yavapai | BIRD      | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population              | ABNKC10015 | SC    | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Yavapai | BIRD      | Haliaeetus leucocephalus pop. 3           | Bald Eagle - Sonoran Desert area Population | ABNKC10014 | LT    | S   | S    | 2    | P      | WSC   | G5TNR  | S2S3    |
| Yavapai | BIRD      | Megaceryle alcyon                         | Belted Kingfisher                           | ABNXD01020 |       |     |      | 4    |        | WSC   | G5     | S2B,S5N |
| Yavapai | BIRD      | Pinicola enucleator                       | Pine Grosbeak                               | ABPBY03010 |       |     |      |      |        | WSC   | G5     | S1      |
| Yavapai | BIRD      | Rallus longirostris yumanensis            | Yuma Clapper Rail                           | ABNME0501A | LE    |     |      |      | P      | WSC   | G5T3   | S3      |
| Yavapai | BIRD      | Setophaga ruticilla                       | American Redstart                           | ABPBX06010 |       |     |      |      |        | WSC   | G5     | S1      |
| Yavapai | BIRD      | Strix occidentalis lucida                 | Mexican Spotted Owl                         | ABNSB12012 | LT    |     | S    | 3    | A      | WSC   | G3T3   | S3S4    |
| Yavapai | FISH      | Agosia chrysogaster chrysogaster          | Gila Longfin Dace                           | AFCJB37151 | SC    | S   |      |      | A      |       | G4T3T4 | S3S4    |
| Yavapai | FISH      | Catostomus clarkii                        | Desert Sucker                               | AFCJC02040 | SC    | S   |      |      |        |       | G3G4   | S3S4    |
| Yavapai | FISH      | Catostomus insignis                       | Sonora Sucker                               | AFCJC02100 | SC    | S   |      |      | P      |       | G3     | S3      |
| Yavapai | FISH      | Cyprinodon macularius                     | Desert Pupfish                              | AFCNB02060 | LE    |     |      |      | P      | WSC   | G1     | S1      |
| Yavapai | FISH      | Gila intermedia                           | Gila Chub                                   | AFCJB13160 | LE    |     | S    |      | P      | WSC   | G2     | S2      |
| Yavapai | FISH      | Gila nigra                                | Headwater Chub                              | AFCJB13180 | C     |     |      |      |        |       | G2Q    | S2      |
| Yavapai | FISH      | Gila robusta                              | Roundtail Chub                              | AFCJB13150 | SC    | S   | S    | 2    | PR     | WSC   | G3     | S2      |
| Yavapai | FISH      | Meda fulgida                              | Spikedace                                   | AFCJB22010 | LT    |     | S    |      |        | WSC   | G2     | S1      |
| Yavapai | FISH      | Poeciliopsis occidentalis occidentalis    | Gila Topminnow                              | AFCNC05021 | LE    |     |      |      | A      | WSC   | G3T3   | S1S2    |
| Yavapai | FISH      | Ptychocheilus lucius                      | Colorado Pikeminnow                         | AFCJB35020 | LE,XN |     |      | 2    | P      | WSC   | G1     | S1      |

| COUNTY  | TAXON        | SCIENTIFIC NAME                       | COMMON NAME                      | ELCODE     | ESA       | BLM | USFS | NESL | MEXFED | STATE | GRANK | S RANK |
|---------|--------------|---------------------------------------|----------------------------------|------------|-----------|-----|------|------|--------|-------|-------|--------|
| Yavapai | FISH         | Rhinichthys osculus                   | Speckled Dace                    | AFCJB37050 | SC        | S   |      |      | P      |       | G5    | S3S4   |
| Yavapai | FISH         | Xyrauchen texanus                     | Razorback Sucker                 | AFCJC11010 | LE        |     | S    | 2    | P      | WSC   | G1    | S1     |
| Yavapai | INVERTEBRATE | Cicindela oregona maricopa            | Maricopa Tiger Beetle            | IICOL02362 | SC        |     | S    |      |        |       | G5T3  | S3     |
| Yavapai | INVERTEBRATE | Cylloepus parkeri                     | Parker's Cylloepus Riffle Beetle | IICOL59010 | SC        |     | S    |      |        |       | G1?   | S1     |
| Yavapai | INVERTEBRATE | Metrichia nigritta                    | Page Spring Micro Caddisfly      | IITRI97010 | SC        |     |      |      |        |       | G5    | S1     |
| Yavapai | INVERTEBRATE | Protoptila balmorhea                  | Balmorhea Saddle-case Caddisfly  | IITRI34040 | SC        |     |      |      |        |       | G2    | S?     |
| Yavapai | INVERTEBRATE | Pyrgulopsis glandulosa                | Verde Rim Springsnail            | IMGASJ0180 | SC        | S   | S    |      |        |       | G1    | S1     |
| Yavapai | INVERTEBRATE | Pyrgulopsis montezumensis             | Montezuma Well Springsnail       | IMGASJ0190 | SC        | S   | S    |      |        |       | G1    | S1     |
| Yavapai | INVERTEBRATE | Pyrgulopsis morrisoni                 | Page Springsnail                 | IMGASJ0200 | C         | S   | S    |      |        |       | G1    | S1S2   |
| Yavapai | INVERTEBRATE | Pyrgulopsis simplex                   | Fossil Springsnail               | IMGASJ0210 | SC        | S   | S    |      |        |       | G1G2  | S1     |
| Yavapai | INVERTEBRATE | Pyrgulopsis sola                      | Brown Springsnail                | IMGASJ0220 | SC        | S   | S    |      |        |       | G1    | S1     |
| Yavapai | MAMMAL       | Corynorhinus townsendii<br>pallascens | Pale Townsend's Big-eared Bat    | AMACC08014 | SC        | S   |      | 4    |        |       | G4T4  | S3S4   |
| Yavapai | MAMMAL       | Euderma maculatum                     | Spotted Bat                      | AMACC07010 | SC        | S   |      |      | PR     | WSC   | G4    | S1S2   |
| Yavapai | MAMMAL       | Idionycteris phyllotis                | Allen's Big-eared Bat            | AMACC09010 | SC        |     |      |      |        |       | G3G4  | S2S3   |
| Yavapai | MAMMAL       | Lasiurus blossevillei                 | Western Red Bat                  | AMACC05060 |           | S   |      |      |        | WSC   | G5    | S3     |
| Yavapai | MAMMAL       | Macrotus californicus                 | California Leaf-nosed Bat        | AMACB01010 | SC        | S   |      |      |        | WSC   | G4    | S3     |
| Yavapai | MAMMAL       | Microtus mexicanus hualpaiensis       | Hualapai Mexican Vole            | AMAFF11212 | LE        |     |      |      |        | WSC   | G5T1Q | S1     |
| Yavapai | MAMMAL       | Myotis ciliolabrum                    | Western Small-footed Myotis      | AMACC01140 | SC        |     |      |      |        |       | G5    | S3S4   |
| Yavapai | MAMMAL       | Myotis occultus                       | Arizona Myotis                   | AMACC01160 | SC        |     |      |      |        |       | G3G4  | S3     |
| Yavapai | MAMMAL       | Myotis thysanodes                     | Fringed Myotis                   | AMACC01090 | SC        |     |      |      |        |       | G4G5  | S3S4   |
| Yavapai | MAMMAL       | Myotis velifer                        | Cave Myotis                      | AMACC01050 | SC        |     |      |      |        |       | G5    | S3S4   |
| Yavapai | MAMMAL       | Myotis volans                         | Long-legged Myotis               | AMACC01110 | SC        |     |      |      |        |       | G5    | S3S4   |
| Yavapai | MAMMAL       | Nyctinomops macrotis                  | Big Free-tailed Bat              | AMACD04020 | SC        |     |      |      |        |       | G5    | S3     |
| Yavapai | MAMMAL       | Sigmodon arizonae arizonae            | Camp Verde Cotton Rat            | AMAFF07023 |           |     |      |      |        | WSC   | G5TH  | SH     |
| Yavapai | PLANT        | Abutilon parishii                     | Pima Indian Mallow               | PDMAL020E0 | SC        | S   | S    |      |        | SR    | G2    | S2     |
| Yavapai | PLANT        | Agave arizonica                       | Arizona Agave                    | PMAGA01030 | No status |     |      |      |        | HS    | G1Q   | SHYB   |
| Yavapai | PLANT        | Agave delamateri                      | Tonto Basin Agave                | PMAGA010W0 | SC        |     | S    |      |        | HS    | G2    | S2     |
| Yavapai | PLANT        | Agave mckelveyana                     | Mckelvey's Agave                 | PMAGA010D0 |           |     |      |      |        | SR    | G4    | S4     |
| Yavapai | PLANT        | Agave murpheyi                        | Hohokam Agave                    | PMAGA010F0 | SC        | S   | S    |      |        | HS    | G2    | S2     |

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|---------|---------|------------------------------------------|---------------------------|------------|-----|-----|------|------|--------|-------|--------|--------|
| Yavapai | PLANT   | Agave toumeyana var. bella               | Toumey Agave              | PMAGA010R1 |     |     |      |      |        | SR    | G3T3   | S3     |
| Yavapai | PLANT   | Allium bigelovii                         | Bigelow Onion             | PMLIL02070 |     |     |      |      |        | SR    | G3     | S2S3   |
| Yavapai | PLANT   | Arenaria aberrans                        | Mt. Dellenbaugh Sandwort  | PDCAR04010 |     |     | S    |      |        |       | G2     | S2     |
| Yavapai | PLANT   | Astragalus newberryi var. aquarii        | Aquarius Milkvetch        | PDFAB0F5Y5 |     | S   |      |      |        |       | G5T1   | S1     |
| Yavapai | PLANT   | Carex ultra                              | Arizona Giant Sedge       | PMCYP03E50 |     | S   | S    |      |        |       | G3?    | S2     |
| Yavapai | PLANT   | Cymopterus megacephalus                  | Cameron Water-parsley     | PDAPI0U0M0 | SC  |     | S    |      |        |       | G3     | S3     |
| Yavapai | PLANT   | Erigeron saxatilis                       | Rock Fleabane             | PDAST3M560 |     |     | S    |      |        |       | G3     | S3     |
| Yavapai | PLANT   | Eriogonum ericifolium var. ericifolium   | Heathleaf Wild-buckwheat  | PDPGN08231 |     |     | S    |      |        |       | G3T2   | S2     |
| Yavapai | PLANT   | Eriogonum ripleyi                        | Ripley Wild-buckwheat     | PDPGN08520 | SC  |     | S    |      |        | SR    | G2     | S2     |
| Yavapai | PLANT   | Escobaria vivipara var. rosea            | Viviparous Foxtail Cactus | PDCAC0X0G8 |     |     |      |      |        | SR    | G5T3   | S3     |
| Yavapai | PLANT   | Ferocactus cylindraceus var. eastwoodiae | Golden Barrel Cactus      | PDCAC08084 |     |     |      |      |        | SR    | G5T1   | S1     |
| Yavapai | PLANT   | Fremontodendron californicum             | Flannel Bush              | PDSTE03010 |     | S   |      |      |        | SR    | G4     | S2S3   |
| Yavapai | PLANT   | Hedeoma diffusum                         | Flagstaff Pennyroyal      | PDLAM0M0N0 |     |     | S    |      |        | SR    | G3     | S3     |
| Yavapai | PLANT   | Heuchera eastwoodiae                     | Eastwood Alum Root        | PDSAX0E0B0 |     |     | S    |      |        |       | G3     | S3     |
| Yavapai | PLANT   | Hexalectris spicata                      | Crested Coral Root        | PMORC1C040 |     |     |      |      |        | SR    | G5     | S3S4   |
| Yavapai | PLANT   | Lupinus latifolius ssp. leucanthus       | Broadleaf Lupine          | PDFAB2B29D |     |     | S    |      |        |       | G5T1T2 | S1     |
| Yavapai | PLANT   | Mammillaria viridiflora                  | Varied Fishhook Cactus    | PDCAC0A0D0 |     |     |      |      |        | SR    | G4     | S4     |
| Yavapai | PLANT   | Penstemon nudiflorus                     | Flagstaff Beardtongue     | PDSR1L4A0  |     |     | S    |      |        |       | G2G3   | S2S3   |
| Yavapai | PLANT   | Phlox amabilis                           | Arizona Phlox             | PDPLM0D050 |     |     | S    |      |        |       | G2     | S2     |
| Yavapai | PLANT   | Polygala rusbyi                          | Hualapai Milkwort         | PDPGL021H0 |     |     | S    |      |        |       | G3     | S3     |
| Yavapai | PLANT   | Puccinellia parishii                     | Parish Alkali Grass       | PMPOA530T0 | SC  |     |      | 4    |        | HS    | G2G3   | S2     |
| Yavapai | PLANT   | Purshia subintegra                       | Arizona Cliff Rose        | PDROS1E080 | LE  |     |      |      |        | HS    | GNA    | S1     |
| Yavapai | PLANT   | Salvia dorrii ssp. mearnsii              | Verde Valley Sage         | PDLAM1S0G5 | SC  |     | S    |      |        | SR    | G5T3   | S3     |
| Yavapai | PLANT   | Talinum validulum                        | Tusayan Flame Flower      | PDPOR080M0 | SC  |     |      |      |        | SR    | G3     | S3     |
| Yavapai | PLANT   | Thelypteris puberula var. sonorensis     | Aravaipa Wood Fern        | PPTHE05192 |     | S   |      |      |        |       | G5T3   | S2     |
| Yavapai | PLANT   | Triteleia lemmoniae                      | Mazatzal Triteleia        | PMLIL210C0 |     |     |      |      |        | SR    | G3     | S3     |
| Yavapai | PLANT   | Washingtonia filifera                    | California Fan Palm       | PMARE0G010 |     |     |      |      |        | SR    | G4     | S1     |
| Yavapai | REPTILE | Charina trivirgata gracia                | Desert Rosy Boa           | ARADA01021 | SC  | S   | S    |      |        |       | G4G5T3 | S3S4   |
| Yavapai | REPTILE | Eumeces gilberti arizonensis             | Arizona Skink             | ARACH01061 | SC  |     | S    |      | PR     | WSC   | G5T1Q  | S1     |

| COUNTY  | TAXON   | SCIENTIFIC NAME                           | COMMON NAME                             | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK  | S RANK  |
|---------|---------|-------------------------------------------|-----------------------------------------|------------|-----|-----|------|------|--------|-------|--------|---------|
| Yavapai | REPTILE | Gopherus agassizii (Sonoran Population)   | Sonoran Desert Tortoise                 | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4   | S4      |
| Yavapai | REPTILE | Heloderma suspectum cinctum               | Banded Gila Monster                     | ARACE01011 | SC  |     |      |      | A      |       | G4T4   | S4      |
| Yavapai | REPTILE | Thamnophis eques megalops                 | Northern Mexican Gartersnake            | ARADB36061 | C   |     | S    |      | A      | WSC   | G5T5   | S1      |
| Yavapai | REPTILE | Thamnophis rufipunctatus                  | Narrow-headed Gartersnake               | ARADB36110 | SC  | S   | S    |      |        | WSC   | G3G4   | S1      |
| Yavapai | REPTILE | Xantusia arizonae                         | Arizona Night Lizard                    | ARACK01050 |     |     | S    |      |        |       | G3     | S1      |
| Yuma    | BIRD    | Ardea alba                                | Great Egret                             | ABNGA04040 |     | S   |      |      |        | WSC   | G5     | S1B,S4N |
| Yuma    | BIRD    | Athene cunicularia hypugaea               | Western Burrowing Owl                   | ABNSB10012 | SC  | S   |      | 4    | A      |       | G4T4   | S3      |
| Yuma    | BIRD    | Coccyzus americanus                       | Yellow-billed Cuckoo (Western U.S. DPS) | ABNRB02020 | C   |     |      | 2    |        | WSC   | G5     | S3      |
| Yuma    | BIRD    | Egretta thula                             | Snowy Egret                             | ABNGA06030 |     | S   |      |      |        | WSC   | G5     | S1B,S4N |
| Yuma    | BIRD    | Empidonax traillii extimus                | Southwestern Willow Flycatcher          | ABPAE33043 | LE  |     | S    | 2    |        | WSC   | G5T1T2 | S1      |
| Yuma    | BIRD    | Glaucidium brasilianum cactorum           | Cactus Ferruginous Pygmy-owl            | ABNSB08041 | SC  | S   |      |      | A      | WSC   | G5T3   | S1      |
| Yuma    | BIRD    | Haliaeetus leucocephalus (wintering pop.) | Bald Eagle - Winter Population          | ABNKC10015 | SC  | S   | S    | 2    | P      | WSC   | G5TNR  | S4N     |
| Yuma    | BIRD    | Ixobrychus exilis                         | Least Bittern                           | ABNGA02010 |     | S   |      |      | A      | WSC   | G5     | S3      |
| Yuma    | BIRD    | Lanius ludovicianus                       | Loggerhead Shrike                       | ABPBR01030 | SC  |     |      |      |        |       | G4     | S4      |
| Yuma    | BIRD    | Laterallus jamaicensis coturniculus       | California Black Rail                   | ABNME03041 | SC  | S   | S    |      | PR     | WSC   | G4T1   | S1      |
| Yuma    | BIRD    | Rallus longirostris yumanensis            | Yuma Clapper Rail                       | ABNME0501A | LE  |     |      |      | P      | WSC   | G5T3   | S3      |
| Yuma    | FISH    | Xyrauchen texanus                         | Razorback Sucker                        | AFCJC11010 | LE  |     | S    | 2    | P      | WSC   | G1     | S1      |
| Yuma    | MAMMAL  | Antilocapra americana sonoriensis         | Sonoran Pronghorn                       | AMALD01012 | LE  |     | S    |      | P      | WSC   | G5T1   | S1      |
| Yuma    | MAMMAL  | Corynorhinus townsendii pallescens        | Pale Townsend's Big-eared Bat           | AMACC08014 | SC  | S   |      | 4    |        |       | G4T4   | S3S4    |
| Yuma    | MAMMAL  | Euderma maculatum                         | Spotted Bat                             | AMACC07010 | SC  | S   |      |      | PR     | WSC   | G4     | S1S2    |
| Yuma    | MAMMAL  | Eumops perotis californicus               | Greater Western Bonneted Bat            | AMACD02011 | SC  | S   |      |      |        |       | G5T4   | S3      |
| Yuma    | MAMMAL  | Lasiurus xanthinus                        | Western Yellow Bat                      | AMACC05070 |     | S   |      |      |        | WSC   | G5     | S2S3    |
| Yuma    | MAMMAL  | Leptonycteris curasoae yerbabuena         | Lesser Long-nosed Bat                   | AMACB03030 | LE  |     | S    |      |        | WSC   | G4     | S2S3    |
| Yuma    | MAMMAL  | Macrotus californicus                     | California Leaf-nosed Bat               | AMACB01010 | SC  | S   |      |      |        | WSC   | G4     | S3      |
| Yuma    | MAMMAL  | Myotis yumanensis                         | Yuma Myotis                             | AMACC01020 | SC  |     |      |      |        |       | G5     | S3S4    |
| Yuma    | MAMMAL  | Sigmodon hispidus eremicus                | Yuma Hispid Cotton Rat                  | AMAFF07013 | SC  |     |      |      |        |       | G5T2T3 | S2      |
| Yuma    | PLANT   | Allium parishii                           | Parish Onion                            | PMLIL021N0 |     | S   |      |      |        | SR    | G3     | S1      |
| Yuma    | PLANT   | Berberis harrisoniana                     | Kofa Mt Barberry                        | PDBER02030 |     | S   |      |      |        |       | G1G2   | S1S2    |
| Yuma    | PLANT   | Cryptantha ganderi                        | Gander's Cryptantha                     | PDBOR0A120 | SC  |     |      |      |        |       | G1G2   | S1      |

| COUNTY | TAXON   | SCIENTIFIC NAME                             | COMMON NAME                     | ELCODE     | ESA | BLM | USFS | NESL | MEXFED | STATE | GRANK    | S RANK |
|--------|---------|---------------------------------------------|---------------------------------|------------|-----|-----|------|------|--------|-------|----------|--------|
| Yuma   | PLANT   | Echinocactus polycephalus var. polycephalus | Clustered Barrel Cactus         | PDCAC05033 |     |     |      |      |        | SR    | G3G4T3T4 | S2     |
| Yuma   | PLANT   | Euphorbia platysperma                       | Dune Spurge                     | PDEUP0D1X0 | SC  |     |      |      |        |       | G3       | S1     |
| Yuma   | PLANT   | Ferocactus cylindraceus var. cylindraceus   | California Barrel Cactus        | PDCAC08081 |     |     |      |      | PR     | SR    | G5T4     | S3     |
| Yuma   | PLANT   | Helianthus niveus ssp. tephrodes            | Dune Sunflower                  | PDAST4N0Z2 | SC  |     |      |      |        |       | G4T2     | S2     |
| Yuma   | PLANT   | Lophocereus schottii                        | Senita                          | PDCAC14010 |     |     |      |      |        | SR    | G4       | S2     |
| Yuma   | PLANT   | Opuntia echinocarpa                         | Straw-top Cholla                | PDCAC0D2W0 |     |     |      |      |        | SR    | G5       | S5     |
| Yuma   | PLANT   | Pholisma sonorae                            | Sand Food                       | PDLNN02020 | SC  | S   |      |      |        | HS    | G2       | S1     |
| Yuma   | PLANT   | Rhus kearneyi                               | Kearney Sumac                   | PDANA08050 |     | S   |      |      |        | SR    | G4       | S2     |
| Yuma   | PLANT   | Stephanomeria schottii                      | Schott Wire Lettuce             | PDAST8U0D0 |     | S   |      |      |        |       | G2       | S2     |
| Yuma   | PLANT   | Triteleopsis palmeri                        | Blue Sand Lily                  | PMLIL22010 |     | S   |      |      |        | SR    | G3       | S1     |
| Yuma   | PLANT   | Washingtonia filifera                       | California Fan Palm             | PMARE0G010 |     |     |      |      |        | SR    | G4       | S1     |
| Yuma   | REPTILE | Charina trivirgata gracia                   | Desert Rosy Boa                 | ARADA01021 | SC  | S   | S    |      |        |       | G4G5T3   | S3S4   |
| Yuma   | REPTILE | Gopherus agassizii (Sonoran Population)     | Sonoran Desert Tortoise         | ARAAF01013 | SC  | S   |      |      | A      | WSC   | G4T4     | S4     |
| Yuma   | REPTILE | Heloderma suspectum cinctum                 | Banded Gila Monster             | ARACE01011 | SC  |     |      |      | A      |       | G4T4     | S4     |
| Yuma   | REPTILE | Phrynosoma mcallii                          | Flat-tailed Horned Lizard       | ARACF12040 | SC  | S   |      |      | A      | WSC   | G3       | S2     |
| Yuma   | REPTILE | Sauromalus ater (Arizona Population)        | Arizona Chuckwalla              | ARACF13013 | SC  | S   |      |      | A      |       | G5T4Q    | S4     |
| Yuma   | REPTILE | Uma rufopunctata                            | Yuman Desert Fringe-toed Lizard | ARACF15040 | SC  | S   | S    |      | A      | WSC   | G3       | S2     |

*APPENDIX D*  
*AIR QUALITY CALCULATIONS*

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CALCULATION SHEET-COMBUSTIBLE EMISSIONS-PROPOSED ACTION

| Assumptions for Combustible Emissions |               |          |         |         |              |
|---------------------------------------|---------------|----------|---------|---------|--------------|
| Type of Construction Equipment        | Num. of Units | HP Rated | Hrs/day | Days/yr | Total hp-hrs |
| Water Truck                           | 2             | 300      | 8       | 240     | 1152000      |
| Diesel Road Compactors                | 1             | 100      | 8       | 40      | 32000        |
| Diesel Dump Truck                     | 1             | 300      | 8       | 90      | 216000       |
| Diesel Excavator                      | 1             | 300      | 8       | 90      | 216000       |
| Diesel Hole Trenchers                 | 1             | 175      | 8       | 90      | 126000       |
| Diesel Bore/Drill Rigs                | 1             | 300      | 8       | 90      | 216000       |
| Diesel Cement & Mortar Mixers         | 1             | 300      | 8       | 90      | 216000       |
| Diesel Cranes                         | 2             | 175      | 8       | 90      | 252000       |
| Diesel Graders                        | 1             | 300      | 8       | 90      | 216000       |
| Diesel Tractors/Loaders/Backhoes      | 1             | 100      | 8       | 180     | 144000       |
| Diesel Bull Dozers                    | 1             | 300      | 8       | 40      | 96000        |
| Diesel Front End Loaders              | 1             | 300      | 8       | 40      | 96000        |
| Diesel Fork Lifts                     | 2             | 100      | 8       | 40      | 64000        |
| Diesel Generator Set                  | 6             | 40       | 8       | 40      | 76800        |

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

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-PROPOSED ACTION

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

| Emission Calculations            |              |              |               |               |                |              |                 |
|----------------------------------|--------------|--------------|---------------|---------------|----------------|--------------|-----------------|
| Type of Construction Equipment   | VOC tons/yr  | CO tons/yr   | NOx tons/yr   | PM-10 tons/yr | PM-2.5 tons/yr | SO2 tons/yr  | CO2 tons/yr     |
| Water Truck                      | 0.559        | 2.628        | 6.970         | 0.520         | 0.508          | 0.939        | 680.454         |
| Diesel Road Paver                | 0.013        | 0.052        | 0.173         | 0.012         | 0.012          | 0.026        | 18.909          |
| Diesel Dump Truck                | 0.105        | 0.493        | 1.307         | 0.098         | 0.095          | 0.176        | 127.585         |
| Diesel Excavator                 | 0.081        | 0.309        | 1.095         | 0.076         | 0.074          | 0.176        | 127.657         |
| Diesel Hole Cleaners\Trenchers   | 0.071        | 0.339        | 0.807         | 0.064         | 0.061          | 0.103        | 74.397          |
| Diesel Bore/Drill Rigs           | 0.143        | 0.545        | 1.702         | 0.119         | 0.117          | 0.174        | 126.086         |
| Diesel Cement & Mortar Mixers    | 0.145        | 0.552        | 1.733         | 0.114         | 0.112          | 0.174        | 126.086         |
| Diesel Cranes                    | 0.122        | 0.361        | 1.588         | 0.094         | 0.092          | 0.203        | 147.239         |
| Diesel Graders                   | 0.083        | 0.324        | 1.126         | 0.079         | 0.076          | 0.176        | 127.657         |
| Diesel Tractors/Loaders/Backhoes | 0.294        | 1.303        | 1.146         | 0.217         | 0.211          | 0.151        | 109.669         |
| Diesel Bull Dozers               | 0.038        | 0.146        | 0.504         | 0.035         | 0.034          | 0.078        | 56.736          |
| Diesel Front End Loaders         | 0.040        | 0.164        | 0.529         | 0.037         | 0.036          | 0.078        | 56.726          |
| Diesel Aerial Lifts              | 0.140        | 0.547        | 0.604         | 0.098         | 0.095          | 0.067        | 48.721          |
| Diesel Generator Set             | 0.102        | 0.318        | 0.505         | 0.062         | 0.060          | 0.069        | 49.705          |
| <b>Total Emissions</b>           | <b>1.936</b> | <b>8.081</b> | <b>19.787</b> | <b>1.626</b>  | <b>1.582</b>   | <b>2.590</b> | <b>1877.625</b> |

|                    |           |
|--------------------|-----------|
| Conversion factors |           |
| Grams to tons      | 1.102E-06 |

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-PROPOSED ACTION

| Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks |                       |                             |             |        |                |                  |                             |                               |              |
|-----------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|-------------|--------|----------------|------------------|-----------------------------|-------------------------------|--------------|
| Pollutants                                                                                          | Emission Factors      |                             | Assumptions |        |                |                  | Results by Pollutant        |                               |              |
|                                                                                                     | Passenger Cars g/mile | Pick-up Trucks, SUVs g/mile | Mile/day    | Day/yr | Number of cars | Number of trucks | Total Emissions Cars tns/yr | Total Emissions Trucks tns/yr | Total tns/yr |
| VOCs                                                                                                | 1.36                  | 1.61                        | 60          | 240    | 15             | 15               | 0.32                        | 0.38                          | 0.71         |
| CO                                                                                                  | 12.4                  | 15.7                        | 60          | 240    | 15             | 15               | 2.95                        | 3.74                          | 6.69         |
| NOx                                                                                                 | 0.95                  | 1.22                        | 60          | 240    | 15             | 15               | 0.23                        | 0.29                          | 0.52         |
| PM-10                                                                                               | 0.0052                | 0.0065                      | 60          | 240    | 15             | 15               | 0.00                        | 0.00                          | 0.00         |
| PM 2.5                                                                                              | 0.0049                | 0.006                       | 60          | 240    | 15             | 15               | 0.00                        | 0.00                          | 0.00         |

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

| Commute to Tower Sites for Maintenance |                       |                             |             |        |                |                  |                             |                               |              |
|----------------------------------------|-----------------------|-----------------------------|-------------|--------|----------------|------------------|-----------------------------|-------------------------------|--------------|
| Pollutants                             | Emission Factors      |                             | Assumptions |        |                |                  | Results by Pollutant        |                               |              |
|                                        | Passenger Cars g/mile | Pick-up Trucks, SUVs g/mile | Mile/day    | Day/yr | Number of Cars | Number of trucks | Total Emissions cars tns/yr | Total Emissions Trucks tns/yr | Total tns/yr |
| VOCs                                   | 1.36                  | 1.61                        | 120         | 12     | 0              | 2                | -                           | 0.01                          | 0.01         |
| CO                                     | 12.4                  | 15.7                        | 120         | 12     | 0              | 2                | -                           | 0.05                          | 0.05         |
| NOx                                    | 0.95                  | 1.22                        | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |
| PM-10                                  | 0.0052                | 0.0065                      | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |
| PM 2.5                                 | 0.0049                | 0.006                       | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |

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

CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION

**Construction Fugitive Dust Emissions**

**Construction Fugitive Dust Emission Factors**

|                                 | <b>Emission Factor</b>   | <b>Units</b> | <b>Source</b>                |
|---------------------------------|--------------------------|--------------|------------------------------|
| General Construction Activities | 0.19 ton PM10/acre-month |              | MRI 1996; EPA 2001; EPA 2006 |
| New Road Construction           | 0.42 ton PM10/acre-month |              | MRI 1996; EPA 2001; EPA 2006 |

**PM2.5 Emissions**

|                  |      |                                             |                    |
|------------------|------|---------------------------------------------|--------------------|
| PM2.5 Multiplier | 0.10 | (10% of PM10 emissions assumed to be PM2.5) | EPA 2001; EPA 2006 |
|------------------|------|---------------------------------------------|--------------------|

**Control Efficiency**

|      |                                                              |                    |
|------|--------------------------------------------------------------|--------------------|
| 0.50 | (assume 50% control efficiency for PM10 and PM2.5 emissions) | EPA 2001; EPA 2006 |
|------|--------------------------------------------------------------|--------------------|

**Project Assumptions**

**Construction Area (0.19 ton PM10/acre-month)**

|                                  |      |        |
|----------------------------------|------|--------|
| Duration of Construction Project | 12   | months |
| Length                           | 0    | miles  |
| Length (converted)               | 0    | feet   |
| Width                            | 0    | feet   |
| Area                             | 4.60 | acres  |

**Conversion Factors**

|             |                |
|-------------|----------------|
| 0.000022957 | acres per feet |
| 5280        | feet per mile  |

**Staging Areas**

|                                  |      |        |
|----------------------------------|------|--------|
| Duration of Construction Project |      | months |
| Length                           |      | miles  |
| Length (converted)               |      | feet   |
| Width                            |      | feet   |
| Area                             | 0.00 | acres  |

|                                      | <b>Project Emissions (tons/year)</b> |                        |                           |                         |
|--------------------------------------|--------------------------------------|------------------------|---------------------------|-------------------------|
|                                      | <b>PM10 uncontrolled</b>             | <b>PM10 controlled</b> | <b>PM2.5 uncontrolled</b> | <b>PM2.5 controlled</b> |
| Construction Area (0.19 ton PM10/ac) | 23.18                                | 11.59                  | 2.32                      | 1.16                    |
| Staging Areas                        | 0.00                                 | 0.00                   | 0.00                      | 0.00                    |
| <b>Total</b>                         | <b>23.18</b>                         | <b>11.59</b>           | <b>2.32</b>               | <b>1.16</b>             |

## Construction Fugitive Dust Emission Factors

### General Construction Activities Emission Factor

**0.19 ton PM10/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The area based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM10/acre month for sites without large scale cut/fill operations. A worst case emission factor of 0.42 ton PM10/acre month was calculated for sites with active large scale earth moving operations. The monthly emission factors are based on 168 work hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre month emission factor by applying 25% of the large scale earthmoving emission factor (0.42 ton PM10/acre month) and 75% of the average emission factor (0.11 ton PM10/acre month).

The 0.19 ton PM10/acre month emission factor is referenced by the EPA for non residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM10/acre month emission factor represents a refinement of EPA's original AP 42 area based total suspended particle (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

### New Road Construction Emission Factor

**0.42 ton PM10/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

### PM2.5 Multiplier

**0.10**

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

### Control Efficiency for PM10 and PM2.5

**0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (EPA 2006).

### References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA 454/R 01 006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339 02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

CALCULATION SHEET-SUMMARY OF EMISSIONS-PROPOSED ACTION

| <b>Proposed Action Construction Emissions for Criteria Pollutants (tons per year)</b> |             |              |              |              |             |             |
|---------------------------------------------------------------------------------------|-------------|--------------|--------------|--------------|-------------|-------------|
| Emission Source                                                                       | VOC         | CO           | NOx          | PM 10        | PM 2.5      | SO2         |
| Combustible Emissions                                                                 | 1.94        | 8.08         | 19.79        | 1.63         | 1.58        | 2.59        |
| Construction Site-Fugitive PM-10                                                      | NA          | NA           | NA           | 11.59        | 1.16        | NA          |
| Construction Workers Commuter & Trucking                                              | 0.73        | 6.83         | 1.07         | 0.02         | 0.02        | NA          |
| <b>Total emissions</b>                                                                | <b>2.67</b> | <b>14.91</b> | <b>20.86</b> | <b>13.23</b> | <b>2.76</b> | <b>2.59</b> |
| De minimis Threshold (1)                                                              | NA          | NA           | NA           | 100.00       | NA          | NA          |

1. De-minimis thresholds for Santa Cruz County, the location of the tower sites and access roads.

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-ALTERNATIVE 1

| Assumptions for Combustible Emissions |               |          |         |         |              |
|---------------------------------------|---------------|----------|---------|---------|--------------|
| Type of Construction Equipment        | Num. of Units | HP Rated | Hrs/day | Days/yr | Total hp-hrs |
| Water Truck                           | 2             | 300      | 8       | 240     | 1152000      |
| Diesel Road Compactors                | 1             | 100      | 8       | 90      | 72000        |
| Diesel Dump Truck                     | 1             | 300      | 8       | 120     | 288000       |
| Diesel Excavator                      | 1             | 300      | 8       | 120     | 288000       |
| Diesel Hole Trenchers                 | 1             | 175      | 8       | 120     | 168000       |
| Diesel Bore/Drill Rigs                | 1             | 300      | 8       | 120     | 288000       |
| Diesel Cement & Mortar Mixers         | 1             | 300      | 8       | 90      | 216000       |
| Diesel Cranes                         | 2             | 175      | 8       | 90      | 252000       |
| Diesel Graders                        | 1             | 300      | 8       | 90      | 216000       |
| Diesel Tractors/Loaders/Backhoes      | 1             | 100      | 8       | 180     | 144000       |
| Diesel Bull Dozers                    | 2             | 300      | 8       | 40      | 192000       |
| Diesel Front End Loaders              | 1             | 300      | 8       | 40      | 96000        |
| Diesel Fork Lifts                     | 2             | 100      | 8       | 40      | 64000        |
| Diesel Generator Set                  | 6             | 40       | 8       | 40      | 76800        |

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

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-ALTERNATIVE 1

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

| Emission Calculations            |              |              |               |               |                |              |                 |
|----------------------------------|--------------|--------------|---------------|---------------|----------------|--------------|-----------------|
| Type of Construction Equipment   | VOC tons/yr  | CO tons/yr   | NOx tons/yr   | PM-10 tons/yr | PM-2.5 tons/yr | SO2 tons/yr  | CO2 tons/yr     |
| Water Truck                      | 0.559        | 2.628        | 6.970         | 0.520         | 0.508          | 0.939        | 680.454         |
| Diesel Road Paver                | 0.029        | 0.117        | 0.389         | 0.027         | 0.026          | 0.059        | 42.544          |
| Diesel Dump Truck                | 0.140        | 0.657        | 1.742         | 0.130         | 0.127          | 0.235        | 170.114         |
| Diesel Excavator                 | 0.108        | 0.413        | 1.460         | 0.102         | 0.098          | 0.235        | 170.209         |
| Diesel Hole Cleaners\Trenchers   | 0.094        | 0.452        | 1.076         | 0.085         | 0.081          | 0.137        | 99.196          |
| Diesel Bore/Drill Rigs           | 0.190        | 0.727        | 2.269         | 0.159         | 0.156          | 0.232        | 168.114         |
| Diesel Cement & Mortar Mixers    | 0.145        | 0.552        | 1.733         | 0.114         | 0.112          | 0.174        | 126.086         |
| Diesel Cranes                    | 0.122        | 0.361        | 1.588         | 0.094         | 0.092          | 0.203        | 147.239         |
| Diesel Graders                   | 0.083        | 0.324        | 1.126         | 0.079         | 0.076          | 0.176        | 127.657         |
| Diesel Tractors/Loaders/Backhoes | 0.294        | 1.303        | 1.146         | 0.217         | 0.211          | 0.151        | 109.669         |
| Diesel Bull Dozers               | 0.076        | 0.292        | 1.007         | 0.070         | 0.068          | 0.157        | 113.472         |
| Diesel Front End Loaders         | 0.040        | 0.164        | 0.529         | 0.037         | 0.036          | 0.078        | 56.726          |
| Diesel Aerial Lifts              | 0.140        | 0.547        | 0.604         | 0.098         | 0.095          | 0.067        | 48.721          |
| Diesel Generator Set             | 0.102        | 0.318        | 0.505         | 0.062         | 0.060          | 0.069        | 49.705          |
| <b>Total Emissions</b>           | <b>2.123</b> | <b>8.855</b> | <b>22.144</b> | <b>1.794</b>  | <b>1.746</b>   | <b>2.910</b> | <b>2109.905</b> |

|                    |           |
|--------------------|-----------|
| Conversion factors |           |
| Grams to tons      | 1.102E-06 |



CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-ALTERNATIVE 1

| Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks |                       |                             |             |        |                |                  |                             |                               |              |
|-----------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|-------------|--------|----------------|------------------|-----------------------------|-------------------------------|--------------|
| Pollutants                                                                                          | Emission Factors      |                             | Assumptions |        |                |                  | Results by Pollutant        |                               |              |
|                                                                                                     | Passenger Cars g/mile | Pick-up Trucks, SUVs g/mile | Mile/day    | Day/yr | Number of cars | Number of trucks | Total Emissions Cars tns/yr | Total Emissions Trucks tns/yr | Total tns/yr |
| VOCs                                                                                                | 1.36                  | 1.61                        | 60          | 240    | 15             | 15               | 0.32                        | 0.38                          | 0.71         |
| CO                                                                                                  | 12.4                  | 15.7                        | 60          | 240    | 15             | 15               | 2.95                        | 3.74                          | 6.69         |
| NOx                                                                                                 | 0.95                  | 1.22                        | 60          | 240    | 15             | 15               | 0.23                        | 0.29                          | 0.52         |
| PM-10                                                                                               | 0.0052                | 0.0065                      | 60          | 240    | 15             | 15               | 0.00                        | 0.00                          | 0.00         |
| PM 2.5                                                                                              | 0.0049                | 0.006                       | 60          | 240    | 15             | 15               | 0.00                        | 0.00                          | 0.00         |

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

| Commute to Tower Sites for Maintenance |                       |                             |             |        |                |                  |                             |                               |              |
|----------------------------------------|-----------------------|-----------------------------|-------------|--------|----------------|------------------|-----------------------------|-------------------------------|--------------|
| Pollutants                             | Emission Factors      |                             | Assumptions |        |                |                  | Results by Pollutant        |                               |              |
|                                        | Passenger Cars g/mile | Pick-up Trucks, SUVs g/mile | Mile/day    | Day/yr | Number of Cars | Number of trucks | Total Emissions cars tns/yr | Total Emissions Trucks tns/yr | Total tns/yr |
| VOCs                                   | 1.36                  | 1.61                        | 120         | 12     | 0              | 2                | -                           | 0.01                          | 0.01         |
| CO                                     | 12.4                  | 15.7                        | 120         | 12     | 0              | 2                | -                           | 0.05                          | 0.05         |
| NOx                                    | 0.95                  | 1.22                        | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |
| PM-10                                  | 0.0052                | 0.0065                      | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |
| PM 2.5                                 | 0.0049                | 0.006                       | 120         | 12     | 0              | 2                | -                           | 0.00                          | 0.00         |

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

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 1

**Construction Fugitive Dust Emissions**

**Construction Fugitive Dust Emission Factors**

|                                 | <b>Emission Factor</b>   | <b>Units</b> | <b>Source</b>                |
|---------------------------------|--------------------------|--------------|------------------------------|
| General Construction Activities | 0.19 ton PM10/acre-month |              | MRI 1996; EPA 2001; EPA 2006 |
| New Road Construction           | 0.42 ton PM10/acre-month |              | MRI 1996; EPA 2001; EPA 2006 |

**PM2.5 Emissions**

|                  |      |                                             |                    |
|------------------|------|---------------------------------------------|--------------------|
| PM2.5 Multiplier | 0.10 | (10% of PM10 emissions assumed to be PM2.5) | EPA 2001; EPA 2006 |
|------------------|------|---------------------------------------------|--------------------|

**Control Efficiency**

|      |                                                              |                    |
|------|--------------------------------------------------------------|--------------------|
| 0.50 | (assume 50% control efficiency for PM10 and PM2.5 emissions) | EPA 2001; EPA 2006 |
|------|--------------------------------------------------------------|--------------------|

**Project Assumptions**

**Construction Area (0.19 ton PM10/acre-month)**

|                                  |      |        |
|----------------------------------|------|--------|
| Duration of Construction Project | 12   | months |
| Length                           | 0    | miles  |
| Length (converted)               | 0    | feet   |
| Width                            | 0    | feet   |
| Area                             | 6.00 | acres  |

**Conversion Factors**

|             |                |
|-------------|----------------|
| 0.000022957 | acres per feet |
| 5280        | feet per mile  |

**Staging Areas**

|                                  |      |        |
|----------------------------------|------|--------|
| Duration of Construction Project |      | months |
| Length                           |      | miles  |
| Length (converted)               |      | feet   |
| Width                            |      | feet   |
| Area                             | 0.00 | acres  |

|                                      | <b>Project Emissions (tons/year)</b> |                        |                           |                         |
|--------------------------------------|--------------------------------------|------------------------|---------------------------|-------------------------|
|                                      | <b>PM10 uncontrolled</b>             | <b>PM10 controlled</b> | <b>PM2.5 uncontrolled</b> | <b>PM2.5 controlled</b> |
| Construction Area (0.19 ton PM10/ac) | 30.24                                | 15.12                  | 3.02                      | 1.51                    |
| Staging Areas                        | 0.00                                 | 0.00                   | 0.00                      | 0.00                    |
| <b>Total</b>                         | <b>30.24</b>                         | <b>15.12</b>           | <b>3.02</b>               | <b>1.51</b>             |

## Construction Fugitive Dust Emission Factors

### General Construction Activities Emission Factor

**0.19 ton PM10/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The area based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM10/acre month for sites without large scale cut/fill operations. A worst case emission factor of 0.42 ton PM10/acre month was calculated for sites with active large scale earth moving operations. The monthly emission factors are based on 168 work hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions from Construction Operations, calculated the 0.19 ton PM10/acre month emission factor by applying 25% of the large scale earthmoving emission factor (0.42 ton PM10/acre month) and 75% of the average emission factor (0.11 ton PM10/acre month).

The 0.19 ton PM10/acre month emission factor is referenced by the EPA for non residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM10/acre month emission factor represents a refinement of EPA's original AP 42 area based total suspended particle (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District and the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas.

### New Road Construction Emission Factor

**0.42 ton PM10/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst case conditions emission factor from the MRI 1996 study described above (0.42 tons PM10/acre month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM10/acre month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

### PM2.5 Multiplier

**0.10**

PM2.5 emissions are estimated by applying a particle size multiplier of 0.10 to PM10 emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

### Control Efficiency for PM10 and PM2.5

**0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM10 and PM2.5 in PM nonattainment areas. Wetting controls will be applied during project construction (EPA 2006).

### References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA 454/R 01 006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339 02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 1

| <b>Proposed Action Construction Emissions for Criteria Pollutants (tons per year)</b> |             |              |              |              |             |             |
|---------------------------------------------------------------------------------------|-------------|--------------|--------------|--------------|-------------|-------------|
| Emission Source                                                                       | VOC         | CO           | NOx          | PM 10        | PM 2.5      | SO2         |
| Combustible Emissions                                                                 | 2.12        | 8.85         | 22.14        | 1.79         | 1.75        | 2.91        |
| Construction Site-Fugitive PM-10                                                      | NA          | NA           | NA           | 15.12        | 1.51        | NA          |
| Construction Workers Commuter & Trucking                                              | 0.73        | 6.83         | 1.07         | 0.02         | 0.02        | NA          |
| <b>Total emissions</b>                                                                | <b>2.86</b> | <b>15.69</b> | <b>23.22</b> | <b>16.93</b> | <b>3.28</b> | <b>2.91</b> |
| De minimis Threshold (1)                                                              | NA          | NA           | NA           | 100.00       | NA          | NA          |

1. De-minimis thresholds for Santa Cruz County, the location of the tower sites and access roads.

*APPENDIX E*  
*VIEWSHED ANALYSIS*

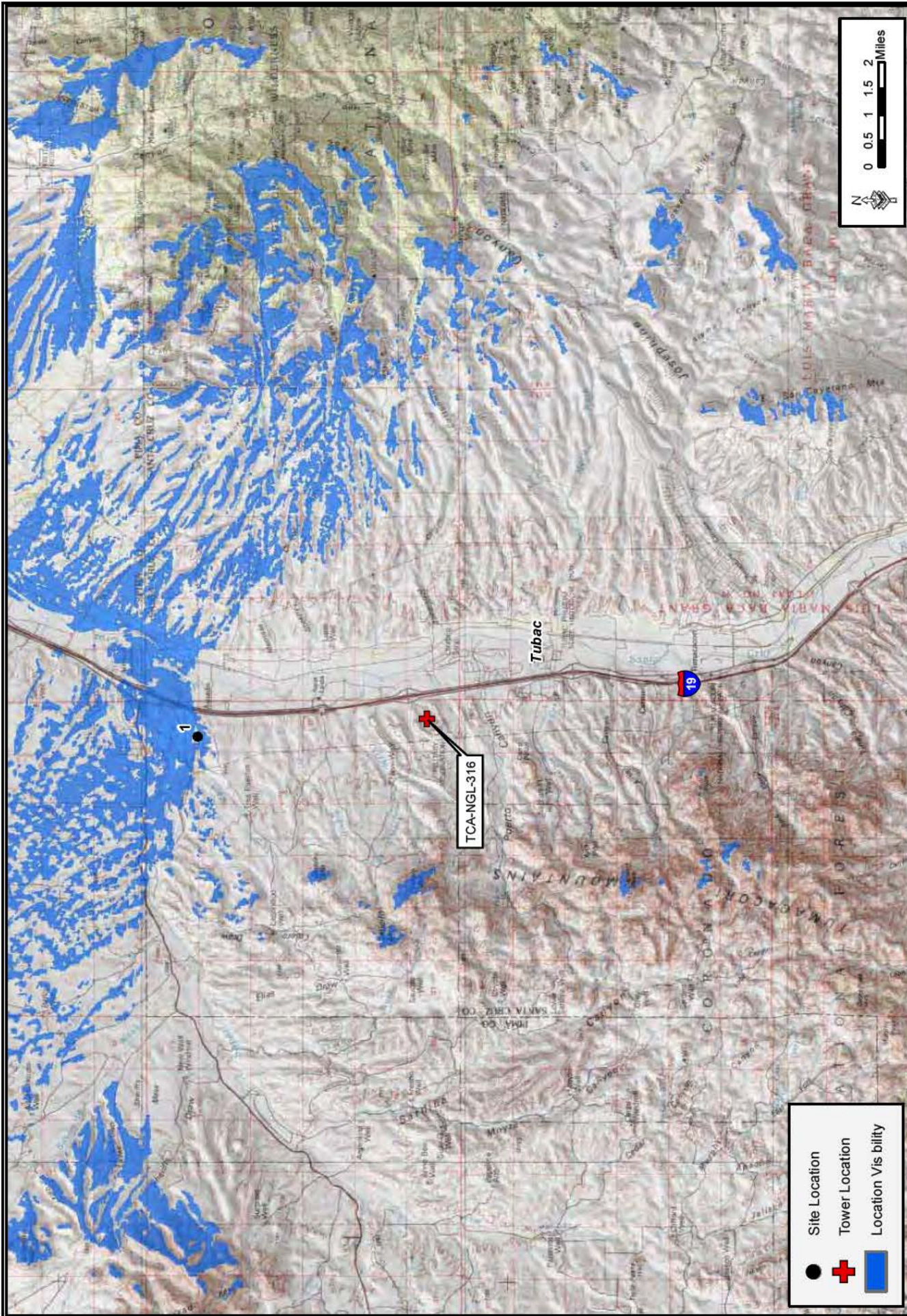




A viewshed analysis was performed from 15 observation points in the project area of the three proposed towers. The observation points used in this analysis were located along roads, populated areas, and higher elevation points and (i.e., Saucito Mountain), and where the public would visit for a wilderness experience. Additionally, a line-of-sight analysis was performed from each of the 15 observation points to verify the viewshed visibility. Both the viewshed and line-of-sight analyses were conducted using a three dimensional Geographic Information System. Both the height of the tower and observer were used in the analysis. A height of 6 feet was used for the observer. The following maps depict the viewshed of each proposed tower site and the area hi-lighted in blue indicates the area that could be seen from the observation points.

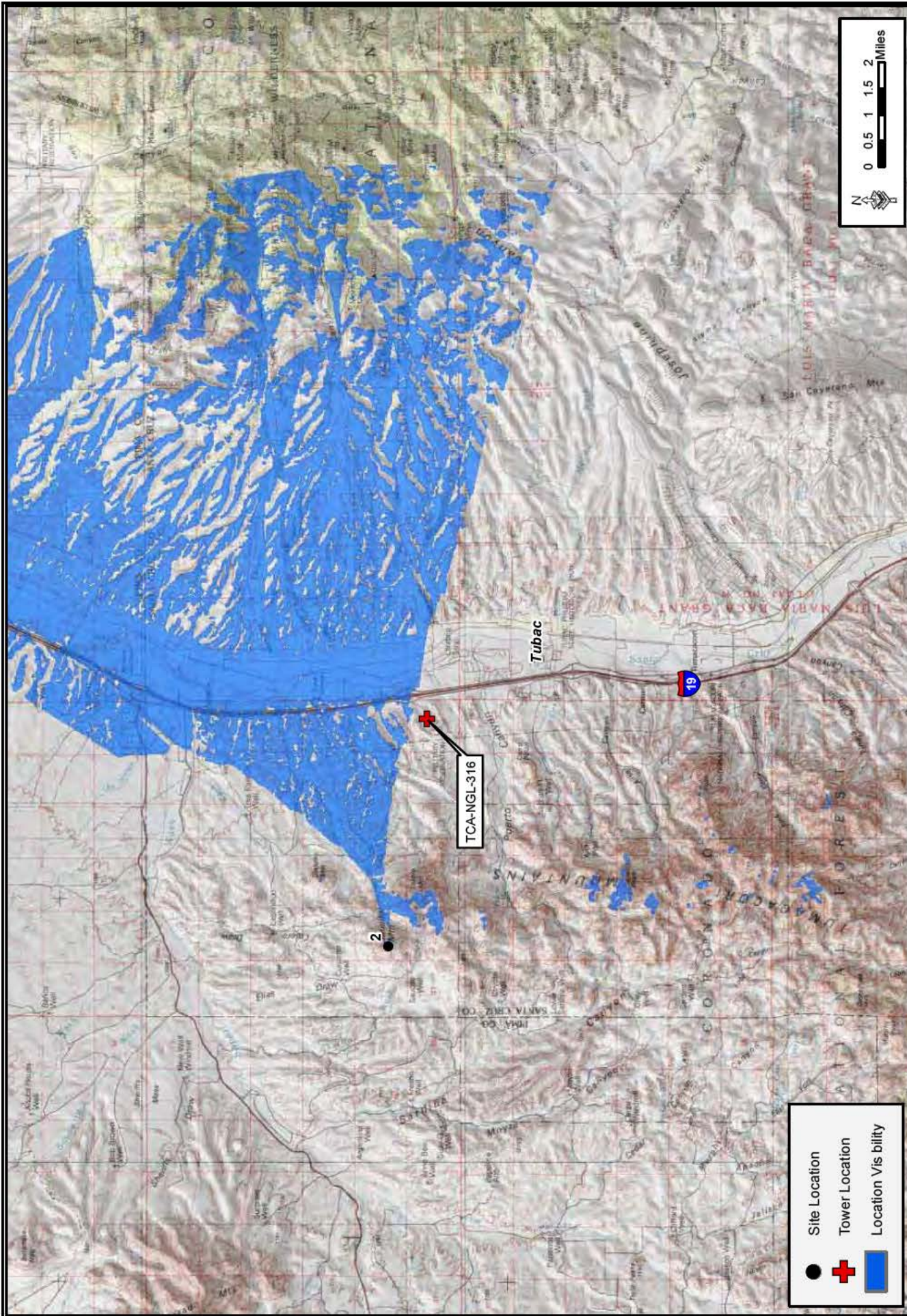




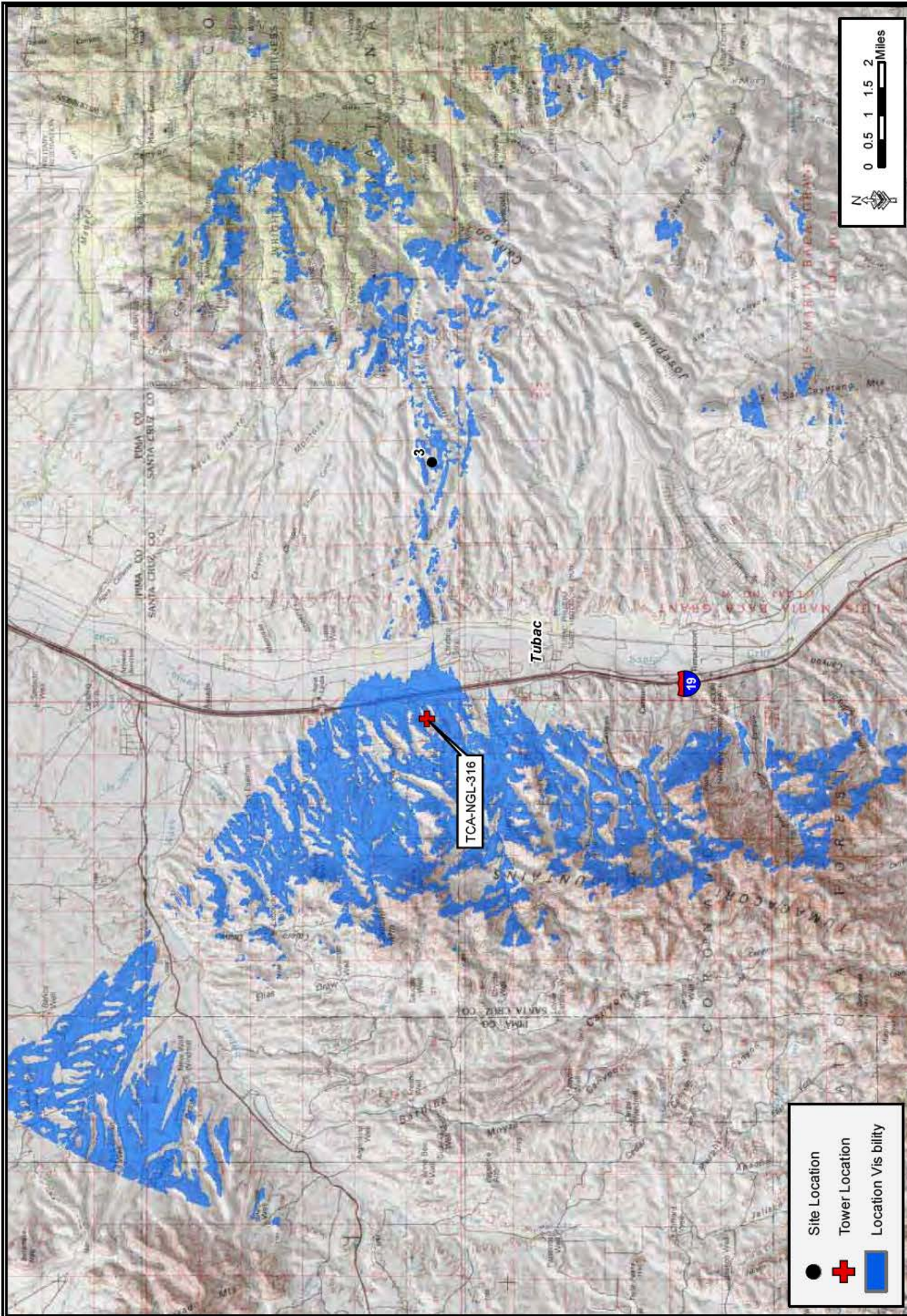


- Site Location
- Tower Location
- Location Visiblity

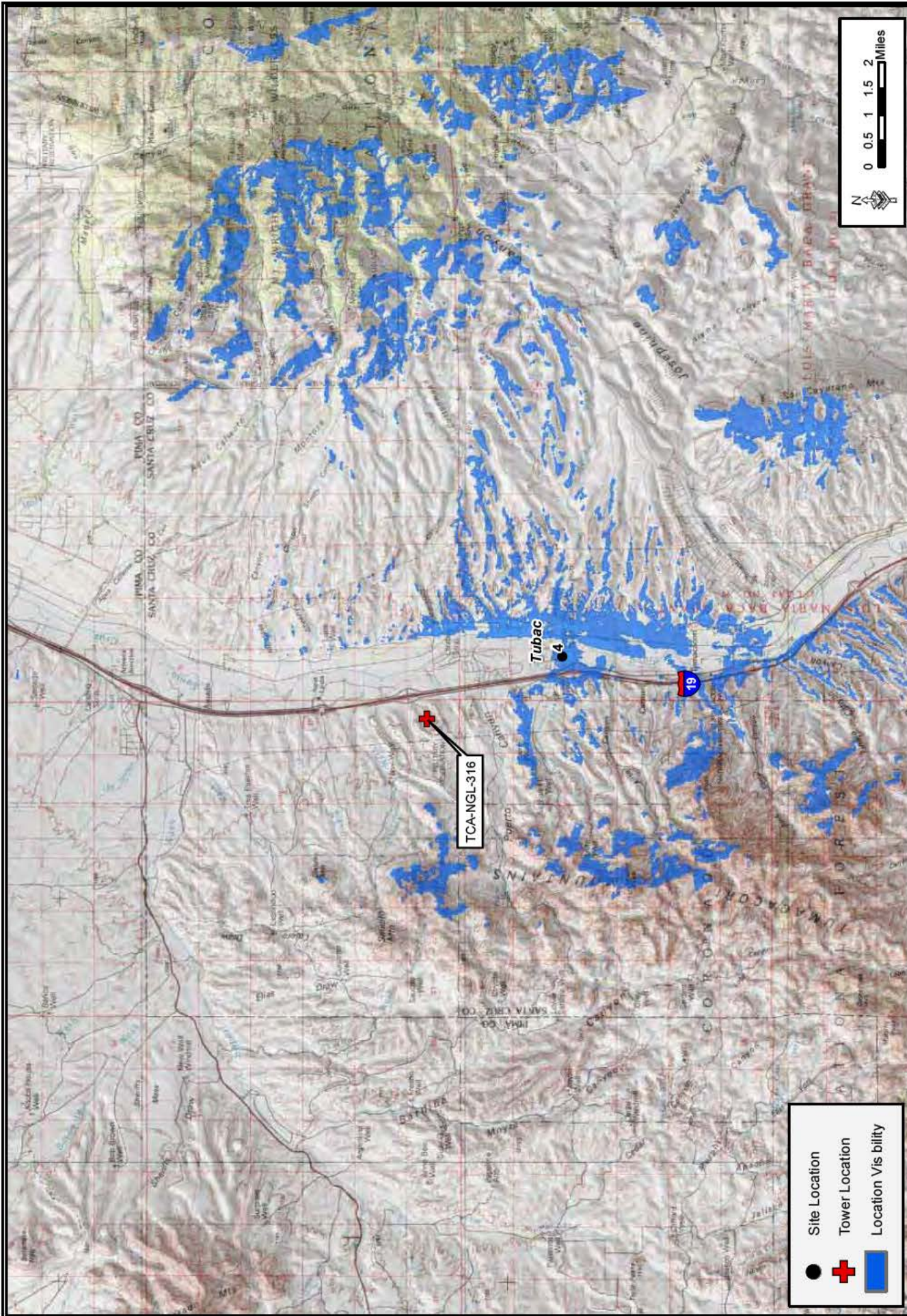
Viewshed Analysis of Location 1



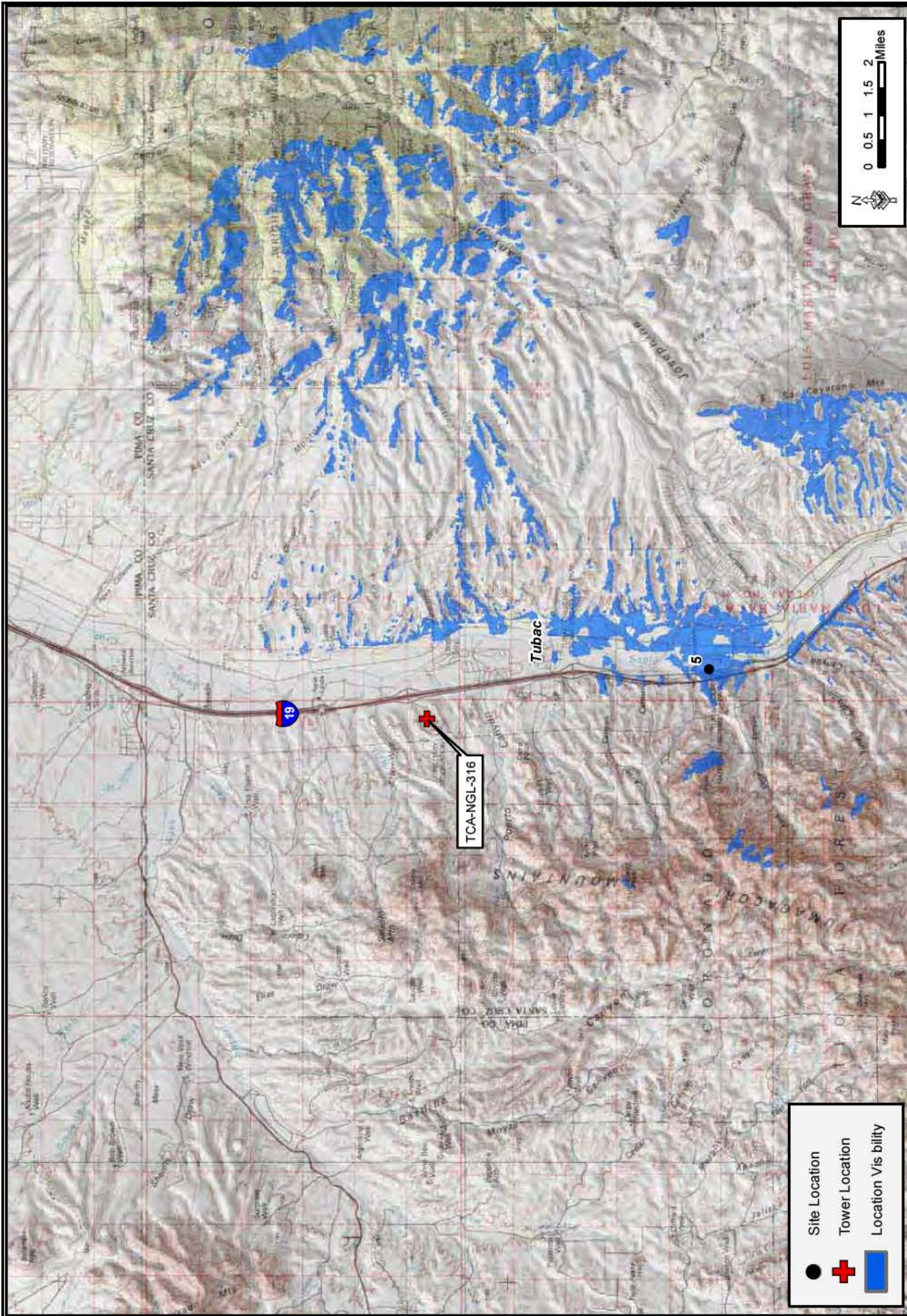
Viewshed Analysis of Location 2



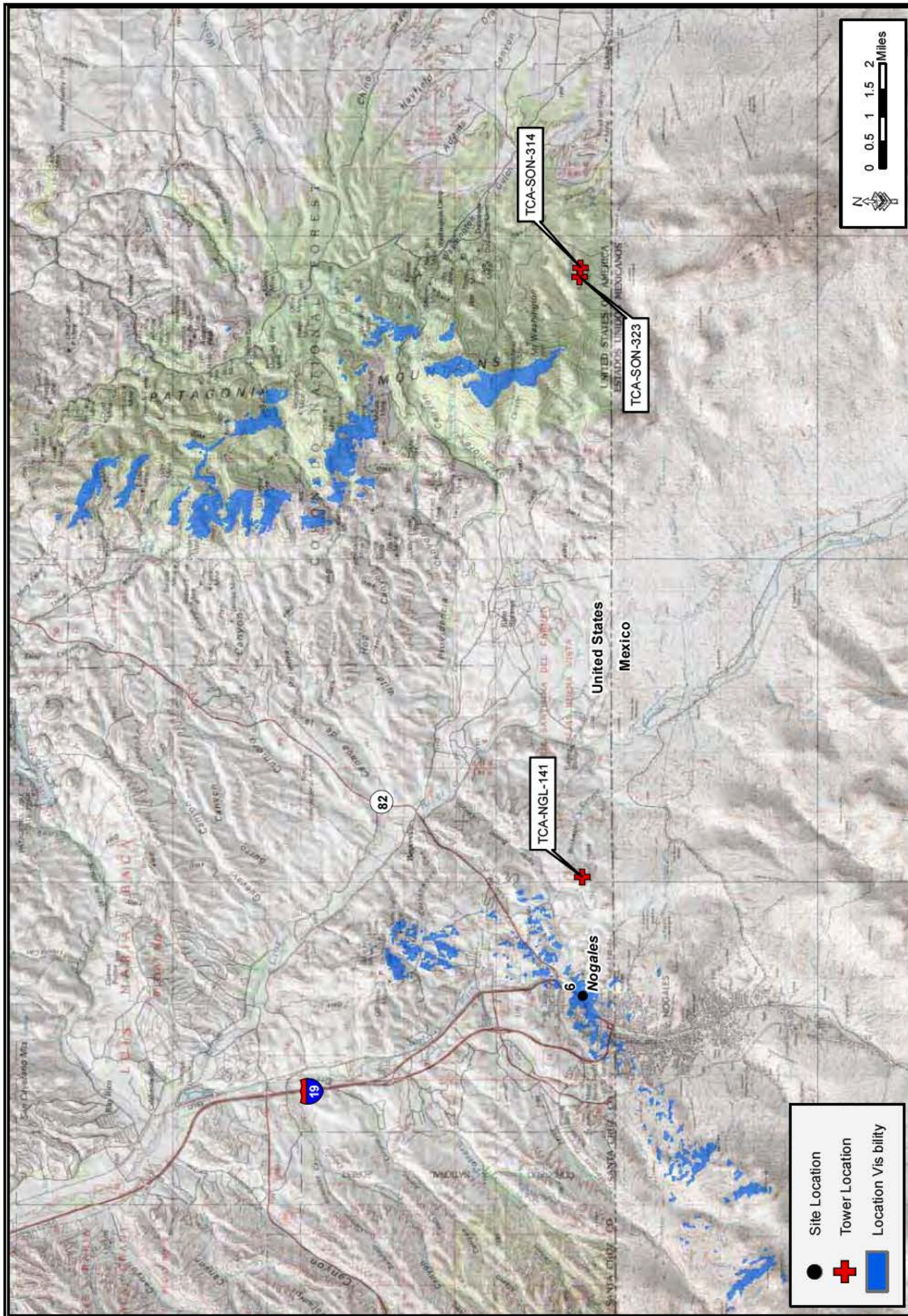
Viewshed Analysis of Location 3



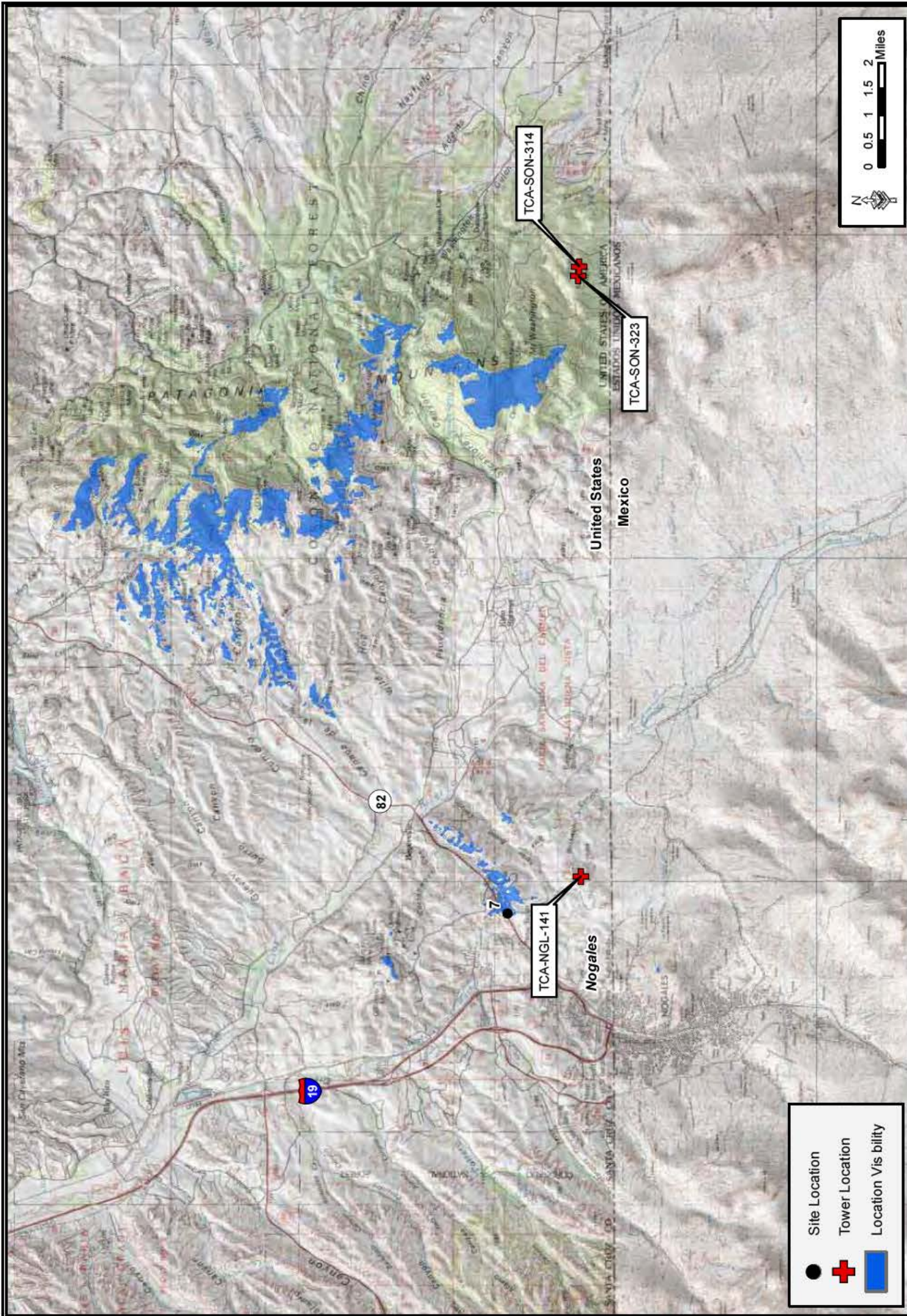
Viewshed Analysis of Location 4



Viewshed Analysis of Location 5



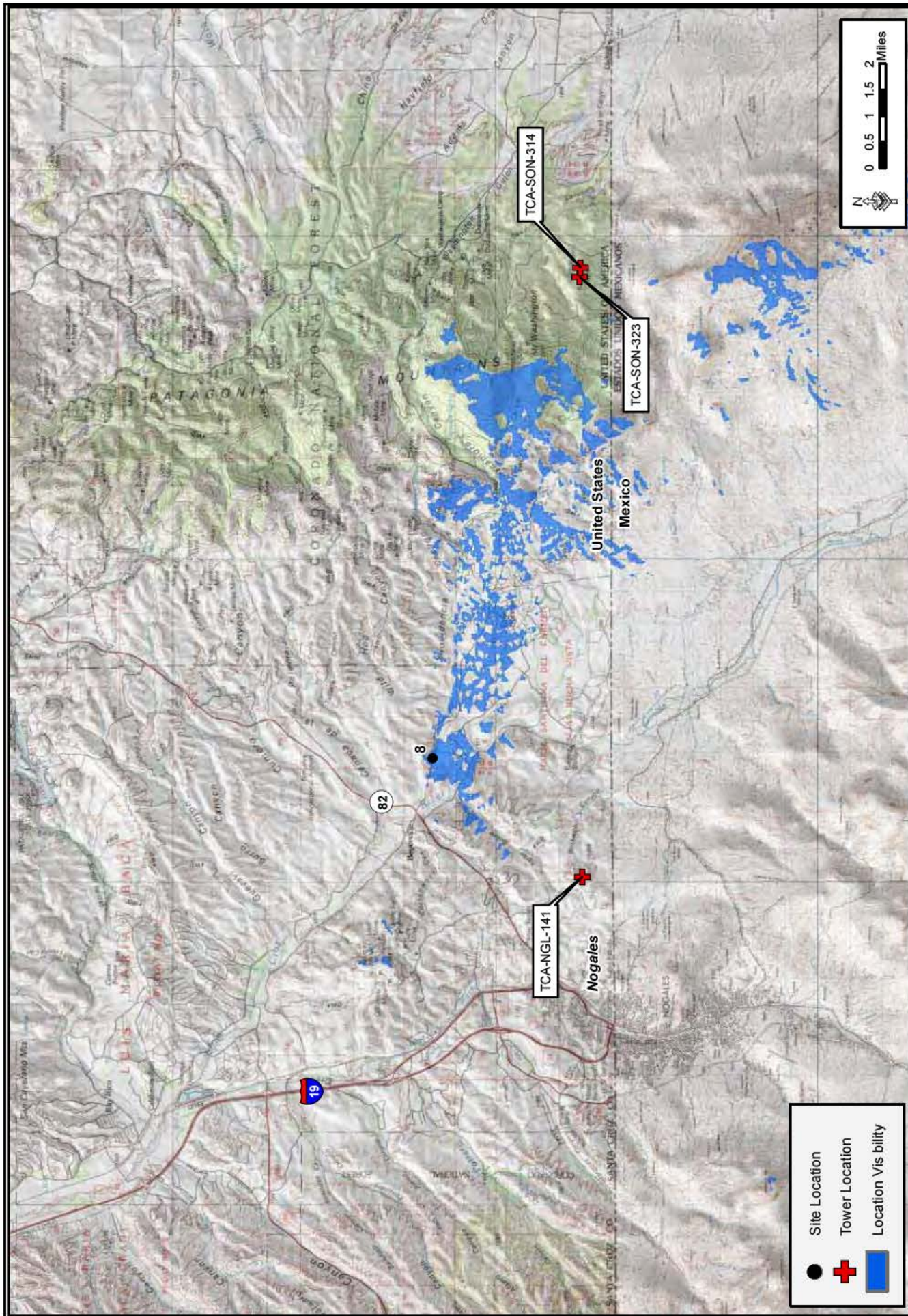
Viewshed Analysis of Location 6



- Site Location
- ⊕ Tower Location
- Location Visiblity

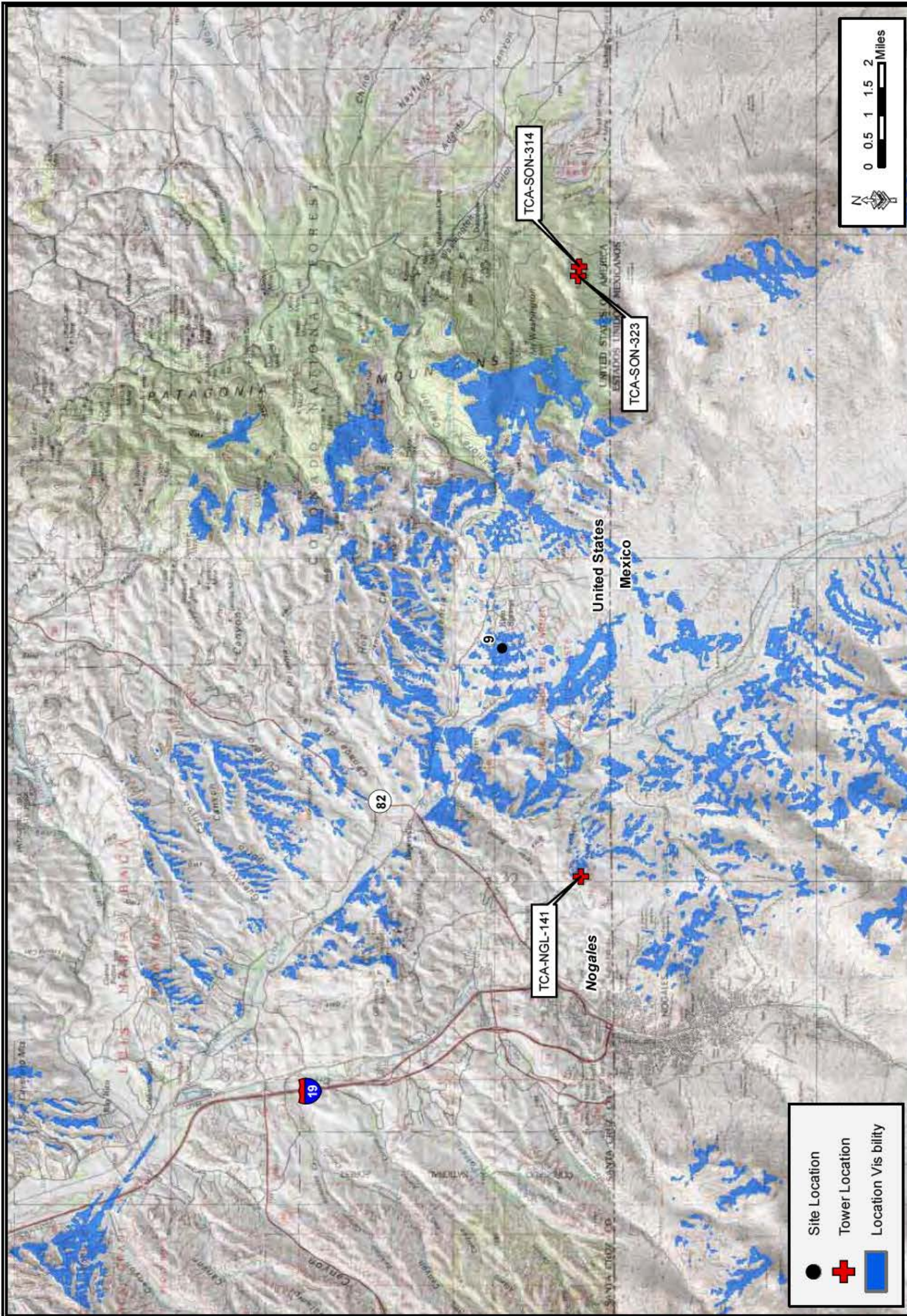


Viewshed Analysis of Location 7

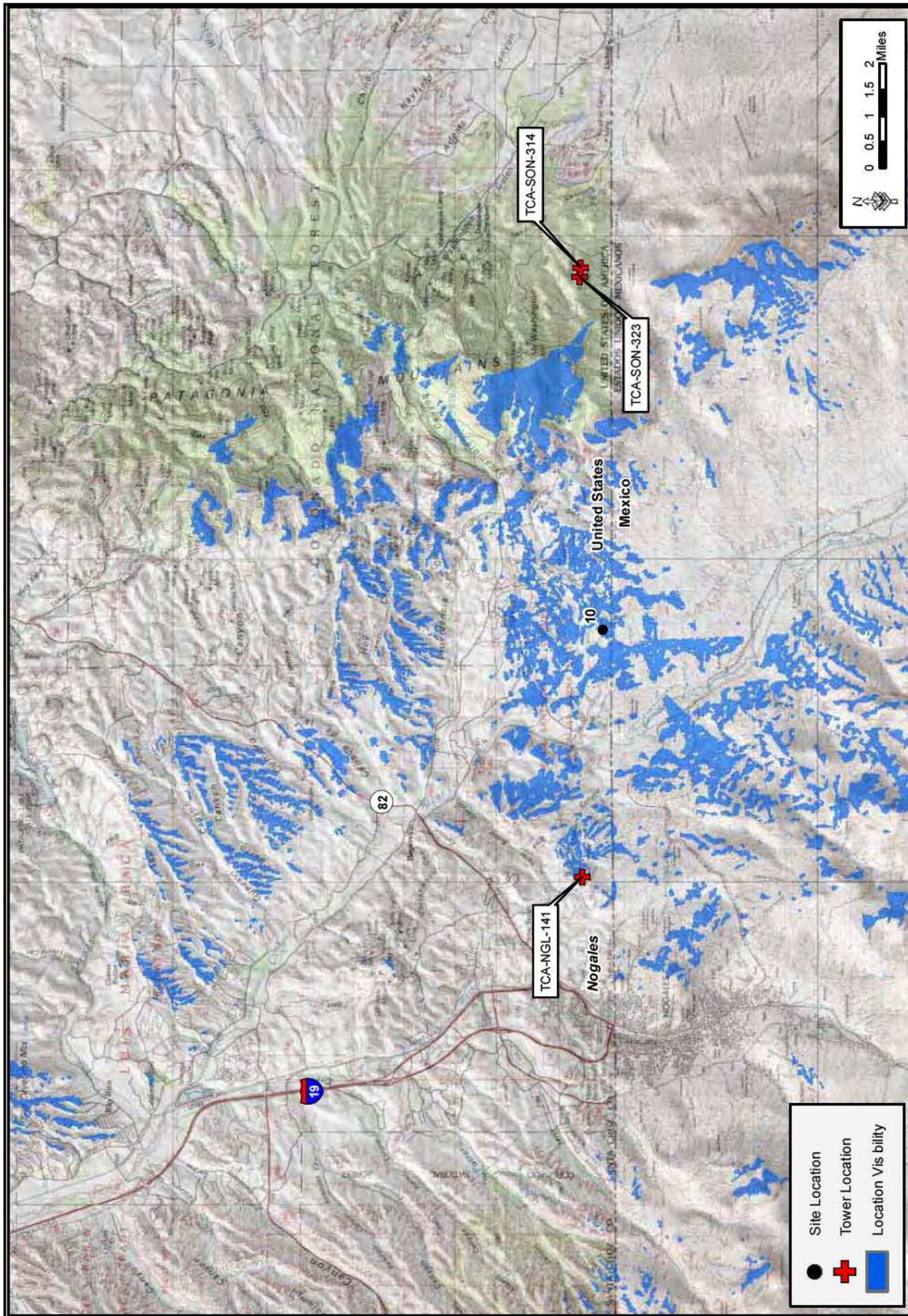


Viewshed Analysis of Location 8

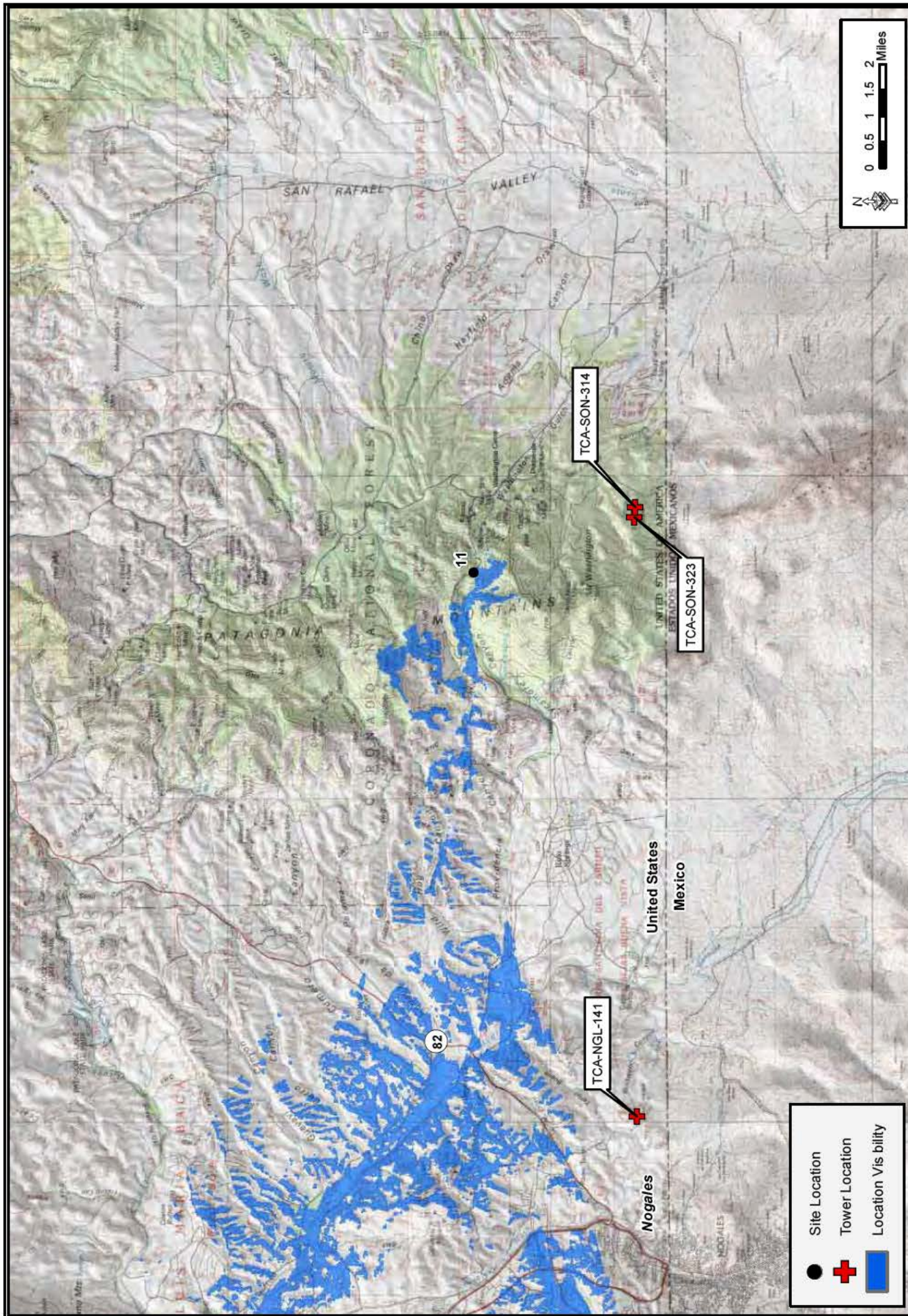




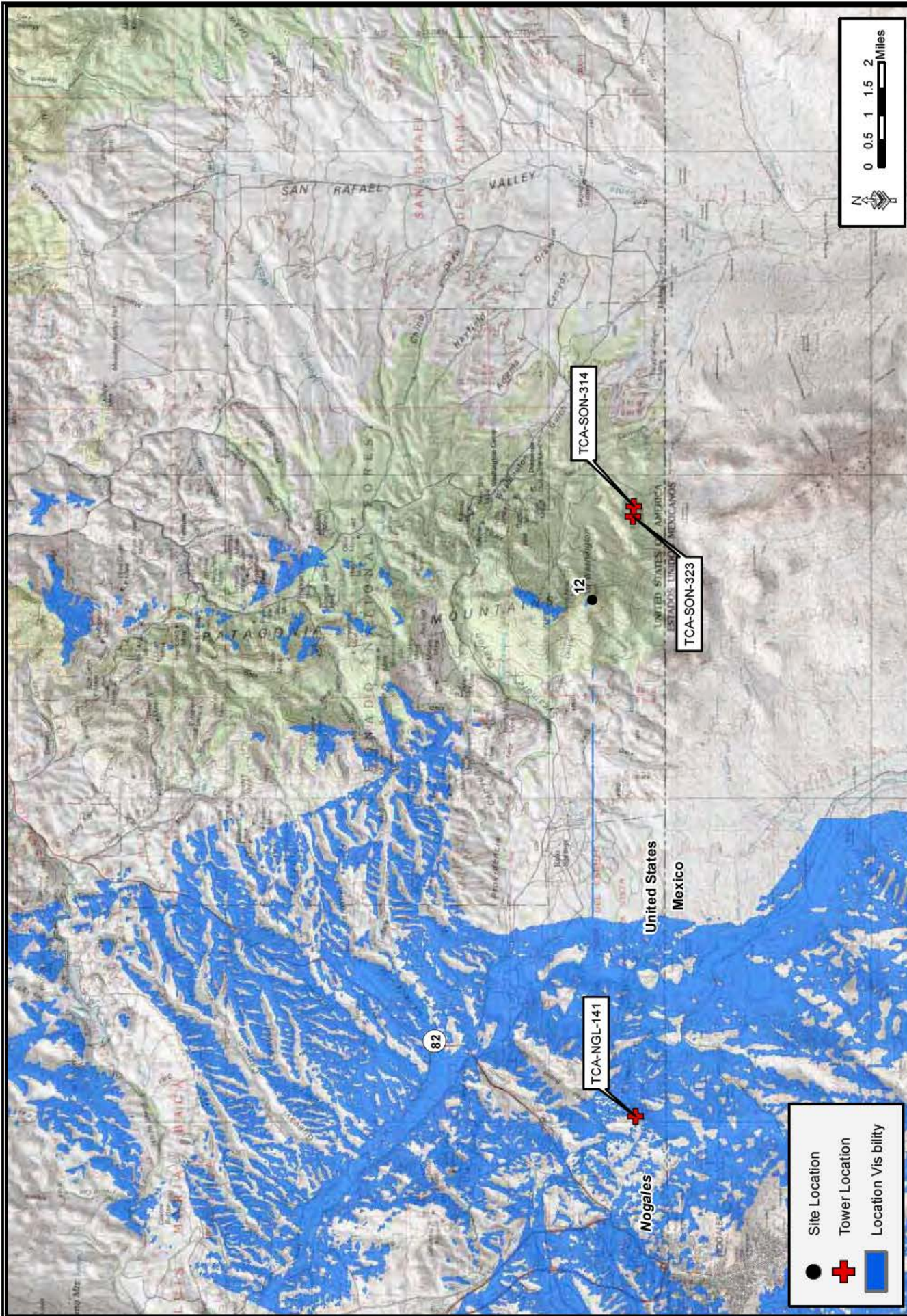
Viewshed Analysis of Location 9



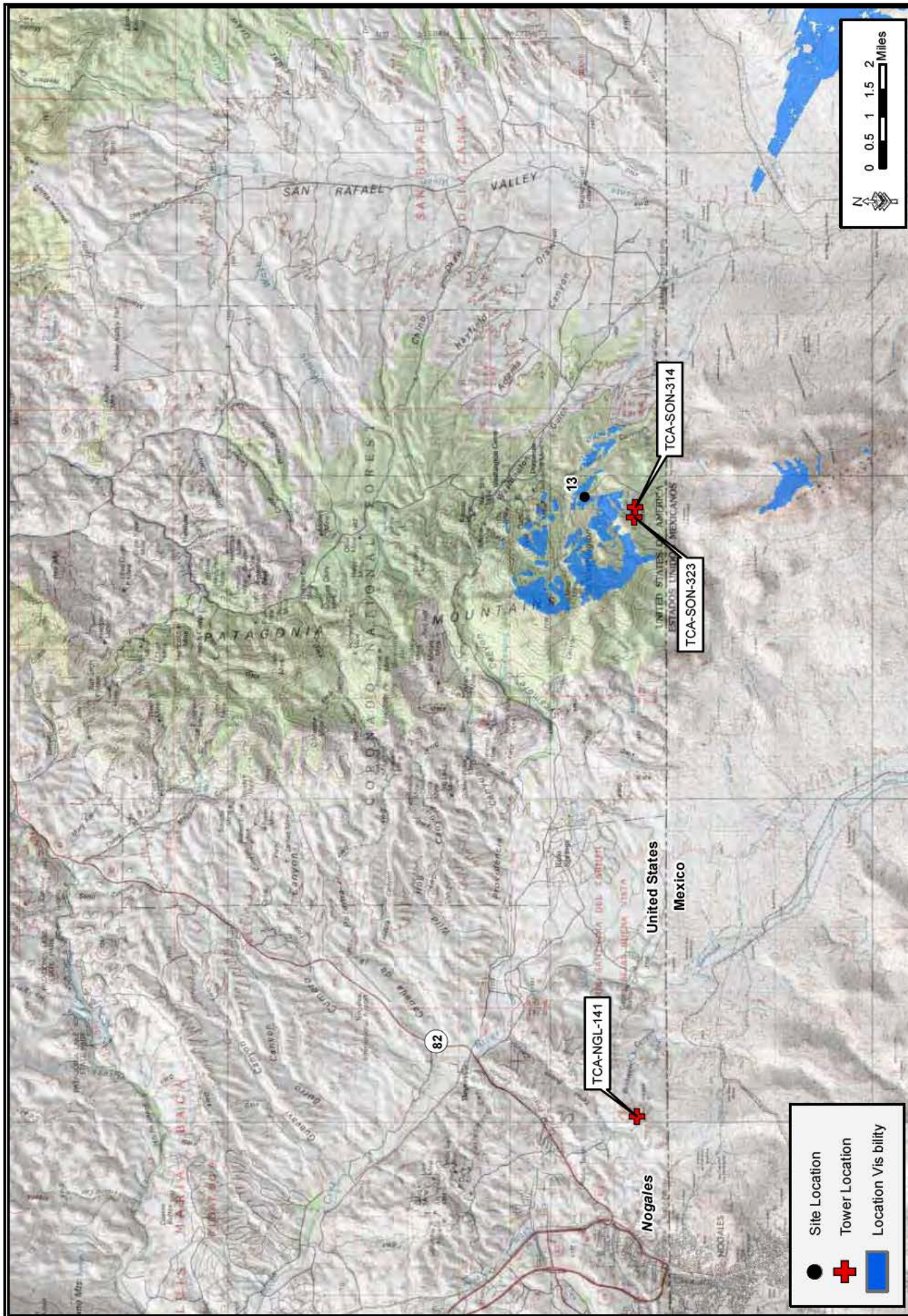
Viewshed Analysis of Location 10



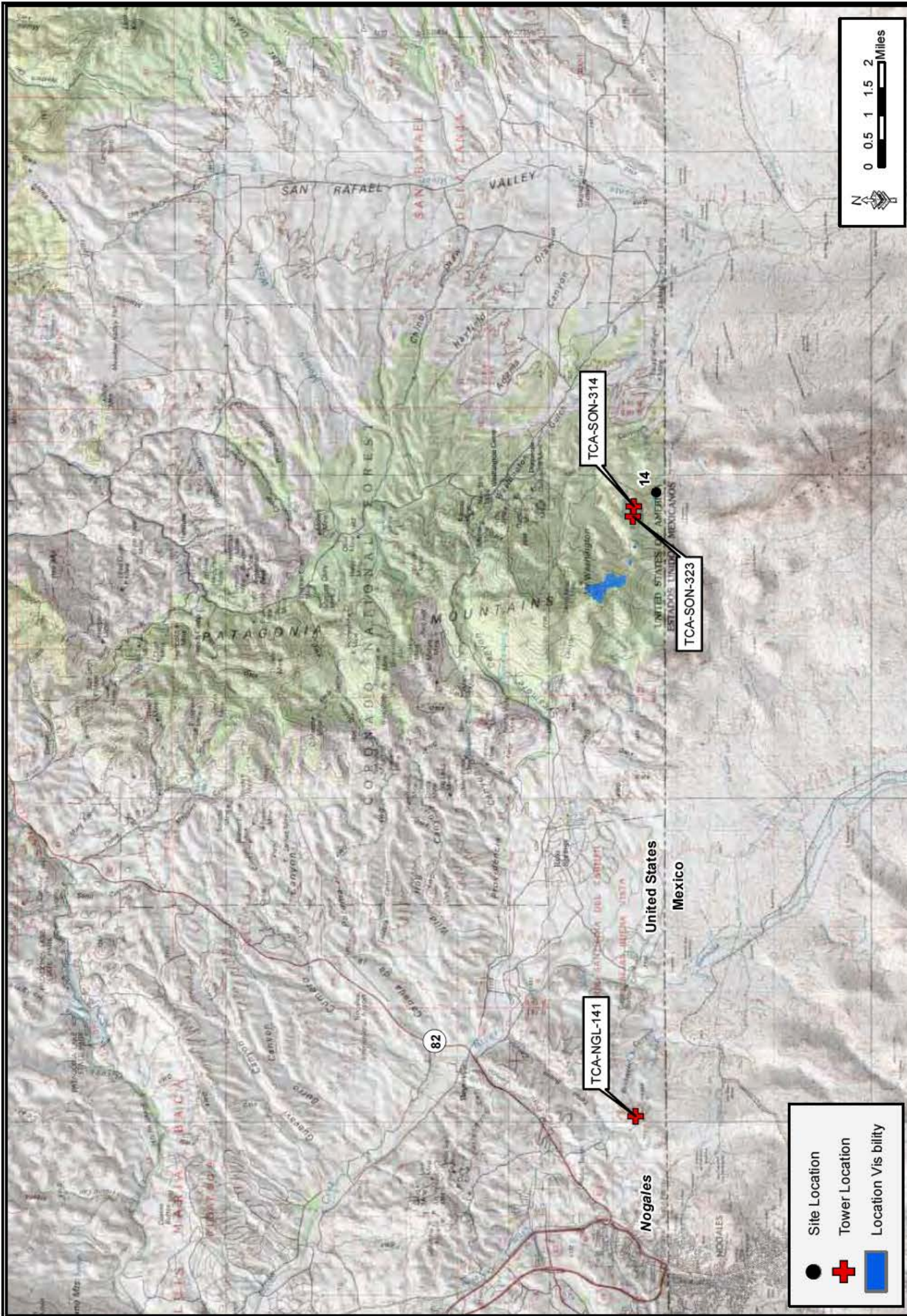
Viewshed Analysis of Location 11



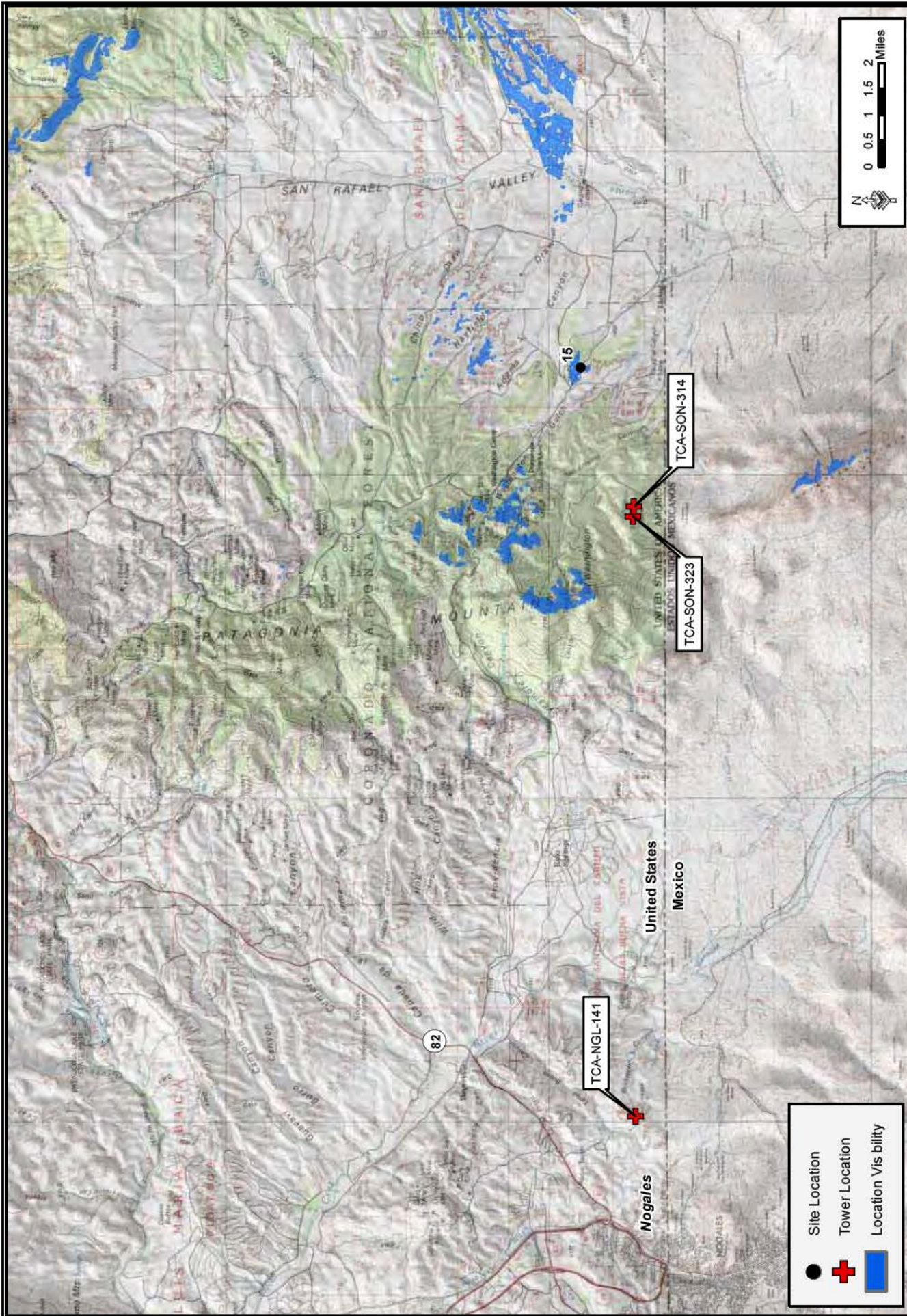
Viewshed Analysis of Location 12



Viewshed Analysis of Location 13



Viewshed Analysis of Location 14



Viewshed Analysis of Location 15







FINAL

**ENVIRONMENTAL ASSESSMENT  
FOR PROPOSED CONSTRUCTION, OPERATION, AND MAINTENANCE  
OF TACTICAL INFRASTRUCTURE  
U.S. BORDER PATROL SAN DIEGO SECTOR, CALIFORNIA**

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



BY EIS/EA/CEP/06669  
**NOVEMBER 2008**

## ABBREVIATIONS AND ACRONYMS

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|                |                                                 |
|----------------|-------------------------------------------------|
| APE            | Area of Potential Effect                        |
| AO             | Areas of Operation                              |
| BEA            | Bureau of Economic Analysis                     |
| BMP            | Best Management Practices                       |
| BLM            | Bureau of Land Management                       |
| CBP            | U.S. Customs and Border Protection              |
| CDFG           | California Department of Fish and Game          |
| CEQ            | Council on Environmental Quality                |
| CEQA           | California Environmental Quality Act            |
| CFR            | Code of Federal Regulations                     |
| CNDDDB         | California Natural Diversity Database           |
| CO             | Carbon Monoxide                                 |
| CWA            | Clean Water Act                                 |
| dB             | decibel                                         |
| dBA            | decibel – A weighted scale                      |
| DHS            | U.S. Department of Homeland Security            |
| DNL            | day-night average sound level                   |
| EA             | Environmental Assessment                        |
| ECSSO          | Engineering Construction Support Office         |
| EIS            | Environmental Impact Statement                  |
| EO             | Executive Order                                 |
| EPA            | U.S. Environmental Protection Agency            |
| ESA            | Endangered Species Act                          |
| FEMA           | Federal Emergency Management Agency             |
| FHWA           | Federal Highway Administration                  |
| FONSI          | Finding of No Significant Impact                |
| GNEB           | Good Neighbor Environmental Board               |
| IA             | illegal alien                                   |
| INS            | Immigration and Naturalization Service's        |
| JTF-6          | Joint Task Force Six                            |
| LWC            | low water crossing                              |
| MBTA           | Migratory Bird Treaty Act                       |
| MOU            | Memorandum of Understanding                     |
| NAAQS          | National Ambient Air Quality Standards          |
| NEPA           | National Environmental Policy Act               |
| NPDES          | National Pollutant Discharge Elimination System |
| NRHP           | National Register of Historic Places            |
| NWP            | Nationwide Permit                               |
| O <sub>3</sub> | Ozone                                           |
| OSHA           | Occupational Safety and Health Administration   |
| PCPI           | per capita personal income                      |
| PM-10          | Particulate<10 micrometers                      |
| PM-2.5         | Particulate<2.5 micrometers                     |

**COVER SHEET  
FINAL ENVIRONMENTAL ASSESSMENT  
FOR PROPOSED  
CONSTRUCTION, OPERATION, AND MAINTENANCE  
OF TACTICAL INFRASTRUCTURE  
U.S. DEPARTMENT OF HOMELAND SECURITY  
U.S. CUSTOMS AND BORDER PROTECTION  
U.S. BORDER PATROL  
SAN DIEGO SECTOR, CALIFORNIA**

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

**Cooperating Agencies:** Bureau of Land Management (BLM), Palm Springs-South Coast Field Office; U.S. Army Corps of Engineers (USACE) Los Angeles District; and the U.S. Section, International Boundary and Water Commission (USIBWC)

**Affected Location:** U.S./Mexico international border in San Diego County, California

**Proposed Action:** CBP proposes the construction, maintenance, and operation of tactical infrastructure, to include a primary pedestrian fence, construction roads, patrol roads, access roads, and minor improvements to existing roads along approximately 9 miles of the U.S./Mexico international border within the USBP San Diego Sector. The Proposed Action would be implemented in four discrete sections, which would range from approximately 0.03 to 1.39 miles in length.

**Report Designation:** Preliminary Final Environmental Assessment (EA).

**Abstract:** CBP proposes to construct, maintain, and operate approximately 9 miles of tactical infrastructure in discrete sections along the U.S./Mexico international border in San Diego County, California. Most of the proposed construction would be within the 60-foot wide Roosevelt Reservation, which, in this area, are public lands set aside for border enforcement and managed by the BLM. However, some of the new road construction would extend beyond the Roosevelt Reservation and affect additional Federal and private lands. Access roads would encroach upon multiple privately owned land parcels and other public lands managed by the BLM.

The EA analyzes and document potential environmental consequences associated with the Proposed Action. The analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental or socioeconomic impacts and a Finding of No Significant Impact (FONSI) has been signed.

Throughout the National Environmental Policy Act (NEPA) process, information concerning the status and progress of the Proposed Action and the EA was available via the project Web site at <http://ecso.swf.usace.army.mil> or by written request to Mr. Charles McGregor, Environmental Manager, U.S. Army Corps of Engineers, Fort Worth District, Engineering Construction Support Office, 814 Taylor Street, Room 3B10, Fort

Worth, TX 76102, Fax: (817) 886-6404. The final EA and FONSI is also available through the same access channels.

### **Privacy Notice**

Comments previously received on the original draft EA are addressed in this EA, where applicable, and made available in Appendix G. Any personal information included in comments will, therefore, be publicly available.

**FINDING OF NO SIGNIFICANT IMPACT  
FOR PROPOSED  
CONSTRUCTION, OPERATION, AND MAINTENANCE  
OF TACTICAL INFRASTRUCTURE  
U.S. DEPARTMENT OF HOMELAND SECURITY  
U.S. CUSTOMS AND BORDER PROTECTION  
U.S. BORDER PATROL  
SAN DIEGO SECTOR, CALIFORNIA**

**PROJECT HISTORY:** United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP) within U.S. Department of Homeland Security (DHS). USBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland. This is accomplished by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. During recent years, illegal aliens (IA) have cost U.S. citizens billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs, and increased insurance costs. This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) and analyzes the project alternatives and potential impacts to the human and natural environment from these alternatives.

The project components covered by this EA were previously part of a larger tactical infrastructure (TI) project, portions of which were waived from National Environmental Policy Act (NEPA) and other major Federal regulatory compliance by the Secretary of DHS under the authority granted by Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) on April 1, 2008. The Draft EA was released for public review prior to the waiver. The TI components not previously covered by the waiver are included in this EA.

**PURPOSE AND NEED:** The purpose of the Proposed Action is to increase border security within the USBP San Diego Sector with an ultimate objective of reducing illegal cross-border activity. The need for the Proposed Action is to help to deter illegal entries within the USBP San Diego Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens, drugs, and other cross border violators and contraband from entering the U.S., while providing a more safe work environment for USBP agents.

**PROPOSED ACTION:** The Proposed Action Alternative is to construct, operate, and maintain approximately 1.72 miles of new roads, 0.35 mile of primary pedestrian fence, and 7.85 miles of road widening along the U.S./Mexico international border in eastern San Diego County, California. Most of the proposed primary pedestrian fence and road improvements would be within the 60-foot wide Roosevelt Reservation, which in this area, is public lands managed by the U.S. Bureau of Land Management (BLM).

However, some of the new road construction would extend beyond the Roosevelt Reservation and affect additional Federal and private lands.

Routine maintenance of the road would be conducted as needed to maintain the driving surface following construction. Maintenance would consist of grading and leveling the road surface, applying road surface material where appropriate, and applying a soil stabilizer if needed. Repairs and maintenance of the primary pedestrian fence would occur on an as needed basis.

In addition, this alternative would include a 2.1-acre staging area (temporary impact area) to accommodate construction equipment and stockpile materials during the construction activities. Temporary construction areas are generally located in previously disturbed areas to the greatest extent practical. Upon completion of construction activities, the temporary construction area (*i.e.*, staging area) would be rehabilitated. Rehabilitation would include natural regeneration, planting with native species, and/or the distribution of dead plant material (*i.e.*, woody plant skeletons) and geologic materials (*i.e.*, rocks and boulders), as needed.

Numerous existing access roads will be used during the construction of the new road and primary pedestrian fence; however, none of these roads would require additional improvements (*i.e.*, straightening, widening, or drainage structures). The roads would be graded and brought back to pre-project conditions once the construction is complete.

**ALTERNATIVES:** Three alternatives were identified and considered during the planning stages of the proposed project: Alternative 1 (No Action Alternative), Alternative 2 (Proposed Action Alternative), and Alternative 3 (Secure Fence Act Alternative). The No Action Alternative would preclude any road improvements or fence and road construction activities, and thus, would not deter illegal entries or enhance safety or response time for USBP agents. Alternative 3 would have greater environmental impacts compared to the Proposed Action Alternative. Of the action alternatives considered, the Proposed Action Alternative would have the least environmental impacts and be the most strategically effective approach for controlling illegal traffic and satisfying the stated purpose and need. It should be noted that USBP has identified its Preferred Alternative as the Proposed Action Alternative.

**ENVIRONMENTAL CONSEQUENCES:** A total of approximately 42.23 acres of land use, geologic resources, soils, vegetation, wildlife habitat, and potentially suitable habitat for protected species would be permanently altered and 2.1 acres would be temporarily altered throughout the project corridor. Through the use of environmental design measures and due to the vast amounts of similar habitat surrounding the project corridor, these impacts would be insignificant.

The Quino checkerspot butterfly; Federally endangered species, may be affected under the Proposed Action Alternative. Noise levels would be temporarily increased during construction activities. Increased noise levels associated with construction would cease following construction. Emissions and fugitive dust would also increase during construction activities. However, due to the remote location of the project corridor and

wind dispersal patterns, the project is not expected to cause or contribute to a violation of Federal or state ambient air quality standards. The aesthetics of project corridor would be not adversely impacted due to the existing infrastructure in place throughout most of the corridor. Mitigation measures would be developed to reduce potential impacts to a less than significant level. Indirect beneficial impacts on soils, socioeconomics, land use, vegetation, wildlife habitat, protected species, and air quality would result from the implementation of the Proposed Action Alternative as a result of eliminating illegal traffic north of the project corridor.

**MITIGATION MEASURES:** Although no significant impacts have been identified, CBP would implement mitigation measures, many of which are standard operating procedures, to further reduce potentially adverse effects. The mitigation measures are presented for each resource category that could be affected. The proposed measures would be coordinated through the appropriate agencies and land managers/administrators prior to initiation of construction.

**General Construction:** Best Management Practices (BMPs) would be implemented during all construction activities, and would include proper handling, storage, and/or disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery would be completed following accepted industry guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (*e.g.*, granular, pillow, sock, *etc.*) would be used to absorb and contain the spill. Pursuant to compliance with 40 Code of Federal Register (CFR), Part 112, Oil Pollution Prevention, a Spill Prevention, Control, and Countermeasures Plan (SPCCP) would be in place prior to the start of operations and all personnel would be briefed on the implementation and responsibilities of this plan. All spills would be reported to the designated CBP point of contact for the project. Furthermore, a spill of any petroleum liquids (*e.g.*, fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 would be included as part of the SPCCP.

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

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

**Soils:** Vehicular traffic associated with the construction activities and operational support activities would remain on established roads. Areas with highly erodible soils would be given special consideration when designing the proposed project to ensure incorporation of various erosion control techniques such as, straw bales (weed seed free), silt fencing, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion. Rehabilitation would include re-vegetating or the distribution of organic (*i.e.*, cacti skeletons and other woody debris) and geological materials (*i.e.*, boulders and rocks) over the disturbed area to reduce erosion while allowing the area to naturally vegetate. In addition, erosion control measures and appropriate BMPs, as required and promulgated through the Storm Water Pollution Prevention Plan (SWPPP) and engineering designs, would be implemented before, during, and after construction activities.

Road maintenance shall avoid, to the extent practicable making wind rows with the soils once grading activities are completed. Any excess soils would be used on-site to raise and shape the road surface.

**Vegetation:** Construction equipment would be cleaned, using a high pressure water system, prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. Soil disturbances in temporary impact areas would be rehabilitated. Rehabilitation would include re-vegetating or the distribution of organic and geological materials over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Rehabilitation methods would be developed in coordination with and approved by BLM. Native seeds or plants, which are compatible with the enhancement of protected species, would be used to the extent practicable, as required under Section 7(a)(1) of the Endangered Species Act (ESA).

Disturbed and restored areas would be monitored for the spread and eventual removal of non-native invasive plant species as part of periodic maintenance activities. Monitoring would occur annually for a period of 5 years. To minimize vegetation impacts, construction travel would be restricted to the existing access roads and temporary construction areas.

**Wildlife:** Numerous migratory birds could nest in the project corridor. The Migratory Bird Treaty Act requires that Federal agencies coordinate with U.S. Fish and Wildlife Service (USFWS) if a construction activity would result in the take of a migratory bird. If bird surveys reveal that construction activities would result in the take of a migratory bird, then coordination with USFWS and California Department of Fish and Game (CDFG) would be conducted prior to construction activities. Bird surveys would not be required if construction activities occur outside of the nesting season (typically February 15 through September 1).

**Protected Species:** During the development of this EA, USFWS, CBP and USBP consulted on various issues regarding protected species and developed potential



mitigation measures that would be implemented as part of the proposed project. For example:

- To mitigate for loss of habitat for the Quino checkerspot butterfly at the East Smith Canyon project site, the existing access road at the west end of the existing primary pedestrian fence near East Smith Canyon project site would be abandoned and rehabilitated.

**Cultural Resources:** All construction would be kept within previously surveyed areas. If any cultural material is discovered during the construction efforts, then all activities in the area of the discovery will halt until a qualified archeologist assesses the cultural remains. If cultural material is discovered on BLM land, the Palm Springs-South Coast Field Office would be notified and all work in the area would cease until authorization to proceed is provided by BLM. Construction activities near any Border Monuments would be monitored to ensure avoidance. Additionally, CBP would complete the Section 106 process prior to the start of any construction activities.

**Water Resources:** Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All construction work shall cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material. All fuels, waste oils, and solvents would be collected and stored in tanks or drums within a secondary containment area consisting of an impervious floor and bermed sidewalls capable of holding the volume of the largest container stored therein. The refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. No refueling or storage would take place within 100 feet of drainage. Other mitigation measures would be implemented such as straw bales (weed and seed free), silt fencing, aggregate materials, wetting compounds, and re-vegetation with native plant species, where possible, to decrease erosion and sedimentation. Furthermore, a SWPPP would be completed before construction.

**Air Quality:** Mitigation measures would be incorporated to ensure that particulate matter (PM-10) emission levels do not rise above the minimum threshold as required per 40 CFR 51.853(b)(1). Measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities. Standard construction BMPs such as routine watering of the construction site as well as access roads to the site would be used to control fugitive dust during the construction phases of the proposed project. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions.

**Noise:** During the construction phase, short term noise impacts are anticipated. All Occupation Safety and Health Administration requirements would be followed. The blasting contractor would provide further analysis of blasting techniques and measures to be taken to ensure that only negligible impacts would occur via the blasting. On-site

activities would be restricted to daylight hours near the 7 Gates/Railroad project site. Construction equipment would possess properly working mufflers and would be maintained properly tuned to reduce backfires. Implementation of these measures would reduce the expected short term noise impacts to an insignificant level in and around the construction site.

**FINDING:** Based upon the results of this EA and the mitigation measures to be implemented, the Proposed Action Alternative (*i.e.*, Preferred Alternative) would not have a significant effect on the environment. Therefore, no additional NEPA documentation (*i.e.*, Environmental Impact Statement) is warranted.

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**FINAL**

**ENVIRONMENTAL ASSESSMENT  
FOR PROPOSED  
CONSTRUCTION, OPERATION, AND MAINTENANCE  
OF TACTICAL INFRASTRUCTURE  
U.S. DEPARTMENT OF HOMELAND SECURITY  
U.S. CUSTOMS AND BORDER PROTECTION  
U.S. BORDER PATROL  
SAN DIEGO SECTOR, CALIFORNIA**

**November 2008**

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## EXECUTIVE SUMMARY

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- INTRODUCTION:** United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP) within U.S. Department of Homeland Security (DHS). USBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland. This is accomplished by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. During recent years, illegal aliens (IA) have cost U.S. citizens billions of dollars annually due directly to criminal activities, as well as the cost of apprehension, detention, and incarceration of criminals; and, indirectly in loss of property, illegal participation in government programs, and increased insurance costs. This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) and analyzes the project alternatives and potential impacts to the human and natural environment from these alternatives.
- PURPOSE AND NEED:** The purpose of the Proposed Action is to increase border security within the USBP San Diego Sector with an ultimate objective of reducing illegal cross-border activity. The need for the Proposed Action is to help to deter illegal entries within the USBP San Diego Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, IAs, drugs, and other cross border violators and contraband from entering the U.S., while providing a more safe work environment for USBP agents.
- DESCRIPTION OF PROPOSED ACTION:** The Proposed Action Alternative is to construct, operate, and maintain approximately 1.72 miles of new roads, 0.35 mile of primary pedestrian fence, and 7.85 miles of road widening along the U.S./Mexico international border in eastern San Diego County, California. Some of the proposed fence and road improvements would be within the 60-foot wide Roosevelt Reservation, which in this area, is managed by the U.S. Bureau of Land Management (BLM). However, some of the new road construction would extend beyond the Roosevelt Reservation and affect additional Federal and private lands.

Routine maintenance of the road would be conducted as needed to maintain the driving surface following construction. Maintenance would consist of grading and leveling the road surface, applying road surface material where appropriate, and applying a soil stabilizer if needed. Repairs and maintenance of the primary pedestrian fence would occur on an as needed basis.

In addition, this alternative would include the use of one staging area (temporary impact area) to accommodate construction equipment and stockpile materials during the construction activities. The temporary staging area would be located in previously disturbed area used for another project. Upon completion of construction activities, the temporary staging area would be rehabilitated. Rehabilitation would include natural regeneration, planting with native species, and/or the distribution of dead plant material (*i.e.*, woody plant skeletons) and geologic materials (*i.e.*, rocks and boulders). The staging area was previously addressed with regard to environmental impacts as an area for which NEPA compliance was waived by the Secretary of DHS, and will not be evaluated further.

Numerous existing access roads would be used during the construction of the new road and fence; however, none of these roads would require additional improvements (*i.e.*, straightening, widening, drainage structures). The roads would be graded and brought back to pre-project conditions once the construction is complete.

**PROPOSED ACTION  
AND ALTERNATIVES  
CONSIDERED:**

Three alternatives were identified and considered during the planning stages of the proposed project: Alternative 1 (No Action Alternative), Alternative 2 (Proposed Action Alternative), and Alternative 3 (Secure Fence Act Alternative). The No Action Alternative would preclude any road improvements or fence and road construction activities, and, thus, would not deter illegal entries or enhance safety or response time for USBP agents. Alternative 3 would have greater environmental impacts compared to the Proposed Action Alternative. Of the action alternatives considered, the Proposed Action Alternative would have the least environmental impacts and be the most strategically effective approach for controlling illegal traffic and satisfying the stated purpose and need. It should be noted that CBP has identified its Preferred Alternative as the Proposed Action Alternative.

AFFECTED  
ENVIRONMENT AND  
CONSEQUENCES:

A total of approximately 42.23 acres would be impacted as part of the Proposed Action Alternative. Approximately 42.23 acres of land use, geologic resources, soils, vegetation, wildlife habitat, and potentially suitable habitat for protected species would be permanently altered. The temporary staging area would impact up to 2.1 acres, and the staging area was addressed through an Environmental Stewardship Plan developed as a result of the waiver issued by the Secretary of DHS. Through the use of mitigation measures and due to the vast amounts of similar habitat surrounding the project corridor, these impacts would be insignificant.

The Quino checkerspot butterfly, a Federally endangered species, may be affected, under the Proposed Action Alternative. Mitigation measures would be implemented as part of the Proposed Action Alternative to ensure any impacts would be discountable. Noise levels would be temporarily increased during construction activities. Emissions and fugitive dust would also increase during construction activities. However, due to the remote location of the project corridor and wind dispersal patterns, the project would not cause or contribute to a violation of Federal or state ambient air quality standards. The aesthetics of project corridor would be not adversely impacted due to the existing infrastructure in place throughout most of the corridor. Mitigation measures would be developed to reduce potential impacts to a less than significant level. Indirect beneficial impacts on soils, socioeconomics, land use, vegetation, wildlife habitat, protected species, and air quality would result from the implementation of the Proposed Action Alternative as a result of reducing illegal traffic north of the project corridor.

SUMMARY OF  
MITIGATION  
ACTIONS:

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, mitigation, and finally, compensation. Mitigation, which may include activities such as restoration of habitat in other areas, acquisition of lands, implementation of Best Management Practices, is typically coordinated with USFWS and other appropriate Federal and state resource agencies. Specific mitigation for resources is provided in Section 5.0 of the EA.

FINDINGS AND  
CONCLUSIONS:

Based upon the results of the EA and the mitigation measures to be implemented, the Proposed Action Alternative (*i.e.*, Preferred Alternative) would not have a significant adverse effect on the environment. Therefore, no additional NEPA documentation is warranted.



**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY ..... ES - 1**

**1.0 INTRODUCTION..... 1-1**

    1.1 USBP BACKGROUND ..... 1-2

    1.2 PURPOSE AND NEED..... 1-3

    1.3 PROPOSED ACTION..... 1-3

    1.4 FRAMEWORK FOR ANALYSIS ..... 1-5

    1.5 PUBLIC INVOLVEMENT ..... 1-11

    1.6 COOPERATING AND COORDINATING AGENCIES..... 1-12

    1.7 CALIFORNIA ENVIRONMENTAL QUALITY ACT ..... 1-13

**2.0 PROPOSED ACTION AND ALTERNATIVES..... 2-1**

    2.1 SCREENING CRITERIA FOR ALTERNATIVES ..... 2-1

    2.2 ALTERNATIVE 1. NO ACTION ALTERNATIVE ..... 2-2

    2.3 ALTERNATIVE 2. PROPOSED ACTION..... 2-2

        2.3.1 New Roads ..... 2-3

        2.3.2 Road Improvements..... 2-5

        2.3.3 Fence ..... 2-5

        2.3.4 Blasting ..... 2-6

        2.3.5 Lighting ..... 2-7

    2.4 ALTERNATIVE 3: SECURE FENCE ACT ALIGNMENT ALTERNATIVE..... 2-8

    2.5 OTHER ALTERNATIVES EVALUATED BUT ELIMINATED FROM  
 CONSIDERATION ..... 2-10

        2.5.1 Additional USBP Agents in Lieu of Tactical Infrastructure..... 2-10

        2.5.2 Vehicle Barriers in Lieu of Fence ..... 2-11

        2.5.3 Fence Types ..... 2-11

        2.5.4 Fence Only Alternative..... 2-11

        2.5.5 Technology in Lieu of Tactical Infrastructure..... 2-12

    2.6 SUMMARY ..... 2-12

    2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE..... 2-17

**3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES ..... 3-1**

    3.1 INTRODUCTION ..... 3-1

    3.2 LAND USE..... 3-3

        3.2.1 Affected Environment..... 3-3

        3.2.2 Environmental Consequences ..... 3-4

            3.2.2.1 No Action Alternative ..... 3-4

            3.2.2.2 Proposed Action Alternative ..... 3-4

            3.2.2.3 Secure Fence Act Alignment Alternative ..... 3-5

    3.3 GEOLOGY AND SOILS..... 3-6

        3.3.1 Affected Environment..... 3-6

        3.3.2 Environmental Consequences ..... 3-6

|      |                                                       |      |
|------|-------------------------------------------------------|------|
|      | 3.3.2.1 No Action Alternative .....                   | 3-7  |
|      | 3.3.2.2 Proposed Action Alternative .....             | 3-7  |
|      | 3.3.2.3 Secure Fence Act Alignment Alternative .....  | 3-8  |
| 3.4  | HYDROLOGY AND GROUNDWATER.....                        | 3-9  |
|      | 3.4.1 Affected Environment.....                       | 3-9  |
|      | 3.4.2 Environmental Consequences .....                | 3-9  |
|      | 3.4.2.1 No Action Alternative .....                   | 3-9  |
|      | 3.4.2.2 Proposed Action Alternative .....             | 3-9  |
|      | 3.4.2.3 Secure Fence Act Alignment Alternative .....  | 3-10 |
| 3.5  | SURFACE WATERS AND WATERS OF THE U.S.....             | 3-10 |
|      | 3.5.1 Affected Environment.....                       | 3-10 |
|      | 3.5.2 Environmental Consequences .....                | 3-12 |
|      | 3.5.2.1 No Action Alternative .....                   | 3-12 |
|      | 3.5.2.2 Proposed Action Alternative .....             | 3-13 |
|      | 3.5.2.3 Secure Fence Act Alignment Alternative .....  | 3-13 |
| 3.6  | FLOODPLAINS.....                                      | 3-14 |
|      | 3.6.1 Affected Environment.....                       | 3-14 |
|      | 3.6.2 Environmental Consequences .....                | 3-14 |
|      | 3.6.2.1 No Action Alternative .....                   | 3-17 |
|      | 3.6.2.2 Proposed Action Alternative .....             | 3-17 |
|      | 3.6.2.3 Secure Fence Act Alternative .....            | 3-17 |
| 3.7  | VEGETATIVE HABITAT .....                              | 3-18 |
|      | 3.7.1 Affected Environment.....                       | 3-18 |
|      | 3.7.2 Environmental Consequences .....                | 3-19 |
|      | 3.7.2.1 No Action Alternative .....                   | 3-20 |
|      | 3.7.2.2 Proposed Action Alternative .....             | 3-20 |
|      | 3.7.2.3 Secure Fence Act Alignment Alternative .....  | 3-22 |
| 3.8  | WILDLIFE AND AQUATIC RESOURCES .....                  | 3-22 |
|      | 3.8.1 Affected Environment.....                       | 3-22 |
|      | 3.8.2 Environmental Consequences .....                | 3-23 |
|      | 3.8.2.1 No Action Alternative .....                   | 3-23 |
|      | 3.8.2.2 Proposed Action Alternative .....             | 3-23 |
|      | 3.8.2.3 Secure Fence Act Alignment Alternative .....  | 3-26 |
| 3.9  | THREATENED AND ENDANGERED SPECIES .....               | 3-26 |
|      | 3.9.1 Affected Environment.....                       | 3-26 |
|      | 3.9.2 Environmental Consequences .....                | 3-28 |
|      | 3.9.2.1 No Action Alternative .....                   | 3-28 |
|      | 3.9.2.2 Proposed Action Alternative .....             | 3-31 |
|      | 3.9.2.3 Secure Fence Act Alternative .....            | 3-33 |
| 3.10 | CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES    | 3-34 |
|      | 3.10.1 Affected Environment.....                      | 3-34 |
|      | 3.10.1.1 Previous Archaeological Investigations ..... | 3-35 |
|      | 3.10.1.2 Current Archaeological Investigation .....   | 3-36 |
|      | 3.10.2 Environmental Consequences .....               | 3-36 |
|      | 3.10.2.1 No Action Alternative .....                  | 3-36 |
|      | 3.10.2.2 Proposed Action Alternative .....            | 3-36 |

|      |                                                        |      |
|------|--------------------------------------------------------|------|
|      | 3.10.2.3 Secure Fence Act Alternative .....            | 3-37 |
| 3.11 | AIR QUALITY .....                                      | 3-37 |
|      | 3.11.1 Affected Environment.....                       | 3-37 |
|      | 3.11.2 Environmental Consequences .....                | 3-39 |
|      | 3.11.2.1 No Action Alternative .....                   | 3-39 |
|      | 3.11.2.2 Proposed Action Alternative .....             | 3-39 |
|      | 3.11.2.3 Secure Fence Act Alternative .....            | 3-42 |
| 3.12 | NOISE.....                                             | 3-42 |
|      | 3.12.1 Affected Environment.....                       | 3-42 |
|      | 3.12.2 Environmental Consequences .....                | 3-44 |
|      | 3.12.2.1 No Action Alternative .....                   | 3-44 |
|      | 3.12.2.2 Proposed Action Alternative .....             | 3-44 |
|      | 3.12.2.3 Secure Fence Act Alternative .....            | 3-46 |
| 3.13 | AESTHETIC AND VISUAL RESOURCES.....                    | 3-47 |
|      | 3.13.1 Affected Environment.....                       | 3-47 |
|      | 3.13.2 Environmental Consequences .....                | 3-47 |
|      | 3.13.2.1 No Action Alternative .....                   | 3-47 |
|      | 3.13.2.2 Proposed Action Alternative .....             | 3-48 |
|      | 3.13.2.3 Secure Fence Act Alternative .....            | 3-48 |
| 3.14 | HAZARDOUS MATERIALS .....                              | 3-49 |
|      | 3.14.1 Affected Environment.....                       | 3-49 |
|      | 3.14.2 Environmental Consequences .....                | 3-49 |
|      | 3.14.2.1 No Action Alternative .....                   | 3-50 |
|      | 3.14.2.2 Proposed Action Alternative .....             | 3-50 |
|      | 3.14.2.3 Secure Fence Act Alternative .....            | 3-50 |
| 3.15 | SOCIOECONOMICS .....                                   | 3-51 |
|      | 3.15.1 Affected Environment.....                       | 3-51 |
|      | 3.15.2 Environmental Consequences .....                | 3-52 |
|      | 3.15.2.1 No Action Alternative .....                   | 3-52 |
|      | 3.15.2.2 Proposed Action Alternative .....             | 3-52 |
|      | 3.15.2.3 Secure Fence Act Alternative .....            | 3-53 |
| 3.16 | ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN ..... | 3-54 |
|      | 3.16.1 Affected Environment.....                       | 3-54 |
|      | 3.16.2 Environmental Consequences .....                | 3-55 |
|      | 3.16.2.1 No Action Alternative .....                   | 3-55 |
|      | 3.16.2.2 Proposed Action Alternative .....             | 3-55 |
|      | 3.16.2.3 Secure Fence Act Alternative .....            | 3-56 |
| 3.17 | SUSTAINABILITY AND GREENING .....                      | 3-56 |
|      | 3.17.1 Affected Environment.....                       | 3-56 |
|      | 3.17.2 Environmental Consequences .....                | 3-56 |
|      | 3.17.2.1 No Action Alternative .....                   | 3-56 |
|      | 3.17.2.2 Proposed Action Alternative .....             | 3-56 |
|      | 3.17.2.3 Secure Fence Act Alternative .....            | 3-57 |
| 3.18 | HUMAN HEALTH AND SAFETY .....                          | 3-57 |
|      | 3.18.1 Affected Environment.....                       | 3-57 |
|      | 3.18.2 Environmental Consequences .....                | 3-57 |

|            |                                                                                                                                     |            |
|------------|-------------------------------------------------------------------------------------------------------------------------------------|------------|
| 3.18.2.1   | No Action Alternative .....                                                                                                         | 3-57       |
| 3.18.2.2   | Proposed Action Alternative .....                                                                                                   | 3-57       |
| 3.18.2.3   | Secure Fence Act Alternative .....                                                                                                  | 3-58       |
| 3.19       | GROWTH INDUCING EFFECTS .....                                                                                                       | 3-58       |
| 3.20       | LOCAL AND SHORT-TERM USE OF THE ENVIRONMENT AND THE<br>MAINTENANCE AND ENHANCEMENT OF LONG-TERM<br>ENVIRONMENTAL PRODUCTIVITY ..... | 3-58       |
| 3.21       | IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF<br>RESOURCES .....                                                                    | 3-59       |
| <b>4.0</b> | <b>CUMULATIVE IMPACTS .....</b>                                                                                                     | <b>4-1</b> |
| 4.1        | LAND USE .....                                                                                                                      | 4-4        |
| 4.2        | GEOLOGY AND SOILS .....                                                                                                             | 4-4        |
| 4.3        | VEGETATION .....                                                                                                                    | 4-5        |
| 4.4        | WILDLIFE AND AQUATIC RESOURCES .....                                                                                                | 4-5        |
| 4.5        | THREATENED AND ENDANGERED SPECIES .....                                                                                             | 4-6        |
| 4.6        | HYDROLOGY AND GROUNDWATER .....                                                                                                     | 4-6        |
| 4.7        | SURFACE WATERS AND WATERS OF THE U.S. ....                                                                                          | 4-6        |
| 4.8        | FLOODPLAINS .....                                                                                                                   | 4-7        |
| 4.9        | AIR QUALITY .....                                                                                                                   | 4-7        |
| 4.10       | NOISE .....                                                                                                                         | 4-8        |
| 4.11       | CULTURAL RESOURCES .....                                                                                                            | 4-8        |
| 4.12       | AESTHETICS AND VISUAL RESOURCES .....                                                                                               | 4-8        |
| 4.13       | HAZARDOUS MATERIALS .....                                                                                                           | 4-9        |
| 4.14       | SOCIOECONOMICS .....                                                                                                                | 4-9        |
| 4.15       | ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN .....                                                                              | 4-9        |
| 4.16       | SUSTAINABILITY AND GREENING .....                                                                                                   | 4-10       |
| 4.17       | HUMAN HEALTH AND SAFETY .....                                                                                                       | 4-10       |
| 4.18       | CEQA FINDING OF SIGNIFICANCE .....                                                                                                  | 4-10       |
|            | 4.18.1 Significance Determination .....                                                                                             | 4-11       |
|            | 4.18.2 Significant Impacts to be Mitigated .....                                                                                    | 4-11       |
|            | 4.18.3 Less-than-Significant Impacts .....                                                                                          | 4-11       |
| <b>5.0</b> | <b>MITIGATION MEASURES .....</b>                                                                                                    | <b>5-1</b> |
| 5.1        | GENERAL CONSTRUCTION ACTIVITIES .....                                                                                               | 5-1        |
| 5.2        | SOILS .....                                                                                                                         | 5-2        |
| 5.3        | VEGETATION .....                                                                                                                    | 5-3        |
| 5.4        | WILDLIFE .....                                                                                                                      | 5-3        |
| 5.5        | PROTECTED SPECIES .....                                                                                                             | 5-4        |
| 5.6        | CULTURAL RESOURCES .....                                                                                                            | 5-4        |
| 5.7        | WATER RESOURCES .....                                                                                                               | 5-4        |
| 5.8        | AIR QUALITY .....                                                                                                                   | 5-5        |
| 5.9        | NOISE .....                                                                                                                         | 5-5        |
| <b>6.0</b> | <b>REFERENCES .....</b>                                                                                                             | <b>6-1</b> |
| <b>7.0</b> | <b>LIST OF PREPARES .....</b>                                                                                                       | <b>7-1</b> |

**List of Figures**

Figure 1-1. Project Vicinity Map ..... 1-4  
Figure 1-2. Project Location Map ..... 1-7  
Figure 2-1. Schematic of Proposed Impact Areas—Alternative 3 ..... 2-9  
Figure 3-1. FEMA Floodplain ..... 3-15  
Figure 3-2. Proposed Action & CNDDDB Map 1..... 3-29  
Figure 3-3. Proposed Action & CNDDDB Map 2..... 3-30

**List of Tables**

Table 1-1. Major Permits, Approvals, and Interagency Coordination ..... 1-10  
Table 2-1. New Road Construction ..... 2-3  
Table 2-2. Fence Construction ..... 2-6  
Table 2-3. Vibration and Airblast Overpressure Levels ..... 2-7  
Table 3-1. Water Quality Limited Segments in the Tijuana River Watershed..... 3-11  
Table 3-2. Vegetation Communities within the Project Area ..... 3-18  
Table 3-3. National Ambient Air Quality Standards ..... 3-38  
Table 3-4. Total Air Emissions (tons/year) from Construction Activities  
vs. de minimis Levels ..... 3-40  
Table 3-5. Total Air Emissions (tons/year) from Construction Activities  
vs. de minimis Levels ..... 3-42  
Table 3-6. dBA Sound Levels of Typical Noise Environments ..... 3-43  
Table 3-7. dBA Sound Levels of Construction Equipment..... 3-45  
Table 4-1. CEQA Significance Determination ..... 4-11

**List of Photographs**

Photograph 2-1. Portable Lights..... 2-7  
Photograph 3-1. Typical IA trash and trails ..... 3-47

**List of Appendices**

Appendix A Detailed Project Maps and Fence Designs  
Appendix B Correspondence  
Appendix C Memorandum of Understanding  
Appendix D Hydrology Report  
Appendix E Threatened and Endangered Species List  
Appendix F Air Quality Calculations  
Appendix G Draft EA Public Comments and Response

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***SECTION 1.0***  
***INTRODUCTION***







## 1.0 INTRODUCTION

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The United States (U.S.) Customs and Border Protection (CBP) and U.S. Border Patrol (USBP) propose to construct, operate, and maintain approximately 1.7 miles of new roads, 0.35 miles of new pedestrian fence, and 7.85 miles of road improvements along the U.S./Mexico international border in eastern San Diego County, California. The proposed road improvements would be primarily restricted to the 60-foot wide Roosevelt Reservation, which in this area, are public lands managed by the U.S. Bureau of Land Management (BLM). However, some of the new road construction would extend beyond the Roosevelt Reservation and affect additional Federal and private lands. The Proposed Action would occur within the USBP El Cajon, Campo, and Boulevard Stations' Areas of Operation (AO). The proposed tactical infrastructure (TI) is located adjacent to numerous TI components that were described in the *Final Environmental Assessment for Various Road Improvements from Canyon City to the Imperial County Line, San Diego County, California, March 2003*, by the U.S. Department of Homeland Security (DHS). Therefore, much of the information contained in the DHS 2003 Environmental Assessment (EA) will be incorporated by reference into this EA. Site specific surveys for various resources were conducted for this EA in order to update information from the DHS 2003 EA. This EA is also tiered from the Immigration and Naturalization Service's (INS) 2001 *Supplemental Programmatic Environmental Impact Statement for the Continuation of Immigration and Naturalization Service and Joint Task Force Six Activities along the Southwestern Border* (INS 2001).

The TI components covered by this EA were previously part of a larger TI project, portions of which Federal regulations and laws governing those actions were waived by the Secretary of DHS under the authority granted by Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) on April 1, 2008. The draft EA for the entire project was released to the public on 7 January 2008 to receive comments. The comments previously received are addressed, where applicable, in this revised final EA, and comments relating to TI sections covered under the waiver are

addressed in the Environmental Stewardship Plan (ESP) developed for the waived areas. The ESP is available electronically at the following URL: [www.BorderFencePlanning.com](http://www.BorderFencePlanning.com). The TI components not previously covered by the waiver and addressed in the ESP are included in this EA.

This EA is divided into seven sections plus appendices. Section 1 provides background information on USBP missions, identifies the purpose of and need for the Proposed Action, describes the area in which the Proposed Action would occur, and explains the public involvement process. Section 2 provides a detailed description of the Proposed Action, other alternatives considered, and the No Action Alternative. Section 3 describes the existing environmental conditions and potential environmental impacts that could occur from each alternative 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 discusses potential mitigation measures to reduce adverse effects. Sections 6 and 7 provide a list of references and preparers for the EA.

## **1.1 USBP BACKGROUND**

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

- Establish substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between the Ports of Entry (POEs)
- Deter illegal entries through improved enforcement
- Detect, apprehend, and deter smugglers of humans, drugs, and other contraband
- Leverage "smart border" technology to multiply the effect of enforcement personnel

- Reduce crime in border communities and consequently improve quality of life and economic vitality of targeted areas.

USBP has nine administrative sectors along the U.S./Mexico international border. Each sector is responsible for implementing an optimal combination of personnel, technology, and infrastructure appropriate to its operational requirements. The San Diego Sector is responsible for San Diego County in California. The areas affected by the Proposed Action include the southeastern portion of San Diego County.

## **1.2 PURPOSE AND NEED**

The purpose of the Proposed Action is to increase border security within the USBP San Diego Sector with an ultimate objective of reducing illegal cross-border. The need for the Proposed Action is to help to deter illegal entries within the USBP San Diego Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens (IA), drugs, and other cross border violators and contraband from entering the U.S., while providing a more safe work environment for USBP agents.

## **1.3 PROPOSED ACTION**

The project corridor for this EA extends from Tecate Port-of-Entry (POE) to the eastern edge of O'Neill Valley, near the San Diego/Imperial County line (Figure 1-1). The project study corridor is defined by a 100-foot to 250-wide corridor, approximately 25 miles long. However, TI is not currently proposed along the entire corridor.

CBP proposes to construct, maintain, and operate TI consisting of four discrete sections of patrol roads and access roads, and replacement of a section of primary pedestrian fence and construction of a short section of new fence along the U.S./Mexico international border in the USBP San Diego Sector, California. Proposed roads include

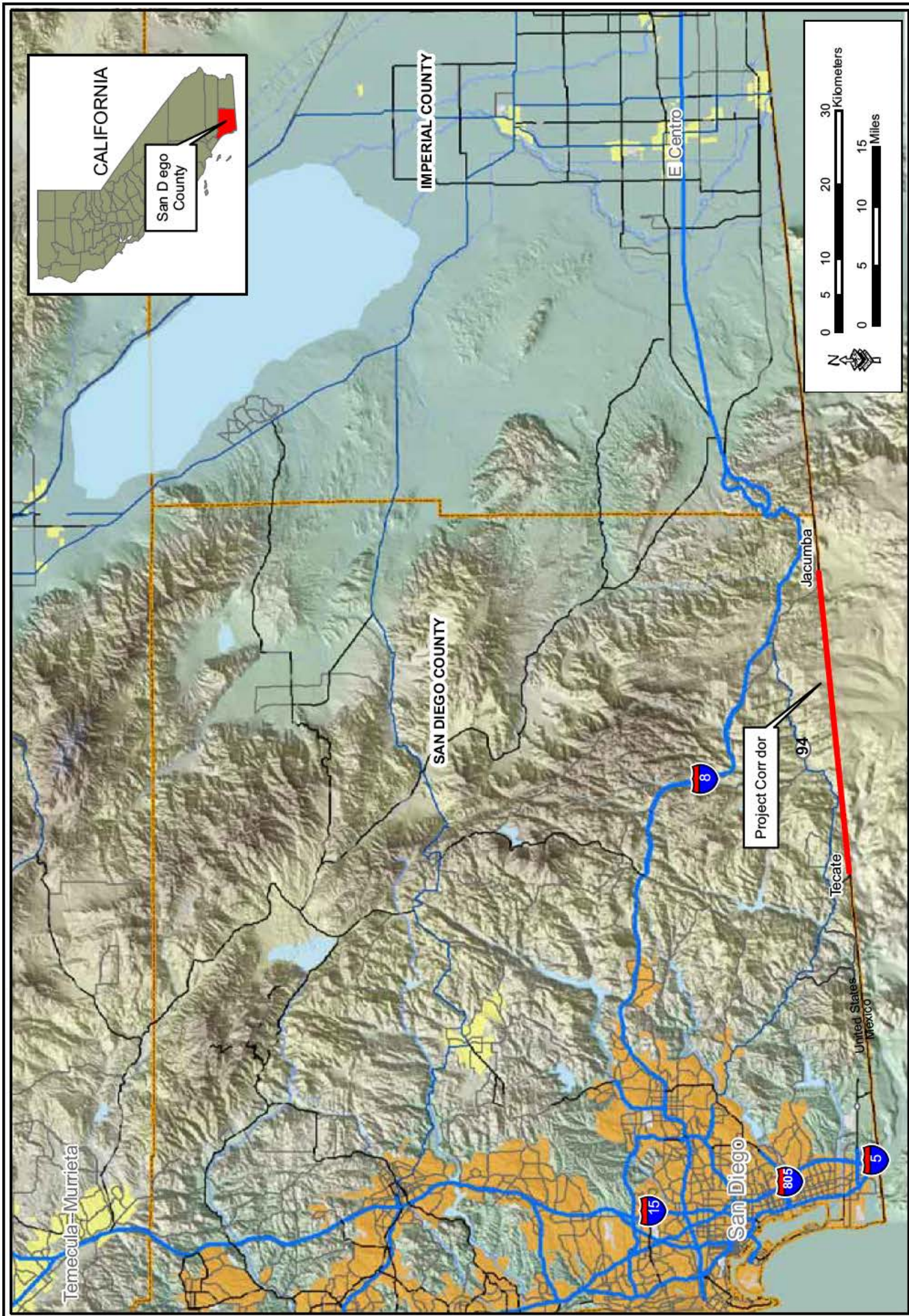


Figure 1-1: Vicinity Map

a 0.258-mile long section of new road at Krutsch's Hill near Tecate, a 200-foot long access road at East Smith Canyon, a 204-foot long access road at East Boundary Peak, and 1.39-mile long section of road at the Seven Gates area along the bed of the Southern Pacific Railroad. Primary pedestrian fence will be replaced along the 0.258-mile road on at Krutsch's Hill, and 425 feet of new primary pedestrian fence will be constructed near East Boundary Peak. Additionally, 7.85 miles of patrol road along the U.S./Mexico border will be widened to the full width of the Roosevelt Reservation (60-foot) in several segments from Krutzch's Hill to Imperial County line.

The proposed locations of TI are based on a USBP San Diego Sector assessment of local operational requirements where such infrastructure would assist USBP agents in reducing illegal cross-border activities. The Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295) provided \$1,187,565,000 under the Border Security Fencing, Infrastructure, and Technology appropriation for the installation of fencing, infrastructure, and technology along the border (CRS 2006). Figure 1-2 illustrates the location of the proposed TI within the San Diego Sector. Details of the Proposed Action are included in Section 2.2.2.

#### **1.4 FRAMEWORK FOR ANALYSIS**

The process for implementing NEPA is codified in Code of Federal Regulations 40 (CFR) Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, and DHS's related Management Directive (MD) 5100.1, *Environmental Planning Program*. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process.

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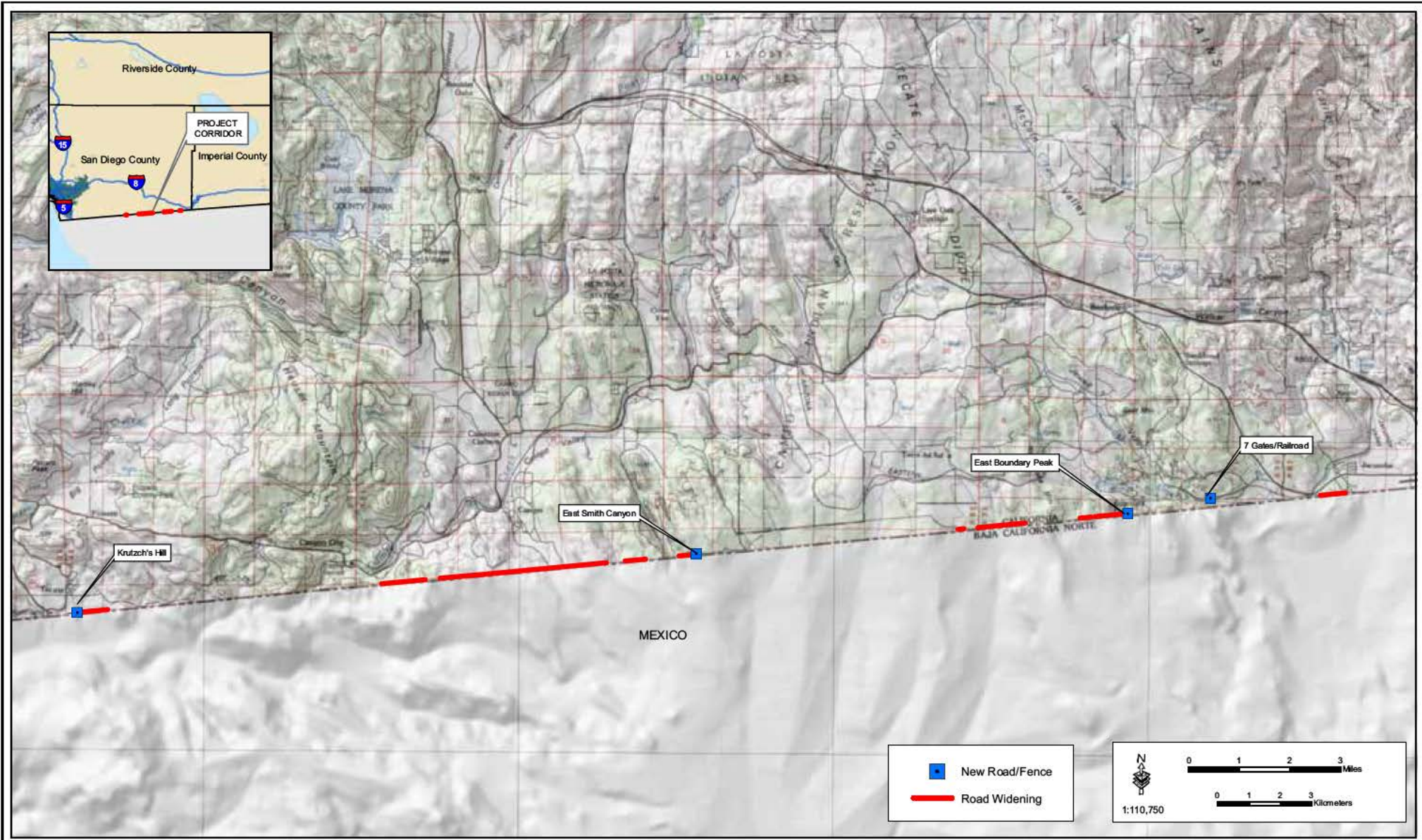


Figure 1-2: Project Location Map

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An EA is prepared when a proposed action is anticipated to have potentially “significant” environmental impacts, or a proposed action is environmentally controversial. CEQ regulations specify that the following must be accomplished 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 environmental document, EA or EIS, which enables the decision maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”

Within the framework of environmental impact analysis under NEPA, additional authorities that may be applicable include the Clean Air Act (CAA), Clean Water Act(CWA) (including a National Pollutant Discharge Elimination System [NPDES] storm water discharge permit and Section 404 permit), Section 10 of the Rivers and Harbors Act of 1899, Noise Control Act, Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), and various Executive Orders (EOs). Some of the EOs that might be applicable to the Proposed Action include EO 11988 (Floodplain Management), EO 11990 (Protection of Wetlands), EO12088 (Federal Compliance with Pollution Control Standards), EO 12580 (Superfund Implementation), EO 12898

(Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks), EO 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), EO 13175 (Consultation and Coordination with Indian Tribal Governments), EO 13148 (Greening the Government through Leadership in Environmental Management) and EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), EO 11514 (Protection and Enhancement of Environmental Quality, as amended by EO 11991); EO 12114 (Environmental Effects Abroad of Major Federal Actions); EO 13101 (Greening the Government through Waste Prevention, Recycling, and Federal Acquisition); EO 13123 (Greening the Government through Efficient Energy Management); EO 13148 (Greening the Government through Leadership in Environmental Management); and EO 13149 (Greening the Government through Federal Fleet and Transportation Efficiency).

Table 1-1 lists major Federal and state permits, approvals, and interagency coordination required to construct, maintain, and operate the proposed TI.

**Table 1-1. Major Permits, Approvals, and Interagency Coordination**

| Agency                                                                  | Permit/Approval/Coordination                                                                                       |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS) | <ul style="list-style-type: none"> <li>• Section 7 ESA consultation</li> <li>• MBTA coordination</li> </ul>        |
| California Water Resource Board                                         | <ul style="list-style-type: none"> <li>• CWA NPDES permit</li> </ul>                                               |
| U.S. Army Corps of Engineers                                            | <ul style="list-style-type: none"> <li>• CWA Section 404 permit</li> </ul>                                         |
| San Diego Regional Water Quality Control Board                          | <ul style="list-style-type: none"> <li>• CWA Section 401 State Water Quality Certification</li> </ul>              |
| San Diego Air Pollution Control District                                | <ul style="list-style-type: none"> <li>• CAA permit consultation</li> </ul>                                        |
| California Department of Fish and Game (CDFG)                           | <ul style="list-style-type: none"> <li>• California Endangered Species Act (CESA) coordination</li> </ul>          |
| California State Historic Preservation Office (SHPO)                    | <ul style="list-style-type: none"> <li>• NHPA Section 106 consultation</li> </ul>                                  |
| Federally recognized American Indian Tribes                             | <ul style="list-style-type: none"> <li>• Consultation regarding potential effects on cultural resources</li> </ul> |
| Advisory Council on Historic Preservation (AHP)                         | <ul style="list-style-type: none"> <li>• NHPA Section 106 consultation</li> </ul>                                  |

## 1.5 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 provide input to the decision-making process.

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

Through the public involvement process, CBP notified relevant Federal, state, and local agencies of the Proposed Action and requested input regarding environmental concerns they might have regarding the Proposed Action. The public involvement process provides CBP with the opportunity to consider state, local and non-governmental views in its decision regarding implementing this Federal proposal. As part of the EA process, CBP has coordinated with agencies such as the BLM; U.S. Environmental Protection Agency (EPA); U.S. Fish and Wildlife Service (USFWS); California State Historic Preservation Office (SHPO); and other Federal, state, and local agencies (see Appendix B). Input from agency responses has been incorporated into the analysis of potential environmental impacts.

A Notice of Availability (NOA) for the original EA and proposed FONSI was published in the *San Diego Union-Tribune* on January 7, 2008. This was done to solicit comments on the Proposed Action from the local community in the decision-making process. Comments from the public and other Federal, state, and local agencies received for the original EA were incorporated into this Final EA, as appropriate, and copies of the comments and responses are included in Appendix G. Some comments received are no longer relevant to this EA due to the reduced scope as a result of the waiver.

The public may obtain the final EA and FONSI via the project Web site at <http://ecso.swf.usace.army.mil> or by written request to Mr. Charles McGregor, Environmental Manager, U.S. Army Corps of Engineers, Fort Worth District, Engineering and Construction Support Office, 814 Taylor Street, Room 3B10, Fort Worth, TX 76102, and Fax: (817) 866-6404.

## **1.6 COOPERATING AND COORDINATING AGENCIES**

The BLM Palm Springs-South Coast Field Office and U.S. Section, International Water Boundary and Water Commission (USIBWC) as cooperating agencies, and the USFWS as a coordinating agency, also have decision-making authority for components of the Proposed Action, and intend for this EA to fulfill their requirements for compliance with NEPA. The CEQ regulations implementing NEPA instruct agencies to combine environmental documents to reduce duplication and paperwork (40 CFR 1506.4).

Section 7 of the ESA (P.L. 93-205, December 28, 1973) states that any project authorized, funded, or conducted by any Federal agency should not "...jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical." The USFWS is a coordinating agency regarding this Proposed Action to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitats would be adversely impacted by the Proposed Action, to streamline the Section 7 consultation process, to identify the nature and extent of potential effects, and to jointly develop measures that would avoid or reduce potential effects on any species of concern. The USFWS will issue a Biological Opinion of the potential for jeopardy. If their opinion is that the project is not likely to jeopardize any listed species, they can also issue an incidental take statement as an exception to the prohibitions in Section 9 of the ESA.

The IBWC is an international body composed of a U.S. Section and a Mexican Section, each headed by an Engineer-Commissioner appointed by their respective president.

Each Section is administered independently of the other. The USIBWC is a Federal government agency headquartered in El Paso, Texas, and operates under the foreign policy guidance of the Department of State (USIBWC 2007). The USIBWC ensures that design and placement of the proposed tactical infrastructure does not impact flood control process and does not violate treaty obligations between the U.S. and Mexico. The USIBWC also ensures that no damage to Border Monuments occur and that maintenance access to these structures is retained.

A request to be a cooperating agency was also submitted to and accepted by BLM, since some of the road improvements, required to construct and maintain the fence, would be located within lands managed by BLM. A copy of the cooperation letter is in Appendix B. BLM is required to manage the natural resources to ensure sustainability of grazing leases, recreational opportunities, cultural resources, and natural resources.

## **1.7 CALIFORNIA ENVIRONMENTAL QUALITY ACT**

The California Environmental Quality Act (CEQA), as promulgated in the California Public Resources Code §§21000-21177, was adopted in 1970 by the State of California to inform governmental decision-makers and the public about the potential environmental effects of a project, identify ways to reduce adverse impacts, offer alternatives to the project, and disclose to the public why a project was approved. CEQA applies to projects undertaken, funded, or requiring an issuance of a permit by a public agency. For this project, CEQA is applicable because under Section 401 of the CWA (33 United States Code [U.S.C.] 1341), states and tribes are delegated authority to approve, condition, or deny all Federal permits of licenses that might result in a discharge to state or tribal waters, including wetlands. Projects that have a potential for resulting in physical change to the environment, and or that might be subject to several discretionary approvals by governmental agencies including construction activities, clearing or grading of land, improvements to existing structures, and activities or equipment involving the issuance of a permit, are required to go through the CEQA

process. The California Code of Regulations (CCR), Title 14, Section 15063, allow the use of a NEPA document to meet the requirements for an Initial Study under CEQA.

***SECTION 2.0***  
***PROPOSED ACTION AND ALTERNATIVES***

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## 2.0 PROPOSED ACTION AND ALTERNATIVES

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This section provides detailed information on CBP's proposal to construct, maintain, and operate TI along the U.S./Mexico international border in the San Diego Sector, California. The range of reasonable alternatives considered in this EA is constrained to those that would meet the purpose and need described in Section 1 to provide USBP agents with the tools necessary to achieve effective control of the border in the San Diego Sector. Such alternatives must also meet essential technical, engineering, and economic threshold requirements to ensure that each is environmentally sound, economically viable, and complies with governing standards and regulations.

The screening criteria for alternatives are described below in Section 2.1, followed by a description of the No Action Alternative (Section 2.2). Section 2.3 provides specific details of the Proposed Action Alternative, Section 2.4 describes the only other viable alternative (Secure Fence Act Alternative). Other alternatives that were considered during the preparation of the EA, but not analyzed in detail, are discussed in Section 2.5.

### 2.1 SCREENING CRITERIA FOR ALTERNATIVES

The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives. USBP San Diego Sector is working to develop the right combination of personnel, technology, and infrastructure to meet its objective to gain effective control of the border in the USBP San Diego Sector.

- *USBP Operational Requirements.* The selected alternative must provide USBP agents with the tools necessary to strengthen their control of the U.S. borders between POEs in the USBP San Diego Sector. It must help to deter illegal entries within the USBP San Diego Sector by improving enforcement, preventing terrorists and terrorist weapons from entering the U.S., reducing the flow of illegal drugs and other contraband, and enhancing response times, while providing a safer work environment for USBP agents.

- Threatened or Endangered Species and Critical Habitat. The selected alternative would be designed to minimize adverse impacts on threatened or endangered species and their critical habitat to the maximum extent practical. CBP is working with the USFWS to identify potential conservation and mitigation measures.
- Wetlands and Floodplains. The selected alternative would be designed to avoid and minimize impacts on wetlands, surface waters, and floodplain resources to the maximum extent practicable. CBP is working with the USACE-Los Angeles District to avoid, minimize, and mitigate potential impacts on wetlands, surface waters, and floodplains.
- Cultural and Historic Resources. The selected alternative would be designed to minimize impacts on cultural and historic resources to the maximum.

## **2.2 ALTERNATIVE 1. NO ACTION ALTERNATIVE**

CEQ regulations require inclusion of the No Action Alternative. Under the No Action Alternative, the fence and road improvements would not be constructed. The No Action Alternative will serve as a baseline against which the impacts of the proposed action alternative can be evaluated. However, the No Action Alternative does not satisfy the purpose and need for the project.

## **2.3 ALTERNATIVE 2. PROPOSED ACTION**

CBP/USBP proposes construction, operation, and maintenance of fence and roads at various locations along the entire 25-mile long corridor. It should be noted that TI is not proposed for construction along the entire 25-mile corridor, and that CBP has identified this alternative as the Preferred Alternative. New road construction is described below in Section 2.3.1. Road improvements that would occur along some border roads to reduce driving hazards and concealment opportunities for IAs are described in Section 2.3.2. The proposed primary pedestrian fence construction is described in Section 2.3.3.

### 2.3.1 New Roads

New roads would be constructed at 4 different locations. These locations and the lengths of each road are described in Table 2-1 and detailed maps of the location and footprint of each component are contained in Appendix A.

**Table 2-1. New Road Construction**

| Road Name                | Affected Station | Miles | Road Type    |
|--------------------------|------------------|-------|--------------|
| Krutzch's Hill           | El Cajon         | 0.26  | Construction |
| East Smith Canyon Access | Campo            | 0.03  | Access       |
| East Boundary Peak       | Campo            | 0.04  | Construction |
| 7 Gates Railroad         | Boulevard        | 1.39  | Patrol       |
| Total                    |                  | 1.72  |              |

As indicated in Table 2-1, there are three types of roads proposed, based on their intended use. Construction roads are needed to construct additional infrastructure, such as fence. These roads are typically 12 to 16 feet wide to allow construction equipment to access the project site. The road is not improved (*i.e.*, no all-weather surface is applied), but can be used for future maintenance purposes. Primary pedestrian fence (as described in Section 2.3.3) would be constructed along the road at Krutzch's Hill to replace an existing fence.

Patrol roads are needed to provide a safe driving surface along the border. Patrol roads are typically 28 feet wide exclusive of parallel drainage ditches, shoulders and safety berms. These roads are typically constructed at grades less than 18 percent; thus, cut and fill activities are needed in terrain where hills and valleys occur. Aggregate and soil stabilizing or binding agent would be added to the surface of the road, once the construction is completed, to reduce erosion and maintenance activities. A top shot of the soil stabilizing agent would be added to the surface on an annual basis to ensure the road surface longevity. Water bars would be installed at various locations along the road to direct stormwater into parallel ditches or down slope to reduce erosion of the road surface. Some roads proposed would have grades greater than 18 percent and, thus, would require pavement to ensure safe driving conditions and control erosion.

Access roads (typically 12 to 16 feet wide) are constructed to allow USBP agents to access areas that previously were inaccessible due to rough terrain, no roads, or contained private lands. As shown in Table 2-1, some of the construction roads would serve a dual purpose of allowing construction of the TI and future USBP access. These roads would also provide access for maintenance activities required in the future.

Descriptions of the specific actions proposed for implementation at each of the sites listed in Table 2-1 are presented below. These components are described in order from west to east (see Figure 1-2, previously).

- **Krutzch's Hill.** Krutzch's Hill is a small hill that is bisected by the international border. Road construction on the south side of the border has created a vertical cut approximately 40 feet deep that is less than 2 feet from the border. The existing primary pedestrian fence is at risk of collapsing onto the Mexican side of the border if this vertical slope fails. Consequently, CBP proposes to remove the fence and the remaining portion of Krutzch's Hill, and bring the entire area down to the surrounding grade (same level as the Mexican side). The primary pedestrian fence would then be re-installed along the border and the road replaced. Approximately 1.9 acres would be impacted by this component. All lands within this segment are within the Roosevelt Reservation.
- **East Smith Canyon Access Road.** The current access from the existing patrol road to the border on the east rim of Smith Canyon is a very narrow and circuitous road with steep grades, all of which create unsafe driving conditions for USBP agents and maintenance equipment operators. This road is proposed for abandonment; a new road would be constructed to replace the current access road. The new access road would be located approximately 0.4 mile from the eastern rim of the canyon in an area that has been previously disturbed. The access road would be approximately 24 feet wide and 200 feet long and impact about 0.1 acre.
- **East Boundary Peak.** The existing primary pedestrian fence ends short of a large outcrop of rock, creating a gap that is approximately 425 feet long. The proposed action at this location is to install primary pedestrian fence that ties into the rock outcrop and closes the gap; a construction access/maintenance road parallel to the border would be required to install the primary pedestrian fence. This would remove an opportunity for illegal pedestrian and vehicle traffic to breach the border. The road and primary pedestrian fence footprint would impact approximately 0.3 acres within the Roosevelt Reservation.

- **7 Gates/Railroad Road.** This road is located west of Jacumba and would be constructed adjacent to and within the right of way of the Southern Pacific Railroad. Some cut and fill activities would be required to widen the railroad corridor to accommodate both the railroad and the USBP patrol road. The road would be approximately 12 feet wide and 1.4 miles long. Construction of this road would substantially reduce the amount of time required to respond to incursions or emergency situations to the east and west of this area. Currently, travel to either side involves driving approximately 18 miles along unimproved roads and Old Highway 80 and requires up to 30 minutes. All areas that would be impacted have already been disturbed by past railroad and other road construction. The total area to be disturbed by this action is estimated to be 10.85 acres.

### 2.3.2 Road Improvements

In addition to the new roads, slight improvements to the existing border patrol road would be implemented at various locations along the project corridor. Improvements would include widening the road to encompass the entire 60-foot wide Roosevelt Reservation and applying an all-weather surface, as described above. The majority of the existing border patrol road is currently 60 feet wide; however, many reaches are about 35 feet to 40 feet wide or contain large boulders, trees, or narrow strips of vegetation that create concealment opportunities for IAs and increase health and safety risks for USBP agents due to driving hazards. Approximately 7.85 miles along the entire corridor would be widened or would be improved to remove large boulders and trees. This road widening would impact approximately 29.16 acres within the corridor (Appendix A, Maps 1 through 16).

### 2.3.3 Fence

Installation of approximately 0.35 mile of primary pedestrian fence is also proposed as part of the Proposed Action Alternative. The 0.35-mile fence includes both new construction and replacement of existing primary pedestrian fence. New primary pedestrian fence (0.09 mile) would be installed in the East Boundary Peak area and 0.26 mile of fence would be installed to replace the existing fence at Krutzch's Hill. Table 2-2 provides the location and length of each fence segment.

**Table 2-2. Fence Construction**

| Area Name          | Affected Station | Length (miles) | Fence Type  |
|--------------------|------------------|----------------|-------------|
| Krutch's Hill      | El Cajon         | 0.26           | Replacement |
| East Boundary Peak | Campo            | 0.09           | New         |
| Total              |                  | 0.35           |             |

The primary pedestrian fence would be installed approximately 3 feet north of the international border, within the Roosevelt Reservation. The final design will be selected by the USACE. The primary pedestrian fences will be constructed under a design-build contract. However, at a minimum, the fence must be 15 to 18 feet high and capable of withstanding a crash of 10,000-pound (gross weight) vehicle traveling at 40 miles per hour. As mentioned above, there is an existing primary pedestrian fence at Krutch's Hill; however, due to construction activities on the south side of the border, the primary pedestrian fence is at risk of collapsing and will be replaced after the road improvements are completed.

#### **2.3.4 Blasting**

Blasting might be required in certain sections (*i.e.*, 7 Gates) that have large rocks or boulders, which create sharp curves, large humps in the road, or other driving hazards that need to be eliminated. Holes would be drilled into the center of the larger rocks and detonating material would be placed in the hole. The detonating material would be activated in order to split or fracture the rock into smaller more manageable pieces for removal. This process would create low-frequency noise. A noise analysis would be conducted prior to construction by the blasting contractor in order to create a plan that would ensure the action would not risk injury or significantly impact people near the construction site.

Vibration levels and airblast overpressure will increase as a result of blasting activities. Airblast overpressure is low frequency air pressure, which usually falls below the sound level that a human ear can hear; however, the energy that is produced could potentially damage nearby structures. Table 2-3 shows a range of vibration and airblast overpressure based upon distance from the affected structure. Vibration levels are

measured by the peak particle velocity (PPV) and recorded in inches per second (IPS). Airblast overpressure levels are measured and recorded in decibels (dB). The dB levels for the blasting falls within the “uncomfortably loud” category (120 dB), as shown in Table 2-3. However, the overpressures will not be high enough to damage nearby structures. The industry acceptable maximum PPV level near residential dwellings is 2.00 IPS and the noise level maximum is 140 db for construction related blasting.

**Table 2-3. Vibration and Airblast Overpressure Levels**

| Distance from Blast Site to Structure | Calculated PPV | Calculated dB |
|---------------------------------------|----------------|---------------|
| 900 feet                              | 0.06 IPS       | 123.14 dB     |
| 775 feet                              | 0.07 IPS       | 124.54 dB     |
| 485 feet                              | 0.15 IPS       | 129.02 dB     |
| 300 feet                              | 0.32 IPS       | 133.63 dB     |

**2.3.5 Lighting**

To account for heat restrictions for adequate concrete drying and curing processes, most concrete pours for fencing would need to take place during pre-dawn hours during summer months. However, the possibility exists that work would have to occur on a 24-hour basis. If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if schedules dictate it to be necessary. In order to facilitate construction activities during these work hours, portable lights units would be used. It is estimated that no more than 10 light units would be in operation at any one time at each project site.

A 6-kilowatt self-contained diesel generator powers these lights (Photograph 2-1). Each unit typically has four 400 to 1000-watt



**Photograph 2-1. Portable lights**

lamps. The portable light systems can be towed to the desired construction location, as needed. Upon completion of construction activities, all portable lights would be removed from the project corridor. Lights would be oriented to illuminate the work area. The area affected by illumination is limited to 200 feet from the light source. Also, the lights may or may not have shields placed over the lamps to reduce or eliminate the effects of backlighting. They are work lights and would not be deployed specifically to providing lighting for enforcement purposes. Additionally, no lights would be placed in a manner to illuminate riparian areas and no nighttime work would occur in the 7 Gates/Railroad project site due to impacts on nearby homes.

#### **2.4 ALTERNATIVE 3: SECURE FENCE ACT ALIGNMENT ALTERNATIVE**

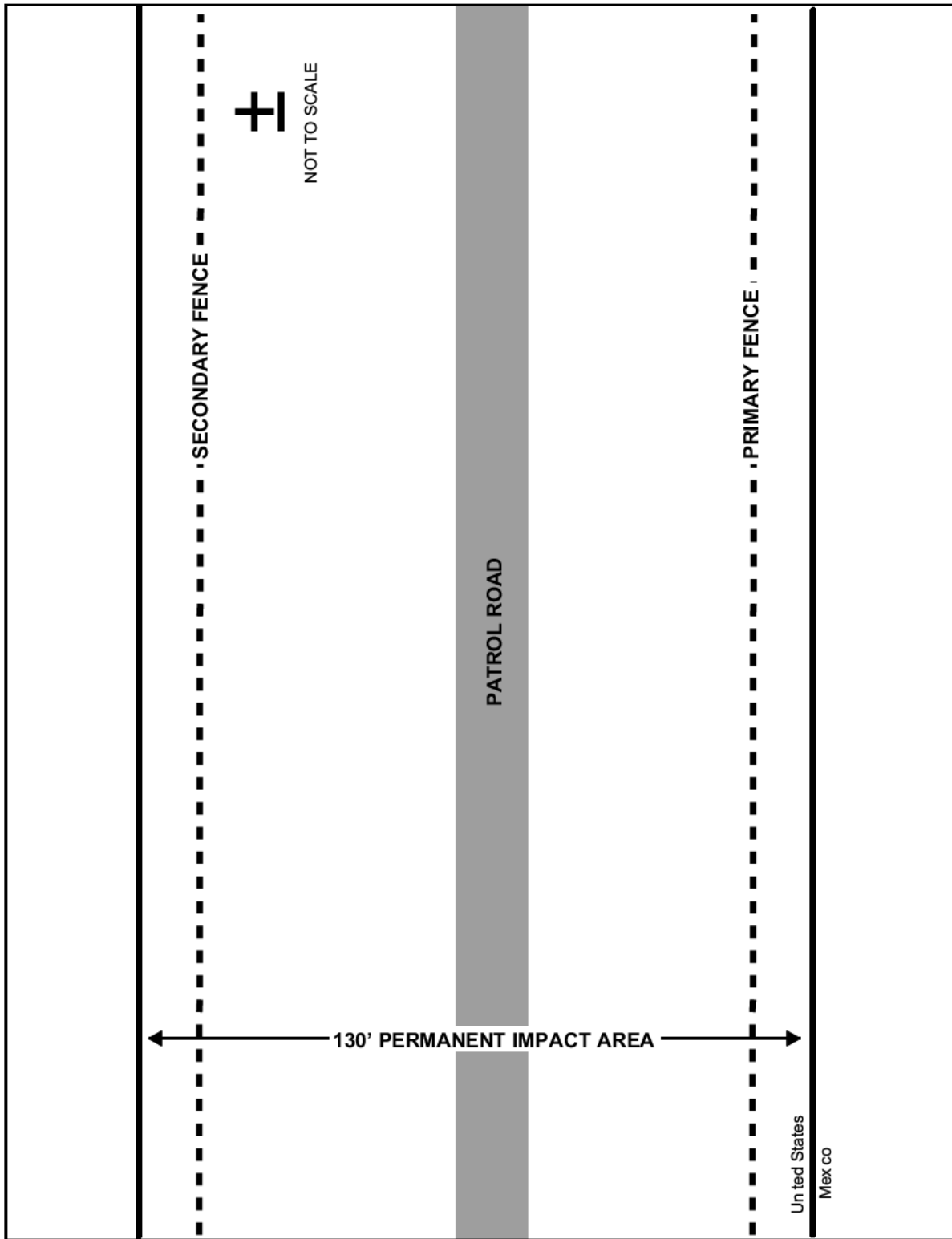
The Secure Fence Act of 2006 (Public Law 109-367) authorized the construction of at least two layers of reinforced fencing along the U.S./Mexico international border. Two layers of fence, known as primary and secondary fence, would be constructed approximately 130 feet apart along the same route as Alternative 2, the Preferred Alternative.

This alternative would also include construction and maintenance of access and patrol roads. The patrol road would be between the primary and secondary fences. Figure 2-1 shows a typical schematic of the permanent impact area for this alternative. The design of the TI for Alternative 3 would be similar to that of Alternative 2.

Construction of the proposed TI would impact an approximate 130-foot wide corridor for approximately 0.35 mile along the two primary pedestrian fence segments. This construction corridor would accommodate access roads and construction staging areas. Vegetation would be cleared and grading may occur where needed. Wherever possible, existing roads would be used for construction access. This is a viable alternative and is evaluated in the EA.



Figure 2-1. Schematic of Proposed Impact Areas—Alternative 3



## **2.5 OTHER ALTERNATIVES EVALUATED BUT ELIMINATED FROM CONSIDERATION**

Several other alternatives to the Proposed Action were evaluated but eliminated from further consideration due to impediments to construction or failure to meet the purpose and need for the project. These are discussed in the following subsections.

### **2.5.1 Additional USBP Agents in Lieu of Tactical Infrastructure**

CBP considered the alternative of increasing the number of USBP agents assigned to the border as a means of gaining effective control of the border. Under this alternative, USBP would hire and deploy a significantly larger number of agents than are currently deployed along the U.S./Mexico international border and increase patrols to apprehend cross-border violators. USBP would deploy additional agents as determined by operational needs, and would likely require 4-wheel drive vehicles, all-terrain vehicles, helicopters, or fixed-wing aircraft. Currently, USBP maintains an aggressive hiring program and a cadre of well-trained disciplined agents.

This alternative was determined not to meet the screening criteria of USBP operational requirements. The physical presence of an increased number of agents could provide an enhanced level of deterrence against illegal entry into the U.S., but the use of additional agents alone, in lieu of the proposed TI, would not provide a practical solution to achieving effective control of the border in the San Diego Sector. The use of physical barriers has been demonstrated to slow cross-border violators and provide USBP agents with additional time to make apprehensions (USACE 1999).

A Congressional Research Service (CRS) report (CRS 2006) concluded that USBP border security initiatives such as the 1994 “Operation Gatekeeper” required a 150 percent increase in USBP manpower, lighting, and other equipment. The report states that “It soon became apparent to immigration officials and lawmakers that the USBP needed, among other things, a ‘rigid’ enforcement system that could integrate infrastructure (i.e., multi-tiered fence and roads), manpower, and new technologies to further control the border region” (CRS 2006).

Tactical infrastructure, such as a primary pedestrian fence, is a force multiplier to allow USBP to deploy agents efficiently and effectively. As TI is built, some agents would be redeployed to other areas of the border within the sector. Increased patrols would aid in interdiction activities, but not to the extent anticipated under the Proposed Action. For the reasons cited above, this alternative is not practical in the USBP San Diego Sector and will not be carried forward for further detailed analysis.

### **2.5.2 Vehicle Barriers in Lieu of Fence**

The option to construct vehicle fence in lieu of the primary pedestrian fence would restrict vehicles from illegally entering the U.S.; however, vehicle fences would not prevent potential terrorists, IAs, or drug smugglers from entering the U.S. on foot in the San Diego Sector, which is a common method of entry for this sector. For these reasons, construction of vehicle fences, rather than a primary pedestrian fence, was eliminated from further consideration.

### **2.5.3 Fence Types**

Pedestrian, aesthetic or hybrid fence alternatives were considered. The final primary pedestrian fence design would be determined during the final design phase based on operational parameters and maintenance requirements. For purposes of evaluating the proposed action and alternatives, the environmental impacts of constructing, operating and maintaining any of the three primary pedestrian fence designs would be virtually identical since the foundations, construction, operations and maintenance access requirements, and fence heights would be the same for any fence alternative selected. Therefore, no additional fence designs will be evaluated in detail in this EA.

### **2.5.4 Fence Only Alternative**

The Fence Only Alternative would involve construction of the primary pedestrian fence only in areas where road construction or improvement is not required. Specifically, these locations are Boundary Peak and Krutzch's Hill. This alternative would provide an additional 0.35 mile of primary pedestrian fence. The fence would be constructed in the same manner as described above under Section 2.3.3. This alternative would not

provide the additional advantage of high ground in some of the crucial areas that USBP needs for IA identification, reduce risks to health and safety of USBP agents due to unsafe driving conditions, reduce the time required to respond to illegal incursions or emergency situations, or eliminate gaps in the primary pedestrian fence that create escape opportunities for cross border violators. Thus, it was eliminated from further consideration.

### **2.5.5 Technology in Lieu of Tactical Infrastructure**

Under this alternative, USBP would use radar, cameras, lights, and other technology to identify cross border crossings. The use of technology is a critical component of *SBlnet* and can be an effective force multiplier, allowing USBP to monitor large areas and deploy agents to where they will be most effective. However, physical barriers are often a required component to effectively control illegal entry into the U.S. (CRS 2006). Technology would identify IAs as they enter the U.S., but would not deter or delay their escape to more populated or remote areas, and thus, would not meet the primary operational criteria for the project. The use of technology alone would not provide a practical solution to achieving effective control of the border in USBP San Diego Sector. Therefore, this alternative would not meet the purpose and need as described in Section 1.2 and will not be carried forward for further analysis.

## **2.6 SUMMARY**

The three alternatives carried forward for analysis are the No Action Alternative, Proposed Action Alternative, and the Secure Fence Act Alignment Alternative. An alternative matrix (Table 2-4) compares the three viable alternatives relative to the purpose and need. Table 2-5 presents a summary matrix of the impacts from the three alternatives analyzed and how they affect the environmental resources in the region.

**Table 2-4. Relationship between Purpose and Need and Alternatives**

| <b>Requirements</b>                                             | <b>Alternative 1:<br/>No Action<br/>Alternative</b> | <b>Alternative 2:<br/>Proposed Action<br/>Alternative</b> | <b>Alternative 3:<br/>Secure Fence Act<br/>Alignment Alternative</b> |
|-----------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------|
| Deter cross-border activities                                   | NO                                                  | YES                                                       | YES                                                                  |
| Enhance the response time for USBP agents                       | NO                                                  | YES                                                       | YES                                                                  |
| Enhance the safety of USBP agents                               | NO                                                  | YES                                                       | YES                                                                  |
| Prevent terrorists and terrorist weapons from entering the U.S. | NO                                                  | YES                                                       | YES                                                                  |
| Reduce the flow of illegal drugs                                | NO                                                  | YES                                                       | YES                                                                  |

Table 2-5. Summary Matrix

| Affected Environment                  | No Action Alternative           | Proposed Action Alternative                                                                                                                                                                                                                                                                                                                                                                                                                        | Secure Fence Act Alignment Alternative                                                                                                                                                                                                       |
|---------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Land Use                              | No direct impacts are expected. | Approximately 11.2 acres of private land would be required to construct this alternative. The remainder of the project corridor is within the Roosevelt Reservation or on BLM property. BLM is cooperating agency for this project; therefore, although land use would change in these areas, it is an acceptable change. No significant impacts are expected, as the indirect beneficial impacts would greatly outweigh the minor direct impacts. | Approximately 45 acres of private and Federal lands would be changed from their current uses to CBP infrastructure. No significant impacts are expected, as the indirect beneficial impacts would greatly outweigh the minor direct impacts. |
| Geology/Soils                         | No direct impacts are expected. | Geology resources in the region would not be significantly impacted. Up to 42.23 acres of soils could be permanently impacted if this alternative is implemented. The soils are regionally and locally common; thus, no significant impacts would occur. No prime farmlands would be impacted.                                                                                                                                                     | If implemented at least 45 acres of soils could be permanently impacted under this alternative. No prime farmlands would be impacted. No significant impacts on soils or geology would occur as a result of the Proposed Action Alternative. |
| Hydrology and Groundwater             | No direct impacts are expected. | The total amount of water withdrawal over the life of the project is approximately 5.6 acre-feet. Water would be obtained from existing wells or those that were previously analyzed in the DHS 2003 EA. No deficit would occur to the region's available groundwater sources; therefore, no significant impacts on water resources would occur.                                                                                                   | At least 6 acre-feet of water would be required for dust suppression and construction activities. No deficit would occur to the region's available groundwater sources; therefore, no significant impacts on water resources would occur.    |
| Surface Waters and Waters of the U.S. | No direct impacts are expected. | The Proposed Action Alternative would result in indirect beneficial impacts on ephemeral streams as a result of reducing illegal vehicle traffic and reducing erosion and sedimentation.                                                                                                                                                                                                                                                           | This alternative would have greater impacts on surface waters and waters of the U.S. than the Proposed Action Alternative. No significant impacts would occur.                                                                               |
| Floodplains                           | No direct impacts are expected. | No direct impacts on floodplains would occur. Indirect impacts could occur as IAs try to circumvent the proposed infrastructure.                                                                                                                                                                                                                                                                                                                   | The same impacts as those presented for the Proposed Action Alternative would be expected if this alternative were chosen.                                                                                                                   |

Table 2-5, continued

| Affected Environment           | No Action Alternative           | Proposed Action Alternative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Secure Fence Act Alignment Alternative                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vegetation                     | No direct impacts are expected. | Approximately 42.23 acres would be impacted if the Proposed Action Alternative is chosen. No significant impacts would be expected. Indirect impacts could occur in areas outside of the project corridor.                                                                                                                                                                                                                                                                                                                                        | At least 45 acres of permanent impacts could occur if the proposed action is implemented. The vegetation is regionally and locally common. Thus, no significant impacts would be expected.                                                                                                                                                                                                                    |
| Wildlife and Aquatic Resources | No direct impacts are expected. | If implemented, approximately 42.23 acres of habitat could be permanently impacted, while 2.1 acres would be temporarily impacted. The temporarily impacted areas would be rehabilitated. The habitat in the corridor is locally and regionally common. Therefore, no significant impacts are expected. Wildlife movement across the international boundary would be impeded within the corridor; however, these impacts would be minimal to wildlife, locally or regionally. Indirect impacts could occur in areas outside the project corridor. | This alternative would impact at least 45 acres of wildlife habitat. However, this habitat is locally and regionally common and its loss would not constitute significant impacts. Wildlife movement impacts would be the same as those discussed for the Proposed Action Alternative. Therefore, no significant impacts are expected. Indirect impacts could occur on areas outside of the project corridor. |
| Protected Species              | No direct impacts are expected. | The Proposed Action Alternative may affect the Quino checkerspot butterfly. No significant impact on any state or BLM protected species is expected.                                                                                                                                                                                                                                                                                                                                                                                              | Additional NEPA documentation and biological surveys would have to be completed in order to accurately analyze the impacts on protected species if this alternative is chosen.                                                                                                                                                                                                                                |
| Cultural Resources             | No direct impacts are expected. | No cultural resources would be impacted either directly or indirectly, since none are present.                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No cultural resources would be impacted either directly or indirectly, since none are present.                                                                                                                                                                                                                                                                                                                |
| Air Quality                    | No direct impacts are expected. | Under the Proposed Action Alternative, exhaust pollutants and dust emissions would increase temporarily from the operation of heavy equipment used for construction activities. These emissions would return to pre-construction levels following construction. The Proposed Action Alternative would have an indirect beneficial impact on air quality as a result of reducing fugitive dust emissions.                                                                                                                                          | The impacts on air quality in the region would be similar to those mentioned for the Proposed Action Alternative; however, these impacts would be greater in nature. Regardless, due to the good wind dispersal patterns and the remote nature of the project corridor these impacts too would be below <i>de minimis</i> levels and would not be significant.                                                |
| Noise                          | No direct impacts are expected. | The project corridor is located in remote areas with two residential or other sensitive receptors; therefore, the impacts would be minimal and temporary.                                                                                                                                                                                                                                                                                                                                                                                         | Noise impacts would be greater than the Proposed Action Alternative due to the larger footprint. However, these impacts would be temporary and cease upon completion of the construction activities. No significant impacts are expected.                                                                                                                                                                     |

Final

2-15

November 2008

San Diego Sector Proposed Tactical Infrastructure

Table 2-5, continued

| Affected Environment                             | No Action Alternative           | Proposed Action Alternative                                                                                                                                                                                                                                                                                                                                            | Secure Fence Act Alignment Alternative                                                                                                                                                                                        |
|--------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aesthetics                                       | No direct impacts are expected. | The aesthetics of the project corridor would be not be substantially impacted due to the existing infrastructure in place throughout most of the corridor. The beneficial impacts from the reduction of IAs and associated trash would outweigh any adverse impacts. No significant impacts would occur. Indirect impacts could occur outside of the project corridor. | Similar impacts as those discussed for the Proposed Action Alternative would be expected for this alternative; however, due to the larger footprint and the addition of a second fence, the adverse impacts would be greater. |
| Hazardous Materials                              | No direct impacts are expected. | Potential indirect impacts associated with the spill of petroleum, oil, or lubricants could occur during construction. Impacts associated with any potential spills would be minimized through the implementation of mitigation measures incorporated as part of the Proposed Action Alternative.                                                                      | The same impacts as those discussed for the Proposed Action Alternative would be expected for this alternative if it were implemented.                                                                                        |
| Socioeconomics                                   | No direct impacts are expected. | Minor, temporary impacts could occur. Indirect beneficial impacts would occur within the region due to the reduction of IA foot traffic and the associated societal cost (e.g. crime, vandalism, drug smuggling).                                                                                                                                                      | Minor, temporary impacts could occur. Indirect beneficial impacts would occur within the region due to the reduction of IA foot traffic and the associated societal cost (e.g. crime, vandalism, drug smuggling).             |
| Environmental Justice and Protection of Children | No direct impacts are expected. | Two residences are located near the 7 Gates/Railroad project site while all other areas are remote and uninhabited. This alternative would not require the displacement of any residence or disproportionately impact minority populations, low income families, or put children at risk of injury.                                                                    | The same impacts as those discussed for the Proposed Action Alternative would be expected for this alternative since no additional fence would be installed along the 7 Gates/Railroad corridor.                              |
| Sustainability and Greening                      | No direct impacts are expected. | Federal sustainability and greening practices would be implemented to the greatest extent practicable. No significant impacts are expected to occur.                                                                                                                                                                                                                   | The same impacts as those discussed for the Proposed Action Alternative would be expected for this alternative if it were implemented.                                                                                        |
| Human Health and Safety                          | No direct impacts are expected. | Construction activities would be completed by professionals who are skilled in their duties. Construction activities would be completed under Occupational Health and Safety Administration guidelines and would not jeopardize the health or safety of those working or residing in or near the project corridor. No significant impacts would occur.                 | The same impacts as those discussed for the Proposed Action Alternative would be expected for this alternative if it were implemented.                                                                                        |



## **2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE**

CEQ's implementing regulation 40 CFR 1502.14(c) instructs NEPA preparers to "Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference." CBP has identified its Preferred Alternative as Alternative 2.

Implementation of Alternative 2 would meet CBP's purpose and need described in Section 1.2. The No Action Alternative would not meet CBP's purpose and need. Alternative 3 would meet CBP's purpose and need, but would have greater environmental impacts compared to the Preferred Alternative. CBP might need to implement this alternative at some point in the future, depending on future IA traffic and USBP operational needs and strategies. At the present time, however, CBP believes that this level of TI is not necessary. Still, it will be carried forward as a viable alternative.

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***SECTION 3.0***  
***AFFECTED ENVIRONMENT AND CONSEQUENCES***

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## 3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

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### 3.1 INTRODUCTION

This section of the EA describes the natural and human environment that exists within the project corridor and region of influence (ROI) and the potential impacts of the No Action and the two action alternatives outlined in Section 2.0 of this document. The ROI for this project is San Diego County. Only those parameters that have the potential to be affected by any of the alternatives are described, as per CEQ guidance (40 CFR 1501.7 [3]). Some topics are limited in scope due to the lack of direct effect from the proposed project on the resource, or because that particular resource is not located within the project corridor. Therefore, resources such as utilities, communications, climate, and wild and scenic rivers are not addressed for the following reasons:

- Utilities: No utilities (e.g., sewer, transmission lines) would be affected by the proposed action. Negligible amounts of energy (fuel) would be required to construct, install, and maintain the infrastructure proposed for this project.
- Communications: The proposed action would not affect communications systems in the area.
- Climate: The proposed action would not affect climate; extreme local weather conditions could affect the schedule of the construction activities, but any delays to the schedule would not result in synergistic or indirect effects on other resources.
- Wild and Scenic Rivers: The proposed action would not affect any designated Wild and Scenic Rivers because no rivers designated as such are located within, or near the project corridor.
- Roadways and Traffic: No high traffic public roadways would be impacted as the access roads and project areas are located in remote, undisturbed areas. Traffic will not be impacted from construction equipment traveling to and from the various work sites.

Impacts (consequence or effect) can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR

1508.8[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). As discussed in this section, the No Action, Proposed Action, and Secure Fence Act alternatives may create temporary (lasting the duration of the project), short term (up to 3 years), long term (3 to 10 years following construction), or permanent impacts or effects. Significant impacts will receive the greatest attention in the decision making process. Whether an impact is significant depends on the context in which the impact occurs and the intensity of the impact.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. Significant impacts are those effects that would result in substantial changes to the environment (40 CFR 1508.27) and should receive the greatest attention in the decision-making process. Insignificant impacts are those that would result in minimal changes to the environment. The following discussions describe and, where possible, quantify the potential effects of each alternative on the resources within or near the project corridor. All impacts described below are considered to be adverse unless stated otherwise. In addition, impacts are also addressed compared to significance criteria relative to CEQA, as mentioned previously. Under NEPA, significance is used to determine whether an Environmental Impact Statement or other level of NEPA documentation is warranted. Some impacts deemed to be significant under CEQA might not be of sufficient magnitude to be considered significant under NEPA.

The anticipated direct, permanent impacts from the Proposed Action Alternative total approximately 42.23 acres. The impacts are based on calculations using design concepts and baseline engineering drawings, as depicted in Appendix A. All temporarily impacted areas would be rehabilitated upon completion of the construction activities (see Section 5.0). The proposed project would be constructed by private contractors, military units or CBP maintenance personnel; the anticipated completion date is December of 2009. Military units could be used to assist in road construction, in particular. Furthermore, it is assumed water for construction would be obtained from

existing water wells or previously analyzed wells described in the DHS 2003 EA. It is further assumed that for primary pedestrian fence and road construction approximately 1-acre foot of water per mile would be needed for concrete and dust suppression, while for road widening approximately ½-acre foot per mile would be used for dust suppression.

If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if schedules dictate it to be necessary. It is anticipated that the temporary lights would not operate any longer than 4 weeks in one location, no more than 0.5-mile of lights would be in operation at any one time, and no more than 10 lights would be in operation at one time, at each project site.

The amount of land impacted by the Secure Fence Act Alternative is based on a footprint of 130 feet X 1,787 feet for a total of 5.3 acres (*i.e.*, 2 times more than the Preferred Alternative in those locations where fence is being constructed). This footprint may not be totally accurate as design concepts may dictate a much larger footprint. Additionally, if the Secure Fence Act Alternative is ultimately selected, some impacts may be potentially significant, and subsequent site-specific surveys and NEPA documentation will be needed to accurately analyze these potential impacts. Therefore, throughout this section of the EA, the Secure Fence Act Alternative is analyzed using professional opinion and best data available.

## **3.2 LAND USE**

### **3.2.1 Affected Environment**

A description of land use and how it is identified is herein incorporated by reference from the DHS 2003 EA. In summary, land within the proposed project areas is predominately undeveloped. Land use is indicative of land ownership. Ownership of

land in the project corridor is divided between private ownership and Federal lands. BLM is the majority landowner for the project corridor, including the 60-foot Roosevelt Reservation. This land is used for recreation and grazing rights. BLM issued their South Coast Resource Management Plan (RMP) in 1994, which provides management guidance and identifies land use decisions to be implemented under BLM jurisdiction within the South Coast Region. The goals of the RMP were to provide a framework for BLM to maximize values and the multiple use of BLM lands through a rational, consistently applied set of guidelines (BLM 1994). An example of this would be the promotion and protection of long-term recovery abilities of both flora and fauna within BLM lands. A Memorandum of Understanding (MOU) between DHS and Department of the Interior was signed in 2006, which acknowledged the authority of USBP to utilize the Roosevelt Reservation for law enforcement purposes. A copy of the MOU is contained in Appendix C. The private lands are typically developed as single-residence ranch land or remain undeveloped and held for occasional use (*i.e.*, recreation) or investment purposes.

### **3.2.2 Environmental Consequences**

The CEQA significance threshold established for land use is:

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

#### **3.2.2.1 No Action Alternative**

Under the No Action Alternative, no road or fence construction would occur within the project corridor. Therefore, land use would not change (*i.e.*, no direct impacts). However, indirect impacts, such as IA foot paths, vegetation losses, accumulated trash and damage to cultural resource sites, would be expected as IA traffic and subsequent USBP pursuits continue and possibly increase.

#### **3.2.2.2 Proposed Action Alternative**

With the implementation of the Proposed Action Alternative, land use within the Roosevelt Reservation would remain as a Federal law enforcement zone. The



Proposed Action Alternative would conform to the BLM South Coast Resource Management Plan and would not impact BLM's guidance for lands under BLM jurisdiction (Hill 2007). Privately owned land and land owned by BLM is currently open, undeveloped areas. These sites (42.23 acres) would be permanently converted to areas set aside for law enforcement purposes. However, open space is common within this area and would not pose a significant change to the land use regionally. The staging area, which is needed to store and stockpile materials and equipment, would temporarily impact approximately 2.1 acres. This area is not addressed in this Final EA, since it was waived from compliance with NEPA by the Secretary of DHS.

Approximately 11.2 acres of privately-owned land would be impacted by this alternative. This private land would change from private land to lands used for USBP border security activities. Negotiations are on-going with private land owners, and they would be compensated at fair market value for any lands acquired by CBP for the Proposed Action Alternative. No significant impacts on land use would occur due to implementation of the Proposed Action.

### ***3.2.2.3 Secure Fence Act Alignment Alternative***

Under the Secure Fence Act Alignment Alternative, a larger portion of land that is currently open space would be dedicated to law enforcement with the implementation of an enforcement zone from the border for approximately 130 feet to the north. However, open space is common within this area and would not pose a significant change to the land use regionally, especially since the majority of the affected land would be located adjacent to the border. Compensation for private land owners would be administered the same as it is described for the Proposed Action Alternative. The impacts as a result of this alternative would be minor to moderate, depending upon the final design or construction footprint.

### **3.3 GEOLOGY AND SOILS**

#### **3.3.1 Affected Environment**

General information regarding soil associations, soil types, and geology within the project corridor and region was previously presented in the DHS 2003 EA; thus, this information is incorporated herein by reference. The entire project corridor is located within the Peninsular Range Geomorphic Province, which is mostly comprised of granitic rock (Nyman 2002). The Peninsular Ranges Province was formed by the Southern California Batholith, a composite of several bodies of igneous rock formed in the subsurface (Demere 1997). These bodies of igneous rock, having varying chemical composition, shifted from gabbro to granodiorite. In the Cretaceous period, the Nevadan Orogeny caused major upward thrusting in southern California (Sharp 1976).

Additionally, the project corridor consists of soils in the Tollhouse, La Posta, Rock land, Las Posas, Kitchen Creek, Calpine, Visalia, Wyman and Mottsville associations. The Tollhouse association is described as consisting of shallow, somewhat excessively drained soils that formed in material weathered from granitic rocks (U.S. Department of Agriculture [USDA] 1973). The Las Posas association consists of well-drained stony fine sandy loams that have clay subsoils (USDA 1973). Exposed bedrock and large boulders dominate the Rock land association, with little vegetation (USDA 1973). The La Posta association is somewhat excessively drained loamy coarse sands over decomposed granodiorite; the Mottsville association is similar, but is associated with alluvial fans. All these soils have a severe erodibility rating (USDA 1973). None of these soils are considered Prime Farmland, since no irrigation is present.

#### **3.3.2 Environmental Consequences**

The CEQA significance thresholds for geology and soils are:

- The action exposes people or structures to substantial adverse effects, including the risk of injury or death;
- The action entirely removes a geologic resource; thus removing the potential for scientific investigation of that geologic resource;
- The action results in substantial soil erosion or loss of topsoil; and

- Infrastructure is located on inappropriate soil types creating substantial risks to life or property.

### **3.3.2.1 No Action Alternative**

Under the No Action Alternative, soils and geology in the project area would remain in the existing condition, as no road or fence construction would occur at or within the project corridor. Therefore, no direct impacts, either beneficial or adverse, on soils or geology would result from the implementation of the No Action Alternative. However, indirect impacts, such as soil erosion from IA footpaths, could occur throughout the project area from continuous IA traffic and consequent USBP enforcement actions

### **3.3.2.2 Proposed Action Alternative**

Minor surface impacts on geologic formations would be expected due to road and primary pedestrian fence construction activities. Although geologic formations would be adversely impacted, these impacts would be minimal and localized. No dangerous or unstable conditions would be created within any geologic unit as a result of the Proposed Action Alternative. Additionally, the Proposed Action Alternative would not expose people or structures to potential substantial adverse effects. Furthermore, no geologic resource is found exclusively within the project corridor; thus, no geologic resources would be removed from future scientific study. Therefore, the Proposed Action Alternative would not result in a significant adverse impact on any geologic unit or local and regional geologic formations.

With the implementation of the Proposed Action Alternative, there would be approximately 42.23 acres of direct permanent impacts on soils. These include: 18.95 acres of Tollhouse association soils, 11.7 acres of La Posta association soils, 3.41 acres of Las Posas association soils, 2.9 acres of the Calpine soils, 3.42 acres of Kitchen Creek soils, 0.31 acre of Visalia soils, 0.45 acre of Wyman soil, and 1.1 acres of Mottsville association soils. These soils are common locally and regionally. Therefore, no significant impacts are expected.

Short-term impacts, such as increased runoff, on soils can be expected from the construction of roads; however, these impacts would be alleviated once construction is finished. Long-term effects on soils would be compaction from vehicles on new roads. Pre- and post-construction best management practices (BMPs) would be developed and implemented to reduce or eliminate erosion and downstream sedimentation. Compaction techniques and erosion control measures, such as waterbars, gabions, straw bales, and the use of rip-rap or sediment traps, would be some of the BMPs expected to be implemented.

The temporary operation of portable lights within the construction footprint would have no effect on soils. The potential exists for petroleum, oil, and lubricants (POL) to be spilled during refueling of the generators; however, drip pans would be provided for the power generators to capture any POL that is accidentally spilled during maintenance activities or leaks from the equipment; thus, no significant impacts would occur due to the operation of the portable lights.

### **3.3.2.3 Secure Fence Act Alignment Alternative**

Under the Secure Fence Act Alignment Alternative, approximately 45 acres would be impacted to create the 130-foot enforcement zone and the remaining road projects. The 130-foot enforcement zone would be maintained clear of vegetation, thereby increasing the potential for soil to be impacted by wind and stormwater erosion. Additional post-construction BMPs would need to be implemented to reduce the potential for soil erosion. The same soil associations would be impacted as those presented for the Proposed Action Alternative. Although this alternative would create greater impacts on soils, these impacts would not be considered significant due to the impacted soils abundance locally and regionally.

## **3.4 HYDROLOGY AND GROUNDWATER**

### **3.4.1 Affected Environment**

Groundwater of the region was discussed in detail in the original EA (DHS 2003), and is incorporated herein by reference. The project area lies within the Peninsular Range geomorphic province. This province covers a large portion of southern California, including all of San Diego County. Large quantities of water are stored in the granitic rock from which this area formed. Most of the groundwater stored moves through the area through cracks and fractures (Nyman 2002). Groundwater in this system is replenished through rain and snow events. Groundwater for this project would be obtained from existing wells or wells that were previously planned for and analyzed in the DHS 2003 EA.

### **3.4.2 Environmental Consequences**

The CEQA significance threshold for groundwater resources is:

- The action substantially depletes groundwater supplies, or interferes substantially with groundwater recharge such that there would be a net deficit in aquifer volume, or a lowering of the local groundwater table.

#### **3.4.2.1 No Action Alternative**

Upon implementation of the No Action Alternative, no direct or indirect impacts on groundwater would be expected, as no construction would occur.

#### **3.4.2.2 Proposed Action Alternative**

Water would be required for the road construction, widening, and maintenance. Workable soil moisture content must be obtained in order to properly compact soils for road construction and to reduce fugitive dust emissions during construction. Water for construction and maintenance would be hauled into the project corridor from existing wells or wells that were previously analyzed in the DHS 2003 EA. The total amount of water that would be required to facilitate construction of the Proposed Action Alternative would be approximately 5.6 acre-feet. This 5.6 acre-feet could be consumed during the construction activities, which would be completed by December 2008. A hydrology

report conducted for the DHS 2003 EA is included in Appendix D, which provides specific details on the region's groundwater resources. Although groundwater would be used from within the project corridor, the area is adequately recharged via rains and snow-melt each year. Therefore, no significant impacts on groundwater or hydrology, locally or regionally, would occur upon implementation of this alternative.

### **3.4.2.3 Secure Fence Act Alignment Alternative**

This alternative would require greater quantities of groundwater to be used versus the Proposed Action Alternative; however, the impacts would still be considered insignificant. An estimate of water needed to facilitate the construction of this alternative is approximately 6 acre-feet. The removal of 6 acre-feet within the basin would not significantly impact water resources locally or in the region due to the high recharge capability of the area (see Appendix D).

## **3.5 SURFACE WATERS AND WATERS OF THE U.S.**

### **3.5.1 Affected Environment**

Section 305(b) of the CWA requires each state to provide a list, known as the 303(d) List, which identifies those streams or lakes that do not meet one or more surface water quality standards. These waters are known as "impaired waters." The CWA requires California Environmental Protection Agency to develop Total Maximum Daily Loads (TMDLs) for impaired waters. The statute addresses how the department identifies impaired waters, develops TMDLs, and prepares implementation plans to achieve the needed pollution reductions in the watershed so that the impaired stream will meet applicable standards (U.S. Environmental Protection Agency [EPA] 1999). The list of water quality limited segments in the Tijuana River Watershed and their pollutants of impairment are provided in Table 3-1. No TMDLs have been reported to the EPA by California since October 1995 (EPA 2007a).

**Table 3-1. Water Quality Limited Segments in the Tijuana River Watershed**

| <b>Waterbody</b>      | <b>Pollutants of Impairment</b>                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| Tijuana River         | Bacteria, Trace Elements, Solids, Low Dissolved Oxygen, Trash, Eutrophic, Pesticides, and Trash              |
| Tijuana River Estuary | Bacteria, Low Dissolved Oxygen, Eutrophic, Pesticides, Trash, Thallium, Synthetic Organics, Lead, and Nickel |

Source: EPA 2007a

The designation of beneficial uses for waters of the State of California is mandated by the Porter-Cologne Water Quality Control Act. Water quality for designated beneficial uses are protected by the state and should work in tandem with sections 303 and 305 of the CWA. The project area is located in the Tijuana River Watershed (CA 91111000). Several ephemeral washes (Campo Creek, Boundary Creek, and several small unnamed creeks) cross near the project area and contribute as water sources to the Tijuana River.

The Tijuana River, Campo Creek, and other creeks in the area have the following designated beneficial uses:

- **Contact Water Recreation** – includes uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible.
- **Non-Contact Water Recreation** - includes uses of water for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion is reasonably possible.
- **Warm Freshwater Habitat** – includes uses of water that support warm water ecosystems (eg., aquatic habitat, vegetation, fish and wildlife).
- **Wildlife Habitat** – includes uses of water that support terrestrial ecosystems including preservation and enhancement of terrestrial habitats, vegetation, wildlife or wildlife water and food sources (California Regional Water Quality Control Board 1994).

The lack of a beneficial uses listed for any given area does not rule out the possibility of existing or future beneficial uses.

The Tijuana River stream segment is on California's 303(d) List of impaired waters for eutrophication, bacteria indicators, low dissolved oxygen, pesticides, synthetic organics, solids, trace elements, and trash. This subsegment of the Tijuana River is not meeting designations for beneficial uses of primary and secondary contact recreation and wildlife and fish propagation. Sources of pollution are non-point sources and point sources (CalEPA 2007).

Section 404 of the CWA authorizes the Secretary of the Army, acting through USACE, to issue permits for the discharge of dredged or fill material into Waters of the U.S. (WUS), including wetlands. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). Due to the climate of the project area, most of the surface drainage channels are dry much of the year and are considered ephemeral. No wetlands or WUS exist within the project corridor addressed in this Final EA.

### **3.5.2 Environmental Consequences**

The CEQA significance thresholds for water resources are:

- The action substantially increases the impairment of existing impaired waters or creates impairment of water bodies;
- The action substantially alters existing drainage patterns of the site or area, resulting in substantial erosion; and
- The action results in a permanent loss of a wetland or wetland function that can not be compensated.

#### **3.5.2.1 No Action Alternative**

Under this alternative, no construction would occur; therefore, no direct impacts would be expected. Indirect impacts could occur as IAs continue to illegally cross the border resulting in subsequent USBP pursuits. These potential impacts could occur in the form of erosion and sedimentation of stream banks as a result of the IA traffic and pursuits.



### **3.5.2.2 Proposed Action Alternative**

The Proposed Action Alternative would not result in a permanent impact on any perennial or intermittent streams or WUS, as none are present within the project corridor.

Construction sites greater than 1 acre require a Storm Water Pollution Prevention Plan (SWPPP) as part of the NPDES permit process, which would be prepared prior to construction. During construction activities, water quality within ephemeral drains would be protected through the implementation of BMPs (e.g., silt fences) as specified in the SWPPP. General BMPs routinely employed as part of CBP construction projects are described in Section 5.0.

No impacts are expected on surface water or WUS from the placement of up to 10 portable lights. Lights would not be placed in or adjacent to drainages in order to reduce the potential of surface water contamination. As a precaution, catch pans would be placed under the portable light generators to contain any accidental POL spills that may occur during refueling or operation.

The Proposed Action Alternative would not result in severe erosion or sedimentation, nor would it substantially alter existing drainage patterns, or result in a violation of any Federal or state water quality standards. Therefore, no significant adverse impacts on surface water resources as a result of this alternative are expected.

### **3.5.2.3 Secure Fence Act Alignment Alternative**

Impacts from the use of portable lights would be the same as those presented in the Proposed Action Alternative. The same SWPPP requirements and mitigation measures proposed for Proposed Action Alternative would apply to this alternative. Therefore, no significant impacts on surface waters or WUS would be expected if this alternative were implemented.

## 3.6 FLOODPLAINS

### 3.6.1 Affected Environment

A floodplain is the area adjacent to a river, creek, lake, stream, or other open waterway that is subject to flooding when there is a significant rain. If an area is in the 100-year floodplain, there is a 1-in-100 chance in any given year that the area will flood. EO 11988 (Floodplain Management) (43 FR 6030) was enacted on May 24, 1977 to “avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. EO 11988 directs all Federal agencies to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains...”. Additionally, where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988 as outlined in the FEMA document *Further Advice on EO 11988 Floodplain Management*. The NEPA process incorporates floodplain management through analysis and public coordination of the EA.

Federal Emergency Management Agency (FEMA) floodplain maps were reviewed to identify project locations that would occur within mapped floodplains (FEMA 2007 and San Diego County 2007). The only location within the project corridor that falls within the 100-year floodplain is Krutzch’s Hill (FEMA Map 06073C2275F). As depicted on Figure 3-1, the extreme eastern end of the project (approximately 110 feet) would extend into the 100-year floodplain of an unnamed drainage.

### 3.6.2 Environmental Consequences

The CEQA significance thresholds established for floodplains are:

- Any action that places structures within a 100-year flood hazard area, which would impede or redirect flood flows, would be significant.

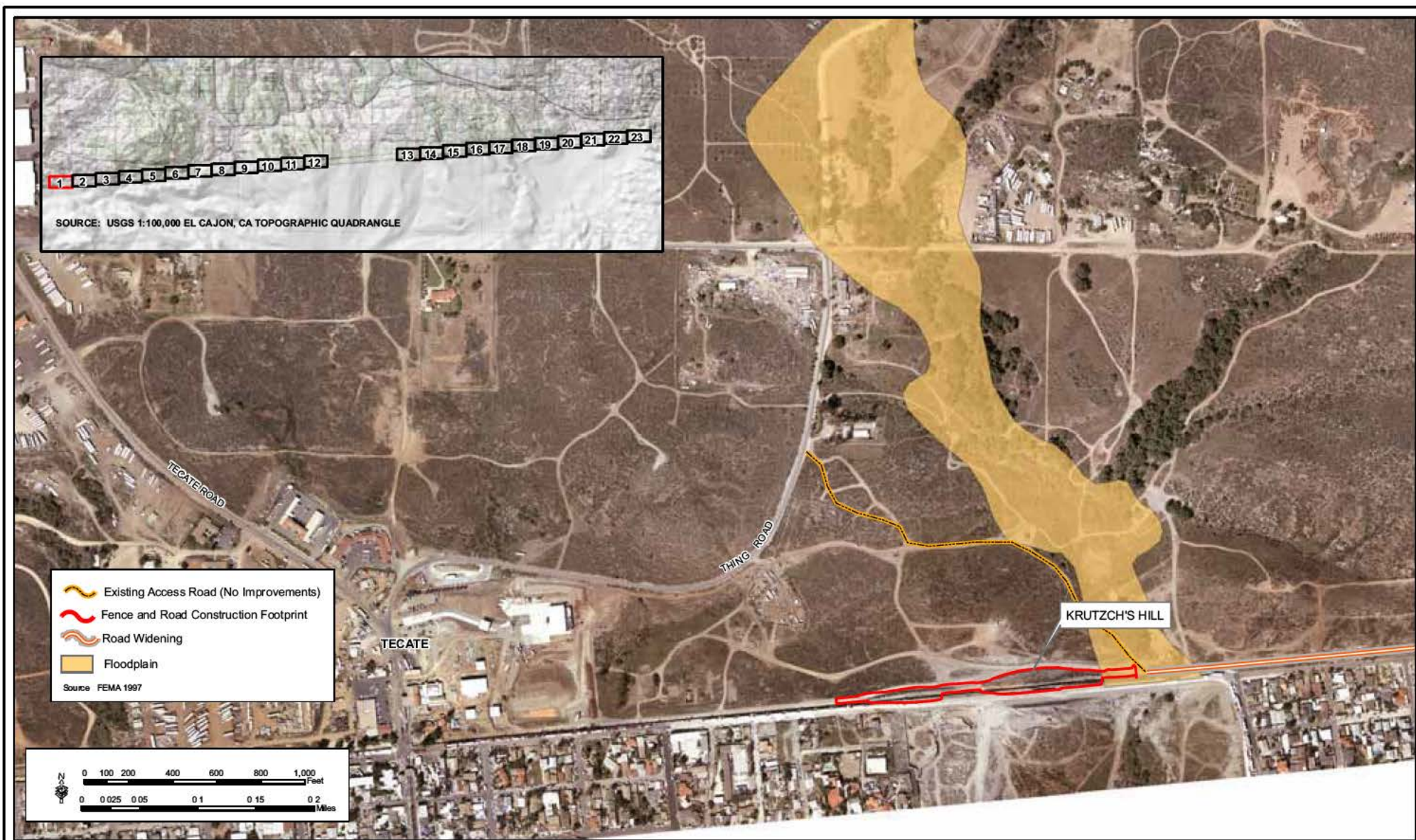


Figure 3-1: FEMA Floodpain

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### **3.6.2.1 No Action Alternative**

Under the No Action Alternative, no direct impacts on floodplain areas would occur, since no construction would take place. However, indirect impacts on floodplains could occur due to continued degradation of surface water channels due to continued IA traffic and the requisite enforcement actions resulting from this traffic.

### **3.6.2.2 Proposed Action Alternative**

Although a portion of the proposed construction activities at Krutzch's Hill would fall within the 100-year floodplain, the primary pedestrian fence construction would be replacement of existing primary pedestrian fence and the road improvements would occur along existing roads. Therefore, no additional impediments to stream flow or increases in stormwater runoff would occur that could cause flood elevations or flood flow velocities to increase. Properly designed erosion and sediment controls and storm water management practices would be implemented during construction activities. CBP has determined that there is no other practicable alternative to constructing this section of the Proposed Action Alternative within the floodplain that meets USBP's mission and operational needs. Consequently, the proposed action would be in compliance with EO 11988. Indirect beneficial impacts from reducing erosion and sedimentation associated with degraded road segments would also be expected. No significant impacts would occur on floodplains as a result of implementing the Proposed Action Alternative.

### **3.6.2.3 Secure Fence Act Alternative**

The impacts on floodplains associated with this alternative would be slightly greater than those identified for the Proposed Action Alternative due to the larger construction footprint at Krutzch's Hill. However, through properly designed erosion and sediment controls and storm water management practices that would be implemented during construction activities, compliance with EO 11988 would still be expected. Additionally, as mentioned in Section 3.6.2.2, no other practical alternative to constructing this section of this alternative is available within the floodplain that meets USBP's mission and operational needs. No significant impacts would be expected if this alternative were implemented.

### 3.7 VEGETATIVE HABITAT

#### 3.7.1 Affected Environment

General information regarding vegetation within the project corridor and region was previously discussed in the DHS 2003 EA, and is incorporated herein by reference. However, additional pedestrian surveys were conducted during October 2007 of each of the proposed project sites to identify specific community types, sensitive species, and habitat suitable to support sensitive species. Table 3-2 identifies the vegetation communities identified at each project site, although the vegetation at some sites observed during field surveys displayed a transition from one vegetation community to another. It should also be noted that these surveys were conducted immediately prior to the 2007 wildfires; much of the vegetation in the areas in and surrounding the proposed project sites have been destroyed by these fires.

**Table 3-2. Vegetation Communities within the Project Area**

| Project Site       | Vegetation Community         |
|--------------------|------------------------------|
| Krutzch's Hill     | Disturbed Coastal Sage Scrub |
| East Smith Canyon  | Mixed Chaparral              |
| East Boundary Peak | Chamise Chaparral            |
| 7 Gates/Railroad   | Disturbed Chaparral          |

A description of the vegetation communities and specific plant species observed is provided in the following paragraphs.

Chamise chaparral is dominated by chamise (*Adenostoma fasciculatum*) that is often densely interwoven with little understory when mature (Holland 1986). Chamise is adapted to revegetating areas cleared by fire by stump sprouting (Holland 1986). Other plant species observed within the chamise chaparral vegetation community included red shank (*Adenostoma sparsifolium*), holly-leaved cherry (*Prunus ilicifolia*), sugar bush (*Rhus ovata*), (*Ceanothus sp.*), Mexican manzanita (*Arctostaphylos pungens*), our Lord's candle (*Yucca whipplei*), yerba santa (*Eriodictyon crassifolium*), San Diego bushmallow (*Malocothamnus densiflorus*), Davidson's buckwheat (*Erigonum davidsonii*), brittlebush (*Encelia farinosa*), broom matchweed, broom baccharis,

deerweed (*Lotus scoparius*), wild oat (*Avena* sp.), rock rose (*Helianthemum scoparium*), saw-toothed goldenbush (*Hazardia squarrosa*), sagebrush (*Artemisia* sp.), California milkweed (*Asclepias californica*), San Diego County sunflower (*Viguiera laciniata*), and thistle (*Cirsium* sp.).

Mixed chaparral is typically dominated by scrub oak (*Quercus berberidifolia*), chamise, and any one of several taxa in manzanita (*Arctostaphylos* sp.) and *Ceanothus* species (Holland 1986). Mixed chaparral is also adapted to repeated fires, by which many species respond by stump sprouting (Holland 1986). Plant species observed during field surveys within the mixed chaparral vegetation community included Tecate cypress (*Cupressus forbesii*), sugar bush, deerweed, four-wing saltbush (*Atriplex canescens*), mustard (*Brassica* sp.), prickly pear (*Opuntia phaeacantha*), our Lord's candle, valley cholla (*Opuntia parryi* var. *parryi*), catclaw acacia (*Acacia greggii*), Mexican manzanita, Davidson's buckwheat, California lilac (*Ceanothus* spp.), California buckwheat (*Eriogonum fasciculatum*), Mormon tea (*Ephedra californica*), and holly-leaved cherry.

Disturbed vegetation communities occur along the existing border roads, including Krutzch's Hill, and along the 7 Gates/Railroad corridor. The communities along the border road occur as a very narrow strip. The vegetation along the railroad is very sparse, and includes non-native, invasive species as well as some native species.

### **3.7.2 Environmental Consequences**

The CEQA significance thresholds established for vegetation resources are:

- Any action that affects ecological processes, population size, population connectivity, migration, or individual fecundity to the extent that long-term viability of any species becomes threatened would be significant.
- Any action that results in the permanent loss or substantial degradation of sensitive or rare plant communities (*i.e.*, riparian habitats) would be significant.

### **3.7.2.1 No Action Alternative**

Under the No Action Alternative, no road or primary pedestrian fence construction would occur at the project locations. Therefore, vegetation would not be directly impacted from construction; however, vegetation at the project sites and throughout the region would be indirectly impacted from continued IAs traffic which creates new trails through undisturbed areas. Increases in illegal foot and vehicle traffic would continue to result in damage to vegetation.

### **3.7.2.2 Proposed Action Alternative**

With the implementation of the Proposed Action Alternative, there would be approximately 42.23 acres of vegetation permanently altered. Road widening would impact 6.71 acres of chamise chaparral, 14.93 acres of mixed chaparral, and 7.52 acres of disturbed vegetation. The new road construction would permanently impact 0.07 acres of mixed chaparral, 0.28 acres of chamise chaparral, and 10.85 acres of disturbed vegetation. These plant communities are both locally and regionally common. In addition, the permanent loss of 42.23 acres of vegetation would not adversely affect the population viability or fecundity of any floral or faunal species. Therefore, impacts are not expected to be significant.

The Proposed Action Alternative would also result in temporary indirect impacts on vegetation. Fugitive dust emissions resulting from construction would affect photosynthesis and respiration of plants within and adjacent to the project corridor. The magnitude of these effects would depend upon several biotic and abiotic factors, including the speed and type of vehicles, climatic conditions, success of wetting measures during construction, and the general health and density of nearby vegetation.

The use of portable lighting could affect plant growth, but these effects would be temporary. If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if



schedules dictate it to be necessary. Also, all lights would be removed from the project corridor upon completion of the construction activities, and the lights would be fitted with backlighting shields, where necessary, to minimize any stray light from escaping to areas outside of the project area. Therefore, no significant impacts on vegetation from the use of portable lights are expected.

Beneficial indirect impacts, such as a reduction of native vegetation being damaged from illegal activities and consequent USBP enforcement activities, would occur as IAs and smuggling activities are reduced or potentially eliminated within the area. Conversely, construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are considered unpredictable and beyond the scope of this EA. However, the primary pedestrian fence would act as a force multiplier, and allow USBP to deploy agents to areas without primary pedestrian fence; thereby minimizing potential adverse indirect impacts.

The Proposed Action Alternative is not expected to promote the establishment and spread of non-native and invasive species. Following construction, daily traffic and regular maintenance (twice a year) of the roads would impede the establishment of non-native and invasive species. Further, temporary impact areas would be rehabilitated by CBP using native vegetation or the distribution of organic and geological materials in association with natural revegetation. Rehabilitation efforts of temporary impact areas would reduce the potential establishment of non-native and invasive species. Through implementation of mitigation measures and BMPs, such as those outlined in Section 5.0, the Proposed Action Alternative is not expected to promote the establishment of non-native and invasive plant species; therefore, this action would not have a significant impact on the spread of non-native and invasive species.

### **3.7.2.3 Secure Fence Act Alignment Alternative**

Under the Secure Fence Act Alignment Alternative, approximately 45 acres of vegetation would be removed to accommodate the 130-foot enforcement zone required for the primary and secondary fences and the associated road improvements. These vegetation communities are all common regionally but there would be a greater loss of vegetation due to the larger footprint from this alternative. All other impacts would be similar to those discussed for the Proposed Action Alternative. The potential impacts would be considered minimal to moderate.

## **3.8 WILDLIFE AND AQUATIC RESOURCES**

### **3.8.1 Affected Environment**

California is one of the most biologically diverse areas in North America. Within its 160,000 square miles, California harbors more unique animals than any other state (Steinhart 1990). The native faunal components of the Peninsular Range support 432 species of birds, which are dominated by wood warblers (40 species), swans, geese, and ducks (34 species), sandpipers and phalaropes (30 species), gulls and terns (20 species), sparrows and towhees (20 species), and tyrant flycatchers (22 species). The majority of these species occur in spring and fall when neotropical migrants (e.g., flycatchers and warblers) pass through on their way to either summer breeding or wintering grounds and during winter when summer resident birds (i.e., robins, kinglets, and sparrows) from the north arrive to spend the winter. The majority of the 94 mammalian species found in the Peninsular Range are evening bats and rodents, with rodents being the most common. Only 17 species of amphibians are found within this province, with frogs being the most abundant and common. A total of 54 species of reptiles inhabit the Peninsular Range, with the iguanid lizards and colubrid snakes being dominant (Ingles 1957; Stebbins 1985; Holt 1990).

Wildlife species observed during field visits conducted in October 2007 within the project corridor were western scrub jay (*Aphelocoma californica*), common raven (*Corvus corax*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*),

American kestrel (*Falco sparverius*), California quail (*Callipepla californica*), house finch (*Carpodacus mexicanus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), red-tailed hawk (*Buteo jamaicensis*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*) scat, and desert cottontail (*Sylvilagus audubonii*).

### **3.8.2 Environmental Consequences**

Significance thresholds established for wildlife resources are:

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved Federal, state or local habitat conservation plan.
- Substantial interference with the movement of any native, resident, or migratory fish or wildlife species, or with established native resident, or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.

#### **3.8.2.1 No Action Alternative**

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

#### **3.8.2.2 Proposed Action Alternative**

Approximately 42.23 acres of wildlife habitat would be permanently impacted by the Proposed Action Alternative. These impacts would be considered negligible, as some of the project components occur in, near and within previously disturbed areas (e.g., road widening), the proposed infrastructure is planned near existing infrastructure, and the wildlife habitat is locally and regionally common.

The Proposed Action Alternative would not have direct impacts on fish or other aquatic species, because the proposed construction activities would not take place in naturally flowing or standing water. Mitigation measures would be implemented for construction in or near washes, as stated in Section 5.0, and would follow the measures described in

the project's SWPPP to reduce potential impacts on riparian areas from erosion or sedimentation.

Mobile animals (e.g., birds) would escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals could potentially be lost. As a result, direct minor adverse impacts on wildlife species in the vicinity of the project corridor are expected. Although some animals may be lost, this alternative would not result in any substantial reduction of the breeding opportunities for birds and other animals on a regional scale due to the suitable, similar habitat adjacent to the project corridor. Additionally, mitigation measures would be implemented to ensure that "take" of migratory birds occurring under this alternative is eliminated or minimized to the extent practicable, in accordance with the Migratory Bird Treaty Act (MBTA).

Although the primary pedestrian fence could preclude transboundary migration patterns of animals, especially larger mammals (e.g., mule deer), and thus fragment habitat within the project corridor, these impacts would be considered negligible. Habitat fragmentation typically affects species with small population sizes or that are dependent upon migration to obtain spatially or temporally limited resources. Wildlife would also still be able to migrate across the U.S.-Mexico border either to the east or west of the project components. In addition, the species located within the project corridor which could be affected by fragmentation are regionally common in both the U.S. and Mexico. The Proposed Action Alternative would not conflict with the provisions of conservation plans identified in the BLM South Coast Resource Management Plan, as mentioned in Section 3.2.2.2. Therefore, no significant adverse effects are anticipated on the region's wildlife population.

Additionally, short-term impacts on wildlife species (e.g., mule deer, red-tailed hawk, desert cottontail, and California towhee) from increased noise during construction activities could occur. Physiological responses from noise range from minor responses such as an increase in heart rate to more damaging effects on metabolism and hormone balance. Long-term exposure to noise can cause excessive stimulation of the

nervous system and chronic stress that is harmful to the health of wildlife species and their reproductive fitness (Fletcher 1990). Behavioral responses vary among species of animals and even among individuals of a particular species. Variations in response may be due to temperament, sex, age, or prior experience. Minor responses include head-raising and body-shifting, and usually, more disturbed mammals would travel short distances. Panic and escape behavior results from more severe disturbances causing the animal to leave the area (Busnel and Fletcher 1978). Since the highest period of movement for most wildlife species occurs during nighttime or low daylight hours, and construction activities would be conducted during daylight hours, to the maximum extent practicable, short-term impacts of noise on wildlife species are expected to be insignificant.

Impacts on wildlife resulting from the operation of the portable lights could potentially occur. Some species, such as insectivorous bats, may benefit from the concentration of insects that would be attracted to the lights. However, the proposed portable lights would only illuminate a minimal amount of area (200 feet per light), would be fitted with backlighting shields, would not shine into riparian areas, and would be temporary. The adverse and beneficial effects of lighting on reptiles and amphibians are currently unknown. This artificial lighting may cause activity levels in diurnal animals to increase (Rich and Longcore 2006); however, any increase would not be expected to create significant impacts to circadian rhythms in mammals and birds. It is anticipated that the temporary lights would not operate any longer than 4 weeks in one location, no more than 0.5-mile of lights would be in operation at any one time, and no more than 10 light units would be used at once at each project location. As the lighting is for construction purposes, wildlife would not be exposed to the nighttime lighting source once the project is complete. Therefore, no significant impacts on wildlife are expected as a result of the operation of portable lights.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are

considered unpredictable and beyond the scope of this EA. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers, minimizing potential adverse indirect impacts. Beneficial indirect impacts would be expected from the protection afforded to areas to the north of the project corridor due to the implementation of Proposed Action Alternative.

### **3.8.2.3 Secure Fence Act Alignment Alternative**

Impacts would be similar to the Proposed Action Alternative, but the amount of wildlife habitat impacted would be greater. Anticipated stresses to wildlife (e.g., mule deer, red-tailed hawk, desert cottontail, and California towhee) caused by construction activities (e.g., noise) would be expected. The implementation of the Secure Fence Act Alignment Alternative would result in approximately 45 acres of wildlife habitat permanently altered. The implementation of the Secure Fence Act alignment would require a 130-foot wide corridor that would be devoid of vegetation to accommodate the primary and secondary fences and the patrol road between them. Vegetation within this corridor would be permanently removed and maintained as such, for agent safety reasons and to reduce concealment opportunities, in the event the primary pedestrian fence is breached. All other impacts would be similar to those discussed for the Proposed Action Alternative. Less than significant impacts would be expected.

## **3.9 THREATENED AND ENDANGERED SPECIES**

### **3.9.1 Affected Environment**

General information regarding Federal, state, and BLM threatened and endangered species, critical habitat, and a list of protected species within the San Diego County was previously discussed in the DHS 2003 EA; thus, this information is incorporated herein by reference. A full list of Federally and state threatened and endangered species occurring within San Diego County can be found in Appendix E.

The Federally listed species with the greatest potential to occur within or near the project corridor are the least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher (*Poliioptila californica californica*), Quino checkerspot butterfly (*Euphydryas editha quino*), arroyo toad (*Bufo microscaphus californicus*), Otay tarplant (*Hemizonia conjugens*), willowy monardella (*Monardella linoides* ssp. *viminea*), Encinitas baccharis (*Baccharis vanessae*), and San Diego thornmint (*Acanthomintha ilicifolia*).

Biological surveys were completed for each portion of the proposed project in October 2007 to determine the presence of potential habitat for protected species. No Federally listed threatened or endangered species were observed during the biological surveys for this project or from past surveys in the area (USACE 1994, 1997; DHS 2003); however, due to schedule conflicts, the most recent surveys were not conducted during the proper season or in accordance with USFWS protocol. Thus, only habitat assessments could be made to determine the presence of suitable habitat.

There is little to no potential for the least Bell's vireo or the arroyo toad to occur within the project sites due to the lack of suitable habitat. There is potential for the Quino checkerspot butterfly to occur throughout the project corridor. In addition, the 7 Gates/Railroad is located within designated critical habitat for the Quino checkerspot butterfly. However, the primary host plant for the butterfly, *Plantago erecta*, was not observed at any of the project sites during October 2007 field visits.

Otay tarplant, willowy monardella, Encinitas baccharis, and San Diego thornmint were not observed within the areas surveyed for the individual project sites during October 2007 biological surveys; suitable habitat was not present for Otay tarplant or San Diego thornmint at any of the project compound locations.

The Wildlife and Habitat Data Analysis Branch of the California Department of Fish and Game (CDFG) Department maintains a list of Wildlife of Special Concern. This list includes species whose occurrence in California is or may be in jeopardy, or with known or perceived threats or population declines. The California Natural Diversity Database

(CNDDDB) is a statewide inventory of the locations and condition of the state's rare species and natural communities. These species are not necessarily the same as those protected by the Federal government under the ESA.

The CDFG currently list 99 species that are considered endangered, threatened, or species of concern within San Diego County (CNDDDB 2007). Only species that are designated state endangered or threatened have state laws protecting them. The CNDDDB indicated no known locations of Federally listed species within 1 mile of the project sites (CNDDDB 2007); however, numerous state listed species have been reported near the project corridor, as shown in Figures 3-2 and 3-3.

The BLM Manual 6840 provides policy and guidance, consistent with appropriate laws, for the conservation of special status species of plants and animals, and the ecosystems upon which they depend. These are species which are proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under the provisions of the ESA; those listed by a state in a category such as threatened or endangered implying potential endangerment or extinction; and those designated by each state director as sensitive. The BLM sensitive species are included on the list provided in Appendix E.

### **3.9.2 Environmental Consequences**

The threshold of significance established for this analysis for threatened and endangered species is:

- The action has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a sensitive or special-status (*i.e.*, threatened or endangered) in local or regional plans, policies or regulations by the USFWS and CDFG which cannot be mitigated.

#### **3.9.2.1 No Action Alternative**

The No Action Alternative would not directly impact any protected species, as no construction activities would occur. However, indirect adverse impacts **on** protected



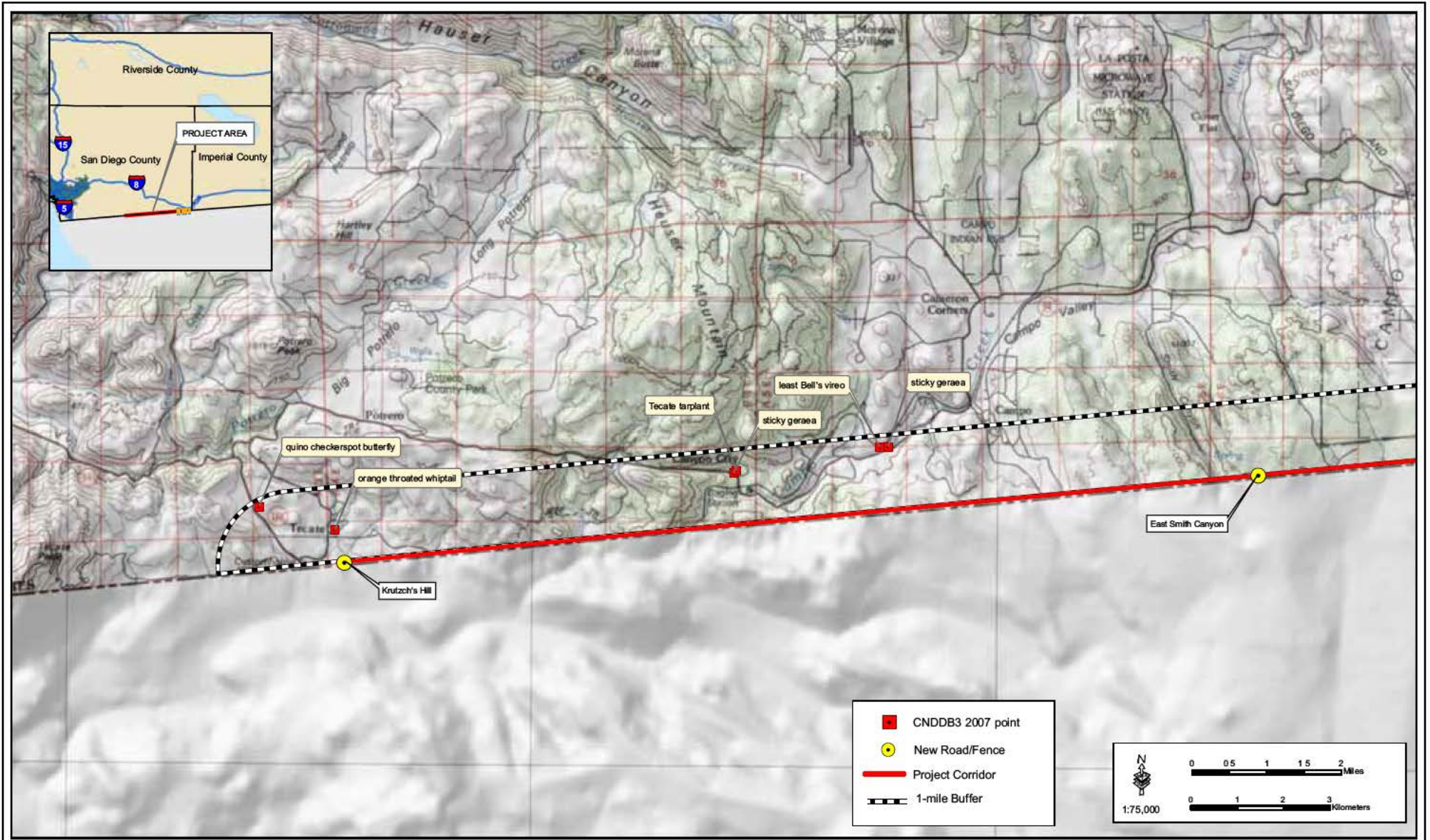


Figure 3-2: Proposed Action & CNDD3 Map 1

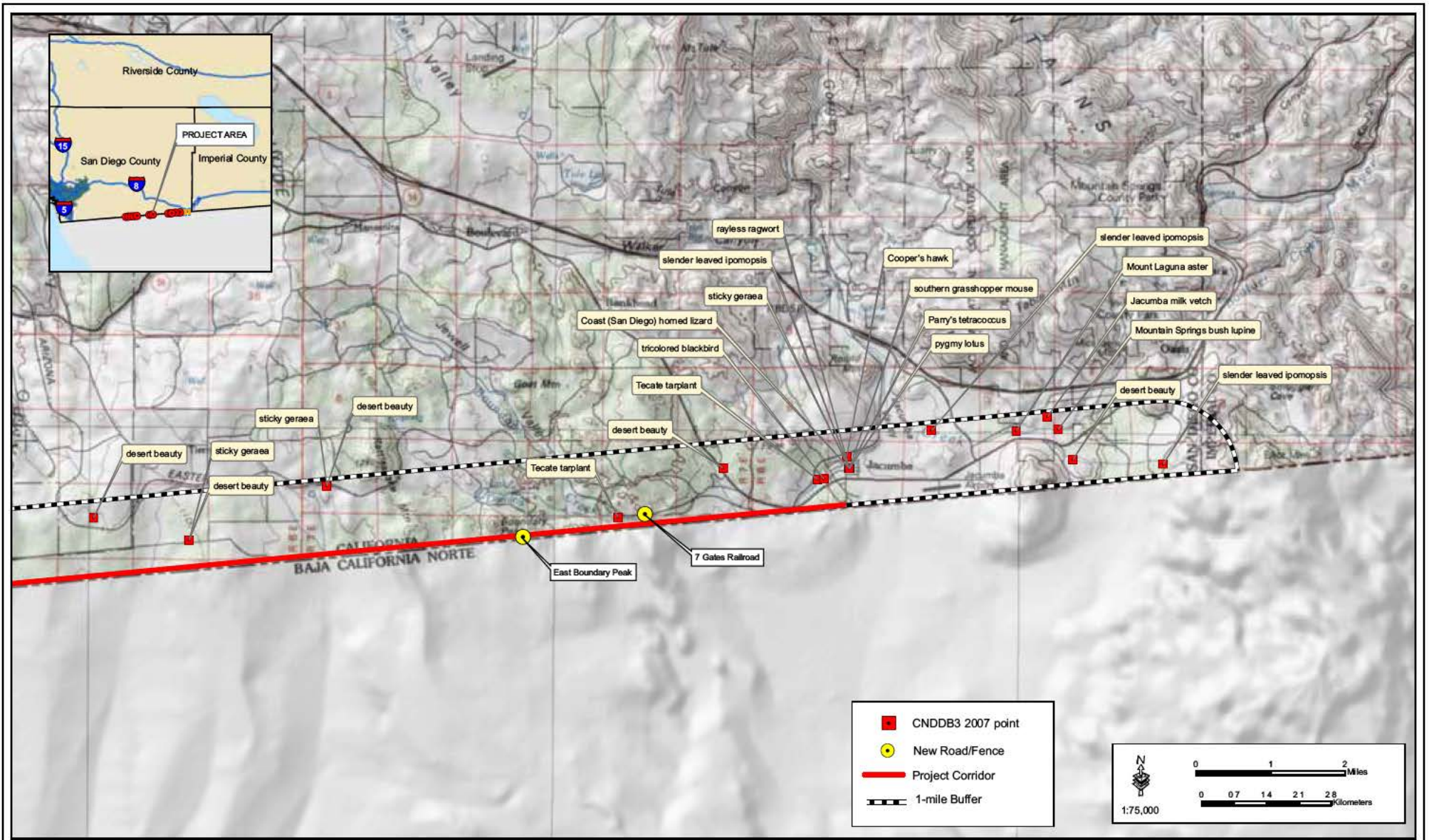


Figure 3-3: Proposed Action & CNDDB Map 2

species, such as habitat degradation as a result of continued illegal traffic, would occur and could potentially increase.

### **3.9.2.2 Proposed Action Alternative**

The Proposed Action Alternative may affect the Quino checkerspot butterfly. Although, suitable habitat exists at the 7 Gates/Railroad, East Smith Canyon, and East Boundary Peak project sites for the butterfly, no primary host plants or individuals were observed during recent field visits and the habitat is not considered good quality due to several factors. The 7 Gates/Railroad area is considered low quality habitat because of the disturbed nature of the area and its close proximity to the railroad ROW. Additionally, the railroad is currently active which contributes to the degraded nature of the habitat. Although, a total of 10.85 acres would be impacted as part of the 7 Gates/Railroad project only 3.2 acres is considered suitable habitat for QCB. The unsuitable habitat is solid rock, rip rap slopes or railroad bed. Therefore, due to the low quality of the habitat combined with anticipated mitigation efforts for potential affects to the QCB as a result of constructing this access road any impacts are considered discountable.

The East Smith Canyon project site consists primarily of cap rock with potential habitat located adjacent to, and scattered throughout the proposed road ROW. Only 0.1 acre would be impacted as a result of the construction of the access road. If constructed, OBP has agreed to close and rehabilitate a currently used nearby access road that would provide 0.5 acre of habitat for the QCB. Therefore, a net gain of better quality habitat in this area would occur upon completion of the East Smith Canyon access road. The potential impacts associated with this project site are considered discountable due to the minimal amount of low quality habitat impacted and because of the long term gain in better quality habitat provided by the rehabilitation.

The East Boundary Peak project site would impact 0.3 acre of habitat. Although, this habitat is considered the best quality habitat of the three project sites, the impacts associated with this project site, too, are considered discountable. The potential impact to 0.3 acre when combined with the remaining net gain of the rehabilitated road near

East Smith Canyon would account for an overall net gain of 0.1 acre of habitat. Therefore, any impacts would be mitigated locally via the rehabilitation. Additionally, other mitigation measures to be implemented as coordinated with USFWS would further result in a no net loss of potential habitat for the QCB. Due to the minimal amount of habitat impacted and mitigation measures (net gain of 0.1 acre) to be implemented the impacts as a result of the Proposed Action would be discountable.

Construction activities would impact approximately 10.85 acres at the 7 Gates/Railroad Road, which is located within designated Quino checkerspot butterfly critical habitat. Although 7 Gates/Railroad is located within designated critical habitat, the project area is currently disturbed due to the existing railroad ROW and previous road construction. Any loss of forage plant specimens that would occur would not appreciably alter the ability of the critical habitat to support the butterfly's survival or recovery, and no host plants were observed in the project impact area during surveys. Also, the proposed changes to Critical Habitat for the Quino checkerspot butterfly would eliminate this site from being in Critical Habitat. Therefore, there would be no significant adverse modification of the Quino checkerspot butterfly critical habitat due to implementation of the Proposed Action Alternative.

If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if schedules dictate it to be necessary. The portable lights would be equipped with backlighting shields, as necessary, to minimize stray light into potential habitat north of the project corridor, and no lights would be positioned in a manner to illuminate riparian areas. Therefore, no adverse impacts are anticipated.

Potential habitat for the least Bell's vireo and the southwestern willow flycatcher is located along Boundary Creek, approximately 500 – 1000 feet south of the 7 Gate/Railroad project site. Noise created during construction activities at this project

site could have an impact on either species, if they are indeed present. However, due to the temporary nature of the construction, topography, distance, because the existing railroad is currently active, and this area is inhabited by people, CBP has determined that the Proposed Action Alternative would have no effect on either the least Bell's vireo or the southwestern willow flycatcher.

No effects on any other Federally protected species are expected, as the project sites either lack suitable habitat or the species were not observed in the project corridor during recent biological surveys.

No state listed species or BLM listed species are expected to occur in or near the project sites; therefore, no direct impacts are anticipated to occur on any state or BLM listed species.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are considered unpredictable and beyond the scope of this EA. However, the implementation of the Proposed Action Alternative would reduce or eliminate illegal traffic north of the primary pedestrian fence within the project corridor, protecting habitat that could otherwise be disturbed and permanently degraded. Further, because the primary pedestrian fence would act as a force multiplier, USBP would be able to deploy agents to those areas without primary pedestrian fence, thereby minimizing any potential indirect impacts on protected species habitat.

### **3.9.2.3 Secure Fence Act Alternative**

The Secure Fence Act Alignment Alternative would have greater impacts on the coastal California gnatcatcher and Quino checkerspot butterfly due to the larger construction footprint and enforcement zone required under this alternative. The impacts associated with this alternative have not been determined, and additional surveys and subsequent

NEPA documentation would be required to properly analyze the significance of the potential impacts.

### **3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES**

#### **3.10.1 Affected Environment**

Cultural, historical, and archaeological resources were previously discussed in the DHS 2003 EA and, therefore, are incorporated herein by reference. The archaeological record in southern California begins approximately 12,000 years ago. Chartkoff and Chartkoff recognize four major periods: Paleoindian, Archaic, “Pacific” (herein referred as Late Prehistoric consistent with Erlandson 1994; Moratto 1984), and Historic (Vargas *et al.* 2002).

*The Paleoindian Period (12,000 – 8,000 B.P.)* is characterized by small, mobile bands of hunter-gatherers. There is only sparse evidence of terminal Paleoindian occupation in the San Diego area. Lasting from the terminal Pleistocene to the Altithermal in the San Diego region is a series of cultures termed the Western Pluvial Lakes Tradition (WPLT). Typically WPLT sites are associated with pluvial lakes, and the associated lake, marsh, and grassland environments. In the San Diego region the cultural expression of that parallels the WPLT has been classified by Moratto as a “Paleo-Coastal Tradition,” which is seen as including the San Dieguito Complex (Moratto 1984; Vargas *et al.* 2002).

*The Archaic Period (8,000 – 2500 B.P.)* occupations that followed the San Dieguito Complex were originally defined as the *Shell Midden Culture* and were later renamed the La Jolla Complex (Vargas *et al.* 2002). The La Jolla tool kits include ceramics, large-stemmed and indented-based points, and unique discoidal and cogged stones of unknown function and sites of this complex are frequently recognized by milling stone assemblages associated with shell middens (Vargas *et al.* 2002).

*The Late Prehistoric Period (2500 – 200 B.P.)* arose gradually from the Archaic and is characterized by a shift to a more local economy and the development of complex

societies. Both True (1966, 1970) and Moratto (1984) suggest that for the San Diego Area the La Jolla evolved into the Cuyamaca Complex, which in turn evolved into the historic Digueño speakers.

*The Historic Period (200 B.P. – present)* marks the advent of European settlement in California. The first Spanish Explorer in San Diego County was Juan Rodigro Cabrillo in 1542. Soon afterwards, other missions and presidios were established farther north along the coast of California. The mission complexes sought to convert the indigenous Yuman-speaking inhabitants to Christianity and make them loyal to the Spanish Crown. Mexico declared its independence in 1822 and replaced the colonial Spanish missions with the rancharo system. Mexico held this area of California until the end of the Mexican-American War with the signing of the Treaty of Guadalupe-Hidalgo in 1848 and ceded California to the U.S. By the 1850-1870 interval, California became a state and San Diego became an American frontier town. With its position on the San Diego Bay and plans for the construction of a railroad connection, San Diego became the regional economic center and a merchant port. In 1919, the San Diego and Arizona Railroad was completed. Portions of the rail line occur within the 7 Gates/Railroad project area. The last passenger train operated in 1951; however, the railroad is still used today for hauling freight.

### **3.10.1.1 Previous Archaeological Investigations**

A site record search was conducted by the South Coastal Information Center (SCIC) at San Diego State University to determine if previously recorded sites are located within the project Area of Potential Effect (APE). The APE is defined as the area in which impacts could occur as a direct result of the Proposed Action. The records search included site descriptions and locations of previously recorded sites, locations of previously conducted archaeological investigations, and historic reference data such as historic homes database and historic maps. The records search indicated that 44 archaeological sites are located within the general vicinity of the project APE. These sites include prehistoric resource procurement and processing sites and temporary camps with minor habitation, and historic railroad, mining, and homesteading sites from

the turn of the twentieth-century through the middle 20th-century. Of the 44 previously recorded archaeological sites, none of the sites are mapped by SCIC as being within or very close to the project area. The records search also indicated that 31 previously conducted archaeological investigations have occurred within the general vicinity of the proposed project corridor.

### **3.10.1.2 Current Archaeological Investigation**

A Class III cultural resources survey (pedestrian survey) was conducted within the APE of the proposed project. No prehistoric cultural resources or historic cultural resources were identified within or near any of the proposed project areas.

### **3.10.2 Environmental Consequences**

The CEQA significance thresholds established for cultural resources are:

- Any action that would alter characteristics that qualify a historic property for the NRHP or diminish the historic property's integrity.
- Any action that would disturb any human remains, including those interred outside of formal cemeteries.

#### **3.10.2.1 No Action Alternative**

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

#### **3.10.2.2 Proposed Action Alternative**

No impacts on cultural resources would occur, since none are present within the project areas. Additionally, all Federally recognized tribes with affiliation to the project corridor have been coordinated with regarding the proposed project. To date, no comments have been received from any tribes. Section 106 compliance would be completed prior to construction activities. As a result of this compliance and lack of sites, the Proposed Action Alternative would have no effect on cultural resources.



### **3.10.2.3 Secure Fence Act Alternative**

This alternative has the potential for impacts on cultural, historic, or archaeological resources, since the expanded footprint has not been surveyed, and would need additional surveys and analysis if this alternative were ultimately selected. Section 106 consultation process would need to be reinitiated as well.

## **3.11 AIR QUALITY**

### **3.11.1 Affected Environment**

Information regarding air quality within the project corridor was discussed and described in the DHS 2003 EA, and is incorporated by reference herein. In California, attainment is classified for both National Ambient Air Quality Standards (NAAQS) established by the EPA and the California Ambient Air Quality Standards. In addition to being classified as “non-attainment,” the degrees of non-attainment are divided into categories indicating the severity. Degrees of non-attainment include marginal, moderate, serious, severe, or extreme.

The NAAQS are included in Table 3-3. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The California Applicant’s Attorneys Association of 1990 established new deadlines for the achievement of NAAQS, depending on the severity of non-attainment. San Diego County is classified as a moderate non-attainment area for carbon monoxide (CO) and the 8-hour ozone (O<sub>3</sub>) (EPA 2007b). Air emissions from internal combustion engines produce volatile organic compounds and nitrogen oxides, which are precursor molecules that react with oxygen in the atmosphere to create O<sub>3</sub>. CO in San Diego County is a result of combustion by-products produced by cars, trucks, and industrial operations utilizing petroleum for energy needs.

Table 3-3. National Ambient Air Quality Standards

| POLLUTANT                                      | STANDARD VALUE*                   | STANDARD TYPE |
|------------------------------------------------|-----------------------------------|---------------|
| <b>CO</b>                                      |                                   |               |
| 8-hour average                                 | 9 ppm (10mg/m <sup>3</sup> )      | P             |
| 1-hour average                                 | 35 ppm (40mg/m <sup>3</sup> )     | P             |
| <b>Nitrogen Dioxide</b>                        |                                   |               |
| Annual arithmetic mean                         | 0.053 ppm (100µg/m <sup>3</sup> ) | P and S       |
| <b>O<sub>3</sub></b>                           |                                   |               |
| 1-hour average                                 | 0.12 ppm (235µg/m <sup>3</sup> )  | P and S       |
| 8-hour average                                 | 0.08 ppm (157µg/m <sup>3</sup> )  | P and S       |
| <b>Lead</b>                                    |                                   |               |
| Quarterly average                              | 1.5 µg/m <sup>3</sup>             | P and S       |
| <b>Particulate&lt;10 micrometers (PM-10)</b>   |                                   |               |
| Annual arithmetic mean                         | 50 µg/m <sup>3</sup>              | P and S       |
| 24-hour average                                | 150 µg/m <sup>3</sup>             | P and S       |
| <b>Particulate&lt;2.5 micrometers (PM-2.5)</b> |                                   |               |
| Annual arithmetic mean                         | 15 µg/m <sup>3</sup>              | P and S       |
| 24-hour Average                                | 65 µg/m <sup>3</sup>              | P and S       |
| <b>Sulfur Dioxide (SO<sub>2</sub>)</b>         |                                   |               |
| Annual arithmetic mean                         | 0.03 ppm (80µg/m <sup>3</sup> )   | P             |
| 24-hour average                                | 0.14 ppm (365µg/m <sup>3</sup> )  | P             |
| 3-hour average                                 | 0.50 ppm (1300µg/m <sup>3</sup> ) | S             |

Source: EPA 2006

Legend: P = Primary

ppm = parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

\*Parenthetical value is an approximate equivalent concentration.

S = Secondary

mg/m<sup>3</sup> = milligrams per cubic meter

According to 40 CFR 51.853(b), Federal actions require a Conformity Determination for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a Federal action would equal or exceed any of the rates in paragraphs 40 CFR 51.853(b)(1) or (2). If emissions from a Federal action do not exceed *de minimis* thresholds, and if the Federal action is not considered a regionally significant action, it is exempt from further conformity analysis. Although San Diego County is in non-attainment for CO and 8-hour O<sub>3</sub>, the project area is located outside of the City of San Diego and within remote locations that have good wind dispersal patterns.

### **3.11.2 Environmental Consequences**

The CEQA significance thresholds established for air quality are:

- Any action that conflicts with or obstructs implementation of the applicable air quality plan.
- Any action that violates any air quality standard or contributes substantially to an existing or projected air quality violation.
- Any action that exposes sensitive receptors to substantial pollutant concentrations.

#### **3.11.2.1 No Action Alternative**

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

#### **3.11.2.2 Proposed Action Alternative**

A minimal short-term increase in local air pollution would be expected from primary pedestrian fence and road construction. Temporary increases in air pollution would be from the use of construction equipment, portable lights, and fugitive dust. Due to the short duration of the individual projects, any increases or impacts on ambient air quality during construction activities are expected to be short-term, and can be reduced further through the use of standard dust control techniques, including roadway watering and chemical dust suppressants, such as PennzSuppress® or an equivalent product. During the construction of the proposed project, proper and routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the design standards of all construction equipment. Air emissions from the Proposed Action Alternative would be temporary and would not significantly impair air quality in the region.

Calculations were performed to estimate the total air emissions from the construction activities. Calculations were made for standard construction equipment, such as bulldozers, generators, excavators, pole trucks, front end loaders, back hoes, cranes, and dump trucks, using emission factors from EPA approved emission model NOROAD

6.2 (see Appendix F for air quality calculations). Assumptions were made regarding the type of equipment, the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Fugitive dust calculations were made for soil disturbance while installing primary pedestrian fence, constructing new roads and grading and constructing the re-alignment of the all weather patrol road. A significant amount of dust can arise from the mechanical disturbance of surface soils. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream. Fugitive dust emissions were calculated using emission factors from Mid-Atlantic Regional Air Management Association (2006).

Impacts from combustible air emissions from USBP traffic are expected to be the same before and after the proposed construction activities. Construction workers will temporarily increase the combustible emissions in the air shed during their commute to and from the project area. The Proposed Action Alternative emissions were calculated in an air emission analysis (Appendix F) and are included in Table 3-4.

**Table 3-4. Total Air Emissions (tons/year) from Construction Activities vs. de minimis Levels**

| Pollutant                  | Total (tons/year) | <i>de minimis</i> Thresholds (tons/year) |
|----------------------------|-------------------|------------------------------------------|
| Carbon Monoxide            | 42.45             | 100                                      |
| Volatile Organic Compounds | 9.61              | 100                                      |
| Nitrogen Oxides            | 77.39             | 100                                      |
| PM-10                      | 22.70             | NA                                       |
| PM-2.5                     | 9.72              | NA                                       |
| Sulfur Dioxide             | 9.31              | 100                                      |

Source: 40 CFR 51.853 and GSRC air emission model projections.

The total air quality emissions, as presented in Appendix F, were calculated to determine the applicability of the General Conformity Rule. A summary of the total emissions are presented in Table 3-4. As can be seen from this table, the proposed construction activities do not exceed *de minimis* thresholds and, thus, do not require a

Conformity Determination. As there are no violations of air quality standards and no conflicts with the state implementation plan, there would be no significant impacts on air quality from the implementation of the Proposed Action Alternative.

Dust and small rock fragments would be emitted into the air during blasting detonation; however, this would be expected to immediately settle and fall to the ground causing no significant or long-term negative impacts to air quality. CO would be the most important factor on air quality in the area. This gas would be produced during detonation, depending on the type and amount of explosives used for the activities (MEMCL 1999). Transporting winds would facilitate dispersion and alleviate high concentrations of CO in the project area. Furthermore, the blasting contractor would be required to use BMPs to ensure minimal fugitive dust and other emission impacts from the blasting. No long-term impacts are expected if this alternative is chosen.

Diesel generators would be used to power the portable lights. These generators would cause low amounts of air emissions. These amounts would be below the *de minimis* threshold (*i.e.*, 100 tons per year) and, thus, would not violate National or state standards. If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if schedules dictate it to be necessary. Regardless, the impacts from the operation of the lights would be temporary as the lights would be eliminated from the project area upon cessation of the project. Thus, no significant impacts on air quality in the region would occur as a result of operating portable lights.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are considered unpredictable and beyond the scope of this EA.

The Proposed Action Alternative would not conflict with any air quality plans, violate air quality standards, or expose sensitive receptors to pollutants. Therefore, no significant impacts are expected.

### 3.11.2.3 Secure Fence Act Alternative

This alternative would have similar impacts to those discussed as the Proposed Action Alternative. However, these impacts would be greater due to the increased size of the project footprint. If this alternative were ultimately selected, moderate to major amounts of blasting would potentially have to occur in order to construct the enforcement zone. As with the Proposed Action Alternative, the blasting contractor would be mandated to use BMPs to ensure minimal impact to air quality from blasting. No long-term impacts or significant impacts would be expected if this alternative is chosen. The Secure Fence Act Alternative air quality emissions were calculated in Appendix F and a summary of the calculations are presented in Table 3-5.

**Table 3-5. Total Air Emissions (tons/year) from Construction Activities vs. de minimis Levels**

| Pollutant                       | Total (tons/year) | <i>de minimis</i> Thresholds (tons/year) |
|---------------------------------|-------------------|------------------------------------------|
| Carbon Monoxide                 | 49.68             | 100                                      |
| Volatile Organic Compounds      | 10.66             | 100                                      |
| Nitrogen Oxides                 | 90.52             | 100                                      |
| Particulate Matter <10 microns  | 31.39             | NA                                       |
| Particulate Matter <2.5 microns | 12.14             | NA                                       |
| Sulfur Dioxide                  | 11.61             | 100                                      |

Source: 40 CFR 51.853 and GSRC air emission model projections.

## 3.12 NOISE

### 3.12.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, *etc.*) or subjective judgments (community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as a sound level.

The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the EPA and has been adopted by most Federal agencies (EPA 1972; FICON 1992).

Several examples of noise pressure levels in decibel – A weighted scale (dBA) are listed in Table 3-6. A DNL of 65 dBA is the level most commonly used for noise planning purposes and represents a compromise between community impacts and the need for activities like construction, which do cause noise. Areas exposed to DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by the EPA as a level below which there is effectively no adverse impact (EPA 1972).

**Table 3-6. dBA Sound Levels of Typical Noise Environments**

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

Source: Wyle Research Corporation 1992.

Some noise levels are continuous sounds (*i.e.*, air conditioner, vacuum cleaner) whose levels are constant for some time. Other noise levels, like the automobile or heavy truck traffic, are the maximum sound during a vehicle pass-by. Noise levels, such as urban daytime and urban nighttime, are averages over some extended period.

### **3.12.2 Environmental Consequences**

The CEQA significance thresholds established for noise are:

- Any action that would result in a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project.
- Any action that would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project.

#### **3.12.2.1 No Action Alternative**

No noise impacts would occur as a result of the No Action Alternative because construction activities would not occur. However, indirect, temporary increases in noise levels from illegal traffic and consequent USBP enforcement activities would be expected to continue and possibly increase.

#### **3.12.2.2 Proposed Action Alternative**

Noise levels created by the transport of construction vehicles, construction equipment, and construction activities would vary depending on several factors, such as climatic conditions, season, and the condition of the equipment. Most construction and transport activities would occur during daylight hours. Noise levels would decrease to an inaudible level as the distance between the construction activities and potential noise receptors increases. Table 3-7 describes noise emission levels for construction equipment which range from 73 dBA to 82 dBA (Federal Highway Administration [FHWA] 2007).



**Table 3-7. dBA Sound Levels of Construction Equipment**

| Type of Construction Equipment | dBA |
|--------------------------------|-----|
| Backhoe                        | 78  |
| Crane                          | 81  |
| Dump Truck                     | 76  |
| Excavator                      | 81  |
| Front end loader               | 79  |
| Generator                      | 73  |
| Concrete mixer truck           | 79  |
| Bull dozer                     | 82  |

Source: FHWA 2007

Two residences are located near the 7 Gates/Railroad area that are considered sensitive noise receptors. Within the remainder of the project corridor, no sensitive noise receptors exist. Construction activities would create temporary and minor increases in ambient noise levels.

Vibration levels and airblast overpressure will increase as a result of blasting activities in the 7 Gates/Railroad area. Airblast overpressure is low frequency air pressure, which usually falls below the sound level that a human ear can hear; however, the energy that is produced could potentially damage nearby structures (MEMCL 1999). See Table 2-3 for the range of vibration and airblast overpressure based upon distance from the affected structure. Vibration levels are measured by the peak particle velocity (PPV) and recorded in inches per second (IPS). Airblast overpressure levels are measured and recorded in decibels (dB). The dB levels for the blasting falls within the “uncomfortably loud” category (120 dB), as shown in Table 3-8. However, the overpressures will not be high enough to damage nearby structures. Industry acceptable maximum PPV level near residential dwellings is 2.00 IPS and the noise level maximum is 140 db for construction related blasting.

Additionally, BMPs, such as the use of blasting mats, will be implemented to minimize the potential for debris and reduce increases in noise levels. Minimal impacts will occur as a result of the blasting activities due to the temporary nature of the work and use of

proper BMPs. Nighttime construction would be restricted along the 7 Gates/Railroad project site to avoid disturbances of the local residents.

Assuming the worst case scenario of 82 dBA for a bull dozer, as would be the case during the road construction along the project corridor, all areas within 350 feet of the project corridor would have noise levels exceeding 65 dBA. Construction noise levels would attenuate to 55 dBA at a distance of 1,100 feet from construction activities. Attenuation could be achieved at much shorter distances depending upon the local topography, vegetation, climatic conditions, and the time of year. Noise impacts would detract from the undeveloped characteristics of the project corridor. However, the level of noise is expected to be minimal, as it would be localized and be expected to return to pre-project conditions at the completion of construction. Therefore, noise impacts would be temporary, and no significant impacts on ambient noise levels would occur.

### **3.12.2.3 Secure Fence Act Alternative**

This alternative would have greater impacts on ambient noise levels in the project corridor due to the increased footprint, construction activities, and amount of disturbance. This alternative would require more blasting and clearing than the Proposed Action Alternative; however, the impacts associated with this alternative would be similar to the Proposed Action Alternative. Noise levels and impacts along the 7 Gates/Railroad project site would be the same as that described for the Proposed Action Alternative, since no primary pedestrian fence would be installed in this area. The impacts would be considered minimal to moderate and would be short-term. Ambient noise levels would return to pre-construction levels upon completion of the project. No significant impacts on noise levels regionally would be expected if this alternative were chosen.

### 3.13 AESTHETIC AND VISUAL RESOURCES

#### 3.13.1 Affected Environment

Visual and aesthetic resources were discussed in the DHS 2003 EA, and are incorporated by reference herein. Aesthetic resources consist of the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. Aesthetics is essentially based on an individual or group of individuals' judgment as to whether or not an object is pleasing, and/or would affect quality of life. The project region is characterized by undeveloped, open landscapes. The major appeal of the region is its vast areas of naturally occurring landscape. At a closer look, however, a large number of illegal trails and roads, damage from human-induced wildland fires, and litter left behind by IAs can be found throughout the project corridor, all of which detracts from the region's natural beauty (Photograph 3-1). There are no unique, natural, or manmade features in the project area that create any different visual landscapes than those described above.



Photograph 3-1. Typical IA trash and trails

#### 3.13.2 Environmental Consequences

The CEQA significance threshold for aesthetics is:

- The action substantially and permanently degrades the existing visual character or quality of the region.

##### 3.13.2.1 No Action Alternative

No impacts on aesthetics would occur upon implementation of the No Action Alternative, as no construction activities would occur. However, indirect adverse

impacts on aesthetics as a result of IAs trampling vegetation and leaving trash and debris would continue and possibly increase.

### **3.13.2.2 Proposed Action Alternative**

The construction of primary pedestrian fence and road would create adverse impacts on the aesthetics of the project corridor. However, the proposed TI projects are extending existing road and fences, which have already degraded the aesthetic value of the project area. In addition, illegal trails and trash currently detract from the visual qualities of the project corridor. A short-term, minimal impact on aesthetics would occur during construction due to the presence of construction equipment and use of portable lighting. The Proposed Action would not substantially or permanently degrade the existing visual character of the region; thus, there would be no long term significant adverse impacts.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are considered unpredictable and beyond the scope of this EA. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers, minimizing potential adverse indirect impacts. Beneficial indirect impacts would be expected from the protection afforded to areas to the north of the project corridor due to the implementation of Proposed Action Alternative.

### **3.13.2.3 Secure Fence Act Alternative**

This alternative would have minimal to moderate impacts on aesthetics and visual resources as all areas within the project corridor would consist of an enforcement zone 130-feet wide with a double fence. However, as stated above, the project corridor is interlaced with existing infrastructure, illegal trails, and debris left by IAs. Although there would be minimal to moderate impacts upon implementation of this alternative, because of the existing infrastructure, debris, and illegal trails, these impacts would not be considered significant.

### **3.14 HAZARDOUS MATERIALS**

#### **3.14.1 Affected Environment**

EPA's mission is to protect humans and the environment and work to develop and enforce regulations that implement environmental laws enacted by Congress (from such legislation as the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980). The EPA maintains a list of hazardous waste sites, particularly waste storage/treatment facilities or former industrial manufacturing sites in the U.S.

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

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

#### **3.14.2 Environmental Consequences**

The CEQA significance thresholds for hazardous materials are:

- Any action that creates a hazard to the public or the environment through routine transport, use, or disposal of hazardous materials.
- Any site location which is included on a list of hazardous materials sites and as a result would create a significant hazard to the public or the environment.
- Any action that would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

### **3.14.2.1 No Action Alternative**

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

### **3.14.2.2 Proposed Action Alternative**

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

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

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

### **3.14.2.3 Secure Fence Act Alternative**

The same impacts that are discussed for the Proposed Action Alternative would be expected for this alternative. No significant impacts would occur.

### **3.15 SOCIOECONOMICS**

#### **3.15.1 Affected Environment**

The population in San Diego County in 2005 was 2,933,462 (U.S. Census Bureau 2005a). The 2005 racial mix of San Diego County was predominantly Caucasian (79.8 percent), followed by people of Asian descent (10.2 percent), followed by African Americans (5.6 percent), with the remaining 3.2 percent of the population split between American Indians and Alaskan Natives, Native Hawaiians, and other races (U.S. Census Bureau 2005a). Approximately 29 percent of the 2005 population of San Diego County identify themselves as of Hispanic or Latino origin (U.S. Census Bureau 2005a). The total number of jobs in San Diego County in 2004 was 1,838,917, an increase of 29 percent over the number of jobs in 1994 (1,421,394) (Bureau of Economic Analysis [BEA] 2004a). The 2006 annual average unemployment rate for San Diego County was 4.0 percent. This is lower than the 4.2 percent average annual unemployment rate for the State of California (Bureau of Labor Statistics 2006).

In 2004, San Diego County had a per capita personal income (PCPI) of \$37,965 (BEA 2004b). This PCPI ranked 13<sup>th</sup> in the State of California, and was 108 percent of the state average of \$35,219, and 115 percent of the National average of \$33,050. The average annual growth rate of PCPI from 1994 to 2004 was 5.3 percent. This average annual growth rate was higher than the growth rate for the state (4.3 percent) and the Nation (4.1 percent). In 2004, San Diego County had a total personal income (TPI) of \$111.4 billion. This TPI ranked 3<sup>rd</sup> in the state and accounted for 8.8 percent of the state total. The 2004 TPI reflected an increase of 7.1 percent from 2003, which was higher than 2003-2004 state change of 6.6 percent and the National change of 6.0 percent during the same period.

The estimated number of people of all ages living in poverty for San Diego County was 308,791 in 2004. This represented 10.9 percent of the population of the county, which is both lower than the percentage of the state and the Nation's population that live in poverty (U.S. Census Bureau 2004). The median household income in 2004 for San

Diego County was \$51,939. This was higher than both the 2004 median household income for the state and the Nation (U.S. Census Bureau 2004).

San Diego County had a total of 1,113,207 housing units in the 2005 Census (U.S. Census Bureau 2005b). The 2000 homeownership rate for San Diego County was 55.4 percent, as compared to the state homeownership rate of 56.9 percent (U.S. Census Bureau 2005b).

### **3.15.2 Environmental Consequences**

The CEQA significance thresholds for socioeconomics are:

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

#### **3.15.2.1 No Action Alternative**

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

#### **3.15.2.2 Proposed Action Alternative**

Direct beneficial impacts from the Proposed Action Alternative include minor and temporary increases in sales volume, material purchases, and sales taxes. Additionally, implementation of the Proposed Action Alternative would reduce the amount of illegal traffic in the region, which, in turn, would reduce the associated societal and economic costs for the region. These societal and economic costs include, but are not limited to,



the costs of removal of trash, overall degradation of property, reduction in property value, and degradation of natural and cultural resources. Consequently, this reduction in illegal traffic would have an indirect beneficial long-term impact on the local economy.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations, and therefore, are considered unpredictable and beyond the scope of this EA. However, the primary pedestrian fence would act as a force multiplier and allow USBP to deploy agents to areas without pedestrian barriers, minimizing potential adverse indirect impacts. Beneficial indirect impacts would be expected from the protection afforded to areas to the north of the project corridor due to the implementation of Proposed Action Alternative.

The Proposed Action Alternative would not affect the region's population or housing markets, and would not require an increased demand on public services that exceed current capacity. Therefore, no significant impacts would occur.

### **3.15.2.3 Secure Fence Act Alternative**

This alternative would have similar impacts to the Proposed Action Alternative but, the beneficial impacts would be slightly greater due to the additional amount of construction materials and equipment that would be required. The Secure Fence Act Alternative would require more materials, construction crews, and equipment; therefore, the local and regional economy would benefit more than the Proposed Action Alternative. Indirect societal cost benefits would be similar as those discussed in Section 3.15.2. No significant impacts are expected.

### **3.16 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

#### **3.16.1 Affected Environment**

EO 12898 was signed in February 1994. This order was intended to direct Federal agencies "...to make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the U.S...." To comply with the EO, minority and poverty status in the vicinity of the project were examined to determine if any minority and/or low-income communities would incur a disproportionate amount of significant impacts from implementation of the either of the action alternatives. San Diego County has a low proportion of their population claiming to be of Hispanic or Latino origin. Furthermore, San Diego County is above both the National and state median household income, and has a smaller percentage of the population living in poverty relative to both the state and the Nation. Two ranch houses exist near the project corridor at the 7 Gates/Railroad project site. These houses are located outside of the project footprint, but close enough to be impacted.

EO 13045 requires each Federal agency "to identify and assess environmental health risks and safety risks that may disproportionately affect children", and "ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks". This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. In San Diego County, 111,422 individuals, or 36 percent of the population below poverty level, are children under the age of 18 (U.S. Census Bureau 2004). The percentage of children under 18 below the poverty level for the State of California is 38.6 percent. The potential for impacts on the health and safety of children is greater where projects are located near residential areas. Although the project corridor is located in remote areas, two residences do exist near one of proposed project sites (7 Gates/Railroad).

### **3.16.2 Environmental Consequences**

The CEQA significance threshold for environmental justice is:

- The action results in any racial, ethnic, or socioeconomic group bearing a disproportionate share of significant adverse project effects.

#### **3.16.2.1 No Action Alternative**

No direct impacts would be expected, as no construction would occur.

#### **3.16.2.2 Proposed Action Alternative**

Impacts regarding EO 13045 and EO 12898 from the implementation of the Proposed Action Alternative would be similar to those previously discussed in the DHS 2003 EA, and are incorporated herein by reference (DHS 2003). Given the remote location of the proposed project sites, there is no potential for disproportionately significant, adverse impacts on minority populations or low income families. As mentioned before, two residences are located near the 7 Gates/Railroad project site. These residences would experience adverse impacts from construction noise and potentially fugitive dust; however, implementation of mitigation measures would reduce potential impacts to less than significant. In addition, once the construction activities are complete near the residences, no further impacts would occur. The proposed infrastructure would reduce illegal traffic north of the project corridor, making it safer for everyone regardless of race, nationality, age, or income level. No residences or commercial entities would be displaced and no significant impacts have been identified during the preparation of this EA.

With the exception of the 7 Gates/Railroad project site, all construction would occur away from residences where the safety of children could become an issue. On-site construction managers and safety officers would implement appropriate measures (e.g., fencing, signage, monitoring) to ensure the safety of all personnel, including children. Should a child enter the construction zone, the on-site safety office would immediately cease all construction. Therefore, the Proposed Action Alternative would not result in a

disproportionate amount of impacts on minority or low-income families, nor increase health and safety risks for children.

### **3.16.2.3 Secure Fence Act Alternative**

The same impacts associated with the Proposed Action Alternative would be expected if this alternative were chosen. No significant impacts would occur.

## **3.17 SUSTAINABILITY AND GREENING**

### **3.17.1 Affected Environment**

In accordance with EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management, CBP would strengthen their environmental, energy, and transportation activities in support of their mission in an environmentally, economically, and fiscally sound, continuously improving, sustainable manner. In doing so, CBP/USBP would incorporate sustainability and greening practices in daily operations through cost-effective waste reduction, recycling of reusable materials and purchase of items produced using recovered materials.

### **3.17.2 Environmental Consequences**

The CEQA significance threshold for sustainability and greening is:

- The action results in an agency not continuously improving their environmental, transportation, or energy-related activities in support of their mission in an environmentally, economically and fiscally sound, integrated, efficient, and sustainable manner.

#### **3.17.2.1 No Action Alternative**

The No Action Alternative would not result in any direct or indirect impacts, as no construction activities would take place.

#### **3.17.2.2 Proposed Action Alternative**

Under the Proposed Action Alternative, CBP would continue to use salvaged or recycled materials to the extent practicable, and to improve its environmental,

transportation, and energy-related activities in support of their missions through sustainability and greening practices, to the greatest extent practicable. No significant impacts are expected to occur as a result of the Proposed Action Alternative.

### **3.17.2.3 Secure Fence Act Alternative**

The same impacts as those discussed for the Proposed Action Alternative would occur if this alternative were implemented.

## **3.18 HUMAN HEALTH AND SAFETY**

### **3.18.1 Affected Environment**

There is little potential for anyone other than USBP agents or private contractors to be at risk from a human health and safety aspect. Two houses are located outside of the project corridor but near the 7 Gates/Railroad project site. The remainder of the project sites are located in remote and uninhabited areas.

### **3.18.2 Environmental Consequences**

The CEQA significance threshold human health and safety is:

- The action would create a health or potential health hazard; or
- The action would expose people to existing sources of potential health hazards.

#### **3.18.2.1 No Action Alternative**

Under the No Action Alternative no construction would occur; therefore, there would be no impacts either beneficial or adverse on human health and safety issues.

#### **3.18.2.2 Proposed Action Alternative**

If implemented, this alternative has the potential to create human health hazards. However, through BMPs developed for general construction practices (see Section 5.1), and because the residences in question are located outside of the project footprint, no significant, long-term, adverse impacts are expected. Furthermore, strict compliance with all Occupational Safety and Health Administration (OSHA) regulations would be

achieved to minimize the potential for accidents to occur for USBP agents, private contractors, or other individuals who might be present near the project site(s).

### **3.18.2.3 Secure Fence Act Alternative**

This alternative would have similar impacts as the Proposed Action Alternative. However, construction accidents would have a greater chance of occurring due to the increased construction footprint and duration. Still, provided OSHA standards are adhered to, no significant or long-term impacts would be expected.

## **3.19 GROWTH INDUCING EFFECTS**

The project area is very remote. The land surrounding the project area is private- and Federal government-owned, and there are no known private or public developments planned for the area. Development on BLM property is not possible in the reasonably foreseeable future. Neither of the alternatives discussed within this EA would act as a hindrance to, nor induce, growth.

## **3.20 LOCAL AND SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM ENVIRONMENTAL PRODUCTIVITY**

Benefits derived from the control of IAs entering the U.S. and the adverse impacts associated with the construction activities necessary to accomplish this control represent trade-offs between the local, short-term use and the long-term stability and productivity of society's environment. The Proposed Action would reduce the flow of IAs, contraband, and other cross-border violators into the U.S., and consequently, reduce the social costs associated with managing these issues. Short-term, local, adverse direct effects resulting from wildlife habitat disturbances would be off-set by long-term regional benefits, including:

- protection of the BLM rangelands from illegal foot traffic,
- reduction of accidental fires caused by IAs,
- lower costs to the U.S. for health and emergency services,

- lower insurance rates for homeowners and businesses north of the border,
- reduction in crime north of the border, and
- reduction in illegal poaching.

The proposed action would permanently impact approximately 42.23 acres. Even though most of the project region has been previously disturbed by road construction, public off-road recreational vehicles, private developments, and IA traffic, the project area is so remote that the disturbance is not expected to inhibit wildlife from using the area as suitable habitat. The long-term productivity of these lands would be not changed over the life of the proposed project. CBP would make every attempt practicable to avoid disturbances to valuable wildlife habitat (e.g., by using previously disturbed sites for staging areas). Compensation for these losses, if statutorily required, would be coordinated through the appropriate state and Federal resource agencies.

### **3.21 IREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The proposed action would require the irretrievable commitment of fuel, labor, construction material, and monetary resources.

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***SECTION 4.0***  
***CUMULATIVE IMPACTS***

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## 4.0 CUMULATIVE IMPACTS

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

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

With continued funding and implementation of CBP’s environmental conservation measures, including use of biological and archaeological monitors, wildlife water systems, and restoration activities, adverse impacts due to future and on-going projects would be avoided or minimized. However, recent, on-going and reasonably foreseeable proposed projects will result in cumulative impacts. In particular, 225 miles of primary

pedestrian fence are being constructed along the US/Mexico border. The construction is being done in areas that have already been developed (e.g., currently contains permanent vehicle barriers [PVB] or temporary vehicle barriers) and, thus, little or no additional environmental impacts are expected. Additional construction is being completed in more remote areas, and would inevitably result in cumulative impacts. CBP is currently planning, conducting, or have completed, several projects in the region.

CBP Projects include:

- Approximately seven road and TI projects which include construction, repair, maintenance and upgrading existing roads and infrastructure within the Brown Field Station AO.
- Ongoing maintenance of approximately 104 miles of patrol roads throughout the Brown Field, El Cajon, and Campo Stations' AOs. The roads adjacent to or nearest the project area are the Marroon Valley Road (6.6 miles) and Barrett Truck Trail (9.6 miles).
- CBP recently constructed a new Campo Border Patrol Station near Kitchen Creek in east San Diego County. The station footprint affected approximately 25 acres, including horse pasture and paddocks, helipad, and buffer zone. Construction was completed in May 2008.
- CBP/USBP is currently constructing a border infrastructure system along the U.S.-Mexico border within San Diego County. The infrastructure system project spans 14 miles and includes: secondary and tertiary fences, patrol and maintenance roads, lights, and integrated surveillance and intelligence system resources. Approximately 9 miles of the 14-mile project have been completed or, are currently under construction. These projects were addressed under separate EAs as pilot projects for the barrier system. When completed, the infrastructure system would impact approximately 297 acres, consisting of disturbed/developed lands, coastal sage scrub, maritime succulent scrub and grasslands.
- CBP/USBP is currently converting the Pack Trail (see BLM constructing project below) to a patrol road and primary pedestrian fence. This project will connect the southern end of the Puebla Tree Trail to the Monument 250 Road, a total distance of about 3.28 miles. Primary pedestrian fence is being installed along the border as part of this project. Due to the terrain, extensive cut and fill activities have been required, which will adversely impact and encroach onto the Otoy Mountain Wilderness Area.

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

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

BLM Projects include:

- Planned collaborative project for upgrading the Border Pack Trail. The trail runs east-west along the border below the Otay Mountain Wilderness. The wilderness boundary is actually 100 feet north of the edge of the trail. The existing trail is mainly a hiking trail, but ATV's could access the trail at this time with some difficulty. CBP is proposing to upgrade the trail to better accommodate ATVs and larger vehicles safely. This would include widening the trail and constructing turnarounds and pull-outs. The primary obstacle with upgrading the trail is that it supports Quino checkerspot butterfly and habitat.

A summary of the anticipated cumulative impacts relative to the Proposed Action Alternative (*i.e.*, construct and maintain approximately 7 miles of new roads, 10 miles of primary pedestrian fence, and 10 miles of road improvements along the U.S./Mexico international border in eastern San Diego County, California) is presented below. These discussions are presented for each of the resources described previously.

#### **4.1 LAND USE**

A significant impact would occur if any action is inconsistent with adopted land use plans or an action would substantially alter those resources required for, supporting or benefiting the current use. The Proposed Action Alternative would permanently affect a total 42.23 acres, most of which are located in the Roosevelt Reservation, which was set aside specifically for border security. Approximately 11.2 acres (of the 42.23 acres total) of private land rangeland would be converted for enforcement and TI uses. The actions within the Roosevelt Reservation are consistent with the authorized land use and, when considered with other potential alterations of private land uses, would not be expected to result in a significant cumulative adverse effect.

#### **4.2 GEOLOGY AND SOILS**

A significant impact on geologic resources would occur if the action occurred on a geologic unit that is unstable or would cause the unit to become unstable, exposed people or structures to the risk of loss, injury, or death, or entirely removing a geologic resource. The Proposed Action Alternative would not create any dangerous or unstable conditions within any geologic unit. The Proposed Action Alternative would not expose people or structures to potential substantial adverse effects. Further, no geologic resource is located exclusively within the project corridor. The impact of the proposed action, when combined with past and proposed projects in the region, would not be considered a significant cumulative adverse impact on geological resources.

A significant impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction and would create a risk to life or property, or if there would be a substantial reduction in agricultural production or loss of prime farmland soils. The proposed action and other CBP actions have not reduced prime farmland soils or agricultural production. Pre- and post-construction SWPPP measures would be implemented to control soil erosion. No inappropriate soil types are located in the project corridor that would present a safety

risk. The impact on 42.23 acres, when combined with past and proposed projects in the region, would not be considered a significant cumulative adverse impact.

#### **4.3 VEGETATION**

The significance threshold for vegetation would include a substantial reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be off-set or otherwise compensated. Removal of 42.23 acres of locally and regionally common plant communities would result in insignificant cumulative impacts on vegetation communities due to vast amounts of similar vegetation communities surrounding the project corridor. The long-term viability of species and communities in the project region would not be threatened. The loss of 42.23 acres, when combined with other ground disturbing or development projects in the ROI, would not result in significant cumulative negative impacts on vegetation communities in the ROI.

#### **4.4 WILDLIFE AND AQUATIC RESOURCES**

The significance threshold for wildlife and aquatic resources would include a substantial reduction in ecological process, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be off-set or otherwise compensated. Removal of 42.23 acres of habitat would result in insignificant cumulative impacts on vegetation communities and wildlife populations, since habitat in the project corridor is considered common, combined with the abundance of similar habitat both locally and regionally. Even after the completion of these segments, there would still be large remote areas along the border, within the San Diego Sector, that do not contain barriers, which would provide ample opportunities for transboundary migration and exchange of genetic material. Consequently, the long-term viability of species and communities in the project region would not be threatened. The loss of 42.23 acres of wildlife habitat, when combined with other ground disturbing or development projects in the project region, would not result in significant cumulative negative impacts on the region's biological resources.

#### **4.5 THREATENED AND ENDANGERED SPECIES**

A significant impact on threatened and endangered species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. CBP would complete ESA Section 7 consultation with USFWS for the Quino checkerspot butterfly. As part of the consultation process, conservation measures have been developed (*i.e.*, rehabilitation of the closed access road) to offset impacts on protected species to a less than significant level. Additionally, CBP has continued to work with USFWS in the development of a comprehensive mitigation plan for all CBP impacts in San Diego County. Similar types of mitigation measures as implemented for this project would be implemented for other CBP construction projects; therefore, cumulative impacts would not be significant.

#### **4.6 HYDROLOGY AND GROUNDWATER**

The significance threshold for water resources includes any action that substantially depletes groundwater water supplies or interferes with groundwater recharge, or substantially alters drainage patterns. No significant impact on hydrology or groundwater resources would occur as a result of the construction and maintenance of the proposed infrastructure. The required SWPPP and BMPs would reduce erosion and sedimentation during construction to negligible levels, and would eliminate post-construction erosion and sedimentation from the sites. The same measures would be implemented for other construction projects; therefore, cumulative impacts would not be significant.

#### **4.7 SURFACE WATERS AND WATERS OF THE U.S.**

The significance threshold for surface water and waters of the U.S. include any action that substantially depletes surface water supplies, substantially alters drainage patterns, or results in the loss of waters of the U.S. that cannot be compensated. No significant impact on surface water resources or waters of the U.S. would occur as a result of the construction and maintenance of the proposed fence and roads. The proposed actions



would not substantially alter drainage patterns, and compensatory mitigation would be implemented, as appropriate, through the Section 404/401 permit processes. The required SWPPP and BMPs would reduce erosion and sedimentation during construction to negligible levels, and would eliminate post-construction erosion and sedimentation from the site. The same measures would be implemented for other construction projects; therefore, cumulative impacts would not be significant.

#### **4.8 FLOODPLAINS**

The significance threshold for floodplains includes any action that substantially reduces flood water storage and results in flooding of adjacent lands. A portion of the proposed action would occur within the 100-year floodplain. However, this reach currently contains road and primary pedestrian fence, which would only be repaired or replaced under the Proposed Action Alternative; therefore, in the long-term, the construction would have no effect on the function of the floodplain. Properly designed erosion and sediment controls and storm water management practices would be implemented during construction activities. Therefore, no impediments to flood conveyance or increase in flood flow velocities would occur as a result of the Proposed Action Alternative. Additionally, the Proposed Action Alternative would be in full compliance with EO 11988. Therefore, this action, when combined with other existing and proposed projects in the region, would not result in significant cumulative impacts on floodplains.

#### **4.9 AIR QUALITY**

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

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

#### **4.10 NOISE**

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

#### **4.11 CULTURAL RESOURCES**

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

#### **4.12 AESTHETICS AND VISUAL RESOURCES**

Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a significant impact. No major impacts on visual resources would occur from implementing the proposed action, due in part to the existing border TI. Construction and maintenance of the proposed primary pedestrian fence and road, when considered with existing and proposed developments

in the surrounding area, would not result in a significant cumulative negative impact on the visual quality of the region. Areas north of the border would experience beneficial, indirect cumulative effects by the reduction of trash and debris produced by IAs.

#### **4.13 HAZARDOUS MATERIALS**

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

#### **4.14 SOCIOECONOMICS**

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

#### **4.15 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

Significance threshold for Environmental Justice and Protection of Children is being in non-compliance with EO 12898 and EO 13245. Given the remote location of the proposed infrastructure, there is no potential for disproportionately high and adverse impacts on minority populations, protection of children, or low income families, regionally. This proposed project, in combination with other CBP projects within EI

Cajon, Campo, and Boulevard stations' AOs, would result in beneficial cumulative impacts due to a reduction of illegal human and drug trafficking, and other crimes within the area, further making a safer living environment for both adults and children. No significant adverse cumulative impacts would occur.

#### **4.16 SUSTAINABILITY AND GREENING**

CBP would implement the Federal sustainability and greening practices to the greatest extent practicable as part of the Proposed Action Alternative. Cost-effective waste reduction and recycling of reusable materials would be implemented as part of the project. Implementation of the Federal sustainability and greening practices would have a cumulative beneficial impact on the environment.

#### **4.17 HUMAN HEALTH AND SAFETY**

Most of the CBP's proposed projects occur in areas that lack residential or commercial areas, often in rugged and rough terrain. Typically, CBP construction activities are completed by National Guard Units, USBP agents, or private contractors, who are all well trained and cognizant of all required safety measures. The Proposed Action Alternative, in conjunction with other CBP and other agencies actions, would not have significant cumulative impacts regarding human health and safety issues due to the remote locations of the projects and personnel used for construction purposes.

#### **4.18 CEQA FINDING OF SIGNIFICANCE**

The following discussions are presented relative to the CEQA significance thresholds that were previously identified in this section. As mentioned previously, significance thresholds under CEQA and NEPA are not the same. It should also be noted that since CEQA does not require the same level of analyses for all viable alternatives, the following discussions focus only on the Proposed Action Alternative.

#### 4.18.1 Significance Determination

Table 4-1 provides a summary of the CBP's determination of significance under the CEQA threshold criteria. The following subsections will describe the significant impacts and the mitigation proposed to reduce these impacts to a less than significant level.

**Table 4-1. CEQA Significance Determination**

| <b>Resource</b>                        | <b>Direct Impacts</b> | <b>Cumulative Impacts</b> |
|----------------------------------------|-----------------------|---------------------------|
| Land Use                               | Less Than Significant | Less Than Significant     |
| Aesthetics                             | Less Than Significant | Less Than Significant     |
| Unique or Sensitive Areas              | Less Than Significant | Less Than Significant     |
| Soils                                  | Less Than Significant | Less Than Significant     |
| Water Resources                        | Less Than Significant | Less Than Significant     |
| Vegetation Communities                 | Less Than Significant | Less Than Significant     |
| Wildlife                               | Less Than Significant | Less Than Significant     |
| Protected Species and Critical Habitat | Less than Significant | Less Than Significant     |
| Air Quality                            | Less Than Significant | Less Than Significant     |
| Noise                                  | Less Than Significant | Less Than Significant     |
| Hazardous Materials                    | Less Than Significant | Less Than Significant     |
| Cultural Resources                     | Less Than Significant | Less Than Significant     |
| Socioeconomics                         | Less Than Significant | Less Than Significant     |
| Growth Inducing Impacts                | Less Than Significant | Less Than Significant     |

#### 4.18.2 Significant Impacts to be Mitigated

While impacts on resources are expected to be less than significant, various mitigation measures would be implemented to reduce the chance and magnitude of unavoidable impacts. Impacts would occur for protected species and critical habitat, and would require implementation of conservation measures or compensatory mitigation to offset these impacts and reduce the impacts to less than significant. As indicated previously, consultation with the USFWS is on-going. Examples of potential mitigation measures are included in Section 5.5.

#### 4.18.3 Less-than-Significant Impacts

The new road and primary pedestrian fence construction, including associated drainage structures, would not result in significant impacts on land use, aesthetics, unique or sensitive areas, soils, water resources, vegetation communities, protected species, wildlife, air quality, ambient noise levels, hazardous materials, cultural resources, social

and economic resources, and agricultural lands or uses. The project would not result in significant growth-inducing impacts.

***SECTION 5.0***  
***MITIGATION MEASURES***

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## **5.0 MITIGATION MEASURES**

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

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, mitigation, and finally, compensation. Mitigation varies, and includes activities such as restoration of habitat in other areas, acquisition of lands, implementation of BMPs, and is typically coordinated with USFWS and other appropriate Federal and state resource agencies.

### **5.1 GENERAL CONSTRUCTION ACTIVITIES**

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

application of an absorbent (e.g., granular, pillow, sock, etc.) would be used to absorb and contain the spill. Pursuant to compliance with 40 CFR, Part 112, Oil Pollution Prevention, a SPCCP would be in place prior to the start of operations, and all construction personnel would be briefed on the implementation and responsibilities of this plan. All spills would be reported to the designated CBP point of contact for the project. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 would be included as part of the SPCCP.

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

Solid waste receptacles would be maintained at staging areas to collect non-hazardous solid waste (trash and waste construction materials). Solid waste would be collected and disposed of by a local waste disposal contractor.

## **5.2 SOILS**

Vehicular traffic associated with the construction activities and maintenance support activities would remain on established roads. Areas with highly erodible soils would be given special consideration when designing the proposed project to ensure incorporation of various erosion control techniques such as, straw bales (weed seed free), silt fencing, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion. Rehabilitation would include re-vegetating or the distribution of organic (i.e., cacti skeletons and other woody debris) and geological materials (i.e., boulders and rocks) over the disturbed area to reduce erosion while allowing the area to naturally vegetate. In addition, erosion control measures and

appropriate BMPs, as required and promulgated through the SWPPP and engineering designs, would be implemented before, during, and after construction activities.

Road maintenance shall avoid, to the extent practicable making wind rows with the soils once grading activities are completed. Any excess soils would be used on-site to raise and shape the road surface.

### **5.3 VEGETATION**

Construction equipment would be cleaned, using a high pressure water system, prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. Soil disturbances in temporary impact areas would be rehabilitated. Rehabilitation would include re-vegetating or the distribution of organic and geological materials over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Rehabilitation methods would be developed in coordination with and approved by BLM. Native seeds or plants, which are compatible with the enhancement of protected species, would be used to the extent practicable, as required under Section 7(a)(1) of the ESA.

Disturbed and restored areas would be monitored for the spread and eventual eradication of non-native invasive plant species as part of periodic maintenance activities. Monitoring would occur annually for a period of 5 years. To minimize vegetation impacts, construction travel would be restricted to the existing access roads and temporary construction areas.

### **5.4 WILDLIFE**

Numerous migratory birds could nest in the project corridor. The MBTA requires that Federal agencies coordinate with USFWS if a construction activity would result in the take of a migratory bird. If construction activities would result in the take of a migratory bird, then coordination with USFWS and CDFG would be conducted prior to

construction activities. Bird surveys would not be required if clearing and grubbing activities occur outside of the nesting season (typically February 15 through September 1).

## **5.5 PROTECTED SPECIES**

During the development of this EA, USFWS and CBP consulted on various issues regarding protected species, and developed potential mitigation measures that would be implemented as part of the proposed project. Examples include:

- To mitigate for loss of habitat for the Quino checkerspot butterfly at the East Smith Canyon project site, CBP would abandon and rehabilitate roads. The existing access road at the west end of the existing primary pedestrian fence near East Smith Canyon project site would be abandoned and rehabilitated. This would result in a gain of 0.5 acre of habitat.

## **5.6 CULTURAL RESOURCES**

All construction would be kept within previously surveyed areas. If any cultural material is discovered during the construction efforts, then all activities in the immediate area will halt until a qualified archeologist assesses the cultural remains. If cultural material is discovered on BLM land, the Palm Springs-South Coast Field Office would be notified, and all work in the immediate area would cease until authorization to proceed is provided by BLM. Construction activities near any monuments would be monitored to ensure avoidance. Additionally, CBP would complete the Section 106 process prior to the start of any construction activities.

## **5.7 WATER RESOURCES**

Standard construction procedures would be implemented to minimize the potential for erosion and sedimentation during construction. All work shall cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and

material. All fuels, waste oils, and solvents would be collected and stored in tanks or drums within a secondary containment area consisting of an impervious floor and bermed sidewalls capable of holding the volume of the largest container stored therein. The refueling of machinery would be completed following accepted guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. No refueling or storage would take place within 100 feet of drainage. Other mitigation measures would be implemented, such as straw bales (weed- and seed-free), silt fencing, aggregate materials, wetting compounds, and re-vegetation with native plant species, where possible, to decrease erosion and sedimentation. Furthermore, a SWPPP and all applicable Section 404/401 permit procedures would be completed before construction.

## **5.8 AIR QUALITY**

Mitigation measures would be incorporated to ensure that PM-10 emission levels do not rise above the minimum threshold as required per 40 CFR 51.853(b)(1). Measures would include dust suppression methods to minimize airborne particulate matter that would be created during construction activities. Standard construction BMPs, such as routine watering of the construction site, as well as access roads to the site, would be used to control fugitive dust during the construction phases of the proposed project. Additionally, all construction equipment and vehicles would be required to be kept in good operating condition to minimize exhaust emissions.

## **5.9 NOISE**

During the construction phase, short term noise impacts are anticipated. All OSHA requirements would be followed. The blasting contractor would provide further analysis of blasting techniques and measures to be taken to ensure negligible impacts would occur via the blasting. On-site activities would be restricted to daylight hours near the 7 Gates/Railroad project site. Construction equipment would possess properly working mufflers and would be maintained properly tuned to reduce backfires. Implementation

of these measures would reduce the expected short term noise impacts to an insignificant level in and around the construction site.

***SECTION 6.0***  
***REFERENCES***







## 6.0 REFERENCES

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***SECTION 7.0***  
***LIST OF PREPARERS***







## 7.0 LIST OF PREPARES

| NAME             | AGENCY/ORGANIZATION             | DISCIPLINE/EXPERTISE  | EXPERIENCE                                                | ROLE IN PREPARING EA                                                   |
|------------------|---------------------------------|-----------------------|-----------------------------------------------------------|------------------------------------------------------------------------|
| Charles McGregor | USACE, ECSI                     | NEPA                  | 10 years Environmental Management and Review              | ECSI Project Manager, EA review and coordination                       |
| Suna Adam Knaus  | Gulf South Research Corporation | Forestry/Wildlife     | 17 years, natural resources                               | EA review                                                              |
| Eric Webb, Ph.D. | Gulf South Research Corporation | Ecology/Wetlands      | 15 years experience in natural resources and NEPA studies | EA technical review                                                    |
| Chris Ingram     | Gulf South Research Corporation | Biology/ Ecology      | 30 years EA/EIS studies                                   | Project Coordinator/EA technical review                                |
| Josh McEnany     | Gulf South Research Corporation | Forestry/Wildlife     | 7 years, natural resources and NEPA studies               | Project Manager                                                        |
| Sharon Newman    | Gulf South Research Corporation | GIS/graphics          | 11 years, GIS/graphics experience                         | GIS/graphics                                                           |
| Shanna McCarty   | Gulf South Research Corporation | Forestry              | 3 years natural resources                                 | EA preparation (socioeconomics)                                        |
| Joanna Cezniak   | Gulf South Research Corporation | Wildlife              | 9 years natural resources                                 | EA preparation (wildlife, protected species, vegetation, and land use) |
| Steve Kolian     | Gulf South Research Corporation | Environmental Science | 10 years environmental resources experience               | EA preparation (air quality)                                           |
| John Lindemuth   | Gulf South Research Corporation | Archeology            | 13 years professional archeologist/cultural resources     | EA preparation (cultural resources)                                    |

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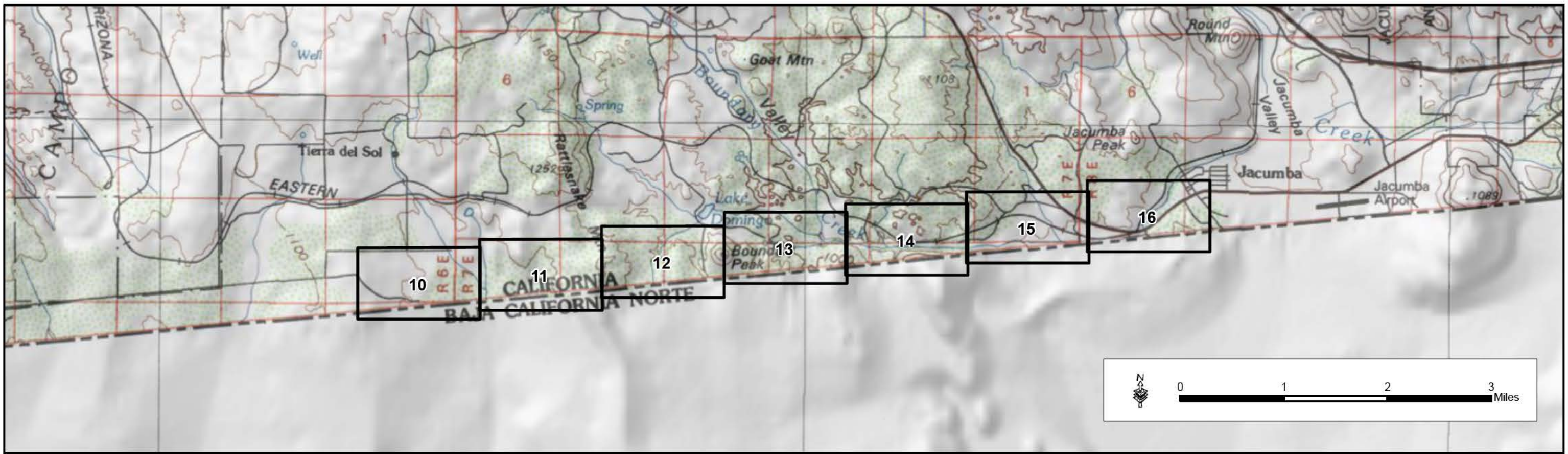
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*APPENDIX A*  
*Detailed Project Maps and Fence Designs*

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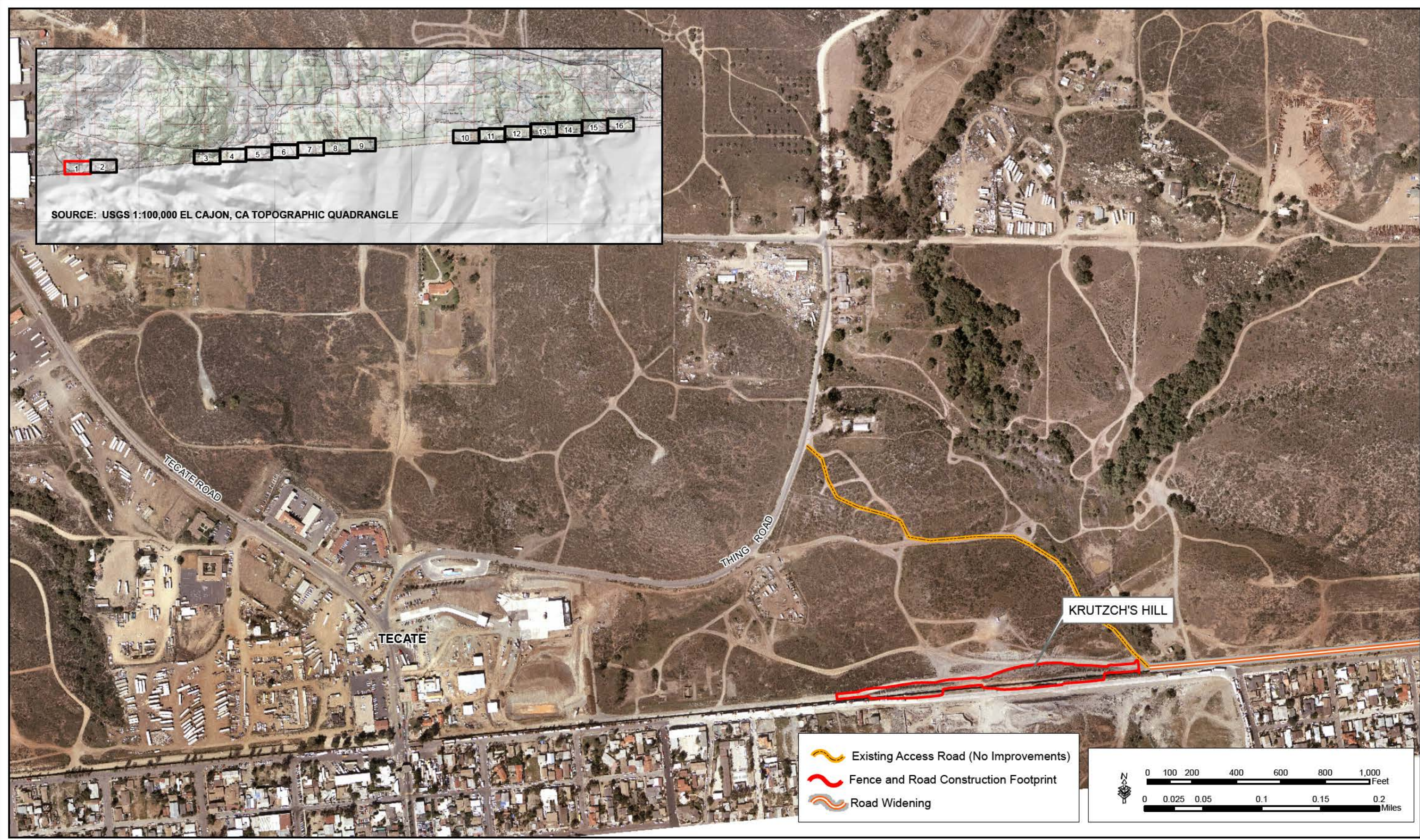
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Index Map





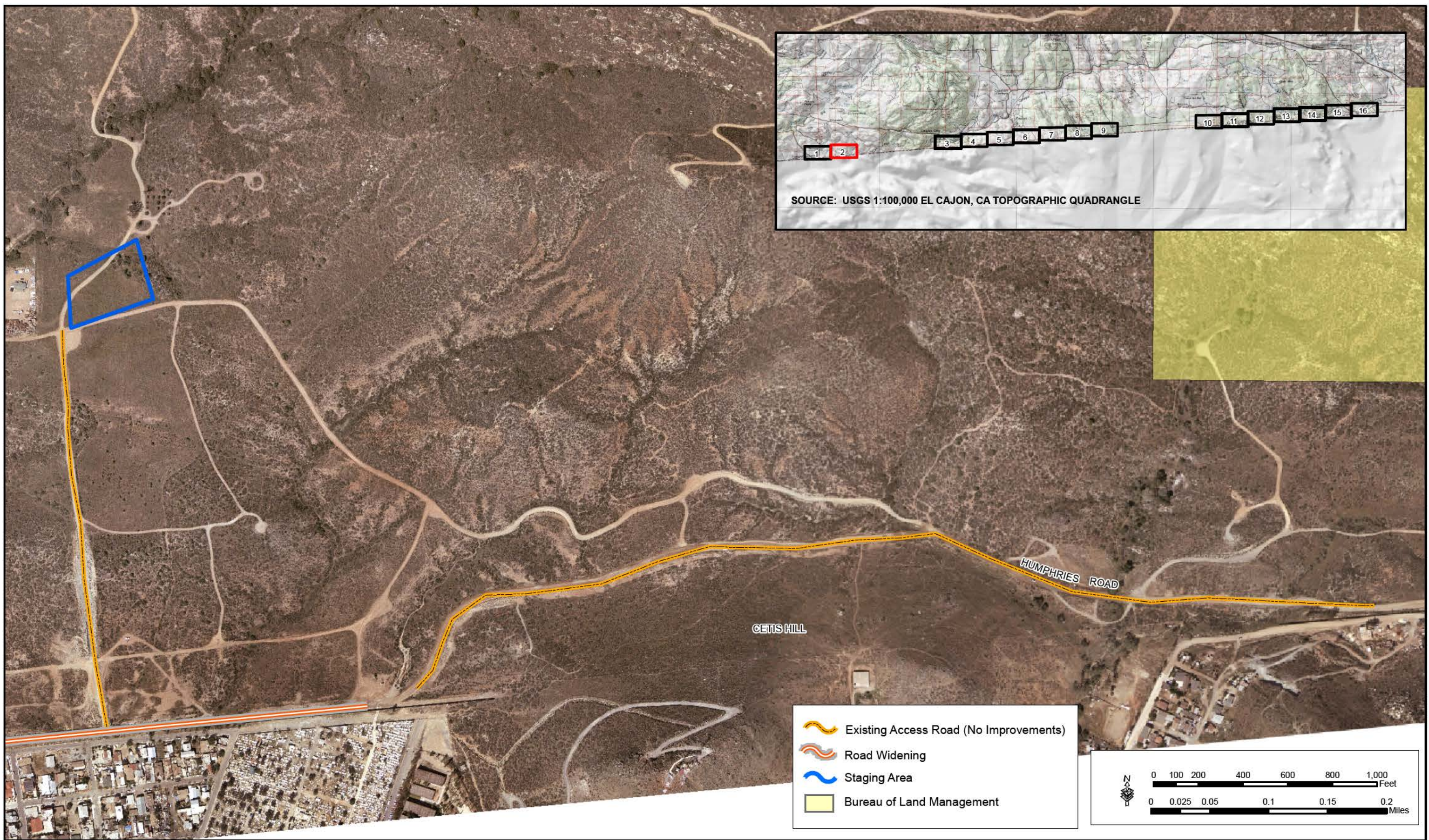
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Map 1 - Krutzch's Hill, Road Widening, and Access Road



May 2008

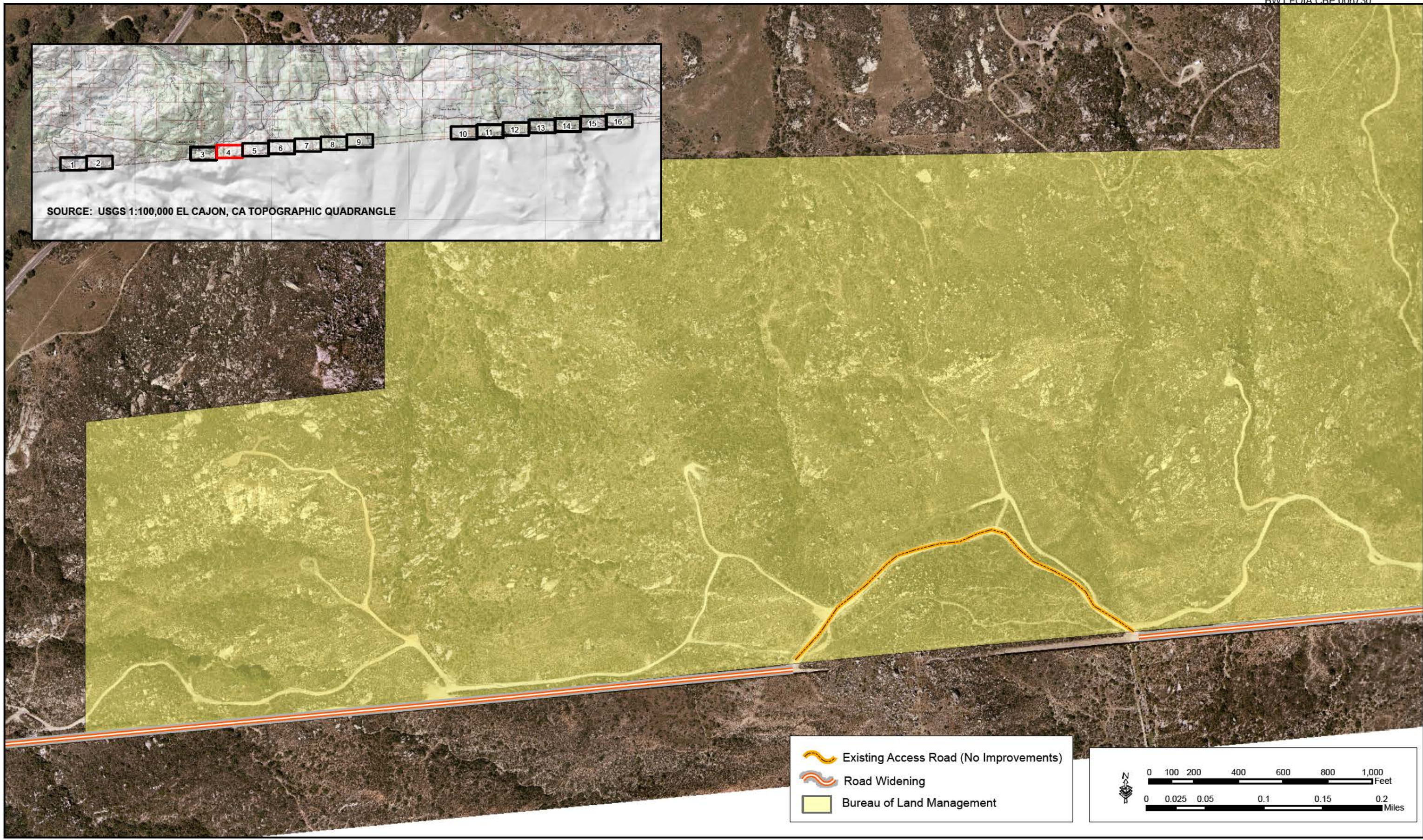
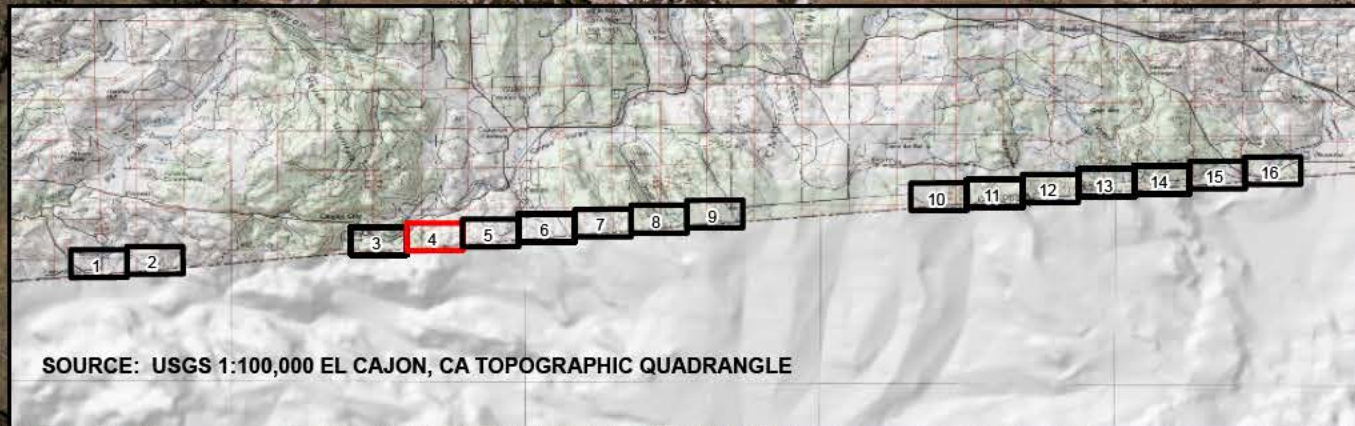




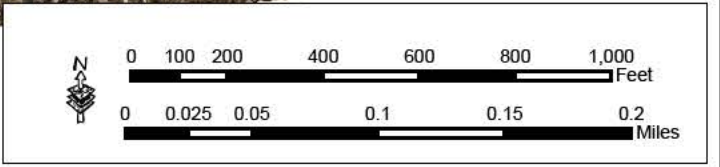
Map 2 - Cetus Hill, Road Widening, Staging Area, and Access Road



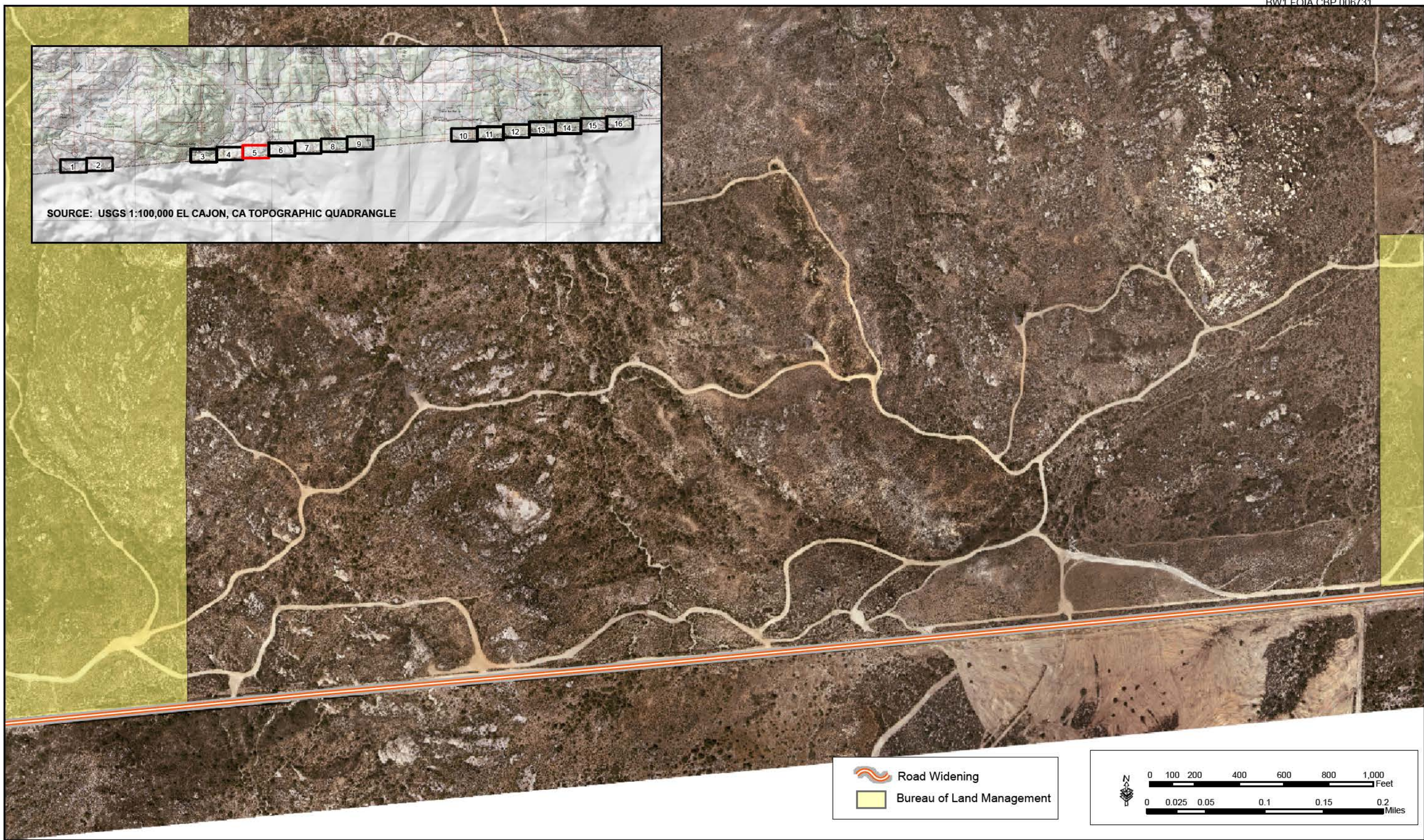
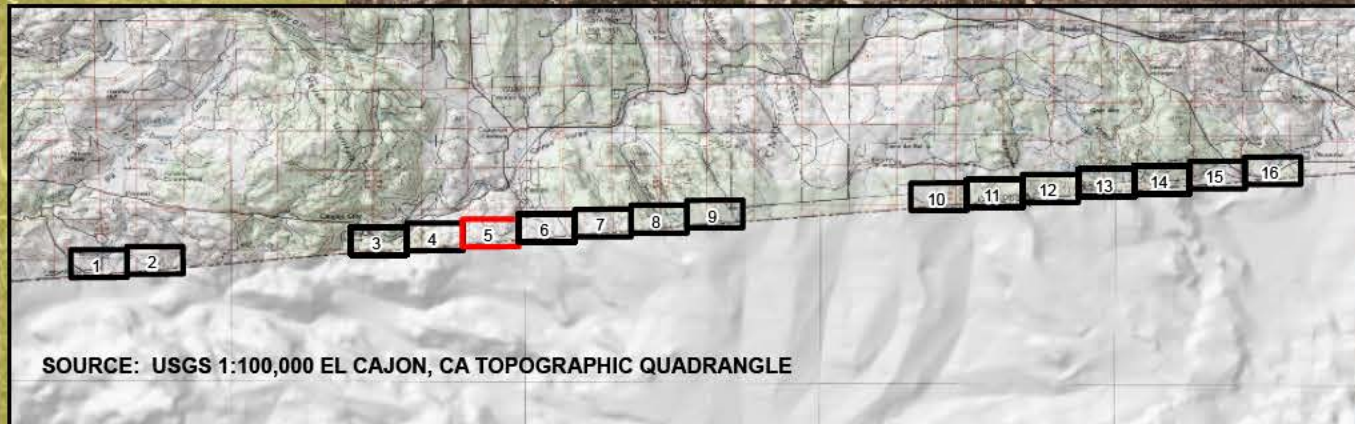
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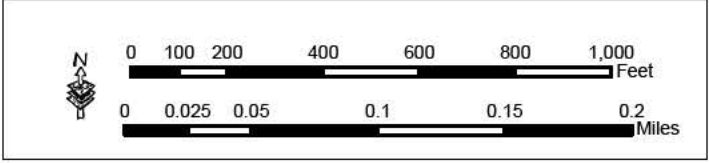
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-  Road Widening
-  Bureau of Land Management



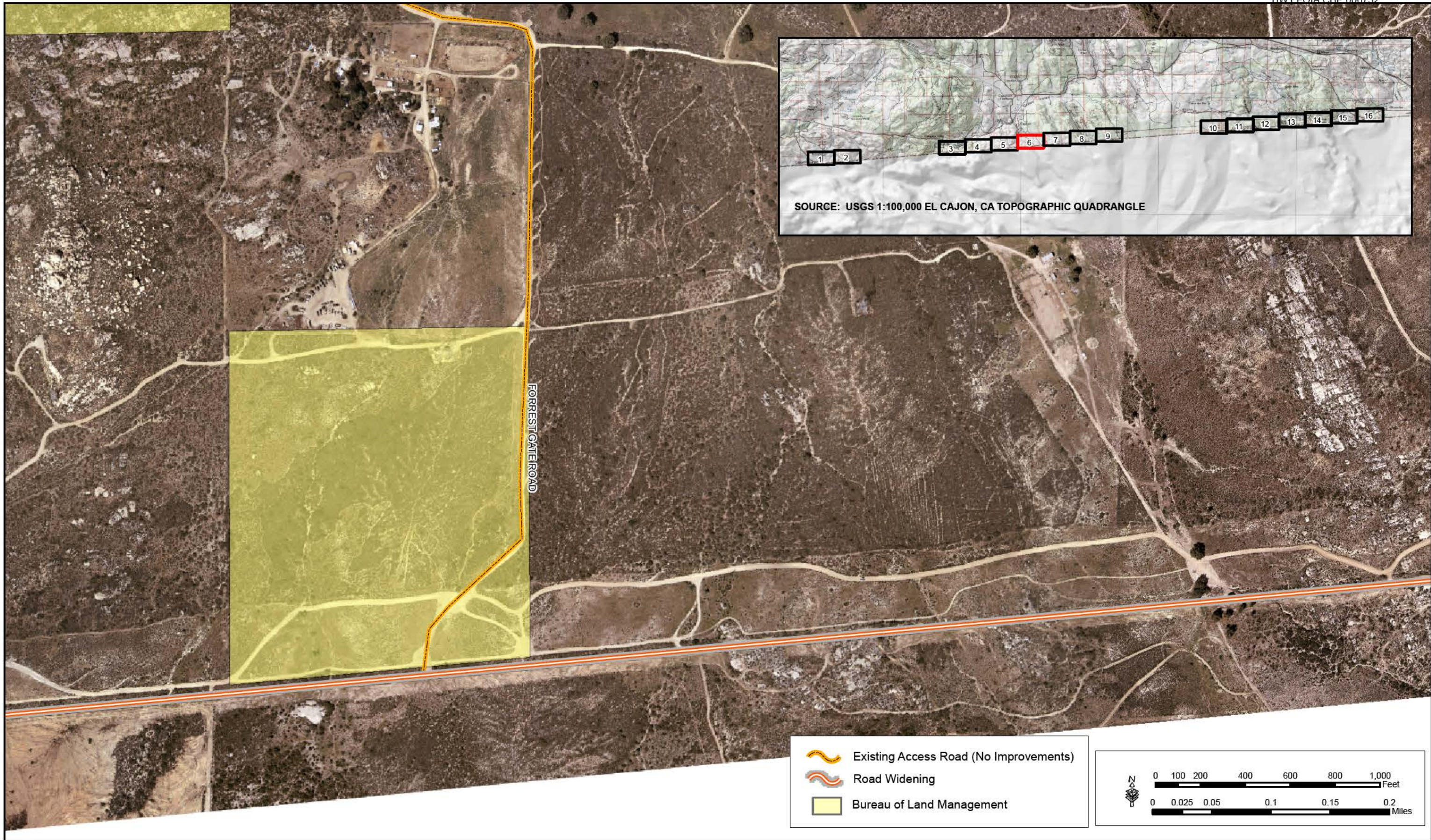
Map 4 - Road Widening and Access Road



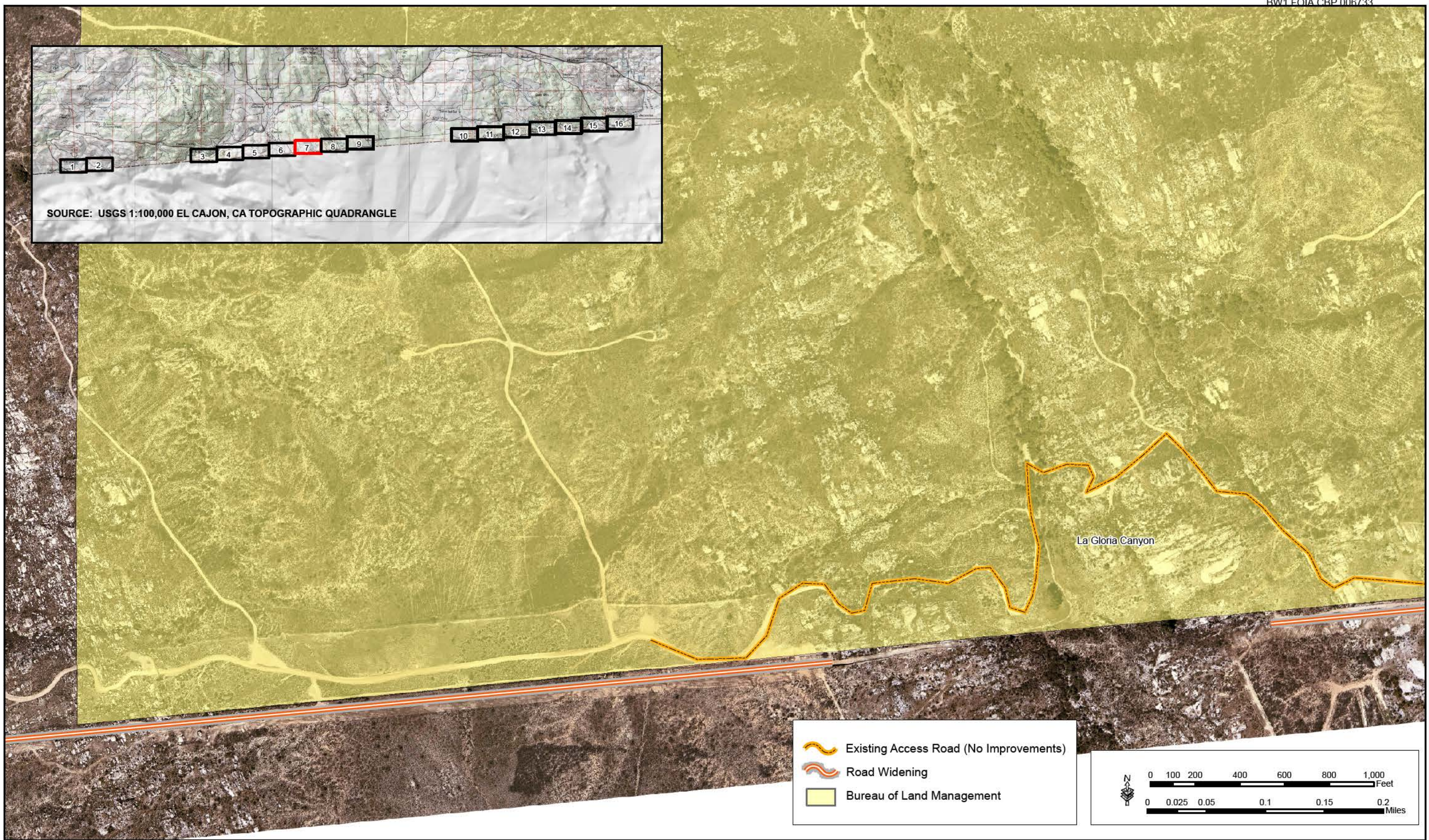
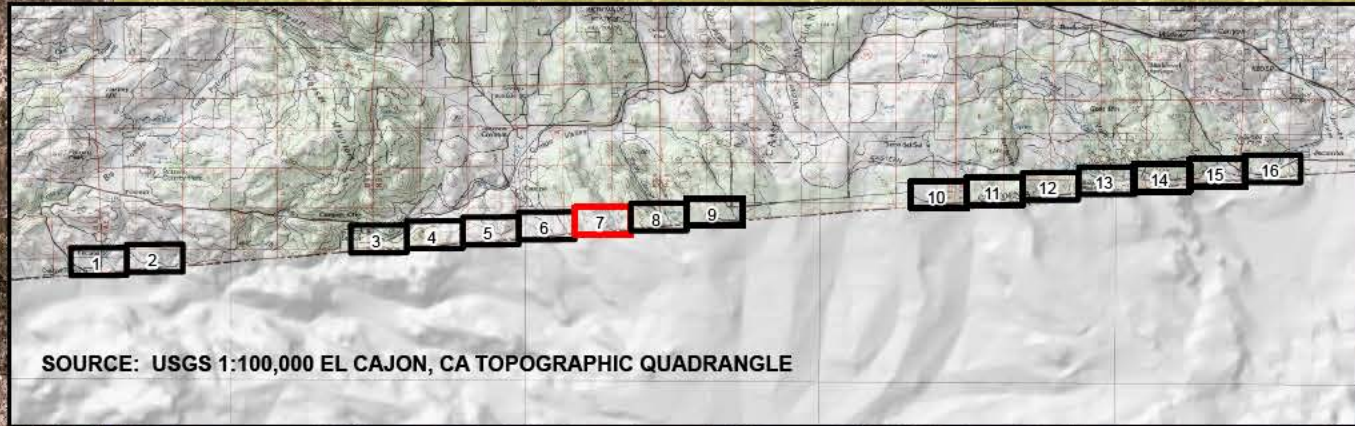
 Road Widening  
 Bureau of Land Management






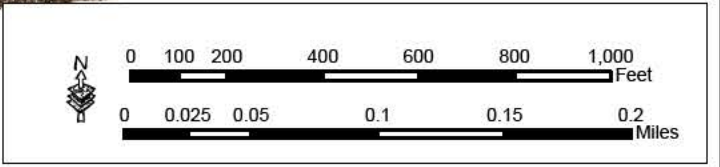
Map 5 - Road Widening



Map 6 - Road Widening and Access Road

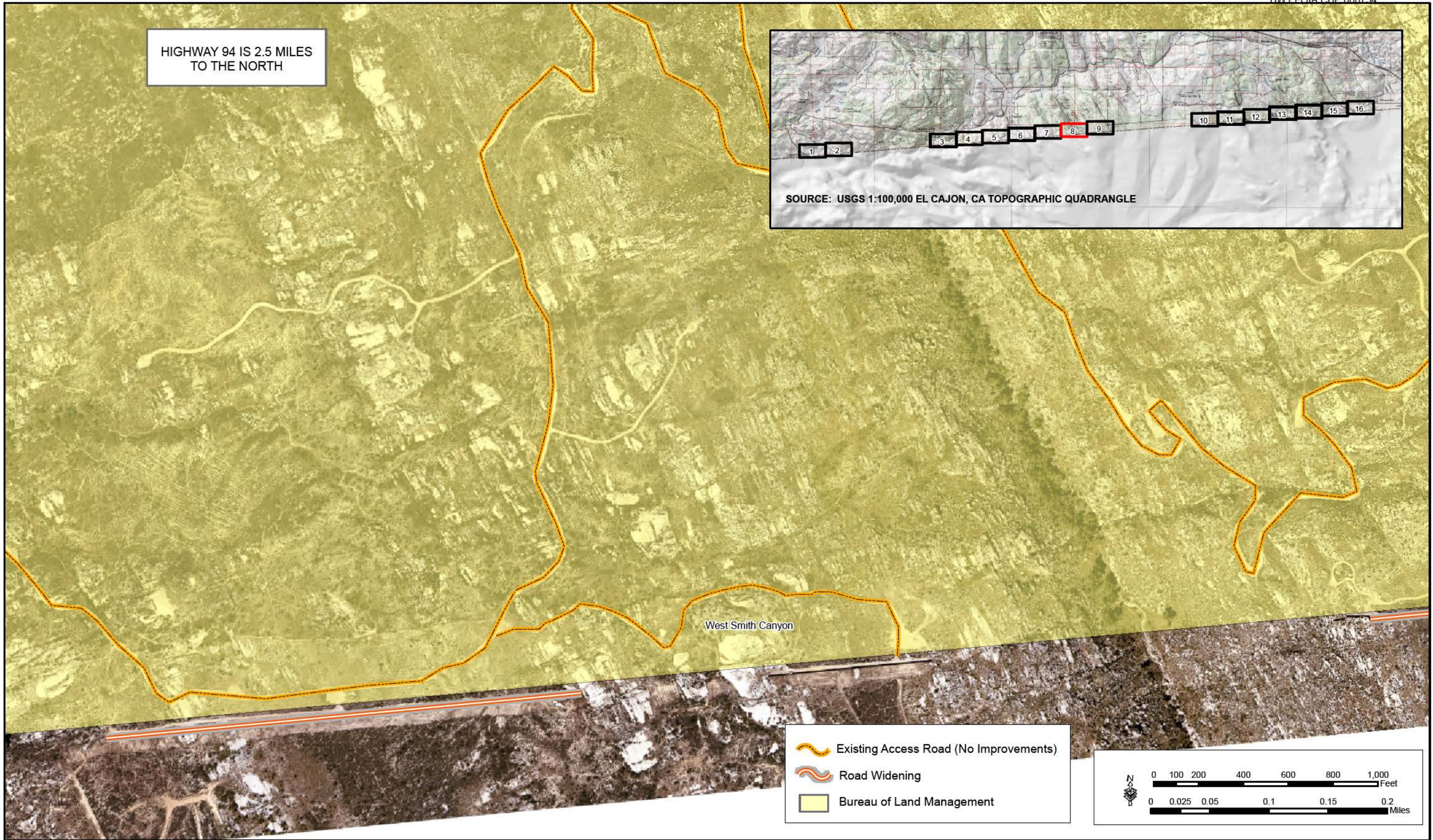
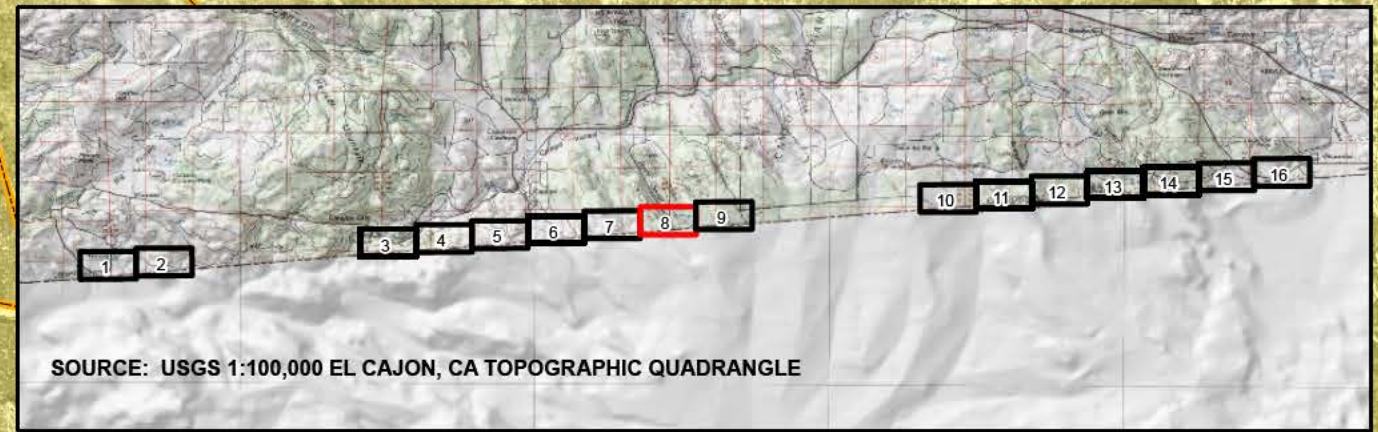


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-  Road Widening
-  Bureau of Land Management

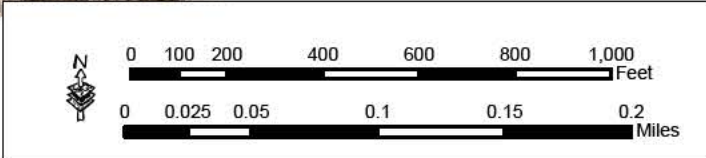


Map 7 - Road Widening, Staging Area, and Access Road

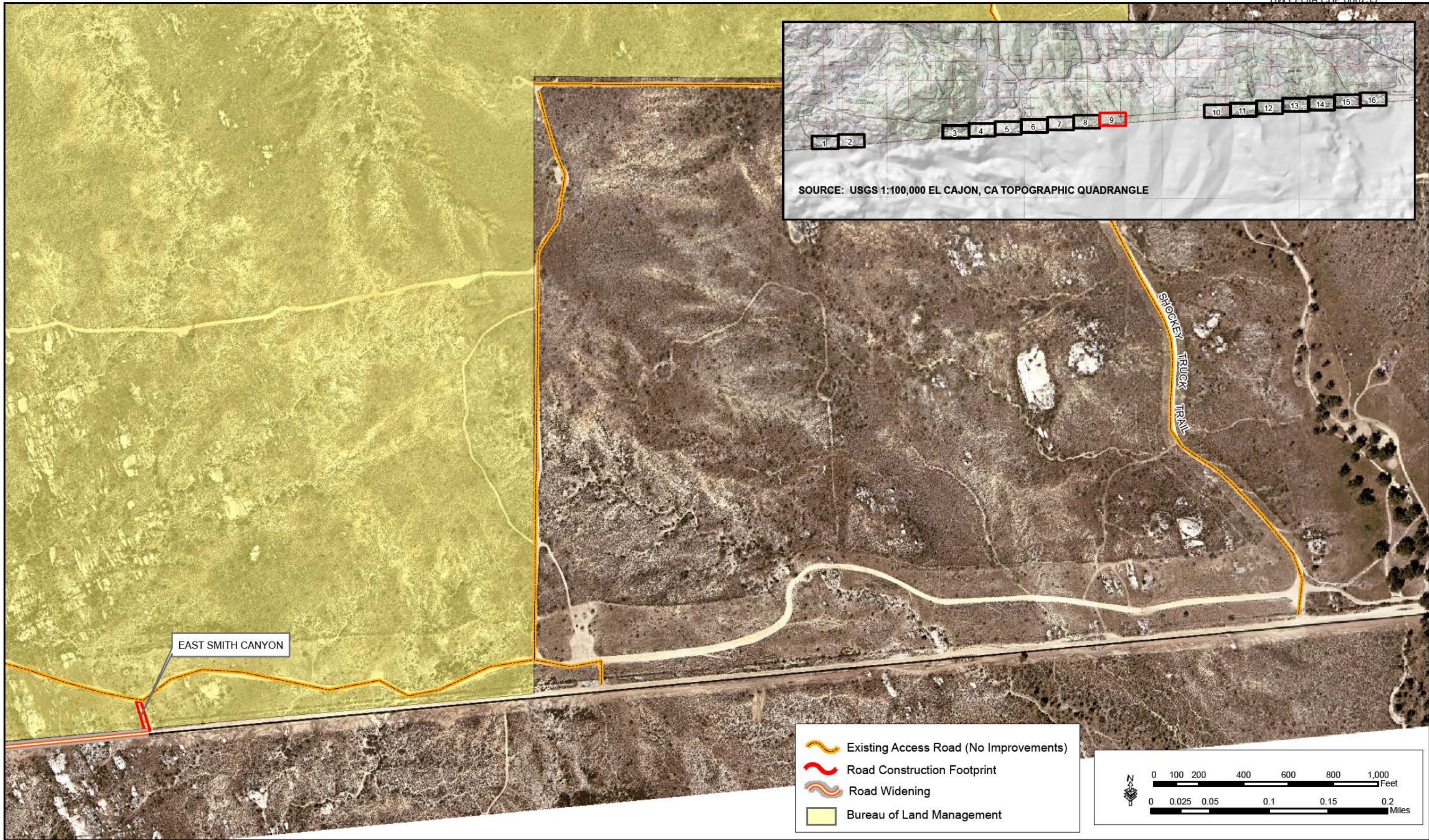
HIGHWAY 94 IS 2.5 MILES TO THE NORTH



-  Existing Access Road (No Improvements)
-  Road Widening
-  Bureau of Land Management

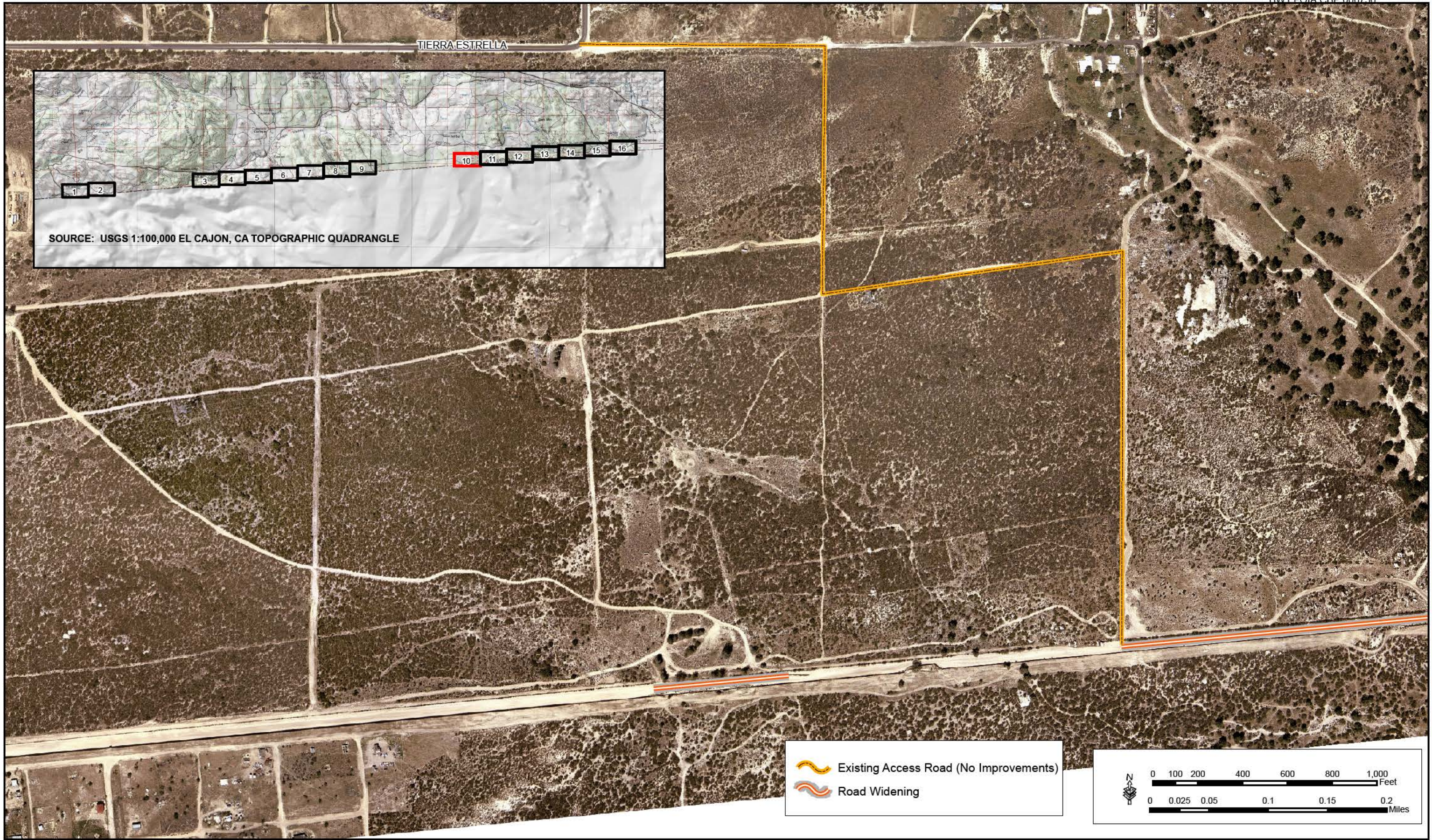
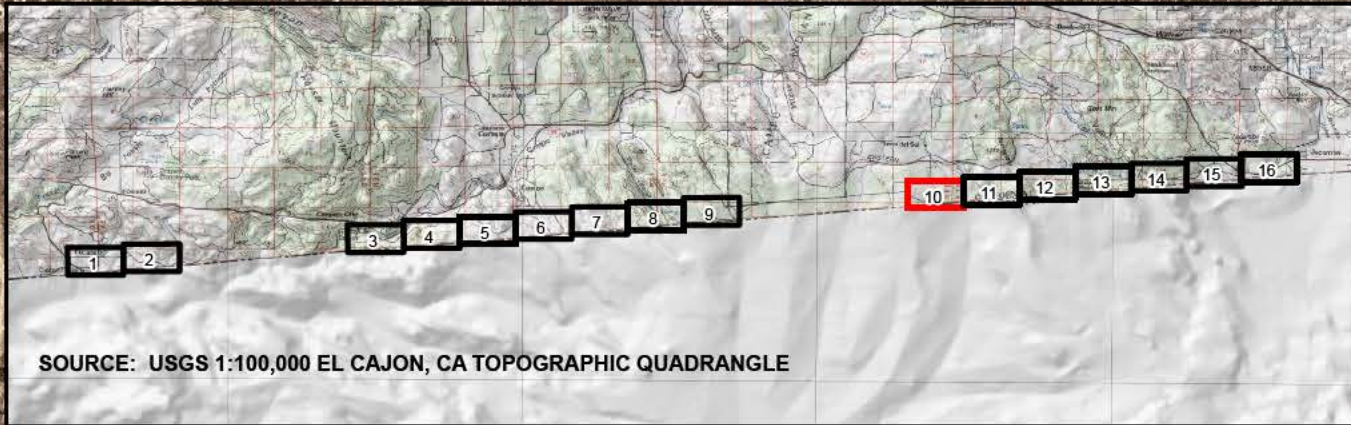


Map 8 - Road Widening, Staging Area, and Access Roads

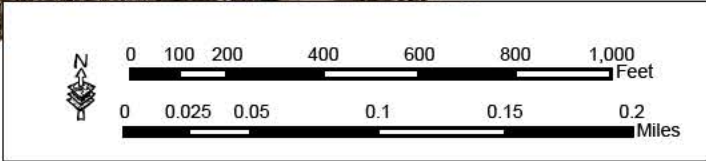


Map 9 - East Smith Canyon, Road Widening, and Access Road

TIERRA ESTRELLA

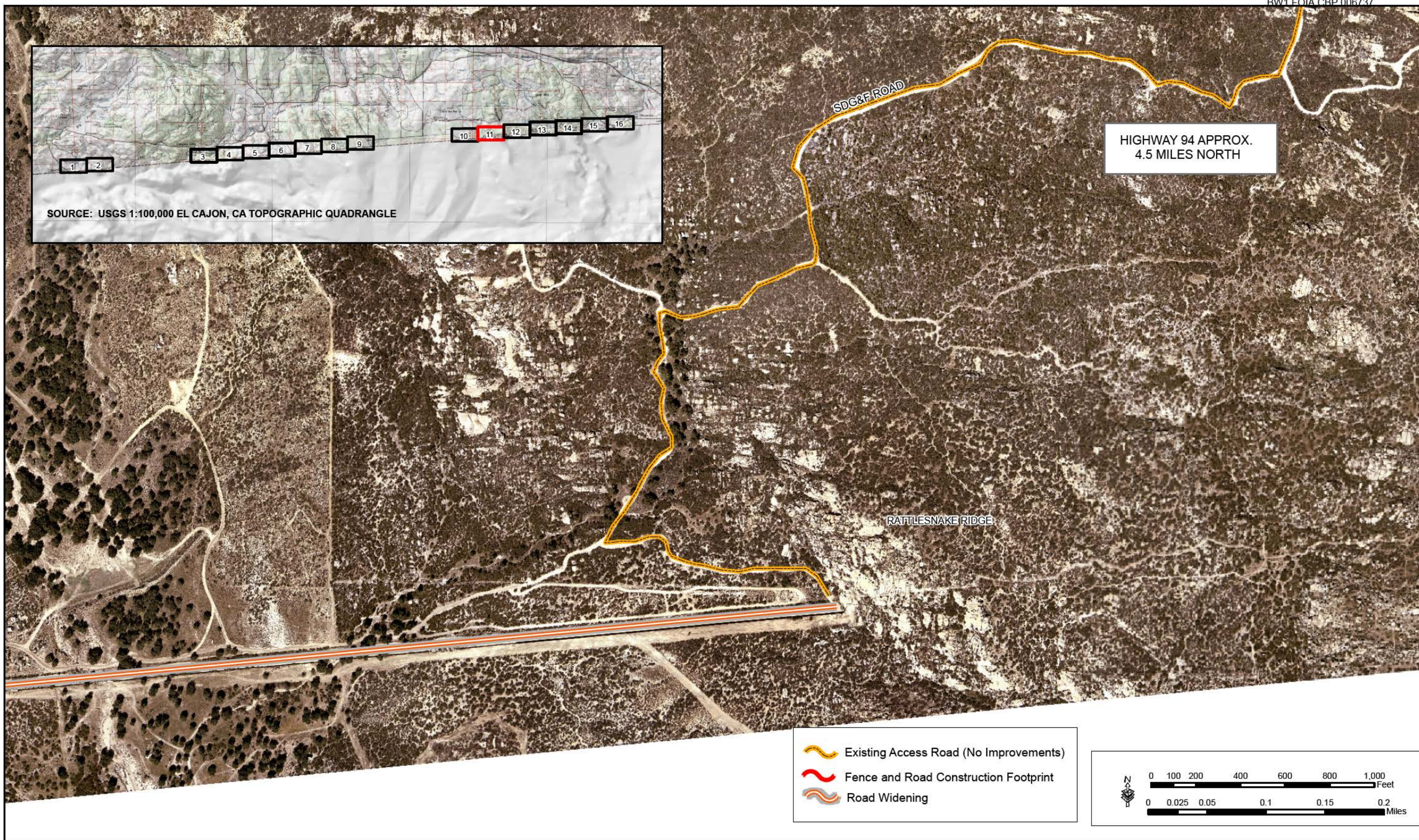
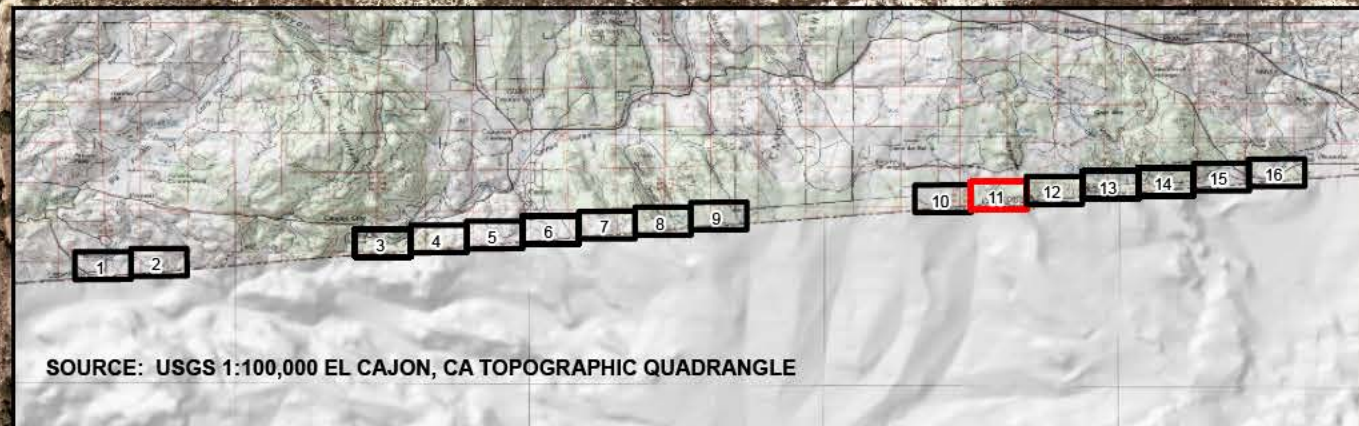


 Existing Access Road (No Improvements)  
 Road Widening



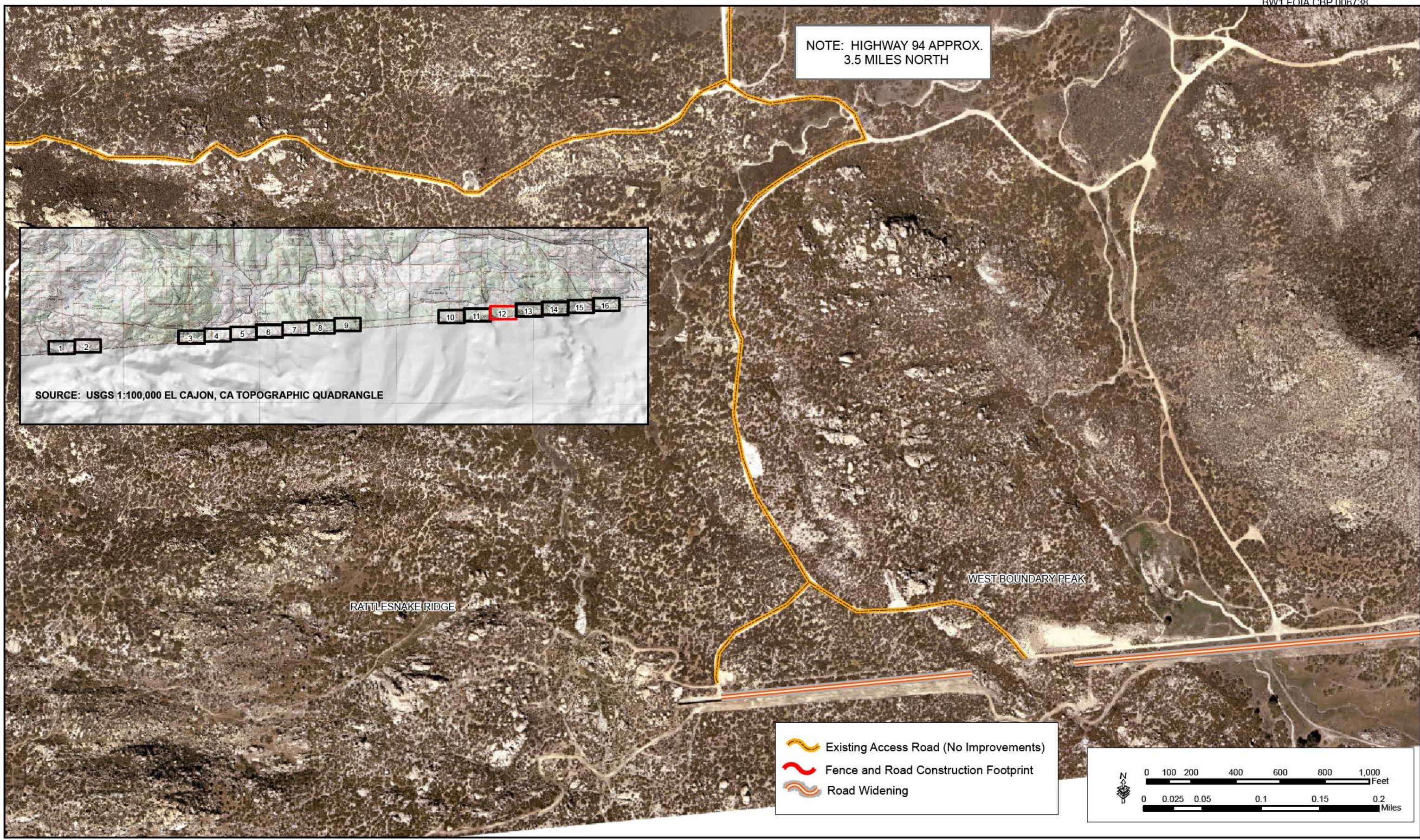
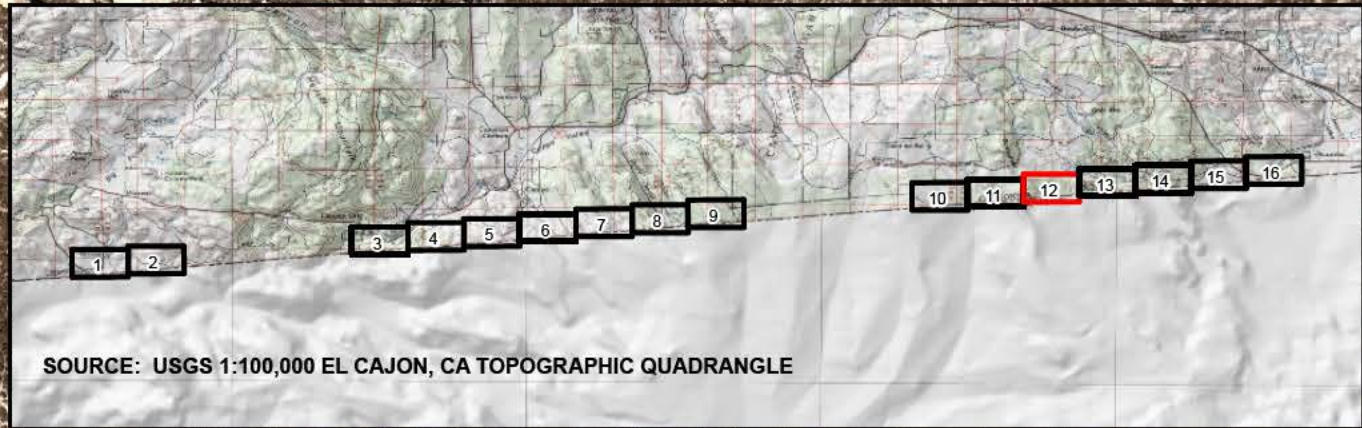
Map 10 - Road Widening, Staging Area, and Access Road








Map 11 - Road Widening, and Access Road

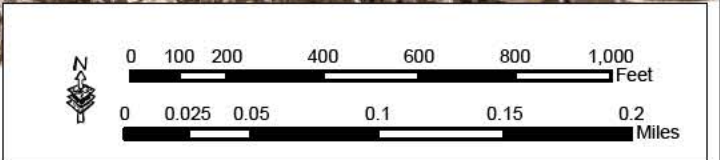
NOTE: HIGHWAY 94 APPROX.  
3.5 MILES NORTH



RATTLESNAKE RIDGE

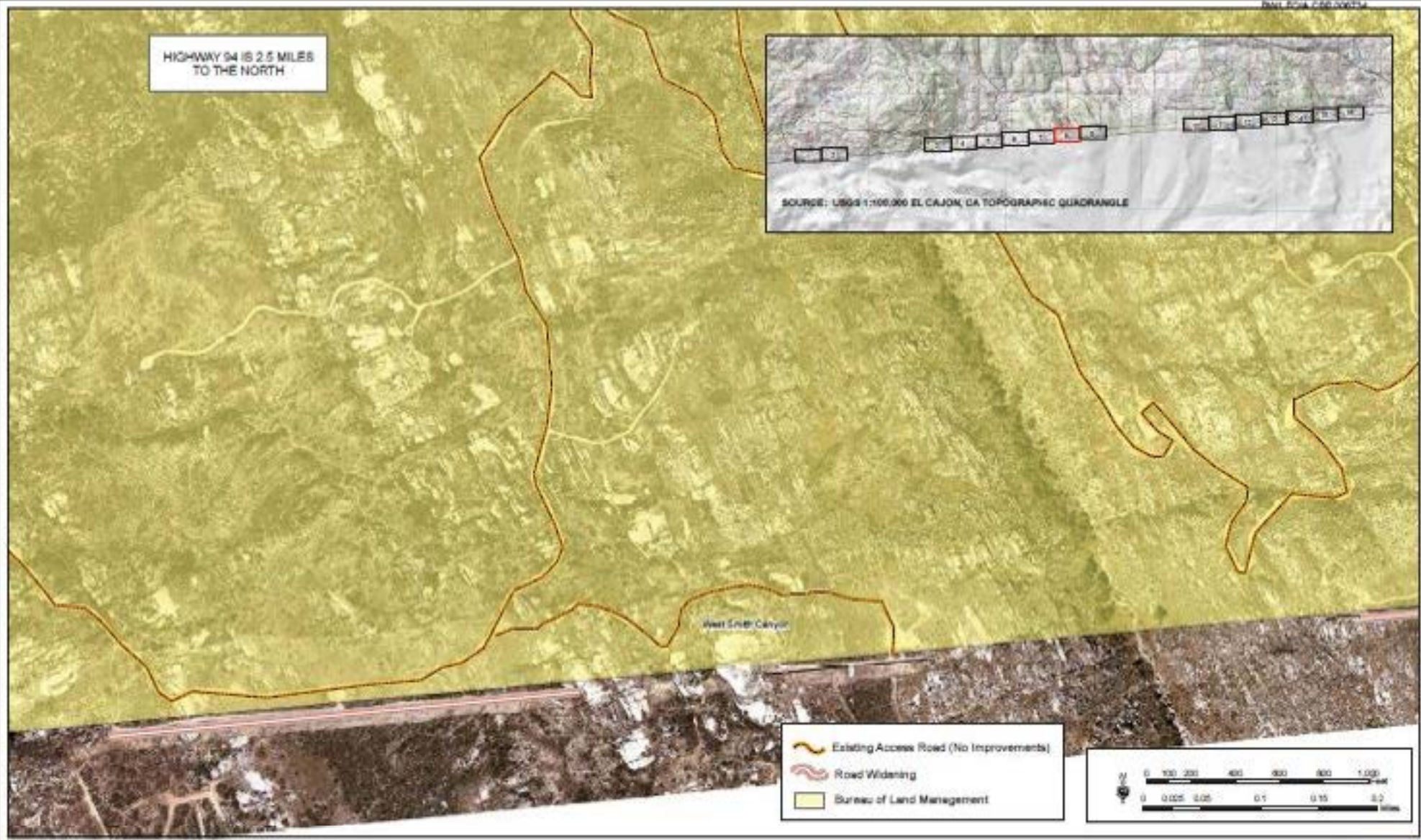
WEST BOUNDARY PEAK

-  Existing Access Road (No Improvements)
-  Fence and Road Construction Footprint
-  Road Widening

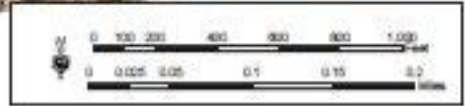


Map 12 - Road Widening, and Access Roads

HIGHWAY 94 IS 2.5 MILES TO THE NORTH



-  Existing Access Road (No Improvements)
-  Road Widening
-  Bureau of Land Management



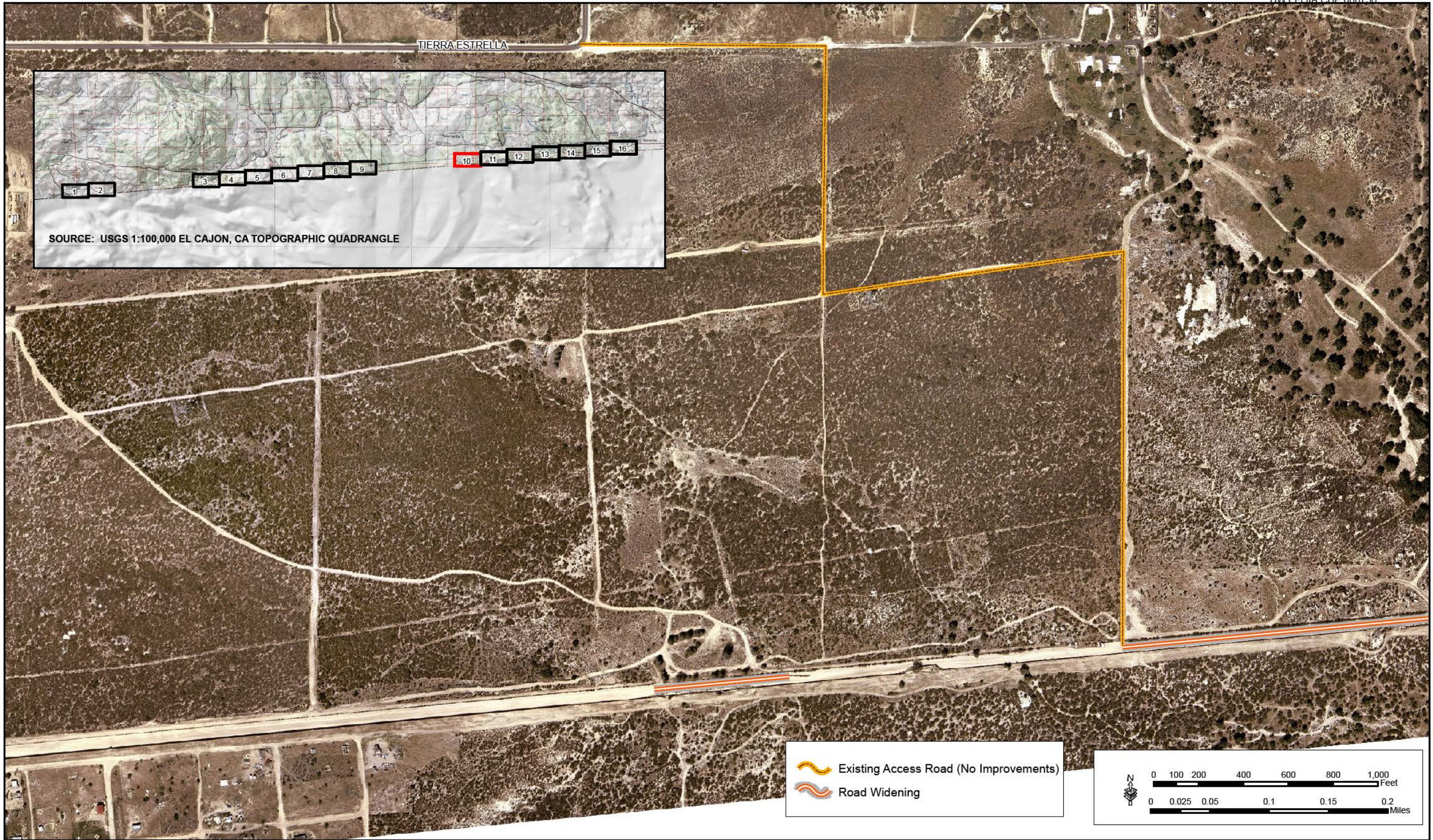
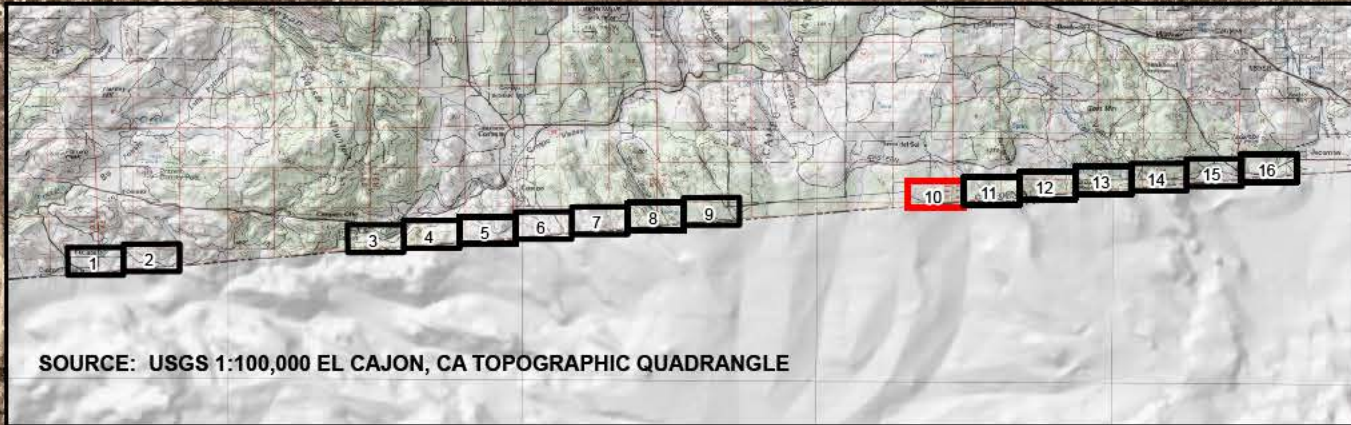
Map 8 - Road Widening, Staging Area, and Access Roads



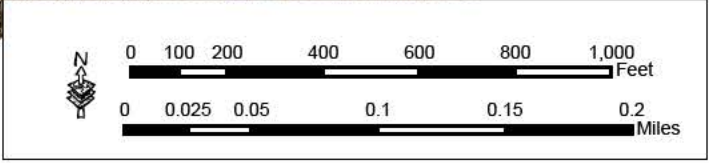
Map 9 - East Smith Canyon, Road Widening, and Access Road



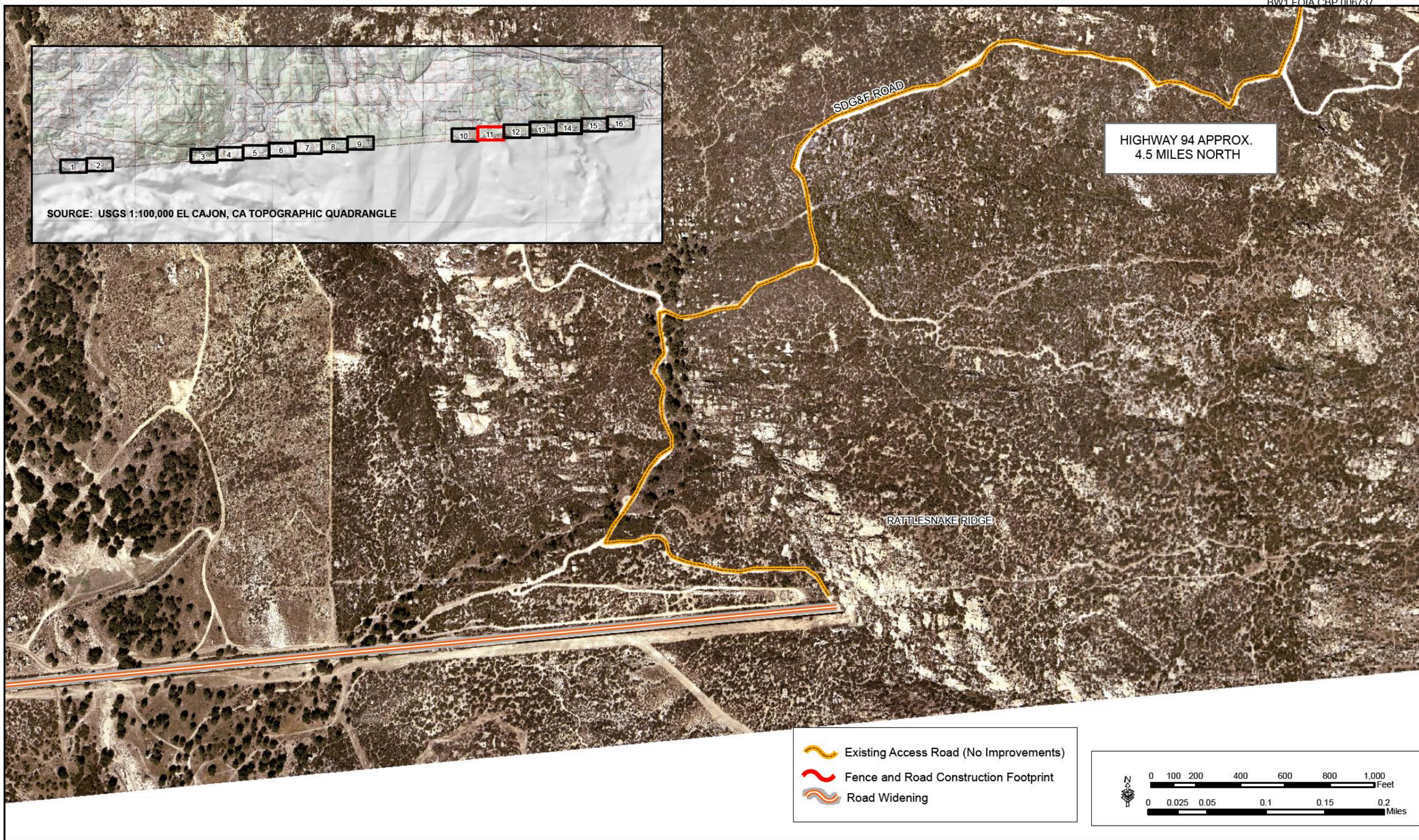
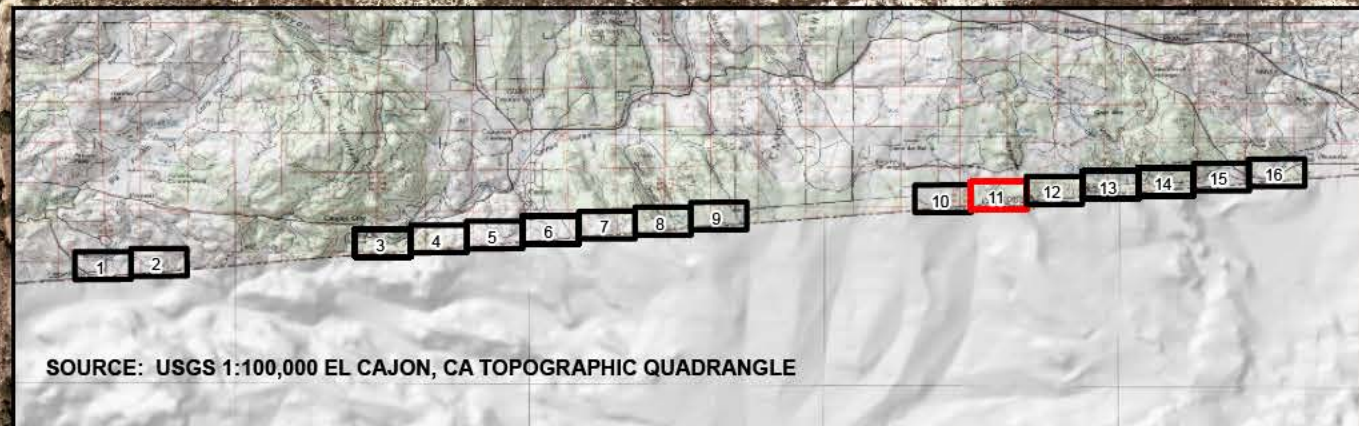
TIERRA ESTRELLA



 Existing Access Road (No Improvements)  
 Road Widening



Map 10 - Road Widening, Staging Area, and Access Road

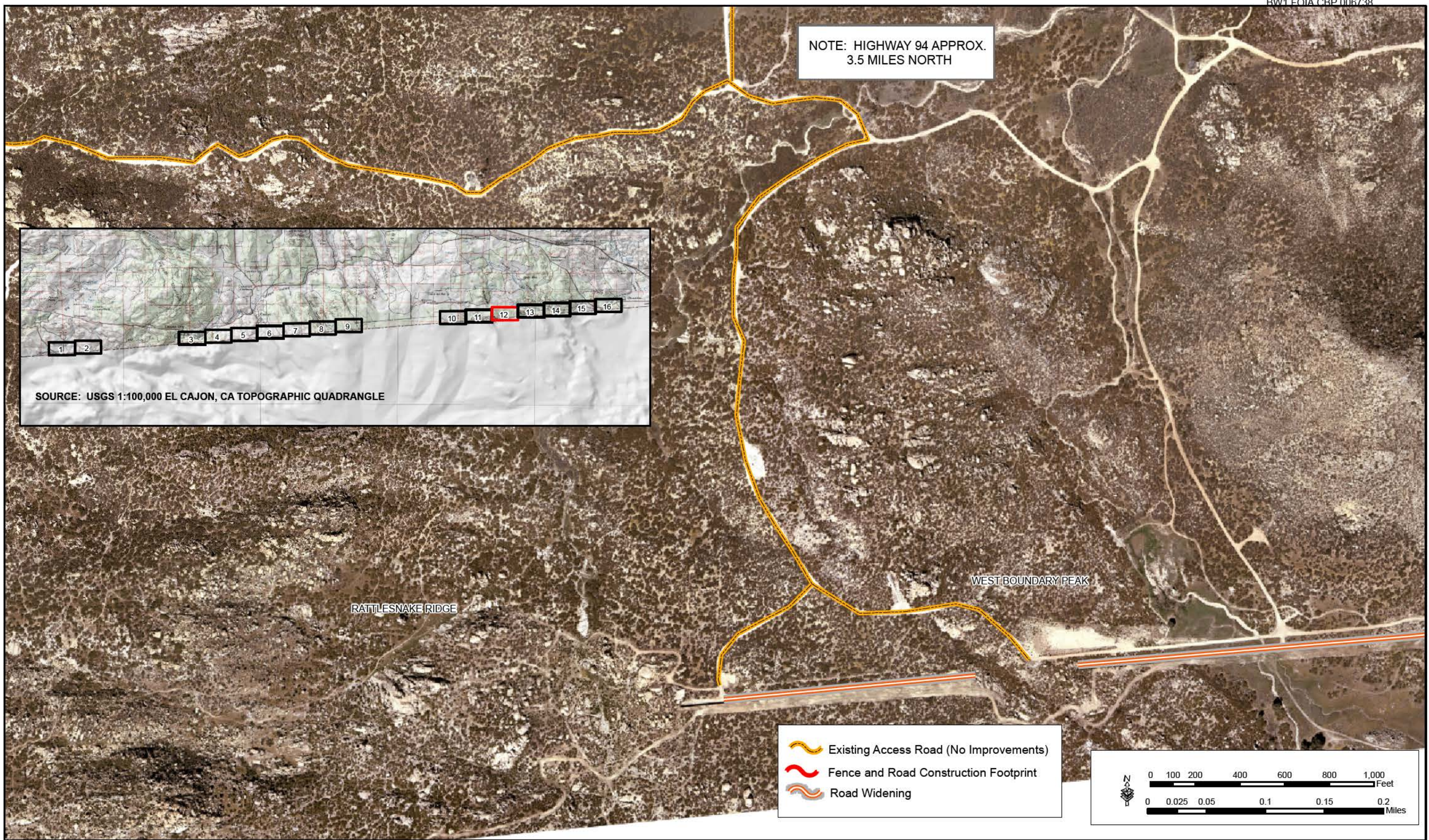
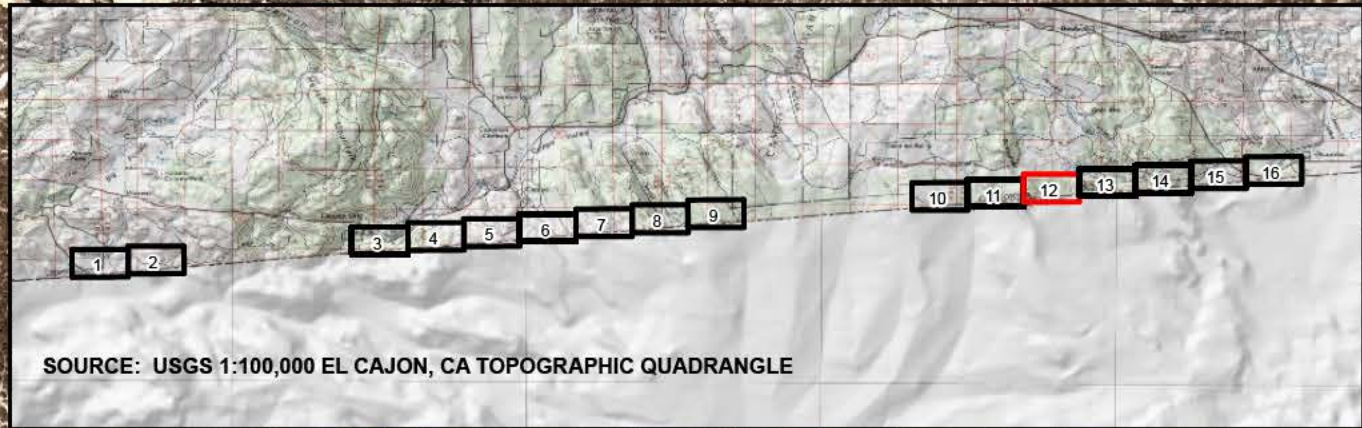





-  Existing Access Road (No Improvements)
-  Fence and Road Construction Footprint
-  Road Widening

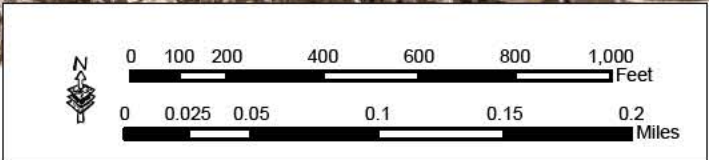


Map 11 - Road Widening, and Access Road

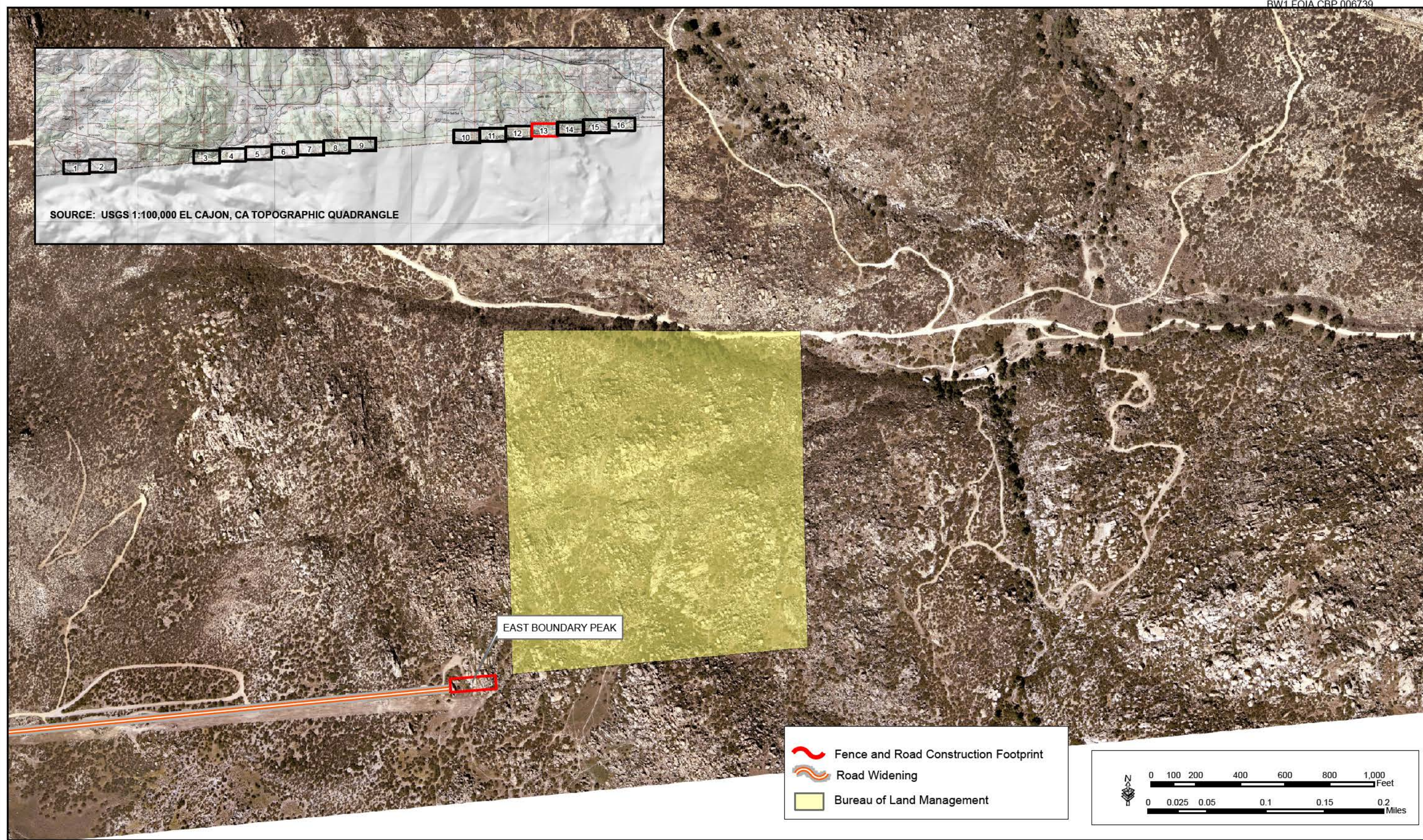
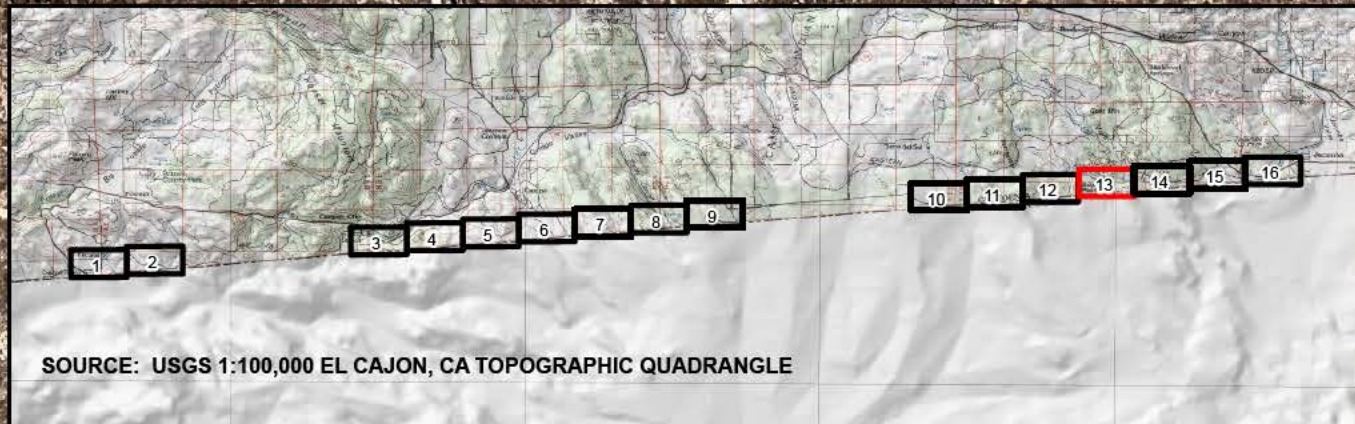
NOTE: HIGHWAY 94 APPROX.  
3.5 MILES NORTH



-  Existing Access Road (No Improvements)
-  Fence and Road Construction Footprint
-  Road Widening



Map 12 - Road Widening, and Access Roads



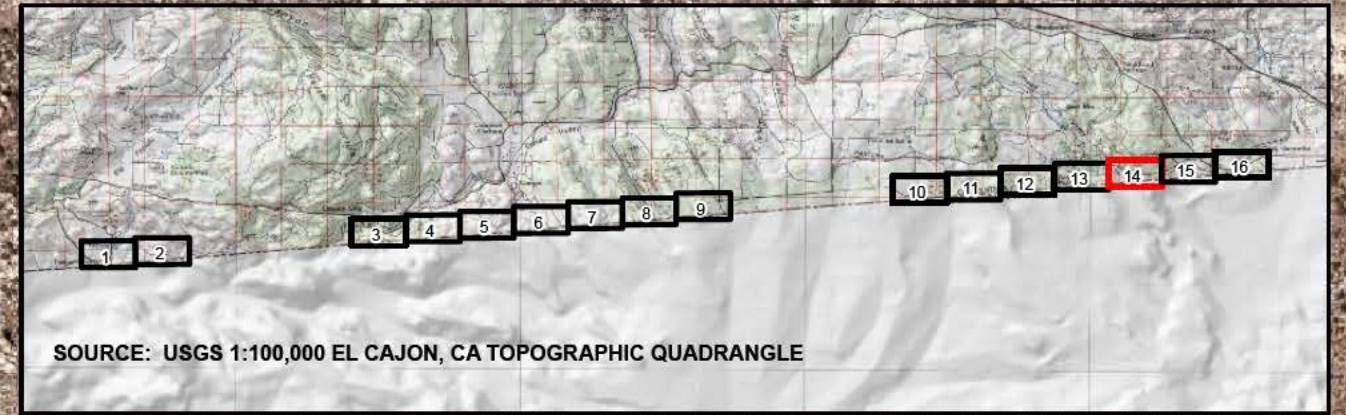
-  Fence and Road Construction Footprint
-  Road Widening
-  Bureau of Land Management



Map 13 - East Boundary Peak and Road Widening

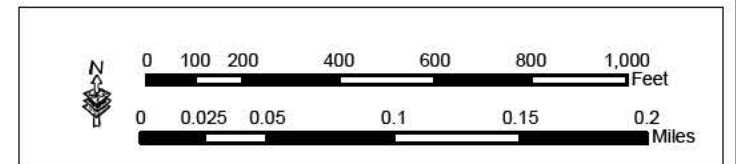


NOTE: OLD HIGHWAY 80 APPROX.  
3.0 MILES NORTH

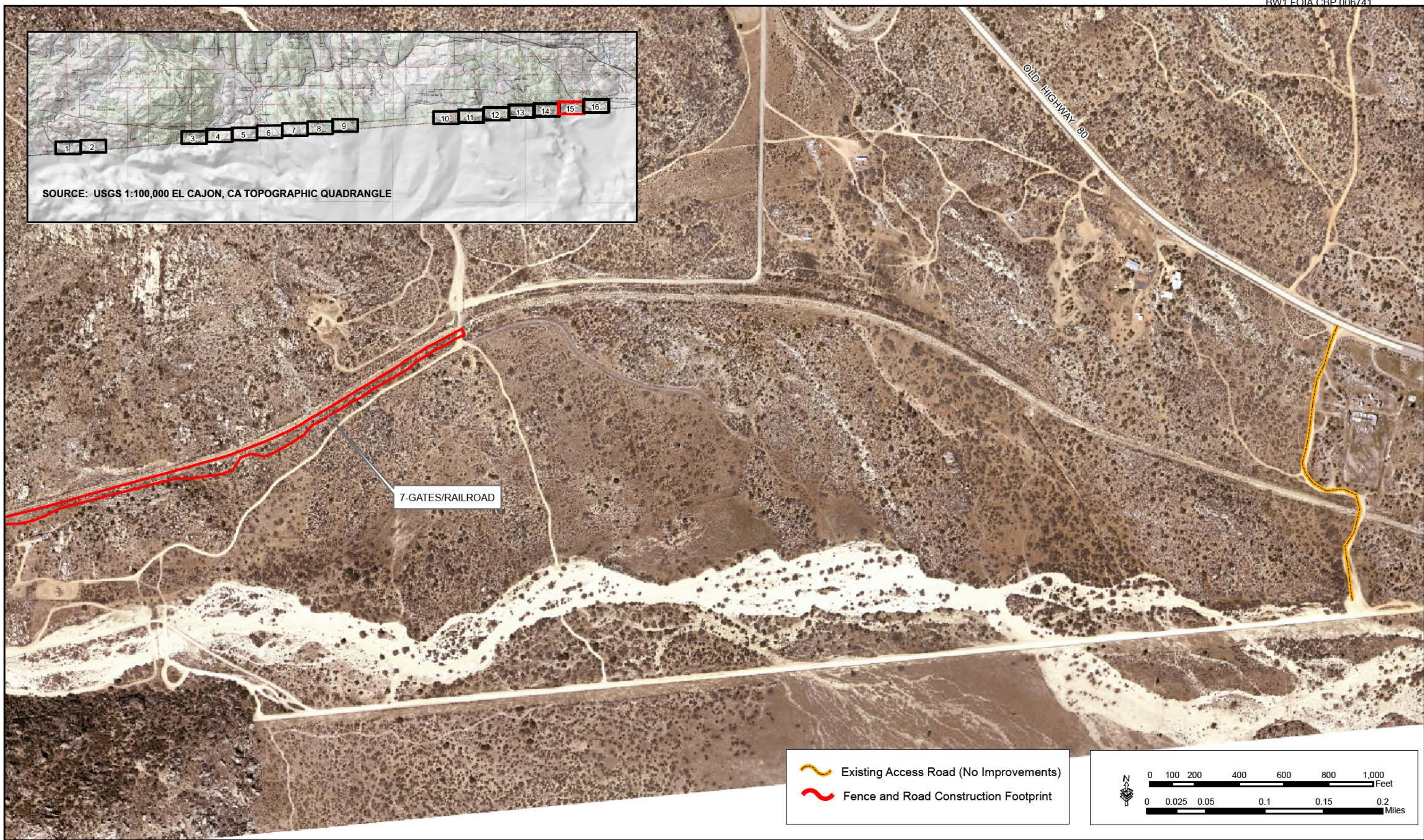
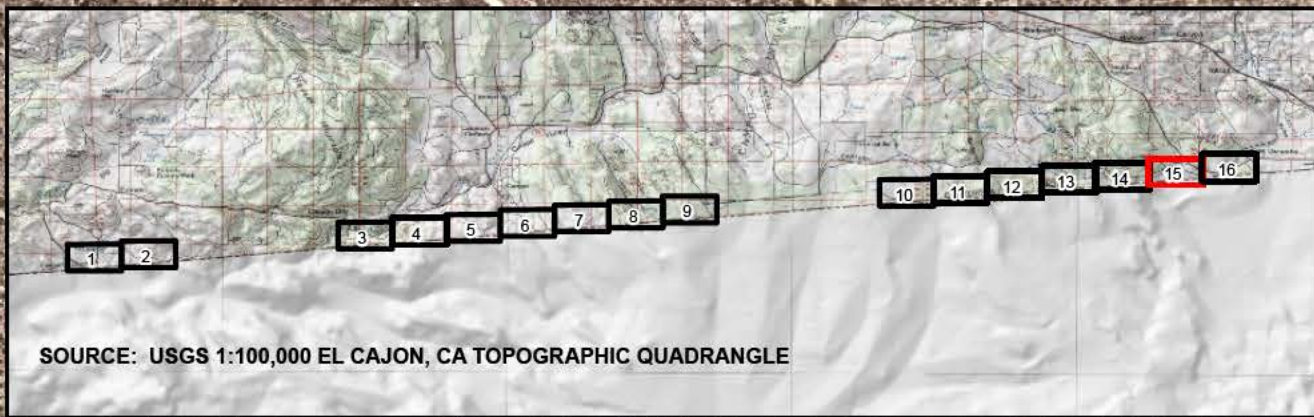


7-GATES/RAILROAD

 Road Construction Footprint

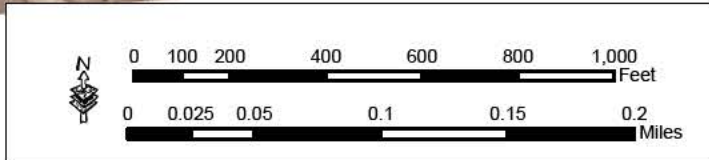


Map 14 - 7-Gates/Railroad and PVB Converted to Fence

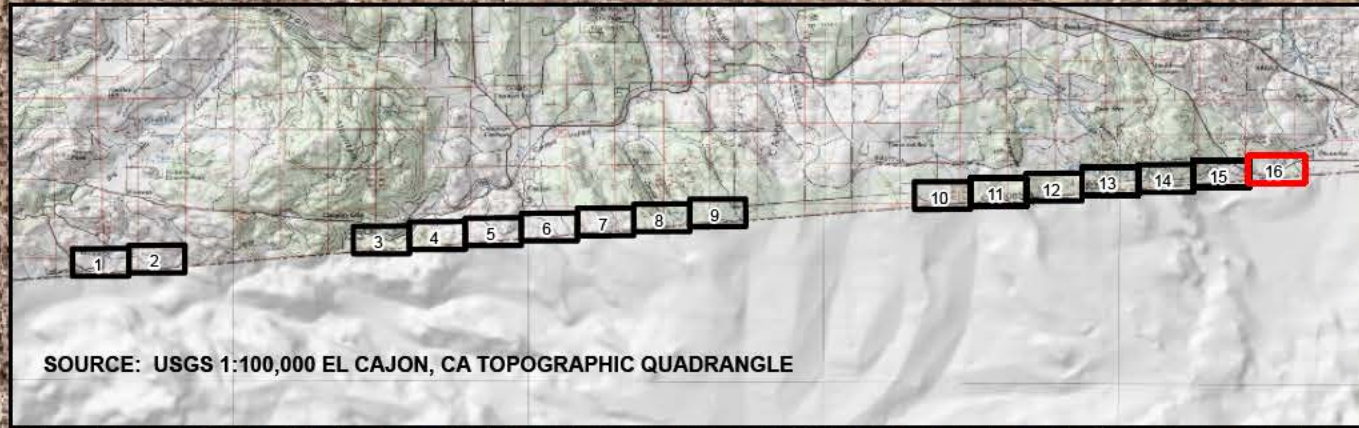



Existing Access Road (No Improvements)

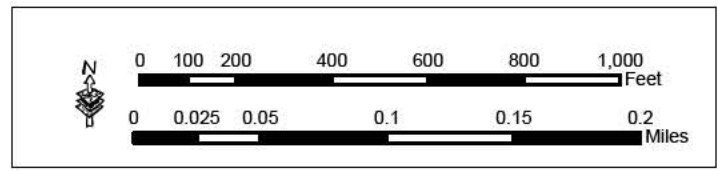
Fence and Road Construction Footprint



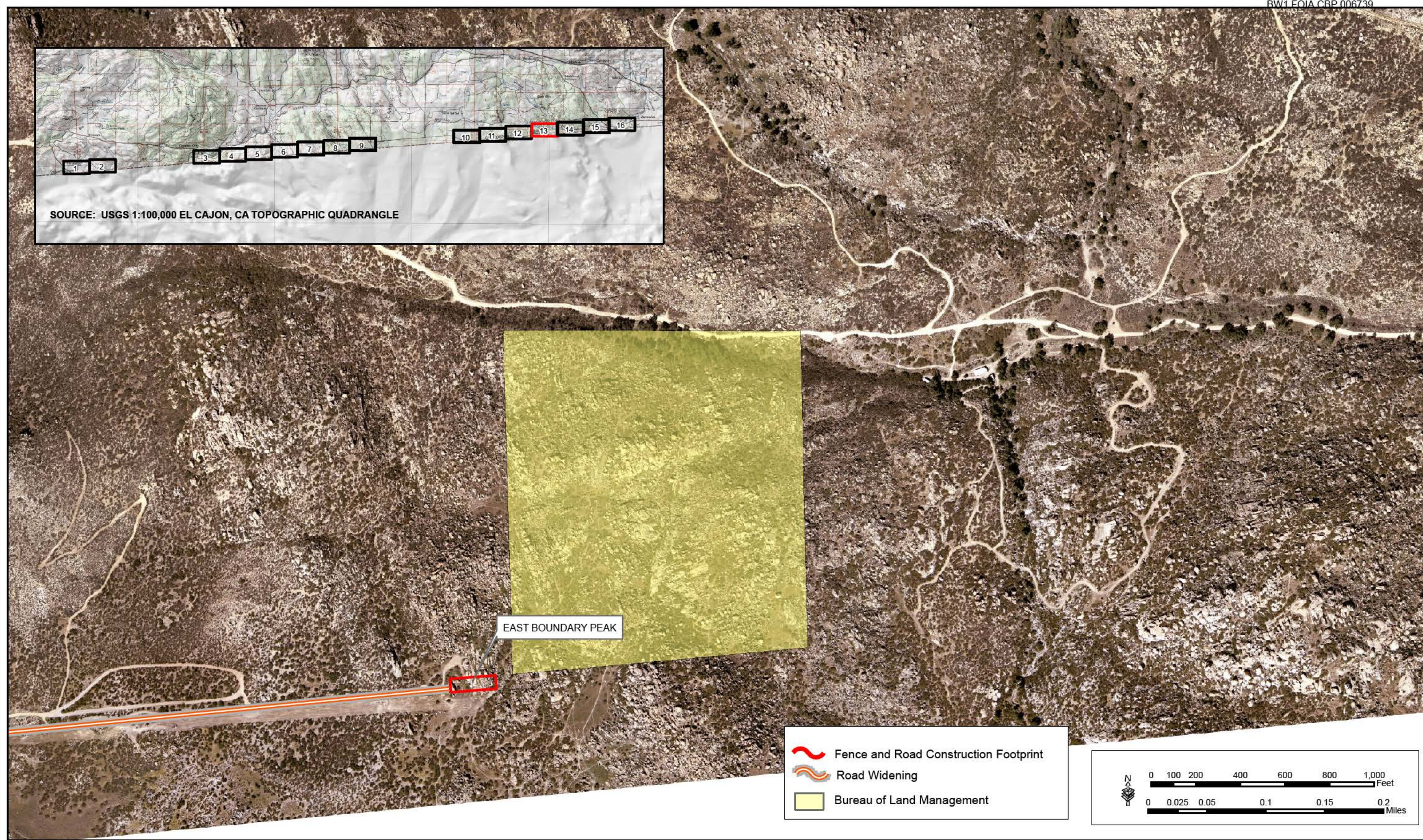
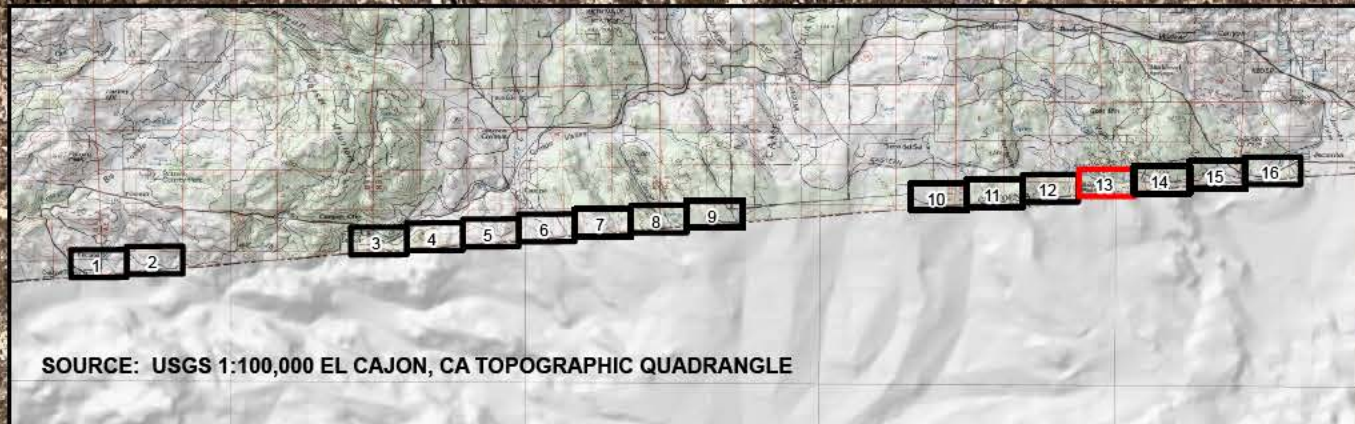
Map 15 - 7-Gates Railroad



 Road Widening

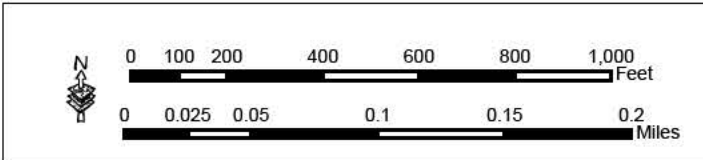


Map 16 - Road Widening



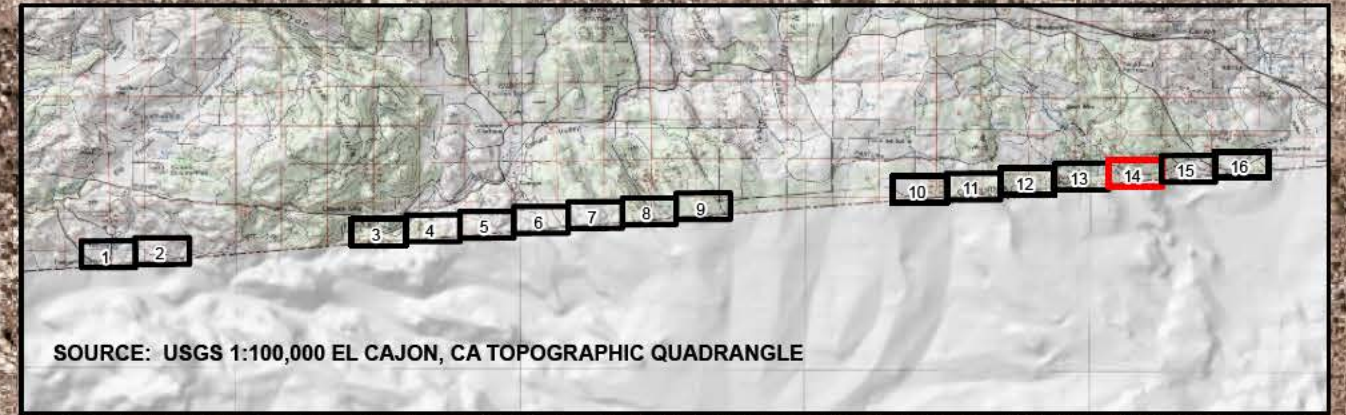
EAST BOUNDARY PEAK

-  Fence and Road Construction Footprint
-  Road Widening
-  Bureau of Land Management



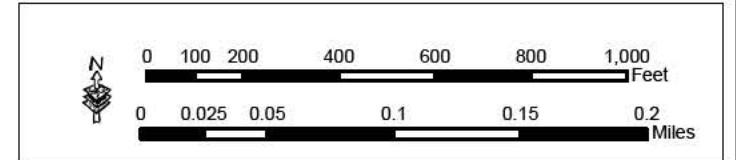
Map 13 - East Boundary Peak and Road Widening

NOTE: OLD HIGHWAY 80 APPROX.  
3.0 MILES NORTH

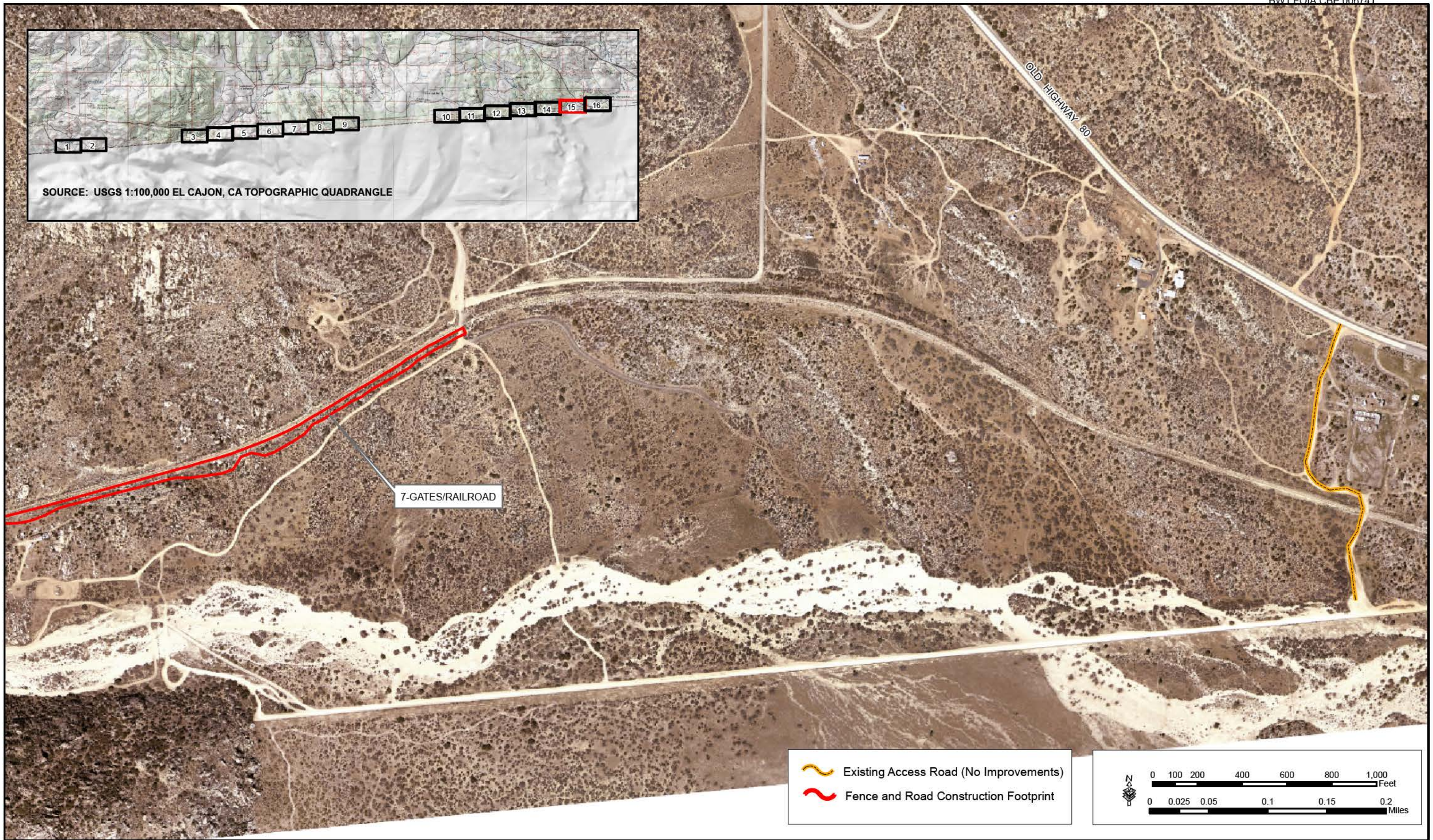
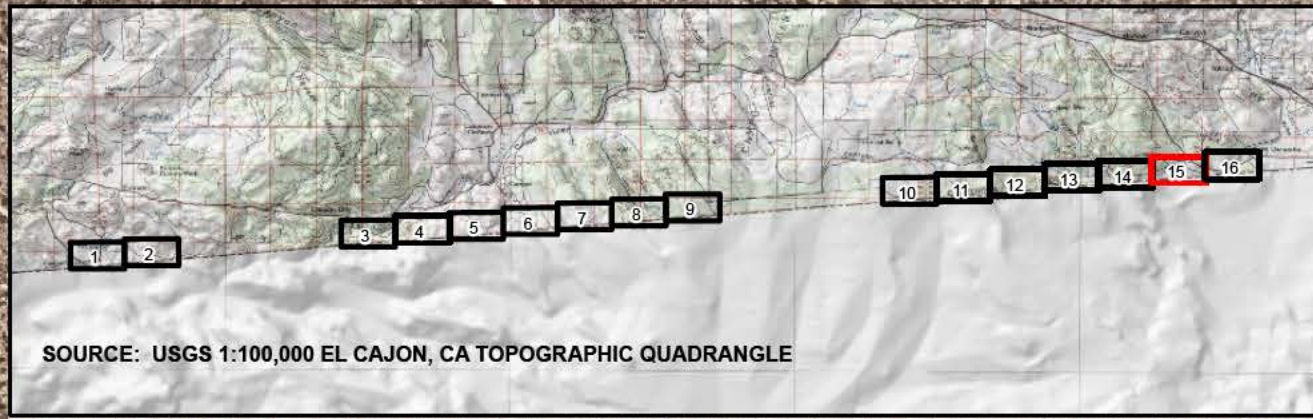


7-GATES/RAILROAD


 Road Construction Footprint



Map 14 - 7-Gates/Railroad and PVB Converted to Fence

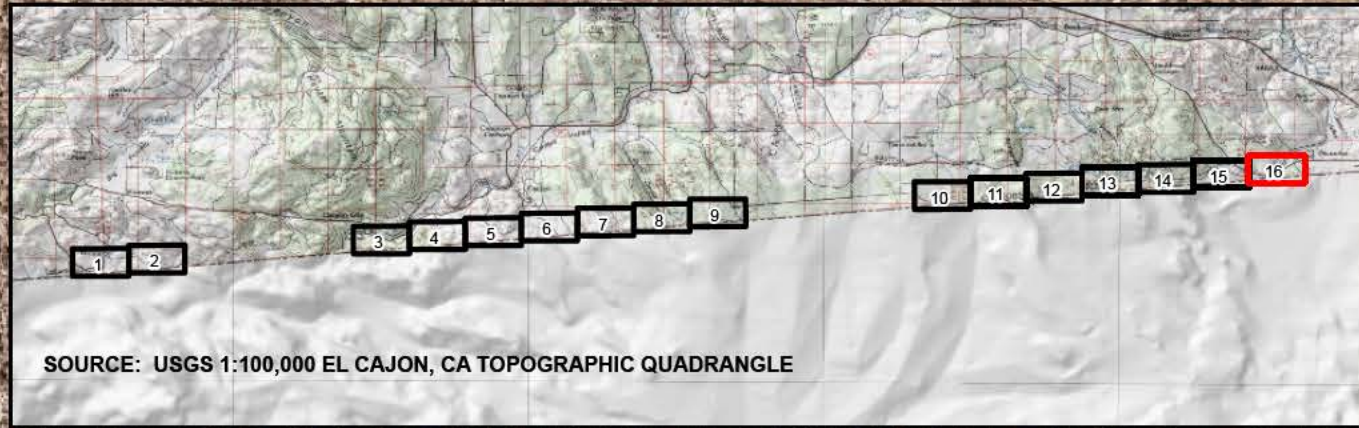


 Existing Access Road (No Improvements)  
 Fence and Road Construction Footprint

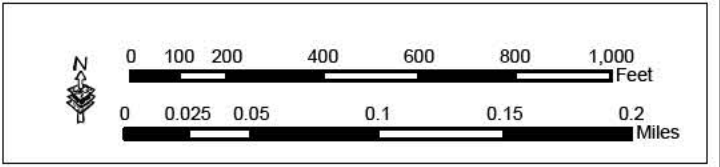


0 100 200 400 600 800 1,000 Feet  
 0 0.025 0.05 0.1 0.15 0.2 Miles

Map 15 - 7-Gates Railroad



 Road Widening



Map 16 - Road Widening

*APPENDIX B*  
*Correspondence*









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

REPLY TO  
ATTENTION OF

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

U.S. Fish and Wildlife Service  
Carlsbad Ecological Services Field Office  
ATTN: Jim Bartel, Field Supervisor  
6010 Hidden Valley Road  
Carlsbad, CA 92011

Dear Mr. Bartel:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.

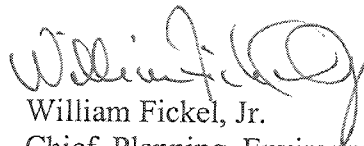
Additionally, where the existing border road is immediately parallel to the border, it would be widened to encompass the entire 60-foot Roosevelt Reservation and would be surfaced to be an all-weather road. These areas are already disturbed by previous road and fence construction. Widening would be required to remove small strips of vegetation or large boulders that provide concealment opportunities for illegal aliens (IAs) and create unnecessary risks to OBP agents' health and safety. These activities would occur at various locations along the 32-mile corridor and would encompass a total of 6 miles.

New fence construction and the conversion of permanent vehicle barriers to fence would also occur across 6.5 miles of the project corridor, in addition to the areas where the new road construction would occur. Most of these areas currently contain permanent vehicle barriers and a border road. Because of recent changes in IA traffic and legislative mandates, it has become necessary to convert these PVBs to pedestrian fences. Military units (Joint Task Force – North or California Army National Guard units), OBP maintenance staff, or private contractors would perform the construction activities.

Enclosed is a map showing the location of the project area for the EA. We are currently in the process of gathering the most current information available regarding Federally and state listed species potentially occurring within this area. The USACE respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (*e.g.*, rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed OBP activities. We intend to provide your agency with a copy of the Draft EA once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Fickel, Jr.", written in dark ink.

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

Enclosure



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

REPLY TO  
ATTENTION OF:

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

California Department of Fish and Game  
South Coast Region  
ATTN: Larry Eng, Regional Manager  
4949 Viewridge Avenue  
San Diego, CA 92123

Dear Mr. Eng:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.


Additionally, where the existing border road is immediately parallel to the border, it would be widened to encompass the entire 60-foot Roosevelt Reservation and would be surfaced to be an all-weather road. These areas are already disturbed by previous road and fence construction. Widening would be required to remove small strips of vegetation or large boulders that provide concealment opportunities for illegal aliens (IAs) and create unnecessary risks to OBP agents' health and safety. These activities would occur at various locations along the 32-mile corridor and would encompass a total of 6 miles.

New fence construction and the conversion of permanent vehicle barriers to fence would also occur across 6.5 miles of the project corridor, in addition to the areas where the new road construction would occur. Most of these areas currently contain permanent vehicle barriers and a border road. Because of recent changes in IA traffic and legislative mandates, it has become necessary to convert these PVBs to pedestrian fences. Military units (Joint Task Force – North or California Army National Guard units), OBP maintenance staff, or private contractors would perform the construction activities.

Enclosed is a map showing the location of the project area for the EA. We are currently in the process of gathering the most current information available regarding Federally and state listed species potentially occurring within this area. The USACE respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (*e.g.*, rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed OBP activities. We intend to provide your agency with a copy of the Draft EA once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,

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

Enclosure



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

REPLY TO  
ATTENTION OF

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

Janaye Byergo, South Coast Project Manager  
c/o Cleveland National Forest  
10845 Rancho Bernardo Road, Suite 200  
San Diego, CA 92127

Dear Ms. Byergo:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.

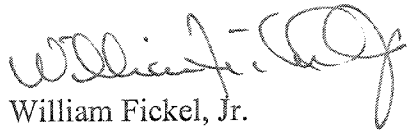
Additionally, where the existing border road is immediately parallel to the border, it would be widened to encompass the entire 60-foot Roosevelt Reservation and would be surfaced to be an all-weather road. These areas are already disturbed by previous road and fence construction. Widening would be required to remove small strips of vegetation or large boulders that provide concealment opportunities for illegal aliens (IAs) and create unnecessary risks to OBP agents' health and safety. These activities would occur at various locations along the 32-mile corridor and would encompass a total of 6 miles.

New fence construction and the conversion of permanent vehicle barriers to fence would also occur across 6.5 miles of the project corridor, in addition to the areas where the new road construction would occur. Most of these areas currently contain permanent vehicle barriers and a border road. Because of recent changes in IA traffic and legislative mandates, it has become necessary to convert these PVBs to pedestrian fences. Military units (Joint Task Force – North or California Army National Guard units), OBP maintenance staff, or private contractors would perform the construction activities.

Enclosed is a map showing the location of the project area for the EA. Some of these areas are contained on Bureau of Land Management areas. USACE Real Estate Specialists will be in contact with your agency soon to obtain rights of entry for survey and other investigation services. We are currently in the process of gathering the most current information available regarding Federally and state listed species potentially occurring within this area. The USACE respectfully requests that your agency provide input regarding protected species, designated critical habitat, descriptions of the sensitive resources (*e.g.*, rare or unique plant communities, threatened and endangered and candidate species), and unique or environmentally sensitive areas that you believe may be affected by the proposed OBP activities. We intend to provide your agency with a copy of the Draft EA once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,

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

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

Enclosure



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

REPLY TO  
ATTENTION OF:

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

USIBWC

ATTN: Dion McMicheaux, Project Manager  
2225 Dairy Market Road  
San Ysidro, CA 92173-2840

Dear Mr. McMicheaux:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.

Additionally, where the existing border road is immediately parallel to the border, it would be widened to encompass the entire 60-foot Roosevelt Reservation and would be surfaced to be an all-weather road. These areas are already disturbed by previous road and fence construction. Widening would be required to remove small strips of vegetation or large boulders that provide concealment opportunities for illegal aliens (IAs) and create unnecessary risks to OBP agents' health and safety. These activities would occur at various locations along the 32-mile corridor and would encompass a total of 6 miles.

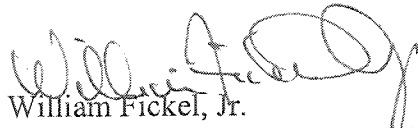
New fence construction and the conversion of permanent vehicle barriers to fence would also occur across 6.5 miles of the project corridor, in addition to the areas where the new road construction would occur. Most of these areas currently contain permanent vehicle barriers and a border road. Because of recent changes in IA traffic and legislative mandates, it has become necessary to convert these PVBs to pedestrian fences. Military units (Joint Task Force – North or California Army National Guard units), OBP maintenance staff, or private contractors would perform the construction activities.



Enclosed is a map showing the location of the project area for the EA. The USACE respectfully requests that your agency provide input regarding border monument and international drainage issues, relative to this project. We intend to provide your agency with a copy of the Draft EA once completed. Please let us know if additional copies are needed.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,



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

Enclosure



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

REPLY TO  
ATTENTION OF.

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

California Regional Water Quality Control Board  
San Diego Region  
ATTN: John Robertus, Executive Officer  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123-4340

Dear Mr. Robertus:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.


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Enclosed is a map showing the location of the project area analyzed in the EA. The USACE respectfully requests that your agency provide input regarding water quality concerns and unique or sensitive water resources that you believe may be affected by the proposed construction and improvement of roads and fences.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,



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

Enclosure



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

REPLY TO  
ATTENTION OF:

July 2, 2007

Planning, Environmental and Regulatory Division

SUBJECT: Proposed Environmental Assessment for the East San Diego County Gapfiller Project, San Diego Sector of the Office of Border Patrol

California Environmental Protection Agency  
ATTN: Ricardo Martinez, Assistant Secretary for Border Affairs  
1001 I Street  
P.O. Box 2815  
Sacramento, CA

Dear Mr. Martinez:

On behalf of U.S. Customs and Border Protection and the Department of Homeland Security, the U.S. Army Corps of Engineers (USACE) intends to prepare an Environmental Assessment (EA) for construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the Office of Border Patrol (OBP) San Diego Sector. The EA will analyze the potential for significant impacts of the proposed construction of new roads at 10 locations across the project corridor and road improvements along the entire 32-mile project corridor, including the placement of low water crossings or some similar drainage structures at some stream crossings. A total of 4.4 miles of new roads would be constructed in these 10 locations. The longest road segment would be 1.1 miles long.


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Enclosed is a map showing the location of the project area analyzed in the EA. The USACE respectfully requests that your agency provide input regarding water quality concerns and unique or sensitive resources that you believe may be affected by the proposed construction and improvement of roads and fences.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Glen Bixler at (817) 886-1533.

Sincerely,

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

Enclosure



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

OCT 25 2007

Honorable Bobby L. Barrett, Chairman  
Viejas Band of Mission Indians  
P.O. Box 908  
Alpine, California 91903

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Barrett:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Bobby L. Barrett  
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,



*For R. Janson*

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

Enclosure

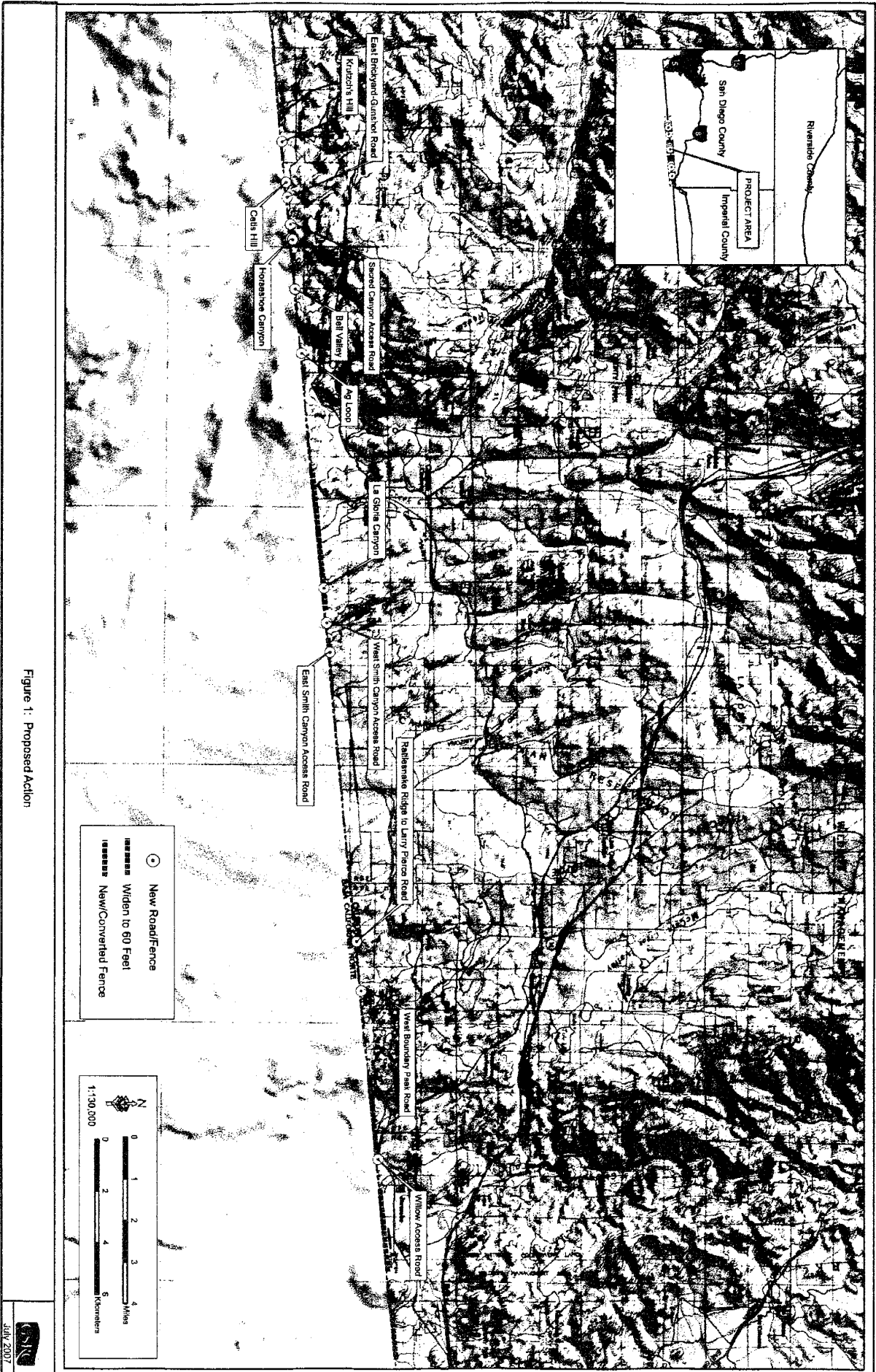


Figure 1: Proposed Action





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

OCT 25 11:09

Honorable H. Paul Cuero, Jr., Chairman  
Campo Band of Kumeyaay Indians  
36190 Church Road, Suite 1  
Campo, California 91906

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Cuero:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.


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Honorable H. Paul Cuero  
Page 2

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Sincerely,

  
For R. Janson

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

Enclosure



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

Honorable Leroy Elliott, Chairman  
Manzanita Band of Mission Indians  
P.O. Box 1302  
Boulevard, California 91905

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Elliott:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

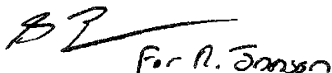
To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Leroy Elliott  
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,

A handwritten signature in black ink, appearing to read "RF Janson", with a horizontal line extending to the right.

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

Enclosure



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

OCT 25 2007

Honorable Johnny Hernandez, Spokesman  
Santa Ysabel Band of Mission Indians  
P.O. Box 130  
Santa Ysabel, California 92070

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Hernandez:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

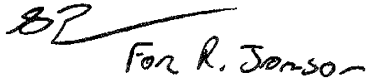
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Honorable Johnny Hernandez  
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Sincerely,

  
For R. Janson

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

Enclosure



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

OCT 25 2007

Honorable John James, Chairman  
Cabazon Band of Mission Indians  
84-245 Indio Springs Pkwy  
Indio, California 92203

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. James:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

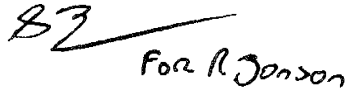
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Honorable John James  
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Sincerely,

A handwritten signature in black ink, appearing to read "RFJ" followed by a horizontal line, with "For R. Janson" written below it.

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

Enclosure





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

Honorable Allen E. Lawson, Spokesman  
San Pasqual Band of Mission Indians  
27458 No. Lake Wolford Rd. Level #3  
Valley Center, California 92082

1 OCT 25 2007

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Lawson:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.


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Honorable Allen E. Lawson  
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Sincerely,

  
For R. Janson

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

Enclosure



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

Honorable Howard Maxcy, Chairman  
Mesa Grande Band of Mission Indians  
P.O. Box 270  
Santa Ysabel, California 92070

087 2 5 2007

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Maxcy:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

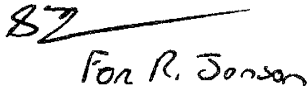
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Honorable Howard Maxcy  
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Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", with a horizontal line extending to the right.

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

Enclosure



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

Honorable Richard Milanovich, Chairperson  
Agua Caliente Band of Cahuilla Indians  
600 East Tahquitz Canyon Way  
Palm Springs, California 92262

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Milanovich:

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Honorable Richard Milanovich  
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Sincerely,

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

Enclosure



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

Honorable Gwendolyn Parada, Chairperson  
La Posta Band of Mission Indians  
1048 Crestwood Road  
Boulevard, California 92905

001 2 5 2009

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Ms. Parada:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Gwendolyn Parada  
Page 2

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Sincerely,

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

Enclosure





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

Honorable Harlan Pinto, Chairman  
Cuyapaipe Band of Mission Indians  
4054 Willows Road  
Alpine, California 91903-2250

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Pinto:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Harlan Pinto  
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Sincerely,

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

Enclosure



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

Honorable Catherine Saubel, Spokeswoman  
Los Coyotes Band of Mission Indians  
2300 Camino San Ignacio  
Warner Springs, California 92086

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Ms. Saubel:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.


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Honorable Catherine Saubel  
Page 2

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Sincerely,



*For R. Janson*

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

Enclosure



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

001 0 5 0000

Honorable Rhonda Welch-Sealco, Chairwoman  
Barona Band of Mission Indians  
1095 Barona Road  
Lakeside, California 92040

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Ms. Welch-Sealco:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Rhonda Welch-Sealco

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Sincerely,



For R. Janson

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

Enclosure



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

Honorable Daniel J. Tucker, Chairman  
Sycuan Band of Mission Indians  
5459 Dehesa Road  
El Cajon, California 92019

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Tucker:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

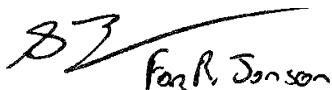
To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Daniel J. Tucker  
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,

A handwritten signature in black ink, appearing to read "RFJ" followed by a horizontal line and "For R. Janson".

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

Enclosure





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

OCT 25 2007

Honorable Leon Acebedo, Chairman  
Jamul Band of Mission Indians  
13910 Lyons Valley Road  
Jamul, California 91935

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Acebedo:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.


To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Leon Acebedo  
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,



For R. Janson

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

Enclosure



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

OCT 25 2007

Mr. Milford Wayne Donaldson, FAIA  
California State Historic Preservation Officer  
ATTN: Michael McGuirt  
Office of Historic Preservation  
1416 9<sup>TH</sup> Street, Room 1442-7  
Sacramento, CA 95814

**Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector**

Dear Mr. Donaldson:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate consultation with your office.


To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Mr. Milford Wayne Donaldson  
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns your office may have. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Forth Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,

  
For R. Janson

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

Enclosure



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Palm Springs-South Coast Field Office  
690 West Garnet Avenue  
P.O. Box 581260  
North Palm Springs, CA 92258-1260  
(760) 251-4800 Fax (760) 251-4899



Visit us on the Internet at  
[www.blm.gov/ca/palmsprings/](http://www.blm.gov/ca/palmsprings/)

IN REPLY REFER TO:  
2800P  
CA660.02

NOV 02 2007

Charles McGregor  
Engineering Construction Support Office  
Fort Worth District, Corps of Engineers  
P.O. Box 17300  
Fort Worth, Texas 76102-0300

Subject: PF225 Border Project Cooperating Agency

Dear Mr. McGregor:

This letter is in response to the U.S. Army Corps of Engineers (USACE), on behalf of the U.S. Customs and Border Protection-Border Patrol, regarding the Bureau of Land Management (BLM), Palm Springs-South Coast Field Office participation in the PF225 border fence project. The BLM retains sole decision-making authority for the lands and resources it administers. For this reason, we request full cooperator status in the development of NEPA analysis documents pertaining to the PF225 border fence projects in San Diego County, California.

A cooperating agency assists the lead Federal agency in developing an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The CEQ regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (See CEQ Regulations for Implementing NEPA, 40 CFR:1501.6).

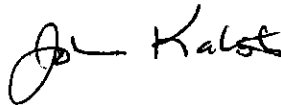
As cooperating agency, we agree to:

- Assist in the NEPA analysis at the earliest possible time.
- Participate in the scoping process, which helps define and frame the issues to be addressed in the NEPA document.
- Share freely any information and data relevant to the NEPA analysis, thereby facilitating rational, fact-based decision making.
- Defer all SHPO, Native American Consultation and Section 7 Consultation with U.S. Fish and Wildlife Service to USACE.
- BLM will issue its own decision for the EIS and FONSI for the EA.

Janaye Byergo, South Coast Project Manager, is designated as BLM's project coordinator for this effort. We request that our coordinator be kept apprised of project schedules as well as meetings with other agencies and consultants pertaining to these NEPA analyses. She can be contacted at 858-451-1767 or by email [Janaye\\_Byergo@ca.blm.gov](mailto:Janaye_Byergo@ca.blm.gov). In addition, please provide the BLM with all correspondence for Native American and SHPO consultation, biological and survey reports, and all correspondence with the U.S. Fish and Wildlife Service. We request that reasonable time be provided for review and comment on individual resource reports, administrative review copies of draft and final EAs or EISs, and any analysis of comments received on draft EAs or EISs.

As lead and cooperating agencies, we look forward to producing a thorough analysis sufficient for us to base our decisions.

Sincerely,

A handwritten signature in black ink, appearing to read "John Kalish". The signature is written in a cursive style with a large initial "J".

John Kalish  
Field Manager

Cc: Oscar Pena  
USBP



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

November 5, 2007

Mr. Charles McGregor  
United States Army Corps of Engineers  
Fort Worth District  
Engineering Construction Support Office  
P.O. Box 17300  
Fort Worth, TX 76102-0300

Dear Mr. McGregor:

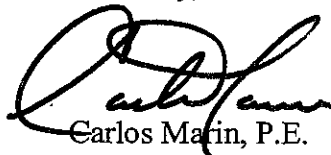
Reference is made to various letters dated October 18, 2007, from Mr. Robert F. Janson, U.S. Customs and Border Protection, requesting us to become a cooperating agency with regard to the development of National Environmental Policy Act (NEPA) environmental documentation for the proposed construction, maintenance, and operation of tactical infrastructure throughout the international boundary. According to the letters, the following projects are being considered:

- 1) Environmental Impact Statement for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector;
- 2) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector;
- 3) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol El Centro Sector;
- 4) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector;
- 5) Supplemental Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol El Paso Sector;
- 6) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Marfa Sector;

- 7) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Del Rio Sector; and
- 8) Environmental Impact Statement for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Rio Grande Valley Sector.

The United States Section, International Boundary and Water Commission (USIBWC) accepts your request to become a cooperating agency in the NEPA process. We look forward to working with you on issues related to the international boundary, specifically international treaties and agreements, issues related to USIBWC jurisdiction, and USIBWC real property. Due to the overwhelming list of Border Patrol initiatives along the international boundary, I have designated Mr. Richard Peace, Division Engineer, Operations and Maintenance Division, as the agency single point of contact for matters related to these projects. Mr. Peace can be reached at (915) 832-4158 for overall project coordination. If you have any questions feel free to contact me at (915) 832-4101.

Sincerely,



Carlos Mañin, P.E.  
Commissioner



January 31, 2008

**U.S. Customs and Border Protection Tribal Distribution List for the  
PF 225 San Diego Sector Environmental Assessment**

Honorable Richard Milanovich, Chairperson  
Agua Caliente Band of Cahuilla Indians  
600 East Tahquitz Canyon Way  
Palm Springs, California 92262

Honorable Rhonda Welch-Sealco,  
Chairwoman  
Barona Band of Mission Indians  
1095 Barona Road  
Lakeside, California 92040

Honorable John James, Chairman  
Cabazon Band of Mission Indians  
84-245 Indio Springs Pkwy  
Indio, California 92203

Honorable H. Paul Cuero, Jr., Chairman  
Campo Band of Kumeyaay Nation  
36190 Church Road, Suite 1  
Campo, California 91906

Honorable Harlan Pinto, Chairman  
Cuyapaipe Band of Mission Indians  
4054 Willows Road  
Alpine, California 91903-2250

Honorable Leon Acebedo, Chairman  
Jamul Indian Village, Kumeyaay Nation  
13910 Lyons Valley Road  
Jamul, California 91935

Honorable Gwendolyn Parada, Chairperson  
La Posta Band of Indians  
1048 Crestwood Road  
Boulevard, California 92905

Honorable Catherine Saubel, Spokeswoman  
Los Coyotes Band of Mission Indians  
2300 Camino San Ignacio  
Warner Springs, California 92086

Honorable Leroy Elliott, Chairman  
Manzanita Band of Mission Indians  
6 Old Mine Road  
Boulevard, California 91905

Honorable Mark Romero, Chairman  
Mesa Grande Band of Mission Indians  
P.O. Box 270  
Santa Ysabel, California 92070

Honorable Allen E. Lawson, Spokesman  
San Pasqual Band of Diegueno Mission  
Indians  
27458 No. Lake Wolford Rd. Level #3  
Valley Center, California 92082

Honorable Johnny Hernandez, Spokesman  
Santa Ysabel Band of Diegueno Mission  
Indians  
P.O. Box 130  
Santa Ysabel, California 92070

Honorable Daniel J. Tucker, Chairman  
Sycuan Band of Kumeyaay Indians  
5459 Dehesa Road  
El Cajon, California 92021

Honorable Bobby L. Barrett, Chairman  
Viejas Band of Mission Indians  
1 Viejas Grade Road  
Alpine, California 91901

Honorable Raymond Torres, Chairman  
Torres-Martinez Band of Desert Cahuilla  
Indians  
66725 Martinez Road  
Thermal, California 92274

Honorable Daryll Mike, Chairman  
Twenty-Nine Palms Band of Mission  
Indians  
46-200 Harrison Street  
Coachella, California 92236

January 31, 2008

Mr. Milford Wayne Donaldson, FAIA  
California State Historic Preservation  
Officer

Attn: Susan Stratton, Senior State  
Archaeologist  
Office of Historic Preservation  
1416 9th Street, Room 1442-7  
Sacramento, California 95814

Wanda Raschkow  
Bureau of Land Management, Palm Springs-  
South Coast Field Office  
690 West Garnet Avenue  
PO Box 581260  
North Palm Springs, California 92258



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

FEB 15 2008

Mr. Milford Wayne Donaldson, FAIA  
California State Historic Preservation Officer  
Attn: Susan Stratton, Senior State Archaeologist  
Office of Historic Preservation  
1416 9th Street, Room 1442-7  
Sacramento, California 95814

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Mr. Donaldson:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

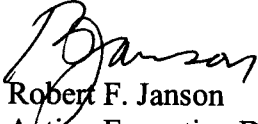
A cultural resources survey was conducted at each of the 10 proposed construction locations to identify historic properties that may be impacted by the proposed project. The survey resulted in the relocation and expansion of one bedrock milling site (SDI-14,425) and the identification of one isolated retouched flakes stone artifact. Site SDI-14,425 lies outside of the current construction area of potential effect, but is very close to the edge of the project corridor. The site was previously recorded in 1997 and determined to be ineligible for the National Register of Historic Places (NHRP) due to erosion and deflation of soils which destroyed the cultural context of the site and any related features or artifacts that may once have surrounded the site. The addition of a second locus, identified by the current survey, did not improve the integrity of the site as a whole. No soils, associated artifacts or subsurface features were identified at the site by the current survey. CBP has determined that site SDI-14,425 is still ineligible for inclusion in the NRHP. No other evidence of cultural resources was identified by the survey.

Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We ask for your concurrence with this determination. Copies of the report have also been sent to the Native American tribes on the attached list and to

Mr. Milford Wayne Donaldson, FAIA  
Page 2

Ms. Wanda Raschkow, Archaeologist at the Bureau of Land Management, Palm Springs-South Coast Field Office. If you have any questions, please call Ms. Nancy Parrish, U.S. Army Corps of Engineers, at (817) 886-1725.

Sincerely,



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

Enclosure(s)

cc: Ms. Wanda Raschkow  
Archaeologist  
Bureau of Land Management, Palm Springs-South Coast Field Office  
690 West Garnet Avenue  
PO Box 581260  
North Palm Springs, California 92258



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

FEB 15 2008

Ms. Wanda Raschkow  
Archaeologist  
Bureau of Land Management, Palm Springs-South Coast Field Office  
690 West Garnet Avenue  
PO Box 581260  
North Palm Springs, California 92258

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Ms. Raschkow:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

A cultural resources survey was conducted at each of the 10 proposed construction locations to identify historic properties that may be impacted by the proposed project. The survey resulted in the relocation and expansion of one bedrock milling site (SDI-14,425) and the identification of one isolated retouched flakes stone artifact. Site SDI-14,425 lies outside of the current construction area of potential effect, but is very close to the edge of the project corridor. The site was previously recorded in 1997 and determined to be ineligible for the National Register of Historic Places (NRHP) due to erosion and deflation of soils which destroyed the cultural context of the site and any related features or artifacts that may once have surrounded the site. The addition of a second locus, identified by the current survey, did not improve the integrity of the site as a whole. No soils, associated artifacts or subsurface features were identified at the site by the current survey. CBP has determined that site SDI-14,425 is still ineligible for inclusion in the NRHP. No other evidence of cultural resources was identified by the survey.

Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer (SHPO) for concurrence with this determination. Enclosed is a copy of the letter sent to

Ms. Wanda Raschkow

Page 2

the California SHPO, along with a sample letter that was sent to the enclosed list of Native American tribes. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink that reads "R. Janson". The signature is written in a cursive style with a large, stylized initial "R".

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

Enclosure(s)

February 15, 2008

**U.S. Customs and Border Protection Tribal Distribution List for the  
PF 225 San Diego Sector Environmental Assessment**

Honorable Richard Milanovich, Chairperson  
Agua Caliente Band of Cahuilla Indians  
600 East Tahquitz Canyon Way  
Palm Springs, California 92262

Honorable Rhonda Welch-Sealco,  
Chairwoman  
Barona Band of Mission Indians  
1095 Barona Road  
Lakeside, California 92040

Honorable John James, Chairman  
Cabazon Band of Mission Indians  
84-245 Indio Springs Pkwy  
Indio, California 92203

Honorable H. Paul Cuero, Jr., Chairman  
Campo Band of Kumeyaay Nation  
36190 Church Road, Suite 1  
Campo, California 91906

Honorable Harlan Pinto, Chairman  
Cuyapaipe Band of Mission Indians  
4054 Willows Road  
Alpine, California 91903-2250

Honorable Leon Acebedo, Chairman  
Jamul Indian Village, Kumeyaay Nation  
13910 Lyons Valley Road  
Jamul, California 91935

Honorable Gwendolyn Parada, Chairperson  
La Posta Band of Indians  
1048 Crestwood Road  
Boulevard, California 92905

Honorable Catherine Saubel, Spokeswoman  
Los Coyotes Band of Mission Indians  
2300 Camino San Ignacio  
Warner Springs, California 92086

Honorable Leroy Elliott, Chairman  
Manzanita Band of Mission Indians  
6 Old Mine Road  
Boulevard, California 91905

Honorable Mark Romero, Chairman  
Mesa Grande Band of Mission Indians  
P.O. Box 270  
Santa Ysabel, California 92070

Honorable Allen E. Lawson, Spokesman  
San Pasqual Band of Diegueno Mission  
Indians  
27458 No. Lake Wolford Rd. Level #3  
Valley Center, California 92082

Honorable Johnny Hernandez, Spokesman  
Santa Ysabel Band of Diegueno Mission  
Indians  
P.O. Box 130  
Santa Ysabel, California 92070

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5459 Dehesa Road  
El Cajon, California 92021

Honorable Bobby L. Barrett, Chairman  
Viejas Band of Mission Indians  
1 Viejas Grade Road  
Alpine, California 91901

Honorable Raymond Torres, Chairman  
Torres-Martinez Band of Desert Cahuilla  
Indians  
66725 Martinez Road  
Thermal, California 92274

Honorable Daryll Mike, Chairman  
Twenty-Nine Palms Band of Mission  
Indians  
46-200 Harrison Street  
Coachella, California 92236



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

FEB 15 2008

The Honorable Richard Milanovich, Chairperson  
Agua Caliente Band of Cahuilla Indians  
600 East Tahquitz Canyon Way  
Palm Springs, California 92262

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Milanovich:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

A cultural resources survey was conducted at each of the 10 proposed construction locations to identify historic properties that may be impacted by the proposed project. The survey resulted in the relocation and expansion of one bedrock milling site (SDI-14,425) and the identification of one isolated retouched flakes stone artifact. Site SDI-14,425 lies outside of the current construction area of potential effect, but is very close to the edge of the project corridor. The site was previously recorded in 1997 and determined to be ineligible for the National Register of Historic Places (NRHP) due to erosion and deflation of soils which destroyed the cultural context of the site and any related features or artifacts that may once have surrounded the site. The addition of a second locus, identified by the current survey, did not improve the integrity of the site as a whole. No soils, associated artifacts, or subsurface features were identified at the site by the current survey. CBP has determined that site SDI-14,425 is still ineligible for inclusion in the NRHP. No other evidence of cultural resources was identified by the survey.

Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer for concurrence with this determination. Your comments on the enclosed report are welcome, and we respectfully request any information you may wish to share concerning the




The Honorable Richard Milanovich

Page 2

presence of traditional cultural properties you feel may be affected by the proposed undertaking. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink that reads "R. Janson". The signature is written in a cursive style with a large initial "R".

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

Enclosure(s)



U.S. Customs and  
Border Protection

FEB 15 2008

The Honorable Rhonda Welch-Sealco, Chairperson  
Barona Band of Mission Indians  
1095 Barona Road  
Lakeside, California 92040

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairwoman Welch-Sealco:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Rhonda Welch-Sealco

Page 2

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Sincerely,



Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



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

FEB 15 2008

The Honorable John James, Chairman  
Cabazon Band of Mission Indians  
84-245 Indio Springs Parkway  
Indio, California 92203

**Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California***

Dear Chairman James:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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**The Honorable John James**

**Page 2**

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Sincerely,

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**Robert F. Janson**

**Acting Executive Director**

**Asset Management**

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

**Enclosure(s)**



U.S. Customs and  
Border Protection

FEB 15 2008

The Honorable H. Paul Cuero, Jr., Chairman  
Campo Band of Kumeyaay Nation  
36190 Church Road, Suite 1  
Californiampo, California 91906

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Cuero:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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Sincerely,



Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



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

FEB 15 2008

The Honorable Harlan Pinto, Chairman  
Cuyapaipe Band of Mission Indians  
4054 Willows Road  
Alpine, California 91903-2250

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Chairman Pinto:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Harlan Pinto

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Sincerely,



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

Enclosure(s)



U.S. Customs and  
Border Protection

FEB 15 2008

The Honorable Leon Acebedo, Chairman  
Jamul Indian Village, Kumeyaay Nation  
13910 Lyons Valley Road  
Jamul, California 91935

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Chairman Acebedo:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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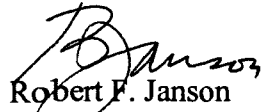
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The Honorable Leon Acebedo

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Sincerely,



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

Enclosure(s)



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

FEB 15 2008

The Honorable Gwendolyn Parada, Chairperson  
La Posta Band of Mission Indians  
1048 Crestwood Road  
Boulevard, California 92905

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Chairwoman Parada:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Gwendolyn Parada

Page 2

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Sincerely,

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

Enclosure(s)



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

FEB 15 2008

The Honorable Catherine Saubel, Spokeswoman  
Los Coyotes Band of Mission Indians  
2300 Camino San Ignacio  
Warner Springs, California 92086

**Subject:** National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Spokeswoman Saubel:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Catherine Saubel

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Sincerely,



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

Enclosure(s)



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

FEB 15 2008

The Honorable Leroy Elliott, Chairman  
Manzanita Band of Mission Indians  
6 Old Mine Road  
Boulevard, California 91905

**Subject:** National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Chairman Elliott:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Leroy Elliott

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Sincerely,



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

Enclosure(s)



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

FEB 15 2008

The Honorable Mark Romero, Chairman  
Mesa Grande Band of Mission Indians  
P.O. Box 270  
Santa Ysabel, California 92070

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project, San Diego County, California*

Dear Chairman Romero:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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

Enclosure(s)



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

FEB 15 2008

The Honorable Allen E. Lawson, Tribal Chairman  
San Pasqual Band of Diegueno Mission Indians  
27548 North Lake Wolford Road, Level #3  
Valley Center, California 92082

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Lawson:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Allen E. Lawson

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

Enclosure(s)



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

FEB 15 2008

The Honorable Johnny Hernandez, Spokesman  
Santa Ysabel Band of Mission Indians  
P.O. Box 130  
Santa Ysabel, California 92070

**Subject:** National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Spokesman Hernandez:

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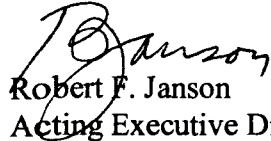
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Robert F. Janson  
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Enclosure(s)



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

FEB 15 2008

The Honorable Daniel J. Tucker, Chairman  
Sycuan Band of Kumeyaay Nation  
5459 Dehesa Road  
El Californiajon, California 92021

**Subject:** National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Tucker:

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The Honorable Daniel J. Tucker

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

Enclosure(s)



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

FEB 15 2008

The Honorable Bobby L. Barrett, Chairman  
Viejas Band of Kumeyaay Indians  
1 Viejas Grade Road  
Alpine, California 91901

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Barrett:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer for concurrence with this determination. Your comments on the enclosed report are welcome, and we respectfully request any information you may wish to share concerning the

The Honorable Bobby L. Barrett

Page 2

presence of traditional cultural properties you feel may be affected by the proposed undertaking. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", written over a circular stamp or seal.

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

Enclosure(s)



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

FEB 15 2008

The Honorable Raymond Torres, Chairman  
Torres-Martinez Band of Desert Cahuilla Indians  
66725 Martinez Road  
Thermal, California 92274

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Torres:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Raymond Torres

Page 2

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Sincerely,



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

Enclosure(s)



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

FEB 15 2008

The Honorable Daryll Mike, Chairman  
Twenty-Nine Palms Band of Mission Indians  
46-200 Harrison Street  
Coachella, California 92236

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural  
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,  
San Diego County, California*

Dear Chairman Mike:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Daryll Mike

Page 2

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Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson". The signature is written in a cursive style with a large initial "R".

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

Enclosure(s)

*APPENDIX C*  
*Memorandum of Understanding*





**Memorandum of Understanding  
Among  
U. S. Department of Homeland Security  
and  
U. S. Department of the Interior  
and  
U. S. Department of Agriculture  
Regarding  
Cooperative National Security and Counterterrorism  
Efforts on Federal Lands along the United States' Borders**

**I. Purpose and Scope**

A. This Memorandum of Understanding (MOU) is made and entered into by the Department of Homeland Security (DHS), including and on behalf of its constituent bureau U.S. Customs and Border Protection (CBP) and the CBP Office of Border Patrol (CBP-BP); the Department of the Interior (DOI), including and on behalf of its constituent bureaus, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR); and the Department of Agriculture (USDA), including and on behalf of its constituent agency the U.S. Forest Service (USFS). Throughout this MOU, these three Departments, including their constituent agencies, may be referred to as “the Parties.” Any reference to a bureau, agency, or constituent component of a Party shall not be deemed to exclude application to any appropriate bureau or constituent component of that Party. DHS recognizes that the BIA enters into this agreement only on its own behalf and not on behalf of any Indian tribe.

B. The geographic and jurisdictional scope of this MOU is nationwide. The Parties recognize the national security and counterterrorism significance of preventing illegal entry into the United States by cross-border violators (CBVs), including but not limited to the following: drug and human smugglers and smuggling organizations, foreign nationals, and terrorists and terrorist organizations. The Parties further recognize that damage to DOI and USDA-managed lands and natural and cultural resources is often a significant consequence of such illegal entry. The Parties are committed to preventing illegal entry into the United States, protecting Federal lands and natural and cultural resources, and - where possible - preventing adverse impacts associated with illegal entry by CBVs.

C. This MOU is intended to provide consistent goals, principles, and guidance related to border security, such as law enforcement operations; tactical infrastructure installation; utilization of roads; minimization and/or prevention of significant impact on or impairment of natural and cultural resources; implementation of the Wilderness Act, Endangered Species Act, and other related environmental law, regulation, and policy across land management agencies; and provide for coordination and sharing information

on threat assessments and other risks, plans for infrastructure and technology improvements on Federal lands, and operational and law enforcement staffing changes. This MOU provides guidance in the development of individual agreements, where appropriate, between CBP and land management agencies to further the provisions contained herein.

D. This MOU is entered into pursuant to the governing statutory authorities of each of the Parties.

E. The Parties acknowledge that CBP operation and construction within the sixty-foot "Roosevelt Reservation" of May 27, 1907 (along the US-Mexico border) and the sixty-foot "Taft Reservation" of May 3, 1912 (along the US-Canada border) is consistent with the purpose of those reservations and that any CBP activity (including, but not limited to, operations and construction) within the sixty-foot reservations is outside the oversight or control of Federal land managers.

F. This MOU supersedes any conflicting provision of any prior MOU or Memorandum of Agreement between the Parties or their subordinate bureaus or components.

## **II. Background**

A. DHS, through its constituent bureaus (including CBP and its CBP-BP), is statutorily mandated to control and guard the Nation's borders and boundaries, including the entirety of the northern and southern land and water borders of the United States.

B. DOI and USDA, through their constituent bureaus, are statutorily charged as managers of Federal lands throughout the United States, including DOI and USDA lands in the vicinity of international borders that are administered as wilderness areas, conservation areas, national forests, wildlife refuges, units/irrigation projects of the Bureau of Reclamation, and/or units of the national park system. Tribal governments have primary management roles over tribal lands; however, the United States, through the BIA, may also have a stewardship or law enforcement responsibility over these lands. Many of these Federal and tribal lands contain natural and cultural resources that are being degraded by activities related to illegal cross-border movements.

C. The volume of CBVs can and has, in certain areas, overwhelmed the law enforcement and administrative resources of Federal land managers. In order to more effectively protect national security, respond to terrorist threats, safeguard human life, and stop the degradation of the natural and cultural resources on those lands, DOI and USDA land managers will work cooperatively with CBP to benefit from the enforcement presence, terrorist and CBV interdiction, and rescue operations of CBP.

### **III. Common Findings and Affirmation of the Parties**

A. The Parties to this MOU recognize that CBP-BP access to Federal lands can facilitate rescue of CBVs on Federal lands, protect those lands from environmental damage, have a role in protecting the wilderness and cultural values and wildlife resources of these lands, and is necessary for the security of the United States. Accordingly, the Parties understand that CBP-BP, consistent with applicable Federal laws and regulations, may access public lands and waterways, including access for purposes of tracking, surveillance, interdiction, establishment of observation points, and installation of remote detection systems.

B. The Parties recognize that DOI and USDA have responsibility for enforcing Federal laws relating to land management, resource protection, and other such functions on Federal lands under their jurisdiction.

### **IV. Responsibilities and Terms of Agreement**

#### **A. The Parties Agree to the Following Common Goals, Policies, and Principles:**

1. The Parties enter into this MOU in a cooperative spirit with the goals of securing the borders of the United States, addressing emergencies involving human health and safety, and preventing or minimizing environmental damage arising from CBV illegal entry on public lands;
2. The Parties will strive to both resolve conflicts at and delegate resolution authority to the lowest field operational level possible while applying the principles of this MOU in such manner as will be consistent with the spirit and intent of this MOU;
3. The Parties will develop and consistently utilize an efficient communication protocol respecting the chain of command for each of the Parties that will result in the consistent application of the goals, policies, and principles articulated in this MOU, and provide a mechanism that will, if necessary, facilitate the resolution of any conflicts among the Parties. If resolution of conflict does not occur at the local level, then the issue will be elevated first to the regional/sector office; if not resolved at the regional/sector level, then the issue will be elevated to the headquarters level for resolution;
4. The Parties will cooperate with each other to complete, in an expedited manner, all compliance that is required by applicable Federal laws not otherwise waived in furtherance of this MOU. If such activities are authorized by a local agreement as described in sub-article IV.B below, then the DOI, USDA, and CBP will complete the required compliance before executing the agreement;

5. The Parties will cooperate with each other to identify methods, routes, and locations for CBP-BP operations that will minimize impacts to natural, cultural, and wilderness resources resulting from CBP-BP operations while facilitating needed CBP-BP access;
6. The Parties will, as necessary, plan and conduct joint local law enforcement operations consistent with all Parties' legal authorities;
7. The Parties will establish a framework by which threat assessments and other intelligence information may be exchanged, including intelligence training to be conducted by all parties so that the intelligence requirements of each may be identified and facilitated;
8. The Parties will establish forums and meet as needed at the local, regional, and national levels to facilitate working relationships and communication between all Parties;
9. The Parties will develop and share joint operational strategies at the local, regional, and national levels, including joint requests for infrastructure and other shared areas of responsibility;
10. The Parties will share the cost of environmental and cultural awareness training unless otherwise agreed; and
11. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. §1535 when one party is to furnish materials or perform work or provide a service on behalf of another party.

B. Responsibilities and Terms Specific to DOI and USDA. The DOI and the USDA hereby recognize that, pursuant to applicable law, CBP-BP is authorized to access the Federal lands under DOI and USDA administrative jurisdiction, including areas designated by Congress as wilderness, recommended as wilderness, and/or wilderness study areas, and will do so in accordance with the following conditions and existing authorities:

1. CBP-BP agents on foot or on horseback may patrol, or pursue, or apprehend suspected CBVs off-road at any time on any Federal lands administered by the Parties;
2. CBP-BP may operate motor vehicles on existing public and administrative roads and/or trails and in areas previously designated by the land management agency for off-road vehicle use at any time, provided that such use is consistent with presently authorized public or administrative use. At CBP-BP's request, the DOI and the USDA will provide CBP-BP with keys, combinations, or other means necessary to

access secured administrative roads/trails. CBP-BP may drag existing public and administrative roads that are unpaved for the purpose of cutting sign, subject to compliance with conditions that are mutually agreed upon by the local Federal land manager and the CBP-BP Sector Chief. For purposes of this MOU, "existing public roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows members of the general public to operate motor vehicles, and "existing administrative roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows persons specially authorized by the agency, but not members of the general public, to operate motor vehicles;

- 3 CBP-BP may request, in writing, that the land management agency grant additional access to Federal lands (for example, to areas not previously designated by the land management agency for off-road use) administered by the DOI or the USDA for such purposes as routine patrols, non-emergency operational access, and establishment of temporary camps or other operational activities. The request will describe the specific lands and/or routes that the CBP-BP wishes to access and the specific means of access desired. After receiving a written request, the local Federal land manager will meet promptly with the CBP-BP Sector Chief to begin discussing the request and negotiating the terms and conditions of an agreement with the local land management agency that authorizes access to the extent permitted by the laws applicable to the particular Federal lands. In each agreement between CBP-BP and the local land management agency, the CBP-BP should be required to use the lowest impact mode of travel and operational setup reasonable and practicable to accomplish its mission. The CBP-BP should also be required to operate all motorized vehicles and temporary operational activities in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands. However, at no time should officer safety be compromised when selecting the least impactful conveyance or operational activity. Recognizing the importance of this matter to the Nation's security, the CBP-BP Sector Chief and the local Federal land manager will devote to this endeavor the resources necessary to complete required compliance measures in order to execute the local agreement within ninety (90) days after the Federal land manager has received the written request for access. Nothing in this paragraph is intended to limit the exercise of applicable emergency authorities for access prior to the execution of the local agreement. The Secretaries of the Interior, Agriculture, and Homeland Security expect that, absent compelling justification, each local agreement will be executed within that time frame and provide the maximum amount of access requested by the CBP-BP and allowed by law;

4. Nothing in this MOU is intended to prevent CBP-BP agents from exercising existing exigent/emergency authorities to access lands, including authority to conduct motorized off-road pursuit of suspected CBVs at any time, including in areas designated or recommended as wilderness, or in wilderness study areas when, in their professional judgment based on articulated facts, there is a specific exigency/emergency involving human life, health, safety of persons within the area, or posing a threat to national security, and they conclude that such motorized off-road pursuit is reasonably expected to result in the apprehension of the suspected CBVs. Articulated facts include, but are not limited to, visual observation; information received from a remote sensor, video camera, scope, or other technological source; fresh “sign” or other physical indication; canine alert; or classified or unclassified intelligence. For each such motorized off-road pursuit, CBP-BP will use the least intrusive or damaging motorized vehicle readily available, without compromising agent or officer safety. In accordance with paragraph IV.C.4, as soon as practicable after each such motorized off-road pursuit, CBP-BP will provide the local Federal land manager with a brief report;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources, or if other significant issues warrant consultation, then the Federal land manager and the CBP-BP will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP may request, in writing, that the land management agency authorize installation or construction of tactical infrastructure for detection of CBVs (including, but not limited to, observation points, remote video surveillance systems, motion sensors, vehicle barriers, fences, roads, and detection devices) on land under the local land management agency’s administrative jurisdiction. In areas not designated as wilderness, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency. In areas designated or managed as wilderness, the local Federal land manager, in consultation with CBP, will promptly conduct a “minimum requirement,” “minimum tool,” or other appropriate analysis. If supported by such analysis, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency;

7. The DOI and USDA will provide CBP-BP agents with appropriate environmental and cultural awareness training formatted to meet CBP-BP operational constraints. The DOI and USDA will work with CBP-BP in the development and production of maps for use or reference by CBP-BP agents including, as appropriate, site-specific and resource-specific maps that will identify specific wildlife and environmentally or culturally sensitive areas;
8. The DOI and USDA will, as applicable, provide CBP-BP with all assessments and studies done by or on behalf of DOI or USDA on the effects of CBVs on Federal lands and native species to better analyze the value of preventative enforcement actions;
9. The DOI and USDA will assist CBP-BP in search and rescue operations on lands within the respective land managers' administration when requested;
10. The CBP-BP and land management agencies may cross-deputize or cross-designate their agents as law enforcement officers under each other agency's statutory authority. Such cross-deputation or cross-designation agreements entered into by the local land management agency and the field operations manager for the CBP-BP shall be pursuant to the policies and procedures of each agency; and
11. DOI and USDA will work at the field operations level with affected local CBP-BP stations to establish protocols for notifying CBP-BP agents when DOI or USDA law enforcement personnel are conducting law enforcement operations in an area where CBP-BP and DOI/USDA operations can or will overlap.

C. Responsibilities and Terms Specific to the CBP. DHS hereby agrees as follows:

1. Consistent with the Border Patrol Strategic Plan, CBP-BP will strive to interdict CBVs as close to the United States' international borders as is operationally practical, with the long-term goal of establishing operational control along the immediate borders;
2. If the CBP-BP drag any unpaved roads for the purpose of cutting sign under provision IV.B.2 above, then CBP-BP will maintain or repair such roads to the extent that they are damaged by CBP-BP's use or activities;
3. If CBP-BP agents pursue or apprehend suspected CBVs in wilderness areas or off-road in an area not designated for such use under



paragraph IV.B.5, then the CBP-BP will use the lowest impact mode of travel practicable to accomplish its mission and operate all motorized vehicles in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands, provided officer safety is not compromised by the type of conveyance selected;

4. CBP-BP will notify the local Federal land manager of any motorized emergency pursuit, apprehension, or incursion in a wilderness area or off-road in an area not designated for such use as soon as is practicable. A verbal report is sufficient unless either CBP-BP or the land managing agency determines that significant impacts resulted, in which case a written report will be necessary;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources as determined by a land manager, or if other significant issues warrant consultation, then the CBP-BP and Federal land manager will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP will consult with land managers to coordinate the placement and maintenance of tactical infrastructure, permanent and temporary video, seismic and other remote sensing sites in order to limit resource damage while maintaining operational efficiency;
7. CBP-BP will ensure that current and incoming CBP-BP agents attend environmental and cultural awareness training to be provided by the land management agencies;
8. CBP-BP will provide land management agencies with appropriate and relevant releasable statistics of monthly CBV apprehensions, search and rescue actions, casualties, vehicles seized, drug seizures and arrests, weapons seizures and arrests, and other significant statistics regarding occurrences on the lands managed by the land manager;
9. CBP-BP will consult with land managers in the development of CBP-BP's annual Operational-Requirements Based Budgeting Program to ensure affected land managers can provide input and are, in the early stages of planning, made aware what personnel, infrastructure, and technology the CBP-BP would like to deploy along the border within their area of operation; and
10. CBP-BP will work at the field operations manager level with affected local land management agencies to establish protocols for notifying

land management agency law enforcement officers when BP is conducting special operations or non-routine activities in a particular area.

## **V. Miscellaneous Provisions**

A. Nothing in this MOU may be construed to obligate the agencies or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOU obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.

B. Nothing in this MOU will be construed as affecting the authority of the Parties in carrying out their statutory responsibilities.

C. This MOU may be modified or amended in writing upon consent of all Parties, and other affected Federal agencies may seek to become a Party to this MOU.


D. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOU with respect to, *inter alia*, pay, personnel benefits, injuries, accidents, losses, damages, and civil liability. This MOU is not intended to change in any way the individual employee status or the liability or responsibility of any Party under Federal law.

E. The Parties agree to participate in this MOU until its termination. Any Party wishing to terminate its participation in this MOU shall provide sixty (60) days written notice to all other Parties.

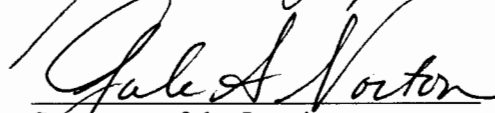
F. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOU is not and shall not be construed as a rule or regulation.

In witness whereof, the Parties hereto have caused this Memorandum of Understanding to be executed and effective as of the date of the last signature below.

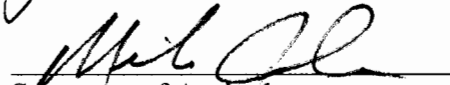
Date: 3/24/06

  
Secretary of Homeland Security

Date: 3/31/06

  
Secretary of the Interior

Date: 3/29/06

  
Secretary of Agriculture

*APPENDIX D*  
*Hydrology Report*





# **NYMAN & ASSOCIATES**

**3168 Sherry Drive**

**Baton Rouge, LA 70816-5009**

March 3, 2003

Kate Koske Roussel  
Natural Resources  
Gulf South Research Corporation  
7602 GSRI Avenue  
Baton Rouge, Louisiana 70820

Subject: Environmental assessment of proposed INS wells in the Smith/La Gloria canyon areas along the U.S./Mexico border, San Diego County, California.

Dear Ms. Roussel:

As you requested, I have made a thorough study of the hydrologic literature that included southeastern San Diego County, California, for the purpose of writing an environmental assessment for the areas of interest to the Immigration and Naturalization Service (INS). The literature search was done to estimate the environmental impact that two water wells, each producing about 50,000 gallons/year, would have on the general hydrology of the area. Geologic maps from the California Department of Conservation (Geological Survey), the San Diego County Water Authority, and several theses on hydrogeology written by students at San Diego State University have provided a good insight toward answering this question. Total recharge for the 2001 recharge season (late winter and spring) was estimated for the Campo Creek basin using stream-hydrograph separation and pro-rated for the Smith/La Gloria canyon watersheds on a unit-recharge basis (recharge/mile<sup>2</sup>) and compared to 30 years of past streamflow.

## **Purpose and Location of Investigation**

The INS plans to have two wells installed along the U.S./Mexico border in Smith and La Gloria canyons, San Diego County, California. Smith and La Gloria canyons are located about 1.0 to 2.5 miles east of the town of Campo (Figure 1). The INS plans to have a well drilled near the national border in each canyon. Each well would be drilled in granite (crystalline rock), each well is expected to be pumped at the rate of 1.0 to 1.5 gal/min, and would be used to maintain a 10,000-gal holding tank needed to support the INS activities in each canyon (Figure 2).

## **Regional Hydrogeology**

San Diego County lies within the Peninsular Range geomorphic province, the mountains of which are largely composed of granitic (crystalline) rocks of the Southern California Batholith, which was emplaced during the Cretaceous period of geologic time. Regional uplift resulted in the erosion of most of the overlying rocks and currently this batholith is exposed over most of southern San Diego County (Figure 1) from elevations of 500 ft to more than 6,000 ft (NGVD)(Pollock, 1991, p.53).

Groundwater movement is primarily through pore spaces developed by weathering and decomposition of the crystalline rocks and through granular alluvium, as well as through fractures in the bedrock. Regional groundwater movement in crystalline rock is preferentially along lineaments and associated fracture zones (Lower, 1977, p. 173).

## **Lineaments**

Lineaments are linear topographic features that are geologically controlled and are most obvious from studies of high-altitude imagery that shows unusually straight valleys, river courses, and other topographic features. In San Diego County, according to Lower (1977, p. 11), lineaments formed because of zones of weakness in crystalline rocks as the rocks cooled and were uplifted as the Peninsular Ranges. Lineaments are topographic features created because of the weathering and erosion of this zone of weakness (frequent jointing and shear zones). The most common trends for lineaments are N 20°W and N 20°E, although north-south and east-west trends are also present. Minor faults in the Southern California Batholith may also have the same trends (Figures 1, 3).

Lineaments are hydrologically important because they provide major avenues for groundwater movement and storage in crystalline rock. Lineaments are often the upstream limit of etchbasins (shallow intermountain basins that contain valley fill) (Lower, 1977, p.39) and large etchbasins are often formed where lineaments cross from two different directions. Etchbasins are important because they store water from surface runoff and groundwater flow from connecting lineaments (Lower, 1977, p.44).

Smith and La Gloria canyons both fit the description of lineaments because they are reasonably straight and are oriented N 20°W in this area. Many of the faults in this area also have an approximately N 20°W trend (Figures 2,3), suggesting that Smith and La Gloria canyons may be fault controlled but may not be indicated as such because they have not been studied in detail. Campo Valley is probably a large etchbasin that is the beneficiary of surface and groundwater flow from Smith and La Gloria canyons, and other adjacent canyons.

## **Water Availability in Crystalline Rocks**

There is considerable literature regarding water wells in crystalline rock. Domestic water supplies in many parts of the U.S., and in other countries, are dependent on such wells because there is no other groundwater source available. Crystalline rocks include all classes of igneous and metamorphic rocks, which include granitic rocks, schist, and gneiss. All of these types of rock, for all practical purposes, have essentially no primary permeability, i.e. the minerals that constitute crystalline rocks are essentially impermeable (pass an insignificant amount of water). However, there is secondary permeability (permeability created after the original rock was emplaced) created by fractures, joints, and shearing that can provide useful amounts of groundwater to wells.

Shallow fractures in crystalline rock are often created by stress relief due to unloading of overlying rocks because of erosion. Tectonically produced fractures adjacent to fault zones and areas of intense folding can occur at any depth (Nommensen, 1989, p.15). According to Nommensen (1989, p.14), the weathering of crystalline rock is primarily a near-surface phenomenon that is generally restricted to a zone within about 300 feet of the earth's surface.

### **Availability of Water from Crystalline Rocks in San Diego County**

According to Nommensen, (1989, p.21), wells in the Southern California Batholith range from 95 to 1,950 feet in depth and have a median depth of about 410 feet and most have casing cemented to a depth of 50 feet or more. Well yields averaged as much as 39.5 gal/min (p.32).

Pollock (1991, p.54), investigated the relationship between well depth and well yield in the fractured crystalline rocks of San Diego County. His investigation was based on 2,618 wells completed in the Southern California Batholith in San Diego County. The well records are on file at the Department of Health Services. Of these records a subset of 146 wells was selected because the records included well location, total depth, total yield, static water level, and included the continuous monitoring of yield with depth.

Records for 91 "valley" wells were studied statistically and it was found that wells less than 100 ft deep had average yields ranging from 0 to about 1.5 gal/min/20-ft of saturated depth, wells 200 ft deep had average yields ranging from about 0.5 to nearly 2.0 gal/min/20-ft of saturated depth, wells to 300 ft deep had average yields ranging from 0.5 to nearly 2.5 gal/min/20-ft of saturated depth (Pollock, 1991, Fig.10, p.67). The average yield of all valley wells is about 1.0 gal/min/20-ft of saturated depth to a depth of about 600 ft. In other words, a 600-ft well with a static water level 100 ft below land surface therefore may yield about 25 gal/min. The average yield per 20-foot depth interval for wells on hillsides and hilltops ranges from 0 to 1.0 and 0 to 0.5 gal/min/20-ft of saturated depth, respectively. According to Pollack (1991, p.95), the relatively high yields in the valleys may be the result of (1) valleys tend to form along structurally weak zones that may contain fractured rocks, and (2) groundwater recharge from streams and the presence of residuum and alluvium probably increase yields in valleys. (3) Erosion in upland areas exposes relatively unweathered rock thus reducing the yield to wells on hillsides and hilltops, and (4) fractures on the hills and hillsides collect water that drains toward the valleys.

Static water levels in valley topography in San Diego County generally range from 0 to 50 ft below land surface (Pollock, 1991, p.66). According to Mower and Nace (1957), the presence of cottonwood trees indicates a water table about 4 to 5 feet below land surface, the presence of willow indicates a water table within about 2 feet of land surface.

### **Phreatic Water Consumption**

According to Lower (1977, p.13), vegetation in San Diego County at the higher elevations generally consists of coniferous and mixed forest trees. Mature pine and oak trees in this class annually transpire up to 1.8 acre-feet of water per acre of trees (Todd, 1970). At lower elevations the vegetation consists of scrub oak and shrubs constituting chaparral and mixed



chaparral. According to Todd (1970) chaparral growths are reported to transpire up to 1.7 acre-feet of water per acre annually (p. 14). Flora around springs and along streams in canyon floors often consist of live oak, cottonwood, willow, alder, and maple, and these trees can transpire from 2.7 to 4.5 acre-ft of water per acre annually (p.16).

## **Groundwater Recharge**

Groundwater recharge is the replenishment of the zone of saturation with water derived from sources above the earth's surface (Meinzer, 1942). It is the most important parameter of the groundwater system (Lower, 1977, p 53) because it is required to maintain the groundwater system. Recharge involves three steps (1) infiltration into the soil or other openings, (2) percolation downward through the unsaturated zone, and (3) recharge—the movement of some of the soil water to the saturated zone (water table) to become part of the groundwater system (Lower, 1977, p. 53). Recharge calculations by Lower (1977, p. 61) indicate that recharge near the village of Mount Laguna, 20 miles north of Campo, occurred primarily from February through April, during his studies from October 1973 to May 1976. Based on stream flow data during this period, bedrock recharge contributed 0.23 acre-ft/acre annually of groundwater to stream channels along lineaments in the Mount Laguna area. Based on spring discharge data during this period, annual recharge of 0.19 acre-foot/acre was related to crystalline rock and etchbasins (Lower, 1977, p.172). Decomposed roots and animal borings augment infiltration in etchbasins. When the rate of rainfall exceeds the infiltration rate surface runoff is created and this water is lost to the groundwater system. Snowfall accounted for 43% of the total annual precipitation at Mount Laguna and snow is very desirable from a recharge point of view because snow generally melts slowly continually wetting the soil thus providing continual infiltration. In the fractured crystalline rocks, groundwater percolates through open fractures to the zone of saturation. Chemical weathering of the bedrock also occurs, slowly enlarging the fractures. Percolation to the zone of saturation continues unless the water is intercepted by plants and is removed by evapotranspiration. Because plants are most active during the spring and summer most of the recharge occurs during the winter and early spring months.

Blain (1981, p.70) established eight rain gages at different elevations at Honey Springs Ranch (Figure 1), about 18 miles WNW of Campo, estimated the relationship between elevation and the amount of precipitation for an area ranging in elevation from 1,145 to 1,900 feet. A plot of average rainfall at the eight stations indicated a linear trend and suggested a 25% increase in rainfall for each 500-foot rise in elevation (Fig. 16, p.71). Blain (p.87, 90, 359) also concluded that the water table rose following wet periods not because of infiltration through the soil but by infiltration and drainage through highly permeable near-surface fractures in the exposed crystalline rock areas nearby. Smith and La Gloria canyons are incised about 1,000 ft into the Southern California Batholith.

## **Recharge in the Campo Creek Basin**

The soils in the Campo Creek Basin are mostly decomposed crystalline rock and are therefore very granular and highly permeable--6.3 to 20 inches/hr on the hilltops and hillsides (Tollhouse soils) and greater than 20 inches/hr in the valley bottoms (Mottsville soil) (USDA, 1973, p.56, 58)—however, because of steep slopes runoff may also be very rapid. The

distribution of these soils are mapped as MvC (Mottsville) and ToG and ToE2 (Tollhouse) as shown in Figure 5. When such soils become saturated these highly permeable soils facilitate the movement of recharging rainwater to the water table and subsurface fractures.

It would be very useful to be able to calculate the volume of water in storage in the soils and fractures in the crystalline rock. A commonly used method of determining total recharge is by observing the water-table rise following a rain event (Lerner, 1997, p.142). Because of the lack of monitor wells and the irregularity of the volume in fractures and pore spaces calculating the volume of water represented by the water-table rise is uncertain in this area.

Another method of estimating the total recharge over a whole catchment area (river basin) is based on the analysis of river hydrographs (Lerner, 1997, p.143). The basic equation is:

$$\text{Recharge} = \text{baseflow} + \text{withdrawals (stresses)} + \text{rate of storage depletion}$$

Baseflow is streamflow maintained by natural groundwater discharge (springs and seepage from the surrounding aquifer). Baseflow is the flow after a storm surge has passed when streamflow is maintained by groundwater discharge from the soil and surrounding bedrock. Withdrawals and depletion of aquifer storage can be avoided here because the Bureau of Land Management restricts anthropogenic development in Smith and La Gloria canyons and recharge occurs primarily in the later winter and early spring when vegetative stress is minimal on the groundwater system (Lower, 1977). The method for estimating groundwater recharge from streamflow records has been thoroughly tested and described by Rutledge and Daniel (1994). The volume of recharge is calculated for each individual rainfall event. The basic equation is:

$$R = \frac{2(Q2 - Q1)(K)}{2.3026}$$

where:

R = total volume of recharge (in cfs, ft<sup>3</sup>/sec);

Q1 = groundwater discharge (cfs) at the critical time (days) as extrapolated from the streamflow recession preceding the peak;

Q2 = groundwater discharge (cfs) at critical time (days) as extrapolated from the streamflow recession following the peak; and

K = the time (days) required for groundwater discharge to decline through one log cycle and is determined by extending the trend line of the rate of recession across a log cycle.

The method also requires the calculation of the critical time period ( $T_c$ , days), which is:

$$T_c = 0.2144K$$

This graphical analysis is shown in Figure 6 for the gauging station Campo Creek near Campo for the period January through April 2001. The station is operated by the U.S. Geological Survey and these average daily discharge readings are available from their internet website (USGS, 2001). The results for two calculations are shown on Figure 6. There was one large event (3.4 cfs, 3/7/2001), and six small events (0.46, 0.32, 0.44, 0.65, 0.57, 0.58, on 1/11, 1/28, 2/13, 3/1, 4/12, and 4/21, respectively). The calculations indicate that during the large event about 11.67 cfs (7.54 Mgal) of recharge had entered the groundwater system. On each of the small events about 6.25 cfs (4.04 Mgal) of recharge had entered the groundwater system. A total of about 24 Mgal had entered the groundwater system during the six small events and the total recharge was therefore about 32 Mgal for the Campo Creek Basin during the late winter and spring of 2001.

According to the USGS, the gauging station near Campo monitors a drainage area of 85 square miles ( $mi^2$ ) (Appendix A). A unit recharge area can therefore be calculated indicating 0.38 Mgal/ $mi^2$ . Smith and La Gloria canyons constitute about 4  $mi^2$  (Figure 7) of the 85  $mi^2$  in the Campo Creek basin. The available recharge to the well sites was therefore estimated to be about 1.5 Mgal during the late winter and spring of 2001. Although the amount of recharge varies from year to year it should be noted that rain events have been reasonably persistent since the late 1970s (Figure 8). Figure 8 shows that there was very little flow in Campo Creek from 1970 to 1977, but since then there have been rather regular rain events during the recharge season that have replenished the groundwater system from year to year. Figure 8 is based on average monthly discharge recorded at the Campo Creek near Campo gage (Appendix A) and monthly rainfall at Campo (from the Western Regional Climate Center, Appendix B).

## **Environmental Assessment**

The studies in San Diego County mentioned above quantify at their location that there is significant recharge and groundwater contribution to springs, rivers, and crystalline rocks. When Campo Creek is at baseflow the flow represents the excess of groundwater after the deep groundwater system has been essentially filled. The two wells proposed for Smith and La Gloria Canyons would each supply the INS about 50,000 gal/yr, or 100,000gal/yr total. The recharge to the groundwater system in the canyons was about 1.5 Mgal during the recharge season of 2001 and there have been repeated significant rain events each year during the recharge season for the past 20 years (Figure 8). The amount of water that is to be pumped by these two INS wells is insignificant compared to the amount of water removed from the natural system by river and spring flow, and the thousands of acres of forest surrounding Smith and La Gloria canyons.

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Hydrogeologist

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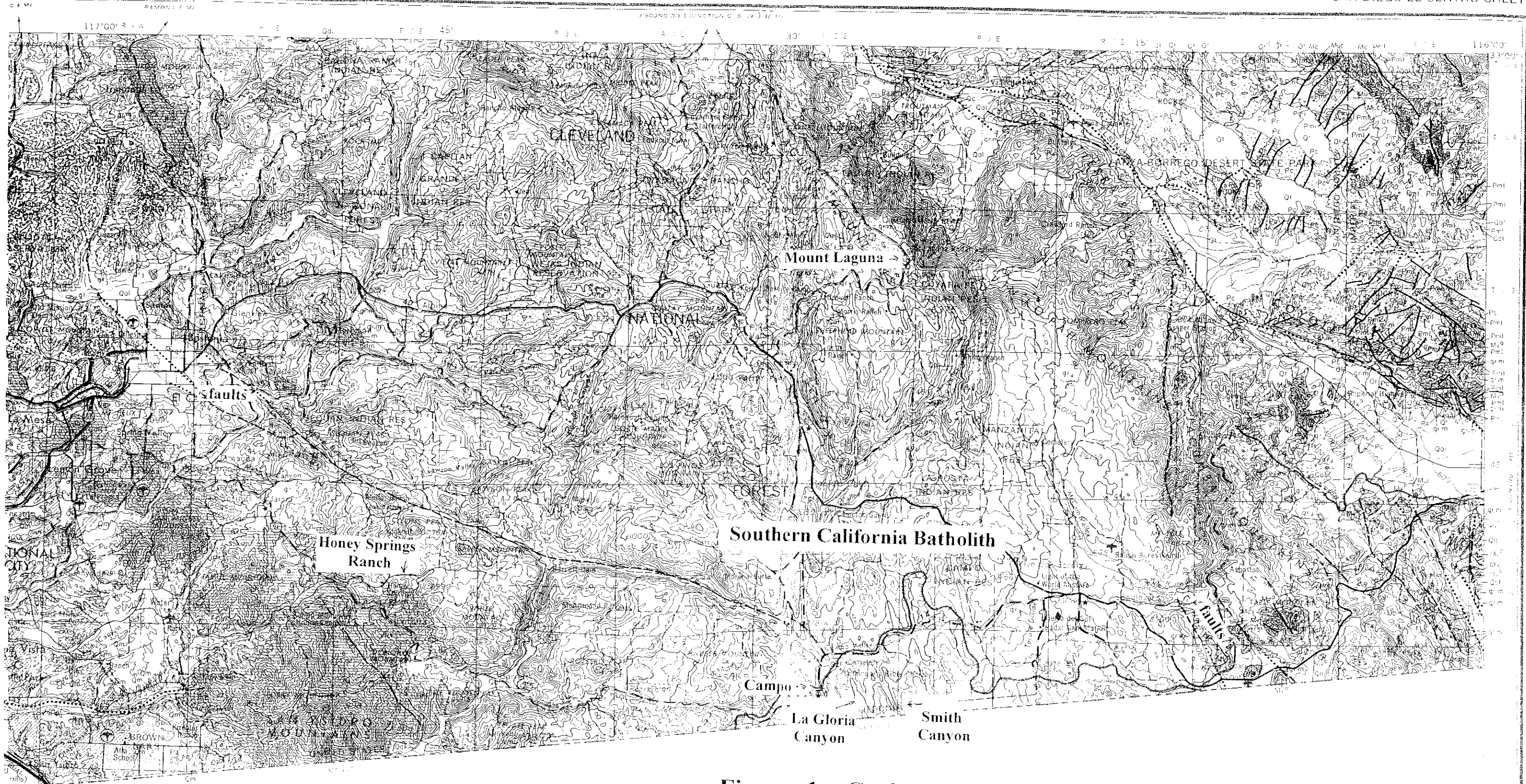
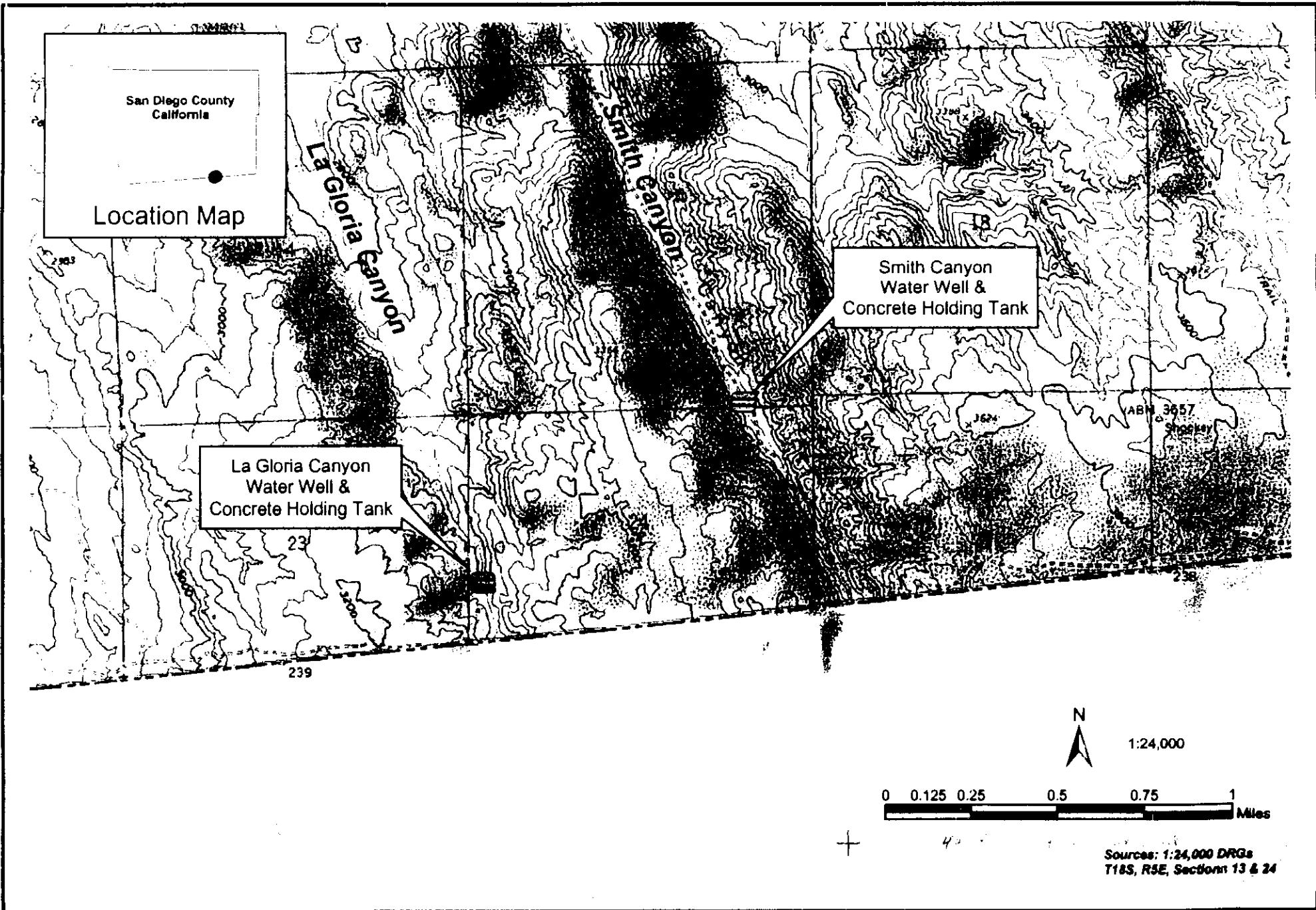


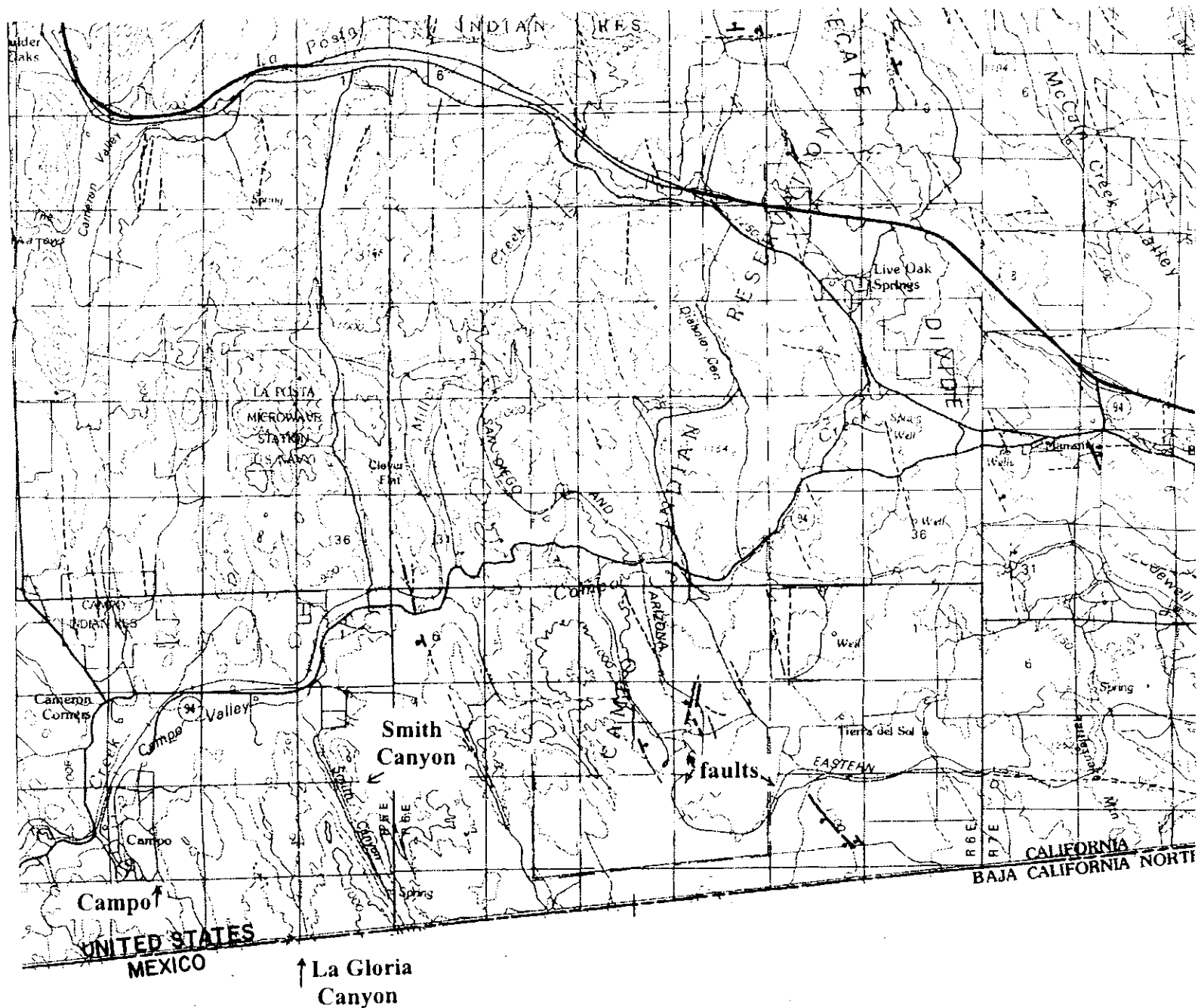
Figure 1. Geologic Map of California, San Diego-El Centro Sheet  
[compiled by R.G. Strand, 1962]





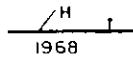
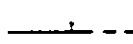
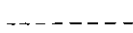
**Figure 2 : Proposed Water Wells and Concrete Holding Tanks**

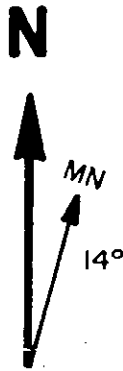




**Figure 3. Map of Quaternary Faults and Lineaments in San Diego County [from DMG Open-File Report 88-6, by J.E. Kahle, 1985]**

-EXPLANATION-

|                                                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Holocene fault</b>    | Fault with most recent displacement in Holocene time (past 10,000 years). Trace marked by scarps or other physiographic features identified on aerial photographs and inspected in the field or compiled from published sources. Historic movement indicated by date adjacent to trace; may be due to movement on other near by faults. Bar and ball on downdropped side.                                                                       |
|  | <b>Pleistocene fault</b> | Fault with most recent displacement in Pleistocene time (past 2,000,000 years). Trace marked by eroded scarps, displaced older alluvium, or other physiographic features identified on aerial photographs. Most were inspected in the field or compiled from published sources. Most are late Pleistocene in age of most recent displacement, but some may be Holocene. Dashed line indicates inferred fault. Bar and ball on downdropped side. |
|  | <b>Lineament</b>         | Trace characterized by aligned vegetation and scarps which appear to displace sediments or surfaces of Quaternary age. Not field checked. May represent movement along joints or bedding planes. Only those which appear to have significant movement are shown.                                                                                                                                                                                |



SCALE 1:100,000

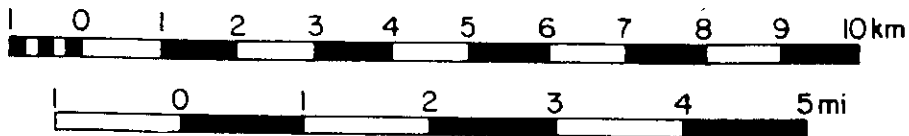


Figure 4. Explanation to Figure 3.







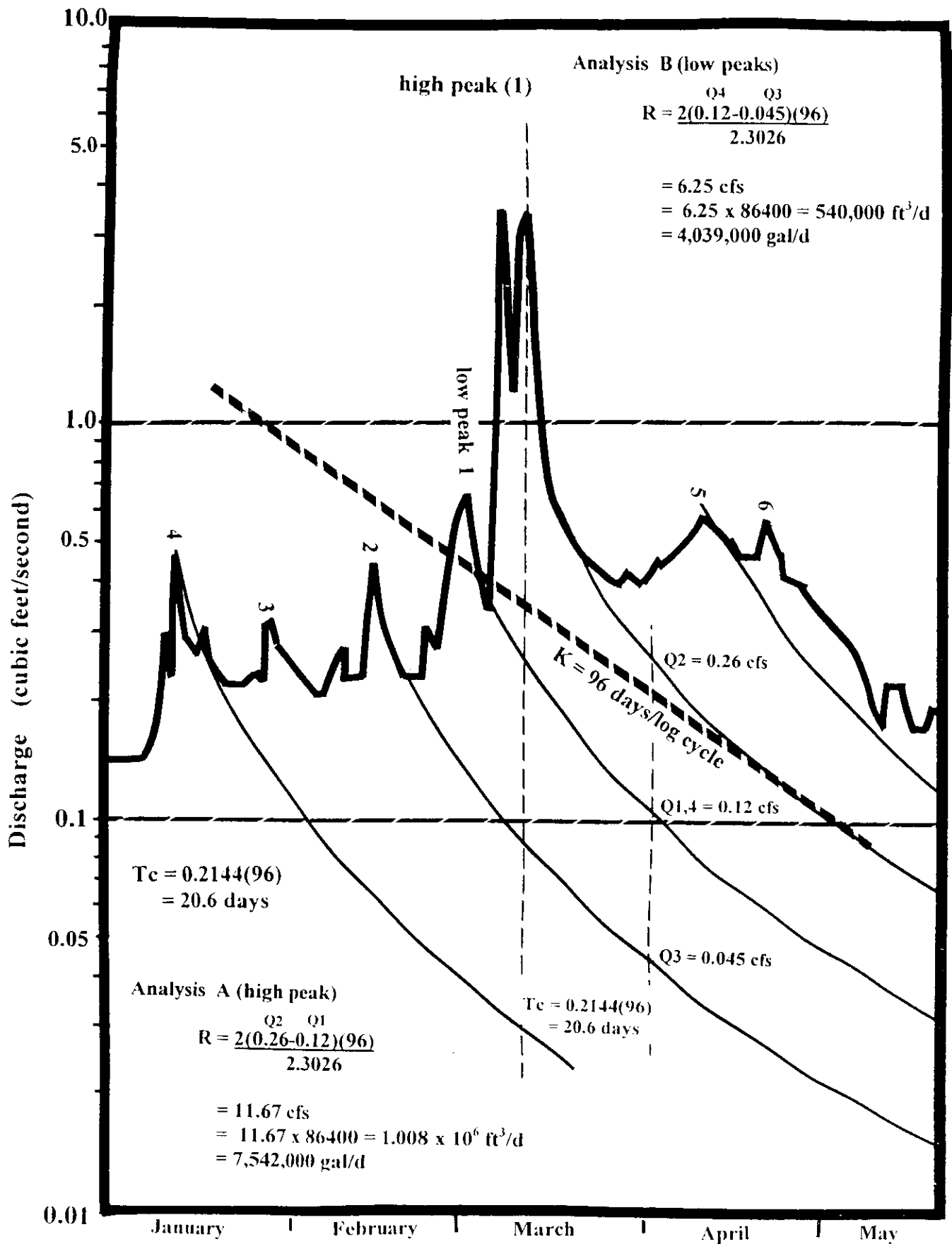
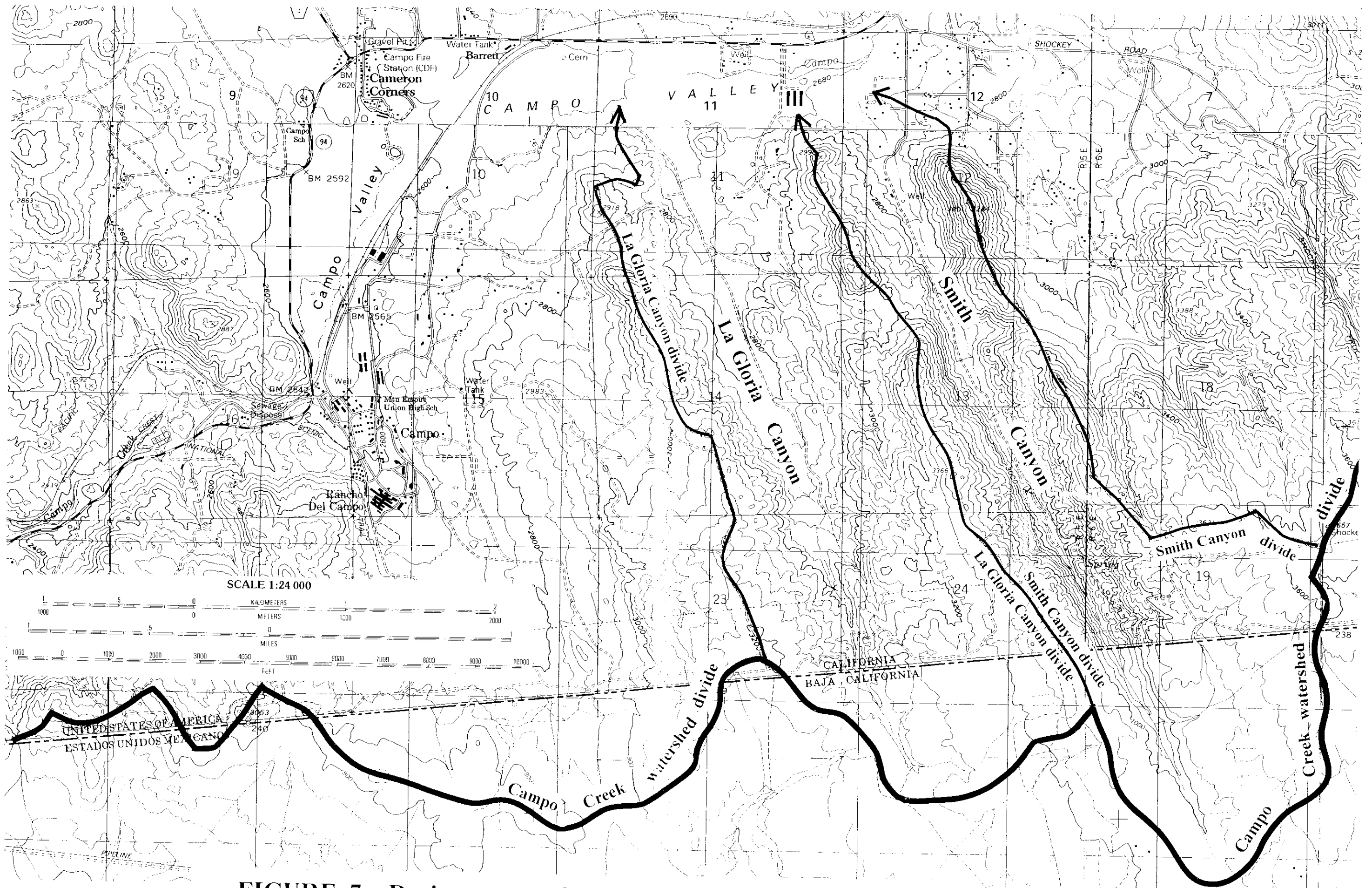


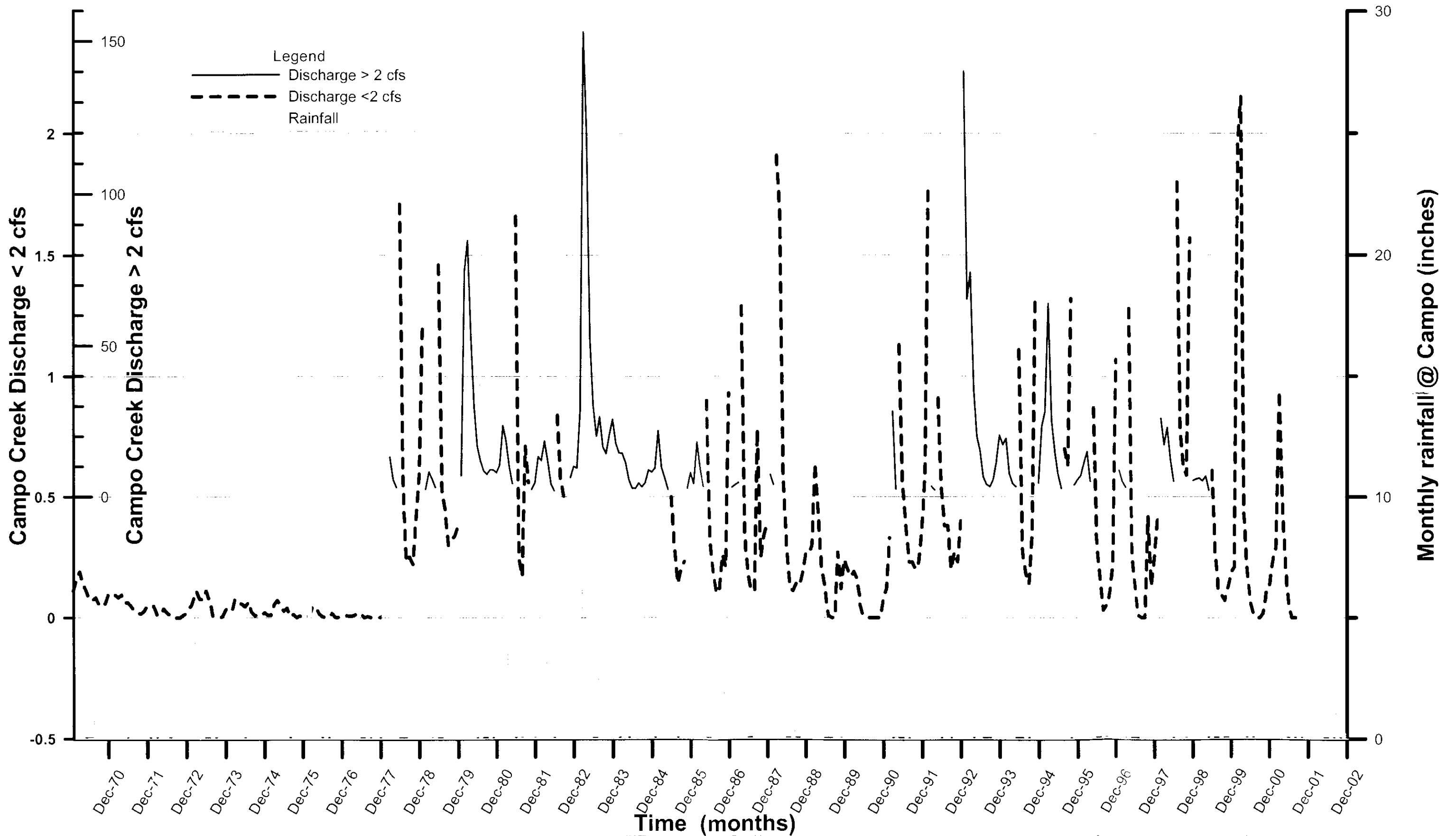
Figure 6. Graphical analyses of recharge in the Campo Creek basin during the late winter and spring of 2001, based on U.S.G.S. streamflow data.





**FIGURE 7. Drainage areas for Smith and La Gloria canyons.**





**FIGURE 8. Rainfall and average monthly discharge hydrographs, Campo Creek nr. Campo, California**

**Appendix A. Monthly streamflow for the USGS gaging station  
Campo Creek near Campo, 1970 to 2001 used in Figure 8**

# Monthly Streamflow Statistics for the Nation

USGS 11012500 CAMPO C NR CAMPO CA

Available data for this site

|                                                                                                                                                                                                       |                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| San Diego County, California<br>Hydrologic Unit Code 18070305<br>Latitude 32°35'28", Longitude 116°31'29" NAD27<br>Drainage area 85.0 square miles<br>Gage datum 2,179.08 feet above sea level NGVD29 | <b>Output formats</b>                                 |
|                                                                                                                                                                                                       | <input type="button" value="HTML table of all data"/> |
|                                                                                                                                                                                                       | <input type="button" value="Tab-separated data"/>     |
|                                                                                                                                                                                                       | <input type="button" value="Reselect output format"/> |

| YEAR | Monthly mean streamflow, in ft <sup>3</sup> /s |      |      |      |      |      |      |      |      |      |      |      |
|------|------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
|      | Jan                                            | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  |
| 1936 |                                                |      |      |      |      |      |      |      |      | .000 | .10  | .47  |
| 1937 | 1.24                                           | 31.2 | 19.5 | 14.3 | 6.35 | 2.26 | .56  | .21  | .10  | .16  | .91  | 5.21 |
| 1938 | 4.37                                           | 11.3 | 38.4 | 10.6 | 7.22 | 2.56 | .56  | .19  | .10  | .12  | .73  | 7.97 |
| 1939 | 10.8                                           | 19.1 | 12.5 | 7.85 | 3.30 | .46  | .20  | .13  | 1.29 | .87  | 1.61 | 2.62 |
| 1940 | 4.75                                           | 9.69 | 4.43 | 5.44 | .90  | .27  | .068 | .058 | .090 | .19  | .24  | 8.95 |
| 1941 | 3.78                                           | 9.74 | 32.8 | 54.6 | 25.1 | 12.1 | 5.86 | 5.23 | 4.43 | 8.83 | 9.12 | 13.1 |
| 1942 | 14.7                                           | 12.4 | 12.4 | 9.15 | 5.42 | 1.91 | .34  | .074 | .093 | .24  | 1.22 | 3.01 |
| 1943 | 14.4                                           | 10.8 | 15.1 | 10.3 | 2.95 | 1.09 | .31  | .18  | .16  | .42  | .70  | 3.24 |
| 1944 | 5.26                                           | 26.7 | 17.3 | 8.73 | 4.29 | 2.43 | .58  | .10  | .097 | .40  | 6.23 | 5.17 |
| 1945 | 6.77                                           | 7.36 | 17.1 | 7.24 | 2.36 | .79  | .22  | .65  | .27  | .38  | .68  | 9.50 |
| 1946 | 7.07                                           | 5.59 | 5.64 | 4.22 | 1.06 | .070 | .013 | .000 | .18  | .084 | .86  | 1.30 |
| 1947 | 1.29                                           | 1.54 | .80  | .24  | .094 | .030 | .000 | .000 | .000 | .000 | .043 | .17  |
| 1948 | .14                                            | .17  | .17  | .12  | .058 | .020 | .000 | .000 | .000 | .068 | .000 | .000 |
| 1949 | .15                                            | .73  | .89  | .42  | .17  | .027 | .000 | .000 | .000 | .000 | .000 | .003 |
| 1950 | .14                                            | .17  | .12  | .083 | .035 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1951 | .010                                           | .018 | .12  | .12  | .045 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1952 | .48                                            | .15  | 12.5 | 3.60 | 1.52 | .63  | .49  | .052 | .000 | .042 | .19  | .25  |
| 1953 | .23                                            | .22  | .67  | .35  | .14  | .063 | .000 | .000 | .000 | .000 | .000 | .087 |
| 1954 | .25                                            | .17  | .91  | .24  | .10  | .003 | .000 | .000 | .000 | .000 | .000 | .094 |
| 1955 | .20                                            | .14  | .11  | .10  | .097 | .000 | .35  | .071 | .000 | .000 | .000 | .003 |
| 1956 | .13                                            | .097 | .000 | .077 | .052 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

|      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1957 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1958 | .000 | .000 | .000 | 1.04 | .039 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1959 | .000 | .046 | .10  | .053 | .016 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1960 | .000 | .000 | .000 | .013 | .029 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1961 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1962 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1963 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1964 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .003 |
| 1965 | .000 | .004 | .003 | .010 | .000 | .000 | .000 | .000 | .000 | .000 | .013 | .006 |
| 1966 | .003 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .003 |
| 1967 | .000 | .000 | .068 | .087 | .077 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1968 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| 1969 | .006 | .32  | .92  | .89  | .72  | .42  | .20  | .20  | .20  | .071 | .084 | .090 |
| 1970 | .11  | .16  | .19  | .14  | .11  | .077 | .072 | .083 | .054 | .046 | .059 | .098 |
| 1971 | .088 | .094 | .083 | .094 | .062 | .063 | .047 | .029 | .020 | .016 | .027 | .051 |
| 1972 | .051 | .047 | .011 | .012 | .037 | .020 | .010 | .001 | .000 | .000 | .010 | .018 |
| 1973 | .039 | .071 | .11  | .077 | .075 | .11  | .071 | .010 | .000 | .000 | .004 | .032 |
| 1974 | .042 | .031 | .077 | .058 | .057 | .045 | .065 | .023 | .009 | .010 | .007 | .021 |
| 1975 | .010 | .010 | .054 | .071 | .046 | .027 | .039 | .003 | .013 | .000 | .007 | .000 |
| 1976 | .000 | .010 | .044 | .045 | .015 | .004 | .000 | .000 | .017 | .001 | .001 | .001 |
| 1977 | .010 | .006 | .005 | .010 | .020 | .014 | .000 | .004 | .000 | .000 | .000 | .001 |
| 1978 | .011 | .040 | 13.1 | 5.52 | 3.10 | 1.71 | .56  | .23  | .25  | .22  | .40  | .59  |
| 1979 | 1.21 | 2.49 | 8.25 | 5.87 | 3.19 | 1.46 | .53  | .45  | .30  | .32  | .34  | .38  |
| 1980 | 7.01 | 74.5 | 84.6 | 53.6 | 30.5 | 16.8 | 11.8 | 8.60 | 7.40 | 8.97 | 8.87 | 7.97 |
| 1981 | 10.4 | 23.6 | 18.6 | 10.1 | 4.38 | 1.66 | .24  | .17  | .71  | .56  | 2.43 | 4.68 |
| 1982 | 13.2 | 12.0 | 18.4 | 11.9 | 4.11 | 2.04 | .84  | .57  | .50  | .51  | 6.32 | 10.0 |
| 1983 | 9.49 | 28.5 | 153  | 121  | 52.2 | 30.4 | 20.1 | 26.5 | 16.5 | 14.3 | 20.7 | 25.7 |
| 1984 | 17.7 | 14.5 | 14.4 | 11.2 | 5.69 | 2.82 | 2.79 | 4.50 | 3.30 | 4.63 | 8.81 | 8.16 |
| 1985 | 9.45 | 21.8 | 9.70 | 6.32 | 2.49 | .50  | .29  | .14  | .20  | .23  | 2.79 | 7.97 |
| 1986 | 4.25 | 18.1 | 9.45 | 3.38 | .90  | .32  | .19  | .10  | .12  | .26  | .21  | .93  |
| 1987 | 3.06 | 3.89 | 4.56 | 1.29 | .35  | .18  | .11  | .11  | .078 | .25  | .34  | .39  |
| 1988 | 7.27 | 4.08 | 1.91 | 1.68 | .60  | .31  | .13  | .11  | .14  | .13  | .18  | .26  |
| 1989 | .26  | .30  | .64  | .43  | .20  | .12  | .009 | .000 | .000 | .027 | .12  | .24  |
| 1990 | .20  | .17  | .19  | .16  | .046 | .007 | .000 | .000 | .000 | .000 | .000 | .069 |
| 1991 | .12  | .33  | 28.3 | 2.53 | 1.13 | .56  | .40  | .23  | .23  | .20  | .23  | .37  |
| 1992 | .59  | 1.77 | 3.37 | 2.21 | .91  | .55  | .38  | .38  | .20  | .27  | .23  | .40  |
| 1993 | 140  | 65.3 | 74.1 | 35.7 | 19.9 | 15.2 | 6.54 | 4.00 | 3.30 | 5.54 | 11.4 | 20.3 |
| 1994 | 17.2 | 19.3 | 7.73 | 4.33 | 3.37 | 1.11 | .28  | .18  | .14  | .35  | 1.31 | 4.48 |

|                             |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1995                        | 23.3 | 28.2 | 63.8 | 25.5 | 15.0 | 7.45 | 2.73 | .70  | .63  | 1.32 | 3.85 | 5.63 |
| 1996                        | 6.98 | 11.3 | 14.9 | 5.11 | .87  | .29  | .15  | .030 | .050 | .095 | .22  | 1.07 |
| 1997                        | 8.79 | 5.10 | 3.12 | 1.28 | .25  | .12  | .009 | .000 | .000 | .042 | .13  | .25  |
| 1998                        | .42  | 25.9 | 17.2 | 22.9 | 12.3 | 5.14 | 1.80 | .78  | .63  | .59  | 1.57 | 5.33 |
| 1999                        | 5.83 | 6.13 | 5.22 | 6.78 | 2.20 | .61  | .27  | .11  | .094 | .072 | .13  | .19  |
| 2000                        | .21  | 1.96 | 2.15 | .43  | .20  | .066 | .017 | .000 | .000 | .018 | .11  | .13  |
| 2001                        | .24  | .29  | .94  | .48  | .20  | .047 | .000 | .000 | .000 |      |      |      |
| Mean of monthly streamflows | 5.60 | 7.96 | 11.6 | 7.39 | 3.49 | 1.77 | .93  | .85  | .64  | .78  | 1.44 | 2.57 |

Questions about data [h2oteam@usgs.gov](mailto:h2oteam@usgs.gov)  
 Feedback on this website [gs-w\\_support\\_nwisweb@usgs.gov](mailto:gs-w_support_nwisweb@usgs.gov)  
 Surface Water data for USA: Monthly Streamflow Statistics  
<http://waterdata.usgs.gov/nwis/monthly?>

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**Appendix B. Monthly rainfall data for Campo, California,  
for 1970 to 2001 used in Figure 8  
(provided by the Western Regional Climate Center)**

**1971 - 2000**

- Daily Temp. & Precip.
  - Daily Tabular data (~23 KB)
  - Monthly Tabular data (~1 KB)
  - NCDC 1971-2000 Normals (~3 KB)
- 

**1961 - 1990**

- Daily Temp. & Precip.
  - Daily Tabular data (~23 KB)
  - Monthly Tabular data (~1 KB)
  - NCDC 1961-1990 Normals (~3 KB)
- 

**Period of Record**

- Station Metadata
- Station Metadata Graphics

**General Climate Summary Tables**

- Temperature
- Precipitation
- Heating Degree Days
- Cooling Degree Days
- Growing Degree Days

**Temperature**

- Daily Extremes and Averages
- Spring 'Freeze' Probabilities
- Fall 'Freeze' Probabilities
- 'Freeze Free' Probabilities
- Monthly Temperature Listings
  - Average
  - Average Maximum
  - Average Minimum

**Precipitation**

- Monthly Average
- Daily Extreme and Average
- Daily Average
- Precipitation Probability by Duration.
- Precipitation Probability by Quantity.
- Monthly Precipitation Listings
  - Monthly Totals

<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?cacamo+sca>

12/26/2002

**Snowfall**

- [Daily Extreme and Average](#)
- [Daily Average](#)
- [Monthly Snowfall Listings](#)  
[Monthly Totals](#)

**Snowdepth**

- [Daily Extreme and Average](#)
- [Daily Average](#)

**Heating Degree Days**

- [Daily Average](#)

**Cooling Degree Days**

- [Daily Average](#)

**Period of Record Data Tables**

- [Daily Summary Stats \(~55 KB\)](#)
  - [Monthly Tabular data \(~2 KB\)](#)
- 

*Western Regional Climate Center,  
[wrcc@dri.edu](mailto:wrcc@dri.edu)*

# CAMPO, CALIFORNIA

## Monthly Total Precipitation (inches)

(041424)

File last updated on Nov 21, 2002

\*\*\* Note \*\*\* Provisional Data \*\*\* After Year/Month 200208

a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,

z = 26 or more days missing, A = Accumulations present

Long-term means based on columns; thus, the monthly row may not sum (or average) to the long-term annual value.

MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5

Individual Months not used for annual or monthly statistics if more than 5 days are missing.

Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

| YEAR (S) | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   | OCT   | NOV   | DEC   | ANN   |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1948     | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00  | 0.00  | 0.22  | 1.10  | 0.00  | 2.56  | 3.88  |
| 1949     | 4.33  | 2.24  | 1.39  | 0.11  | 0.41  | 0.00  | 0.00  | 0.00  | 0.00  | 0.77  | 1.09  | 2.42  | 12.76 |
| 1950     | 2.74  | 1.19  | 1.68  | 0.48  | 0.01  | 0.00  | 0.10  | 0.00  | 0.22  | 0.00a | 0.41  | 0.34  | 7.17  |
| 1951     | 4.00  | 1.39  | 1.12  | 3.57  | 0.27  | 0.00  | 0.44  | 1.34  | 0.01  | 1.09  | 0.82  | 7.19  | 21.24 |
| 1952     | 5.05  | 0.95  | 8.40  | 1.62  | 0.00  | 0.00  | 1.24  | 0.00  | 0.00  | 0.00  | 2.85  | 3.13  | 23.24 |
| 1953     | 1.04  | 1.05  | 2.28  | 1.24  | 0.49  | 0.01  | 0.04  | 0.01  | 0.00  | 0.00  | 1.14  | 0.18  | 7.48  |
| 1954     | 4.89  | 2.49  | 6.45  | 0.16  | 0.18  | 0.05  | 1.42  | 0.03  | 0.13  | 0.00  | 0.68  | 0.75  | 17.23 |
| 1955     | 3.85  | 1.23  | 0.68  | 0.52  | 1.95  | 0.00  | 0.82  | 1.90  | 0.00  | 0.00  | 1.14  | 1.77  | 13.86 |
| 1956     | 1.70  | 1.75  | 0.00  | 2.36  | 0.45  | 0.00  | 0.65  | 0.00  | 0.00  | 0.07  | 0.00  | 0.40  | 7.38  |
| 1957     | 7.05  | 0.78  | 1.57  | 1.09  | 2.60  | 0.28  | 0.01  | 0.65  | 0.44  | 2.17  | 0.84  | 1.34  | 18.82 |
| 1958     | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00z | 0.00  |
| 1959     | 1.12  | 5.61  | 0.00  | 0.17  | 0.14  | 0.00  | 0.03  | 0.16  | 0.34  | 0.50  | 0.13  | 2.93  | 11.13 |
| 1960     | 2.97  | 4.10  | 0.45  | 1.95  | 0.49  | 0.00  | 0.17  | 0.03  | 1.59  | 0.16  | 1.67  | 0.07  | 13.65 |
| 1961     | 1.09  | 0.16  | 2.28  | 0.00  | 0.02  | 0.00  | 0.00  | 0.62  | 0.00  | 0.37  | 0.77  | 2.08  | 7.39  |
| 1962     | 3.61  | 4.53  | 2.12  | 0.00  | 0.90  | 0.11  | 0.00  | 0.00  | 0.00  | 0.07  | 0.00  | 0.65  | 11.99 |
| 1963     | 0.18g | 3.03  | 1.72  | 1.86  | 0.00  | 0.13  | 0.00  | 0.63  | 2.45  | 1.35  | 1.77  | 0.31  | 13.25 |
| 1964     | 2.12  | 1.34  | 3.22  | 0.95  | 0.67  | 0.00  | 0.00  | 0.03  | 0.07  | 0.39  | 1.88  | 1.83  | 12.50 |
| 1965     | 0.80  | 0.00z | 1.20  | 6.03  | 0.05  | 0.00  | 0.36  | 0.13  | 0.00z | 0.00  | 9.03  | 4.31  | 21.91 |
| 1966     | 1.35  | 1.40  | 1.16  | 0.05  | 0.07  | 0.22  | 0.39  | 0.19  | 0.20  | 0.46  | 0.83  | 0.00z | 6.32  |
| 1967     | 1.42  | 0.00  | 1.03  | 3.54  | 0.48  | 0.06  | 0.34  | 0.49  | 0.82  | 0.00  | 3.65  | 4.23  | 16.06 |
| 1968     | 0.58  | 0.73  | 2.19  | 0.85  | 0.28  | 0.03  | 1.88  | 0.06  | 0.00  | 0.05  | 0.72  | 1.66  | 9.03  |
| 1969     | 8.30  | 5.67  | 1.96  | 0.10  | 0.43  | 0.12  | 0.01  | 0.00  | 0.20  | 0.02  | 1.85  | 0.26  | 18.92 |
| 1970     | 0.85  | 0.96  | 3.95  | 1.18  | 0.00  | 0.03  | 0.03  | 2.66  | 0.08  | 0.12  | 1.28  | 2.66  | 13.80 |
| 1971     | 1.12  | 1.22  | 0.40  | 1.46  | 0.67  | 0.00  | 0.07  | 1.00  | 0.25  | 1.18  | 0.05  | 3.60  | 11.02 |
| 1972     | 0.00  | 0.18  | 0.00  | 0.24  | 0.14  | 0.31  | 0.00  | 0.04  | 0.14  | 1.87  | 2.60  | 2.55  | 8.07  |
| 1973     | 1.70  | 3.13  | 5.24  | 0.29  | 0.09  | 0.00  | 0.00  | 0.09  | 0.00  | 0.05  | 1.69  | 0.11  | 12.39 |
| 1974     | 4.29  | 0.07  | 1.24  | 0.24  | 0.16  | 0.00  | 1.28  | 0.13  | 0.31  | 2.32  | 0.39  | 1.24  | 11.67 |
| 1975     | 0.40  | 1.02  | 3.40  | 1.58  | 0.11  | 0.12  | 0.09  | 0.00  | 0.18  | 0.07  | 2.15  | 0.63  | 9.75  |
| 1976     | 0.07  | 5.47  | 1.81  | 1.85  | 0.06  | 0.00  | 0.61  | 0.00  | 2.85  | 0.24  | 1.02  | 0.76  | 14.74 |

|      |       |       |       |       |      |       |       |      |       |       |       |       |       |
|------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|
| 1977 | 3.10  | 0.35  | 0.85  | 0.19  | 1.15 | 0.00  | 0.00  | 1.18 | 0.00  | 0.88  | 0.25  | 0.00z | 7.95  |
| 1978 | 7.79  | 5.38  | 5.45  | 1.48  | 0.53 | 0.00  | 0.00  | 0.01 | 0.16  | 0.06  | 3.05  | 4.45  | 28.36 |
| 1979 | 3.99  | 1.95  | 4.88  | 0.03  | 0.19 | 0.00  | 0.00  | 0.16 | 0.04  | 0.82  | 0.26  | 0.69  | 13.01 |
| 1980 | 11.82 | 8.82  | 3.72  | 1.87  | 0.80 | 0.00  | 0.55  | 0.00 | 0.00  | 0.28  | 0.00  | 0.54  | 28.40 |
| 1981 | 0.91  | 2.64  | 4.22  | 0.80  | 0.10 | 0.00  | 0.05  | 0.03 | 0.31  | 0.19  | 1.35  | 0.03  | 10.63 |
| 1982 | 5.14  | 2.15  | 4.30  | 0.82  | 0.12 | 0.00  | 0.33  | 0.56 | 0.37  | 0.13  | 4.42  | 3.44  | 21.78 |
| 1983 | 2.23  | 4.82  | 9.92  | 2.23  | 0.19 | 0.00  | 0.01  | 4.05 | 0.68  | 1.16  | 2.45  | 3.20c | 30.94 |
| 1984 | 0.12  | 0.00  | 0.04  | 0.24  | 0.00 | 0.55  | 1.51  | 2.29 | 0.67  | 0.18  | 1.43  | 4.25  | 11.28 |
| 1985 | 0.00z | 1.59  | 1.46  | 0.27  | 0.04 | 0.09  | 1.74  | 0.00 | 0.33  | 0.69  | 4.53  | 1.76  | 12.50 |
| 1986 | 0.75  | 3.53  | 3.47  | 0.28  | 0.01 | 0.00  | 0.35  | 0.06 | 1.32  | 2.12  | 0.57  | 0.72  | 13.18 |
| 1987 | 1.66  | 2.55  | 2.58  | 0.31  | 0.08 | 0.01  | 0.00  | 0.65 | 0.48  | 3.13  | 2.48  | 1.82  | 15.75 |
| 1988 | 3.49  | 1.94  | 0.72  | 2.48  | 0.36 | 0.00  | 0.02  | 1.65 | 0.00  | 0.00  | 1.08  | 2.12  | 13.86 |
| 1989 | 1.05  | 1.18  | 1.65  | 0.21  | 0.13 | 0.00  | 0.00  | 0.00 | 0.17  | 0.36  | 0.03  | 0.29  | 5.07  |
| 1990 | 3.06  | 1.78  | 0.70  | 0.99  | 0.23 | 0.22  | 0.11  | 0.18 | 0.62  | 0.04  | 0.56  | 1.30  | 9.79  |
| 1991 | 1.35  | 2.23  | 0.00z | 0.05  | 0.00 | 0.00z | 0.62  | 0.00 | 0.35  | 0.58  | 0.30  | 2.83  | 8.31  |
| 1992 | 3.24a | 5.05  | 4.94  | 0.68  | 0.23 | 0.00  | 0.75  | 2.05 | 0.00  | 0.24  | 0.06  | 4.04  | 21.28 |
| 1993 | 18.61 | 6.51  | 1.53  | 0.00  | 0.12 | 0.16a | 0.00  | 0.00 | 0.00  | 0.30  | 1.49  | 1.16  | 29.88 |
| 1994 | 1.70  | 4.14  | 3.14  | 1.35  | 0.00 | 0.00  | 0.00  | 1.22 | 0.00  | 0.19  | 0.68  | 0.97  | 13.39 |
| 1995 | 10.12 | 3.28  | 6.63  | 1.26  | 1.10 | 0.48  | 0.06  | 0.64 | 0.28  | 0.00  | 0.08  | 0.57  | 24.50 |
| 1996 | 1.54  | 3.20  | 2.76  | 0.53  | 0.07 | 0.00  | 0.00  | 0.07 | 0.03  | 1.56  | 0.92  | 1.98  | 12.66 |
| 1997 | 4.33  | 1.53  | 0.02  | 0.22  | 0.00 | 0.00z | 0.00z | 0.07 | 1.93  | 0.16  | 1.75  | 4.21  | 14.22 |
| 1998 | 1.60  | 10.37 | 4.40  | 2.35d | 1.17 | 0.02  | 0.10  | 0.20 | 0.20  | 0.03  | 1.17  | 1.42  | 23.03 |
| 1999 | 1.66  | 0.83  | 0.62  | 3.31  | 0.00 | 0.46  | 0.00z | 0.00 | 0.14  | 0.00  | 0.00  | 0.21  | 7.23  |
| 2000 | 0.75  | 4.20  | 1.47  | 0.46  | 0.00 | 0.21  | 0.00  | 0.13 | 0.30  | 0.65  | 0.39  | 0.04  | 8.60  |
| 2001 | 2.92  | 4.12  | 1.76  | 1.45  | 0.03 | 0.00  | 0.12  | 0.00 | 0.24  | 0.00  | 1.11  | 1.02  | 12.77 |
| 2002 | 0.40  | 0.12  | 1.12  | 0.39  | 0.00 | 0.00  | 0.19  | 0.00 | 1.06a | 0.00c | 0.26j | 0.00z | 3.28  |

Period of Record Statistics

|           |       |       |      |      |      |      |      |      |      |      |      |      |       |
|-----------|-------|-------|------|------|------|------|------|------|------|------|------|------|-------|
| MEAN      | 3.13  | 2.61  | 2.49 | 1.09 | 0.34 | 0.07 | 0.32 | 0.47 | 0.38 | 0.52 | 1.34 | 1.82 | 14.99 |
| S.D.      | 3.37  | 2.24  | 2.18 | 1.17 | 0.50 | 0.13 | 0.49 | 0.82 | 0.61 | 0.72 | 1.54 | 1.55 | 6.57  |
| SKEW      | 2.49  | 1.32  | 1.36 | 1.86 | 2.63 | 2.16 | 1.78 | 2.38 | 2.54 | 1.77 | 2.75 | 1.06 | 0.89  |
| MAX       | 18.61 | 10.37 | 9.92 | 6.03 | 2.60 | 0.55 | 1.88 | 4.05 | 2.85 | 3.13 | 9.03 | 7.19 | 30.94 |
| MIN       | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 5.07  |
| NO<br>YRS | 51    | 52    | 52   | 53   | 53   | 51   | 52   | 54   | 53   | 54   | 53   | 51   | 44    |





*APPENDIX E*  
*Threatened and Endangered Species List*



| Scientific Name                                          | Common Name                           | Lead | Status | R.P. | CH   | LA | O | SB | Riv | SD | Imp | Fed R  |
|----------------------------------------------------------|---------------------------------------|------|--------|------|------|----|---|----|-----|----|-----|--------|
| <b>PLANTS</b>                                            |                                       |      |        |      |      |    |   |    |     |    |     |        |
| <i>Acanthomintha ilicifolia</i>                          | San Diego thornmint                   | CFWO | T      |      |      |    |   |    |     | X  |     | 63:549 |
| <i>Allium munzii</i>                                     | Munz's onion                          | CFWO | E      |      | D-05 |    |   |    | X   |    |     | 63:549 |
| <i>Ambrosia pumila</i>                                   | San Diego ambrosia                    | CFWO | E      |      |      |    |   |    | X   | X  |     | 64:725 |
| <i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> | Del Mar manzanita                     | CFWO | E      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Arenaria paludicola</i>                               | marsh sandwort                        | VFO  | E      | F 98 |      | X  |   | X  |     |    |     | 58:413 |
| <i>Arenaria ursina</i>                                   | Bear Valley sandwort                  | CFWO | T      |      |      |    |   | X  |     |    |     | 63:490 |
| <i>Astragalus albens</i>                                 | Cushenbury milk-vetch                 | CFWO | E      | D2   | D-02 |    |   | X  |     |    |     | 59:436 |
| <i>Astragalus brauntonii</i>                             | Braunton's milk-vetch                 | VFO  | E      | F 99 |      | X  | X |    |     |    |     | 62:417 |
| <i>Astragalus lentiginosus</i> var. <i>coachellae</i>    | Coachella Valley milk-vetch           | CFWO | E      |      | P-04 |    |   |    | X   |    |     | 63:535 |
| <i>Astragalus magdalenae</i> var. <i>peirsonii</i>       | Peirson's milk-vetch                  | CFWO | T      |      | D-04 |    |   |    |     | X  | X   | 63:535 |
| <i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> | Ventura marsh milk-vetch              | VFO  | E      |      | D-04 | X  | X |    |     |    |     | 66:279 |
| <i>Astragalus tener</i> var. <i>titi</i>                 | coastal dunes milk-vetch              | VFO  | E      | D    |      | X  |   |    |     | X  |     | 63:431 |
| <i>Astragalus tricarinatus</i>                           | triple-ribbed milk-vetch              | CFWO | E      |      |      |    |   | X  | X   |    |     | 63:535 |
| <i>Atriplex coronata</i> var. <i>notatior</i>            | San Jacinto Valley crownscale         | CFWO | E      |      | P-04 |    |   |    | X   |    |     | 63:549 |
| <i>Baccharis vanessae</i>                                | Encinitas baccharis                   | CFWO | T      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Berberis nevinii</i>                                  | Nevin's barberry                      | CFWO | E      |      |      | X  |   | X  | X   | X  |     | 63:549 |
| <i>Brodiaea filifolia</i>                                | thread-leaved brodiaea                | CFWO | T      |      | P-04 | X  | X | X  | X   | X  |     | 63:549 |
| <i>Castilleja cinerea</i>                                | ash-gray Indian paintbrush            | CFWO | T      |      |      |    |   | X  |     |    |     | 63:490 |
| <i>Castilleja grisea</i>                                 | San Clemente Island Indian paintbrush | CFWO | E      | F 84 |      | X  |   |    |     |    |     | 42:406 |
| <i>Ceanothus ophiochilus</i>                             | Vail Lake ceanothus                   | CFWO | T      |      |      |    |   |    | X   |    |     | 63:549 |
| <i>Cercocarpus traskiae</i>                              | Catalina Island mountain-mahogany     | CFWO | E      |      |      | X  |   |    |     |    |     | 62:426 |
| <i>Chorizanthe orcuttiana</i>                            | Orcutt's spineflower                  | CFWO | E      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Chorizanthe parryi</i> var. <i>fernandina</i>         | San Fernando Valley spineflower       | VFO  | C      |      |      | X  | X | X  |     |    |     | 64:575 |
| <i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>      | salt marsh bird's beak                | CFWO | E      | F 85 |      | X  | X |    |     | X  |     | 43:448 |
| <i>Deinandra (Hemizonia) conjugens</i>                   | Otay tarplant                         | CFWO | T      | D 03 | D-02 |    |   |    |     | X  |     | 63:549 |
| <i>Delphinium variegatum</i> ssp. <i>kinkiense</i>       | San Clemente Island larkspur          | CFWO | E      | F 84 |      | X  |   |    |     |    |     | 42:406 |
| <i>Dodecahema leptoceras (Centrostegia L.)</i>           | slender-horned spineflower            | CFWO | E      | D    |      | X  |   | X  | X   |    |     | 52:362 |
| <i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>             | Santa Monica Mountains dudleya        | VFO  | T      | F 99 |      | X  | X |    |     |    |     | 62:417 |
| <i>Dudleya stolonifera</i>                               | Laguna Beach live-forever             | CFWO | T      |      |      |    | X |    |     |    |     | 63:549 |
| <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>       | Santa Ana River woolly-star           | CFWO | E      | D    |      |    | X | X  | X   |    |     | 52:362 |
| <i>Erigeron parishii</i>                                 | Parish's daisy                        | CFWO | T      | D2   | D-02 |    |   | X  | X   |    |     | 59:436 |

|                                                      |                                     |      |   |      |      |  |   |   |   |   |        |
|------------------------------------------------------|-------------------------------------|------|---|------|------|--|---|---|---|---|--------|
| <i>Eriogonum kennedyi</i> var. <i>austromontanum</i> | southern mountain wild buckwheat    | CFWO | T |      |      |  |   | X |   |   | 63:490 |
| <i>Eriogonum ovalifolium</i> var. <i>vineum</i>      | Cushenbury buckwheat                | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Eryngium aristulatum</i> var. <i>parishii</i>     | San Diego button celery             | CFWO | E | F 98 |      |  |   |   | X | X | 58:413 |
| <i>Fremontodendron mexicanum</i>                     | Mexican flannelbush                 | CFWO | E |      |      |  |   |   |   | X | 63:549 |
| <i>Hazardia orcuttii</i>                             | Orcutt's hazardia                   | CFWO | C |      |      |  |   |   |   | X | 69:248 |
| <i>Helianthemum greenii</i>                          | Island rush-rose                    | VFO  | T | F 00 |      |  | X |   |   |   | 62:409 |
| <i>Lesquerella kingii</i> ssp. <i>bernardina</i>     | San Bernardino Mountains bladderpod | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Lithophragma maximum</i>                          | San Clemente Island woodland star   | CFWO | E | F 84 |      |  | X |   |   |   | 62:426 |
| <i>Lotus dendroideus</i> var. <i>traskiae</i>        | San Clemente Island lotus           | CFWO | E | F 84 |      |  | X |   |   |   | 42:406 |
| <i>Malacothamnus clementinus</i>                     | San Clemente Island bush mallow     | CFWO | E | F 84 |      |  | X |   |   |   | 42:406 |
| <i>Monardella linoides</i> ssp. <i>viminea</i>       | willowy monardella                  | CFWO | E |      |      |  |   |   |   | X | 63:549 |
| <i>Navarretia fossalis</i>                           | spreading navarretia                | CFWO | T | F 98 | P-04 |  | X |   | X | X | 63:549 |
| <i>Orcuttia californica</i>                          | California Orcutt grass             | CFWO | E | F 98 |      |  | X |   | X | X | 58:413 |
| <i>Oxytheca parishii</i> var. <i>goodmaniana</i>     | Cushenbury oxytheca                 | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Pentachaeta lyonii</i>                            | Lyon's pentachaeta                  | VFO  | E | F 99 |      |  | X |   |   |   | 62:417 |
| <i>Phacelia stellaris</i>                            | Brand's phacelia                    | CFWO | C |      |      |  | X |   | X | X | 69:248 |
| <i>Poa atropurpurea</i>                              | San Bernardino bluegrass            | CFWO | E |      |      |  |   | X |   | X | 63:490 |
| <i>Pogogyne abramsii</i>                             | San Diego mesa mint                 | CFWO | E | F 98 |      |  |   |   |   | X | 43:448 |
| <i>Pogogyne nudiuscula</i>                           | Otay mesa mint                      | CFWO | E | F 98 |      |  |   |   |   | X | 58:413 |
| <i>Rorippa gambellii</i>                             | Gambel's watercress                 | VFO  | E | F 98 |      |  | X | X | X | X | 58:413 |
| <i>Sibara filifolia</i>                              | Santa Cruz Island rock-cress        | CFWO | E |      |      |  | X |   |   |   | 62:426 |
| <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>       | Parish's checkerbloom               | VFO  | C |      |      |  |   | X |   |   |        |
| <i>Sidalcea pedata</i>                               | pedate checker-mallow               | CFWO | E | F 98 |      |  |   | X |   |   | 49:344 |
| <i>Taraxacum californicum</i>                        | California taraxacum                | CFWO | E |      |      |  |   | X |   |   | 63:490 |
| <i>Thelypodium stenopetalum</i>                      | slender-petaled mustard             | CFWO | E | F 98 |      |  |   | X |   |   | 49:344 |
| <i>Trichostema austromontanum compactum</i>          | Hidden Lake bluecurls               | CFWO | T |      |      |  |   |   | X |   | 63:490 |
| <i>Verbesina dissita</i>                             | big-leaved crown beard              | CFWO | T |      |      |  |   | X |   |   | 61:523 |

**INVERTEBRATES**

|                                             |                             |      |   |      |      |  |   |   |   |   |        |
|---------------------------------------------|-----------------------------|------|---|------|------|--|---|---|---|---|--------|
| <i>Branchinecta lynchii</i>                 | vernal pool fairy shrimp    | SAC  | T |      | D-03 |  |   |   | X |   | 59:481 |
| <i>Branchinecta sandiegonensis</i>          | San Diego fairy shrimp      | CFWO | E | F 98 | RP   |  | X |   |   | X | 62:492 |
| <i>Euphilotes battoides allyni</i>          | El Segundo blue butterfly   | CFWO | E | F 98 |      |  | X |   |   |   | 41:220 |
| <i>Euphydryas editha quino</i>              | Quino checkerspot butterfly | CFWO | E | F 03 | D-02 |  | X | X | X | X | 62:231 |
| <i>Glaucopsyche lygdamus palosverdensis</i> | Palos Verdes blue butterfly | CFWO | E | F 84 | D    |  | X |   |   |   | 45:449 |

|                                            |                               |      |   |      |      |   |   |   |   |   |  |        |
|--------------------------------------------|-------------------------------|------|---|------|------|---|---|---|---|---|--|--------|
| <i>Pyrgus ruralis lagunae</i>              | Laguna Mountains skipper      | CFWO | E |      |      |   |   |   |   | X |  | 62:231 |
| <i>Rhaphiomidas terminatus abdominalis</i> | Delhi Sands flower-loving fly | CFWO | E | F 97 |      |   |   | X | X |   |  | 58:498 |
| <i>Streptocephalus woottoni</i>            | Riverside fairy shrimp        | CFWO | E | F 98 | D-05 | X | X |   | X | X |  | 58:413 |

**FISH**

|                                           |                                  |      |   |      |      |   |   |   |   |   |   |        |
|-------------------------------------------|----------------------------------|------|---|------|------|---|---|---|---|---|---|--------|
| <i>Catostomus santaanae</i>               | Santa Ana sucker                 | CFWO | T |      | D-05 | X | X | X | X |   |   | 65:196 |
| <i>Cyprinodon macularius</i>              | desert pupfish                   | R02  | E | F 93 | D    |   |   |   | X | X | X | 51:108 |
| <i>Eucyclogobius newberryi</i>            | tidewater goby                   | VFO  | E | D 04 | D    |   | X |   |   | X |   | 59:549 |
| <i>Gasterosteus aculeatus williamsoni</i> | unarmored threespine stickleback | VFO  | E | F 85 |      | X |   | X |   | X |   | 35:160 |
| <i>Gila bicolor mohavensis</i>            | Mohave tui chub                  | VFO  | E | F 84 |      |   |   | X |   |   |   | 35:160 |
| <i>Gila elegans</i>                       | bonytail chub                    | R06  | E | F 90 | D    |   |   | X | X |   | X | 45:277 |
| <i>Oncorhynchus mykiss</i>                | southern steelhead               | R09  | E |      |      | X | X |   |   | X |   | 62:439 |
| <i>Ptychocheilus lucius</i>               | Colorado squawfish               | R06  | E | F 91 |      |   |   | X | X |   | X | 50:301 |
| <i>Xyrauchen texanus</i>                  | razorback sucker                 | R06  | E |      | D    |   |   | X | X |   | X | 56:549 |

**AMPHIBIANS**

|                             |                             |      |   |      |       |   |   |   |   |   |  |        |
|-----------------------------|-----------------------------|------|---|------|-------|---|---|---|---|---|--|--------|
| <i>Batrachoseps aridus</i>  | desert slender salamander   | CFWO | E | F 82 |       |   |   |   | X |   |  | 38:146 |
| <i>Bufo californicus</i>    | arroyo toad                 | VFO  | E | F 99 | D-05  | X | X | X | X | X |  | 59:648 |
| <i>Rana aurora draytoni</i> | California red-legged frog  | SAC  | T | F 02 | RP-04 | X | X | X | X | X |  | 61:258 |
| <i>Rana muscosa</i>         | mountain yellow-legged frog | CFWO | E |      | P-05  | X |   | X | X |   |  | 64:717 |

**REPTILES**

|                            |                                     |      |   |      |   |  |   |   |   |  |   |        |
|----------------------------|-------------------------------------|------|---|------|---|--|---|---|---|--|---|--------|
| <i>Gopherus agassizii</i>  | desert tortoise                     | VFO  | T | F 94 | D |  |   | X | X |  | X | 55:121 |
| <i>Uma inornata</i>        | Coachella Valley fringe-toed lizard | CFWO | T | F 85 | D |  |   |   | X |  |   | 45:638 |
| <i>Xantusia riversiana</i> | island night lizard                 | CFWO | T | F 84 |   |  | X |   |   |  |   | 42:406 |

**BIRDS**

|                                        |                                |      |    |      |       |   |   |   |   |   |   |        |
|----------------------------------------|--------------------------------|------|----|------|-------|---|---|---|---|---|---|--------|
| <i>Amphispiza belli clementeae</i>     | San Clemente sage sparrow      | CFWO | T  | F 84 |       |   | X |   |   |   |   | 42:406 |
| <i>Brachyramphus marmoratus</i>        | marbled murrelet               | POR  | T  | F 97 | D     |   | X |   |   |   |   | 57:453 |
| <i>Charadrius alexandrinus nivosus</i> | western snowy plover           | SAC  | T  | D 01 | D-05  | X | X |   |   |   | X | 58:128 |
| <i>Charadrius montanus</i>             | mountain plover                | R02  | W* |      |       | X | X | X | X | X | X | 64:758 |
| <i>Coccyzus americanus</i>             | yellow-billed cuckoo           | SAC  | C  |      |       | X | X | X | X | X | X | 66:386 |
| <i>Empidonax traillii extimus</i>      | southwestern willow flycatcher | R02  | E  | D    | RP-04 | X | X | X | X | X | X | 60:107 |
| <i>Gymnogyps californianus</i>         | California condor              | VFO  | E  | F 96 |       |   | X |   | X |   |   | 61:540 |

|                                           |                                |      |    |      |    |   |   |   |   |   |   |        |
|-------------------------------------------|--------------------------------|------|----|------|----|---|---|---|---|---|---|--------|
| <i>Haliaeetus leucocephalus</i>           | bald eagle                     | R03  | T  | F 86 |    | X | X | X | X | X | X | 60:360 |
| <i>Lanius ludovicianus mearnsi</i>        | San Clemente loggerhead shrike | CFWO | E  | F 84 |    | X |   |   |   |   |   | 42:406 |
| <i>Pelecanus occidentalis</i>             | brown pelican                  | VFO  | E  | F 83 |    | X | X | X | X | X | X | 50:494 |
| <i>Phoebastria albatrus</i>               | short-tailed albatross         | JFO  | E  |      |    | X | X |   |   | X |   | 65:466 |
| <i>Polioptila californica californica</i> | coastal California gnatcatcher | CFWO | T* |      | RP | X | X | X | X | X | X | 58:167 |
| <i>Rallus longirostris levipes</i>        | light-footed clapper rail      | CFWO | E  | F 85 |    | X | X |   |   | X |   | 35:160 |
| <i>Rallus longirostris yumanensis</i>     | Yuma clapper rail              | R02  | E  |      |    |   |   |   | X |   | X | 32:400 |
| <i>Sterna antillarum browni</i>           | California least tern          | CFWO | E  | F 85 |    | X | X |   | X | X | X | 35:845 |
| <i>Vireo bellii pusillus</i>              | least Bell's vireo             | CFWO | E  | D 98 | D  | X | X | X | X | X | X | 51:164 |

**MAMMALS**

|                                           |                              |      |      |      |      |   |   |   |   |   |   |        |
|-------------------------------------------|------------------------------|------|------|------|------|---|---|---|---|---|---|--------|
| <i>Dipodomys merriami parvus</i>          | San Bernardino kangaroo rat  | CFWO | E    |      | D-02 | X |   | X | X |   |   | 63:510 |
| <i>Dipodomys stephensi</i>                | Stephens' kangaroo rat       | CFWO | E    | D 97 |      |   |   | X | X | X |   | 53:384 |
| <i>Enhydra lutris nereis</i>              | southern sea otter           | VFO  | T/X* | D 00 |      | X | X |   |   | X |   | 52:297 |
| <i>Ovis canadensis</i>                    | peninsular bighorn sheep     | CFWO | E    | F 00 | D-01 |   |   |   | X | X | X | 63:131 |
| <i>Panthera onca</i>                      | jaguar                       | R02  | E    |      |      |   |   |   | X |   | X | 62:391 |
| <i>Perognathus longimembris pacificus</i> | Pacific pocket mouse         | CFWO | E    | F 98 |      | X | X |   |   | X |   | 59:497 |
| <i>Spermophilus tereticaudus chlorus</i>  | Palm Springs ground squirrel | CFWO | C    |      |      |   |   |   | X |   |   | 64:575 |
| <i>Urocyon littoralis catalinae</i>       | Santa Catalina Island Fox    | CFWO | E    |      |      | X |   |   |   |   |   | 69:103 |

**E:** Listed as a federally endangered species

**T:** Listed as a federally threatened species

**XN:** Experimental population; \* southern sea otter first listed as threatened Jan. 14, 1977 42:2968

**PE:** Proposed as federally endangered

**PT:** Proposed as federally threatened

**C:** Federal candidate species

**R.P.:** Recovery Plan, F= Final, D= Draft, those lacking date are in progress

**CH:** Critical Habitat **P**-Proposed; **D**-Designated

**R:** Remanded

**RV:** Remanded and CH designation vacated; RVp = partially vacated

**RP:** CH Remanded and now repropoed

**T\*:** Proposed DPS

**W\* =** was proposed as threatened but withdrawn 2003

**Note:** Santa Catalina Isl. and San Clemente Isl. Are in L.A. County

| Scientific Name                                          | Common Name                           | Lead | Status | R.P. | CH   | LA | O | SB | Riv | SD | Imp | Fed R  |
|----------------------------------------------------------|---------------------------------------|------|--------|------|------|----|---|----|-----|----|-----|--------|
| <b>PLANTS</b>                                            |                                       |      |        |      |      |    |   |    |     |    |     |        |
| <i>Acanthomintha ilicifolia</i>                          | San Diego thornmint                   | CFWO | T      |      |      |    |   |    |     | X  |     | 63:549 |
| <i>Allium munzii</i>                                     | Munz's onion                          | CFWO | E      |      | D-05 |    |   |    | X   |    |     | 63:549 |
| <i>Ambrosia pumila</i>                                   | San Diego ambrosia                    | CFWO | E      |      |      |    |   |    | X   | X  |     | 64:725 |
| <i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> | Del Mar manzanita                     | CFWO | E      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Arenaria paludicola</i>                               | marsh sandwort                        | VFO  | E      | F 98 |      | X  |   | X  |     |    |     | 58:413 |
| <i>Arenaria ursina</i>                                   | Bear Valley sandwort                  | CFWO | T      |      |      |    |   | X  |     |    |     | 63:490 |
| <i>Astragalus albens</i>                                 | Cushenbury milk-vetch                 | CFWO | E      | D2   | D-02 |    |   | X  |     |    |     | 59:436 |
| <i>Astragalus brauntonii</i>                             | Braunton's milk-vetch                 | VFO  | E      | F 99 |      | X  | X |    |     |    |     | 62:417 |
| <i>Astragalus lentiginosus</i> var. <i>coachellae</i>    | Coachella Valley milk-vetch           | CFWO | E      |      | P-04 |    |   |    | X   |    |     | 63:535 |
| <i>Astragalus magdalenae</i> var. <i>peirsonii</i>       | Peirson's milk-vetch                  | CFWO | T      |      | D-04 |    |   |    |     | X  | X   | 63:535 |
| <i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i> | Ventura marsh milk-vetch              | VFO  | E      |      | D-04 | X  | X |    |     |    |     | 66:279 |
| <i>Astragalus tener</i> var. <i>titi</i>                 | coastal dunes milk-vetch              | VFO  | E      | D    |      | X  |   |    |     | X  |     | 63:431 |
| <i>Astragalus tricarinatus</i>                           | triple-ribbed milk-vetch              | CFWO | E      |      |      |    |   | X  | X   |    |     | 63:535 |
| <i>Atriplex coronata</i> var. <i>notatior</i>            | San Jacinto Valley crownscale         | CFWO | E      |      | P-04 |    |   |    | X   |    |     | 63:549 |
| <i>Baccharis vanessae</i>                                | Encinitas baccharis                   | CFWO | T      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Berberis nevinii</i>                                  | Nevin's barberry                      | CFWO | E      |      |      | X  |   | X  | X   | X  |     | 63:549 |
| <i>Brodiaea filifolia</i>                                | thread-leaved brodiaea                | CFWO | T      |      | P-04 | X  | X | X  | X   | X  |     | 63:549 |
| <i>Castilleja cinerea</i>                                | ash-gray Indian paintbrush            | CFWO | T      |      |      |    |   | X  |     |    |     | 63:490 |
| <i>Castilleja grisea</i>                                 | San Clemente Island Indian paintbrush | CFWO | E      | F 84 |      | X  |   |    |     |    |     | 42:406 |
| <i>Ceanothus ophiochilus</i>                             | Vail Lake ceanothus                   | CFWO | T      |      |      |    |   |    | X   |    |     | 63:549 |
| <i>Cercocarpus traskiae</i>                              | Catalina Island mountain-mahogany     | CFWO | E      |      |      | X  |   |    |     |    |     | 62:426 |
| <i>Chorizanthe orcuttiana</i>                            | Orcutt's spineflower                  | CFWO | E      |      |      |    |   |    |     | X  |     | 61:523 |
| <i>Chorizanthe parryi</i> var. <i>fernandina</i>         | San Fernando Valley spineflower       | VFO  | C      |      |      | X  | X | X  |     |    |     | 64:575 |
| <i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>      | salt marsh bird's beak                | CFWO | E      | F 85 |      | X  | X |    |     | X  |     | 43:448 |
| <i>Deinandra (Hemizonia) conjugens</i>                   | Otay tarplant                         | CFWO | T      | D 03 | D-02 |    |   |    |     | X  |     | 63:549 |
| <i>Delphinium variegatum</i> ssp. <i>kinkiense</i>       | San Clemente Island larkspur          | CFWO | E      | F 84 |      | X  |   |    |     |    |     | 42:406 |
| <i>Dodecahema leptoceras (Centrostegia L.)</i>           | slender-horned spineflower            | CFWO | E      | D    |      | X  |   | X  | X   |    |     | 52:362 |
| <i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>             | Santa Monica Mountains dudleya        | VFO  | T      | F 99 |      | X  | X |    |     |    |     | 62:417 |
| <i>Dudleya stolonifera</i>                               | Laguna Beach live-forever             | CFWO | T      |      |      |    | X |    |     |    |     | 63:549 |
| <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>       | Santa Ana River woolly-star           | CFWO | E      | D    |      |    | X | X  | X   |    |     | 52:362 |
| <i>Erigeron parishii</i>                                 | Parish's daisy                        | CFWO | T      | D2   | D-02 |    |   | X  | X   |    |     | 59:436 |



|                                                      |                                     |      |   |      |      |  |   |   |   |   |        |
|------------------------------------------------------|-------------------------------------|------|---|------|------|--|---|---|---|---|--------|
| <i>Eriogonum kennedyi</i> var. <i>austromontanum</i> | southern mountain wild buckwheat    | CFWO | T |      |      |  |   | X |   |   | 63:490 |
| <i>Eriogonum ovalifolium</i> var. <i>vineum</i>      | Cushenbury buckwheat                | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Eryngium aristulatum</i> var. <i>parishii</i>     | San Diego button celery             | CFWO | E | F 98 |      |  |   |   | X | X | 58:413 |
| <i>Fremontodendron mexicanum</i>                     | Mexican flannelbush                 | CFWO | E |      |      |  |   |   |   | X | 63:549 |
| <i>Hazardia orcuttii</i>                             | Orcutt's hazardia                   | CFWO | C |      |      |  |   |   |   | X | 69:248 |
| <i>Helianthemum greenii</i>                          | Island rush-rose                    | VFO  | T | F 00 |      |  | X |   |   |   | 62:409 |
| <i>Lesquerella kingii</i> ssp. <i>bernardina</i>     | San Bernardino Mountains bladderpod | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Lithophragma maximum</i>                          | San Clemente Island woodland star   | CFWO | E | F 84 |      |  | X |   |   |   | 62:426 |
| <i>Lotus dendroideus</i> var. <i>traskiae</i>        | San Clemente Island lotus           | CFWO | E | F 84 |      |  | X |   |   |   | 42:406 |
| <i>Malacothamnus clementinus</i>                     | San Clemente Island bush mallow     | CFWO | E | F 84 |      |  | X |   |   |   | 42:406 |
| <i>Monardella linoides</i> ssp. <i>viminea</i>       | willowy monardella                  | CFWO | E |      |      |  |   |   |   | X | 63:549 |
| <i>Navarretia fossalis</i>                           | spreading navarretia                | CFWO | T | F 98 | P-04 |  | X |   | X | X | 63:549 |
| <i>Orcuttia californica</i>                          | California Orcutt grass             | CFWO | E | F 98 |      |  | X |   | X | X | 58:413 |
| <i>Oxytheca parishii</i> var. <i>goodmaniana</i>     | Cushenbury oxytheca                 | CFWO | E | D2   | D-02 |  |   | X |   |   | 59:436 |
| <i>Pentachaeta lyonii</i>                            | Lyon's pentachaeta                  | VFO  | E | F 99 |      |  | X |   |   |   | 62:417 |
| <i>Phacelia stellaris</i>                            | Brand's phacelia                    | CFWO | C |      |      |  | X |   | X | X | 69:248 |
| <i>Poa atropurpurea</i>                              | San Bernardino bluegrass            | CFWO | E |      |      |  |   | X |   | X | 63:490 |
| <i>Pogogyne abramsii</i>                             | San Diego mesa mint                 | CFWO | E | F 98 |      |  |   |   |   | X | 43:448 |
| <i>Pogogyne nudiuscula</i>                           | Otay mesa mint                      | CFWO | E | F 98 |      |  |   |   |   | X | 58:413 |
| <i>Rorippa gambellii</i>                             | Gambel's watercress                 | VFO  | E | F 98 |      |  | X | X | X | X | 58:413 |
| <i>Sibara filifolia</i>                              | Santa Cruz Island rock-cress        | CFWO | E |      |      |  | X |   |   |   | 62:426 |
| <i>Sidalcea hickmanii</i> ssp. <i>parishii</i>       | Parish's checkerbloom               | VFO  | C |      |      |  |   | X |   |   |        |
| <i>Sidalcea pedata</i>                               | pedate checker-mallow               | CFWO | E | F 98 |      |  |   | X |   |   | 49:344 |
| <i>Taraxacum californicum</i>                        | California taraxacum                | CFWO | E |      |      |  |   | X |   |   | 63:490 |
| <i>Thelypodium stenopetalum</i>                      | slender-petaled mustard             | CFWO | E | F 98 |      |  |   | X |   |   | 49:344 |
| <i>Trichostema austromontanum compactum</i>          | Hidden Lake bluecurls               | CFWO | T |      |      |  |   |   | X |   | 63:490 |
| <i>Verbesina dissita</i>                             | big-leaved crown beard              | CFWO | T |      |      |  |   | X |   |   | 61:523 |

**INVERTEBRATES**

|                                             |                             |      |   |      |      |  |   |   |   |   |        |
|---------------------------------------------|-----------------------------|------|---|------|------|--|---|---|---|---|--------|
| <i>Branchinecta lynchii</i>                 | vernal pool fairy shrimp    | SAC  | T |      | D-03 |  |   |   | X |   | 59:481 |
| <i>Branchinecta sandiegonensis</i>          | San Diego fairy shrimp      | CFWO | E | F 98 | RP   |  | X |   |   | X | 62:492 |
| <i>Euphilotes battoides allyni</i>          | El Segundo blue butterfly   | CFWO | E | F 98 |      |  | X |   |   |   | 41:220 |
| <i>Euphydryas editha quino</i>              | Quino checkerspot butterfly | CFWO | E | F 03 | D-02 |  | X | X | X | X | 62:231 |
| <i>Glaucopsyche lygdamus palosverdensis</i> | Palos Verdes blue butterfly | CFWO | E | F 84 | D    |  | X |   |   |   | 45:449 |

|                                            |                               |      |   |      |      |   |   |   |   |   |  |        |
|--------------------------------------------|-------------------------------|------|---|------|------|---|---|---|---|---|--|--------|
| <i>Pyrgus ruralis lagunae</i>              | Laguna Mountains skipper      | CFWO | E |      |      |   |   |   |   | X |  | 62:231 |
| <i>Rhaphiomidas terminatus abdominalis</i> | Delhi Sands flower-loving fly | CFWO | E | F 97 |      |   |   | X | X |   |  | 58:498 |
| <i>Streptocephalus woottoni</i>            | Riverside fairy shrimp        | CFWO | E | F 98 | D-05 | X | X |   | X | X |  | 58:413 |

**FISH**

|                                           |                                  |      |   |      |      |   |   |   |   |   |   |        |
|-------------------------------------------|----------------------------------|------|---|------|------|---|---|---|---|---|---|--------|
| <i>Catostomus santaanae</i>               | Santa Ana sucker                 | CFWO | T |      | D-05 | X | X | X | X |   |   | 65:196 |
| <i>Cyprinodon macularius</i>              | desert pupfish                   | R02  | E | F 93 | D    |   |   |   | X | X | X | 51:108 |
| <i>Eucyclogobius newberryi</i>            | tidewater goby                   | VFO  | E | D 04 | D    |   | X |   |   | X |   | 59:549 |
| <i>Gasterosteus aculeatus williamsoni</i> | unarmored threespine stickleback | VFO  | E | F 85 |      | X |   | X |   | X |   | 35:160 |
| <i>Gila bicolor mohavensis</i>            | Mohave tui chub                  | VFO  | E | F 84 |      |   |   | X |   |   |   | 35:160 |
| <i>Gila elegans</i>                       | bonytail chub                    | R06  | E | F 90 | D    |   |   | X | X |   | X | 45:277 |
| <i>Oncorhynchus mykiss</i>                | southern steelhead               | R09  | E |      |      | X | X |   |   | X |   | 62:439 |
| <i>Ptychocheilus lucius</i>               | Colorado squawfish               | R06  | E | F 91 |      |   |   | X | X |   | X | 50:301 |
| <i>Xyrauchen texanus</i>                  | razorback sucker                 | R06  | E |      | D    |   |   | X | X |   | X | 56:549 |

**AMPHIBIANS**

|                             |                             |      |   |      |       |   |   |   |   |   |  |        |
|-----------------------------|-----------------------------|------|---|------|-------|---|---|---|---|---|--|--------|
| <i>Batrachoseps aridus</i>  | desert slender salamander   | CFWO | E | F 82 |       |   |   |   | X |   |  | 38:146 |
| <i>Bufo californicus</i>    | arroyo toad                 | VFO  | E | F 99 | D-05  | X | X | X | X | X |  | 59:648 |
| <i>Rana aurora draytoni</i> | California red-legged frog  | SAC  | T | F 02 | RP-04 | X | X | X | X | X |  | 61:258 |
| <i>Rana muscosa</i>         | mountain yellow-legged frog | CFWO | E |      | P-05  | X |   | X | X |   |  | 64:717 |

**REPTILES**

|                            |                                     |      |   |      |   |   |  |   |   |  |   |        |
|----------------------------|-------------------------------------|------|---|------|---|---|--|---|---|--|---|--------|
| <i>Gopherus agassizii</i>  | desert tortoise                     | VFO  | T | F 94 | D |   |  | X | X |  | X | 55:121 |
| <i>Uma inornata</i>        | Coachella Valley fringe-toed lizard | CFWO | T | F 85 | D |   |  |   | X |  |   | 45:638 |
| <i>Xantusia riversiana</i> | island night lizard                 | CFWO | T | F 84 |   | X |  |   |   |  |   | 42:406 |

**BIRDS**

|                                        |                                |      |    |      |       |   |   |   |   |   |   |        |
|----------------------------------------|--------------------------------|------|----|------|-------|---|---|---|---|---|---|--------|
| <i>Amphispiza belli clementeae</i>     | San Clemente sage sparrow      | CFWO | T  | F 84 |       |   | X |   |   |   |   | 42:406 |
| <i>Brachyramphus marmoratus</i>        | marbled murrelet               | POR  | T  | F 97 | D     |   | X |   |   |   |   | 57:453 |
| <i>Charadrius alexandrinus nivosus</i> | western snowy plover           | SAC  | T  | D 01 | D-05  | X | X |   |   |   | X | 58:128 |
| <i>Charadrius montanus</i>             | mountain plover                | R02  | W* |      |       | X | X | X | X | X | X | 64:758 |
| <i>Coccyzus americanus</i>             | yellow-billed cuckoo           | SAC  | C  |      |       | X | X | X | X | X | X | 66:386 |
| <i>Empidonax traillii extimus</i>      | southwestern willow flycatcher | R02  | E  | D    | RP-04 | X | X | X | X | X | X | 60:107 |
| <i>Gymnogyps californianus</i>         | California condor              | VFO  | E  | F 96 |       | X |   | X |   |   |   | 61:540 |

|                                           |                                |      |    |      |    |   |   |   |   |   |   |        |
|-------------------------------------------|--------------------------------|------|----|------|----|---|---|---|---|---|---|--------|
| <i>Haliaeetus leucocephalus</i>           | bald eagle                     | R03  | T  | F 86 |    | X | X | X | X | X | X | 60:360 |
| <i>Lanius ludovicianus mearnsi</i>        | San Clemente loggerhead shrike | CFWO | E  | F 84 |    | X |   |   |   |   |   | 42:406 |
| <i>Pelecanus occidentalis</i>             | brown pelican                  | VFO  | E  | F 83 |    | X | X | X | X | X | X | 50:494 |
| <i>Phoebastria albatrus</i>               | short-tailed albatross         | JFO  | E  |      |    | X | X |   |   | X |   | 65:466 |
| <i>Polioptila californica californica</i> | coastal California gnatcatcher | CFWO | T* |      | RP | X | X | X | X | X | X | 58:167 |
| <i>Rallus longirostris levipes</i>        | light-footed clapper rail      | CFWO | E  | F 85 |    | X | X |   |   | X |   | 35:160 |
| <i>Rallus longirostris yumanensis</i>     | Yuma clapper rail              | R02  | E  |      |    |   |   |   | X |   | X | 32:400 |
| <i>Sterna antillarum browni</i>           | California least tern          | CFWO | E  | F 85 |    | X | X |   | X | X | X | 35:845 |
| <i>Vireo bellii pusillus</i>              | least Bell's vireo             | CFWO | E  | D 98 | D  | X | X | X | X | X | X | 51:164 |

**MAMMALS**

|                                           |                              |      |      |      |      |   |   |   |   |   |   |        |
|-------------------------------------------|------------------------------|------|------|------|------|---|---|---|---|---|---|--------|
| <i>Dipodomys merriami parvus</i>          | San Bernardino kangaroo rat  | CFWO | E    |      | D-02 | X |   | X | X |   |   | 63:510 |
| <i>Dipodomys stephensi</i>                | Stephens' kangaroo rat       | CFWO | E    | D 97 |      |   |   | X | X | X |   | 53:384 |
| <i>Enhydra lutris nereis</i>              | southern sea otter           | VFO  | T/X* | D 00 |      | X | X |   |   | X |   | 52:297 |
| <i>Ovis canadensis</i>                    | peninsular bighorn sheep     | CFWO | E    | F 00 | D-01 |   |   |   | X | X | X | 63:131 |
| <i>Panthera onca</i>                      | jaguar                       | R02  | E    |      |      |   |   |   | X |   | X | 62:391 |
| <i>Perognathus longimembris pacificus</i> | Pacific pocket mouse         | CFWO | E    | F 98 |      | X | X |   |   | X |   | 59:497 |
| <i>Spermophilus tereticaudus chlorus</i>  | Palm Springs ground squirrel | CFWO | C    |      |      |   |   |   | X |   |   | 64:575 |
| <i>Urocyon littoralis catalinae</i>       | Santa Catalina Island Fox    | CFWO | E    |      |      | X |   |   |   |   |   | 69:103 |

**E:** Listed as a federally endangered species

**T:** Listed as a federally threatened species

**XN:** Experimental population; \* southern sea otter first listed as threatened Jan. 14, 1977 42:2968

**PE:** Proposed as federally endangered

**PT:** Proposed as federally threatened

**C:** Federal candidate species

**R.P.:** Recovery Plan, F= Final, D= Draft, those lacking date are in progress

**CH:** Critical Habitat **P**-Proposed; **D**-Designated

**R:** Remanded

**RV:** Remanded and CH designation vacated; RVp = partially vacated

**RP:** CH Remanded and now repropoed

**T\*:** Proposed DPS

**W\* =** was proposed as threatened but withdrawn 2003

**Note:** Santa Catalina Isl. and San Clemente Isl. Are in L.A. County

BLM Sensitive Species Known or Suspected to Occur within the Palm Springs/South  
Coast Office Area of Responsibility

| <b>Common Name</b>                          | <b>Scientific Name</b>                              |
|---------------------------------------------|-----------------------------------------------------|
| San Diego ambrosia                          | <i>Ambrosia pumila</i>                              |
| Otay manzanita                              | <i>Arctostaphylos otayensis</i>                     |
| Deane's milk-vetch                          | <i>Astragalus deani</i>                             |
| Jacumba milk-vetch                          | <i>Astragalus douglasii</i> var. <i>perstrictus</i> |
| San Diego rattleweed                        | <i>Astragalus oocarpus</i>                          |
| Orcutt's brodiaea                           | <i>Brodiaea orcuttii</i>                            |
| Lakeside ceanothus                          | <i>Ceanothus cyaneus</i>                            |
| Flat-seed spurge                            | <i>Chamaesyce platysperma</i>                       |
| Tecate cypress                              | <i>Cupressus forbesii</i>                           |
| Tecate tarplant                             | <i>Deinandra floribunda</i>                         |
| Many-stemmed dudleya                        | <i>Dudleya multicaulis</i>                          |
| California bedstraw                         | <i>Galium californicum</i> ssp. <i>primum</i>       |
| San Gabriel bedstraw                        | <i>Galium grande</i>                                |
| Orcutt's hazardia                           | <i>Hazardia orcuttii</i>                            |
| Gander's pitcher-sage                       | <i>Lepechinia ganderi</i>                           |
| Borrego Valley pepper-grass                 | <i>Lepidium flavum</i> var. <i>felipense</i>        |
| Little San Bernadino<br>Mountains linanthus | <i>Linanthus maculatus</i>                          |
| Orcutt's linanthus                          | <i>Linanthus orcuttii</i>                           |
| Mountain Spring bush lupine                 | <i>Lupinus excubitus</i> var. <i>medius</i>         |
| Robison monardella                          | <i>Monardella robisonii</i>                         |
| San Diego goldenstar                        | <i>Muilla clevelandii</i>                           |
| Munz cholla                                 | <i>Opuntia munzii</i>                               |
| San Diego current                           | <i>Ribes canthariforme</i>                          |
| Parry's tetracoccus                         | <i>Tetracoccus dioicus</i>                          |
| White-eared pocket mouse                    | <i>Perognathus alticola</i>                         |
| Palm Springs little pocket<br>mouse         | <i>Perognathus longimembris bangsi</i>              |
| Desert bighorn sheep                        | <i>Ovis canandensis nelsoni</i>                     |
| California leaf-nosed bat                   | <i>Macrotus californicus</i>                        |
| Spotted bat                                 | <i>Euderma maculatum</i>                            |
| Western mastiff bat                         | <i>Eumops perotis californicus</i>                  |
| Townsend's western big-eared<br>bat         | <i>Plecotus townsendii</i>                          |
| Pallid bat                                  | <i>Antrozous pallidus</i>                           |
| Fringed myotis                              | <i>Myotis tghaysanodes</i>                          |
| Small-footed myotis                         | <i>Myotis ciliolabrum</i>                           |
| Long-eared myotis                           | <i>Myotis evotis</i>                                |
| Cave myotis                                 | <i>Myotis velifer</i>                               |
| Yuma myotis                                 | <i>Myotis yumanensis</i>                            |
| Burrowing owl                               | <i>Athene cunicularia</i>                           |
| Tricolored blackbird                        | <i>Agelaius tricolor</i>                            |
| Gray vireo                                  | <i>Vireo vicinior</i>                               |
| Bendire's thrasher                          | <i>Toxostoma bendirei</i>                           |
| California horned lizard                    | <i>Phrynosoma coronatum frontale</i>                |
| Flat-tailed horned lizard                   | <i>Phrynosoma macalli</i>                           |
| Colorado Desert fringe-toed<br>lizard       | <i>Uma notata notata</i>                            |
| Coronado skink                              | <i>Eumeces skiltonianus interparietalis</i>         |

|                               |                               |
|-------------------------------|-------------------------------|
| Two-striped garter snake      | <i>Thamnophis hammondi</i>    |
| Southwestern pond turtle      | <i>Emys marmorata pallida</i> |
| San Sebastian leopard frog    | <i>Rana yavapaiensis</i>      |
| Western spadefoot toad        | <i>Scaphiopus hammondi</i>    |
| Thorne's hairstreak butterfly | <i>Callophrys thornei</i>     |

*APPENDIX F*  
*Air Quality Calculations*

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CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

| Assumptions for Combustable Emissions |               |          |         |         |              |
|---------------------------------------|---------------|----------|---------|---------|--------------|
| Type of Construction Equipment        | Num. of Units | HP Rated | Hrs/day | Days/yr | Total hp-hrs |
| Water Truck                           | 2             | 300      | 10      | 160     | 960000       |
| Diesel Road Compactors                | 1             | 100      | 10      | 160     | 160000       |
| Diesel Dump Truck                     | 2             | 300      | 10      | 160     | 960000       |
| Diesel Excavator                      | 1             | 300      | 10      | 160     | 480000       |
| Diesel Hole Cleaners/Trenchers        | 2             | 175      | 10      | 160     | 560000       |
| Diesel Bore/Drill Rigs                | 2             | 300      | 10      | 160     | 960000       |
| Diesel Cement & Mortar Mixers         | 3             | 300      | 10      | 160     | 1440000      |
| Diesel Cranes                         | 2             | 175      | 10      | 160     | 560000       |
| Diesel Graders                        | 1             | 300      | 10      | 160     | 480000       |
| Diesel Tractors/Loaders/Backhoes      | 0             | 100      | 10      | 160     | 0            |
| Diesel Bull Dozers                    | 1             | 300      | 10      | 160     | 480000       |
| Diesel Front End Loaders              | 1             | 300      | 10      | 160     | 480000       |
| Diesel Fork Lifts                     | 3             | 100      | 10      | 160     | 480000       |
| Diesel Generator Set                  | 10            | 40       | 10      | 160     | 640000       |

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



CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

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

| Emission Calculations            |              |               |               |               |                |              |                 |
|----------------------------------|--------------|---------------|---------------|---------------|----------------|--------------|-----------------|
| Type of Construction Equipment   | VOC tons/yr  | CO tons/yr    | NOx tons/yr   | PM-10 tons/yr | PM-2.5 tons/yr | SO2 tons/yr  | CO2 tons/yr     |
| Water Truck                      | 0.465        | 2.190         | 5.808         | 0.434         | 0.423          | 0.783        | 567.045         |
| Diesel Road Paver                | 0.065        | 0.261         | 0.864         | 0.060         | 0.058          | 0.130        | 94.543          |
| Diesel Dump Truck                | 0.465        | 2.190         | 5.808         | 0.434         | 0.423          | 0.783        | 567.045         |
| Diesel Excavator                 | 0.180        | 0.688         | 2.433         | 0.169         | 0.164          | 0.391        | 283.681         |
| Diesel Hole Cleaners\Trenchers   | 0.315        | 1.506         | 3.585         | 0.284         | 0.272          | 0.457        | 330.653         |
| Diesel Bore/Drill Rigs           | 0.635        | 2.423         | 7.564         | 0.529         | 0.518          | 0.772        | 560.380         |
| Diesel Cement & Mortar Mixers    | 0.968        | 3.682         | 11.552        | 0.762         | 0.746          | 1.158        | 840.570         |
| Diesel Cranes                    | 0.272        | 0.802         | 3.530         | 0.210         | 0.204          | 0.450        | 327.197         |
| Diesel Graders                   | 0.185        | 0.719         | 2.502         | 0.175         | 0.169          | 0.391        | 283.681         |
| Diesel Tractors/Loaders/Backhoes | 0.000        | 0.000         | 0.000         | 0.000         | 0.000          | 0.000        | 0.000           |
| Diesel Bull Dozers               | 0.190        | 0.730         | 2.518         | 0.175         | 0.169          | 0.391        | 283.681         |
| Diesel Front End Loaders         | 0.201        | 0.820         | 2.645         | 0.185         | 0.180          | 0.391        | 283.628         |
| Diesel Fork Lifts                | 1.047        | 4.105         | 4.528         | 0.735         | 0.714          | 0.503        | 365.406         |
| Diesel Generator Set             | 0.853        | 2.652         | 4.211         | 0.515         | 0.501          | 0.571        | 414.211         |
| <b>Total Emissions</b>           | <b>5.842</b> | <b>22.766</b> | <b>57.548</b> | <b>4.665</b>  | <b>4.541</b>   | <b>7.174</b> | <b>5201.722</b> |

|                    |           |
|--------------------|-----------|
| Conversion factors |           |
| Grams to tons      | 1.102E-06 |

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION

| Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks |                          |                                   |             |        |                   |                     |                                   |                                  |              |
|------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------|-------------|--------|-------------------|---------------------|-----------------------------------|----------------------------------|--------------|
| Pollutants                                                                                           | Emission Factors         |                                   | Assumptions |        |                   |                     | Results by Pollutant              |                                  |              |
|                                                                                                      | Passenger Cars<br>g/mile | Pick-up<br>Trucks, SUVs<br>g/mile | Mile/day    | Day/yr | Number of<br>cars | Number of<br>trucks | Total<br>Emissions<br>Cars tns/yr | Total Emissions<br>Trucks tns/yr | Total tns/yr |
| VOCs                                                                                                 | 1.36                     | 1.61                              | 120         | 160    | 10                | 10                  | 0.29                              | 0.34                             | 0.63         |
| CO                                                                                                   | 12.4                     | 15.7                              | 120         | 160    | 10                | 10                  | 2.62                              | 3.32                             | 5.95         |
| NOx                                                                                                  | 0.95                     | 1.22                              | 120         | 160    | 10                | 10                  | 0.20                              | 0.26                             | 0.46         |
| PM-10                                                                                                | 0.0052                   | 0.0065                            | 120         | 160    | 10                | 10                  | 0.00                              | 0.00                             | 0.00         |
| PM 2.5                                                                                               | 0.0049                   | 0.006                             | 120         | 160    | 10                | 10                  | 0.00                              | 0.00                             | 0.00         |

| Heavy Duty Trucks Delivery Supply Trucks to Construction Sight |                                    |                                         |             |        |                     |                     |                                   |                                  |              |
|----------------------------------------------------------------|------------------------------------|-----------------------------------------|-------------|--------|---------------------|---------------------|-----------------------------------|----------------------------------|--------------|
| Pollutants                                                     | Emission Factors                   |                                         | Assumptions |        |                     |                     | Results by Pollutant              |                                  |              |
|                                                                | 10,000-19,500<br>lb Delivery Truck | 33,000-60,000<br>lb semi trailer<br>rig | Mile/day    | Day/yr | Number of<br>trucks | Number of<br>trucks | Total<br>Emissions<br>Cars tns/yr | Total Emissions<br>Trucks tns/yr | Total tns/yr |
| VOCs                                                           | 0.29                               | 0.55                                    | 60          | 160    | 2                   | 2                   | 0.01                              | 0.01                             | 0.02         |
| CO                                                             | 1.32                               | 3.21                                    | 60          | 160    | 2                   | 2                   | 0.03                              | 0.07                             | 0.10         |
| NOx                                                            | 4.97                               | 12.6                                    | 60          | 160    | 2                   | 2                   | 0.11                              | 0.27                             | 0.37         |
| PM-10                                                          | 0.12                               | 0.33                                    | 60          | 160    | 2                   | 2                   | 0.00                              | 0.01                             | 0.01         |
| PM 2.5                                                         | 0.13                               | 0.36                                    | 60          | 160    | 2                   | 2                   | 0.00                              | 0.01                             | 0.01         |

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

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

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

CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION

| <b>Fugitive Dust Emissions at New Construction Site (1)</b> |                                                    |                                                    |                  |                                             |                             |
|-------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------|---------------------------------------------|-----------------------------|
| <b>Construction Site</b>                                    | <b>Emission Factor<br/>tons/acre/month<br/>(1)</b> | <b>Total Area-<br/>Construction<br/>Site/month</b> | <b>Months/yr</b> | <b>Total PM-10<br/>Emissions<br/>tns/yr</b> | <b>Total PM-2.5<br/>(2)</b> |
| Fugitive Dust Emissions                                     | 0.11                                               | 42.70                                              | 6                | 28.18                                       | 5.64                        |

1. Environmental Protection Agency (EPA) 2001. Procedures Document for National Emission Inventory, Criteria Air Pollutants 1985-1999. EPA-454/R-01-006. Office of Air Quality Planning and Standards Research Triangle Park NC 27711. Midwest Research Institute, Inventory of Agricultural Tiling, Unpaved Roads, Airstrips and construction Sites., prepared for the U.S. EPA, PB 238-929, Contract 68-02-1437 (November 1977)

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

| <b>Coastruction Site Area</b>       | <b>Demension (ft)</b> |              |              | <b>Total<br/>Acres/month</b> |
|-------------------------------------|-----------------------|--------------|--------------|------------------------------|
|                                     | <b>Length</b>         | <b>Width</b> | <b>Units</b> |                              |
| <b>Proposed Prioject</b>            |                       |              |              |                              |
| Construction Area-New Road          |                       |              |              | 13.70                        |
| Construction Area-Road Improvements |                       |              |              | 29.00                        |
| Low Water Crossings (LWC)           |                       |              |              | -                            |
| <b>Total</b>                        |                       |              |              | <b>42.70</b>                 |

| <b>Conversion Factors</b> | <b>Miles to feet</b> | <b>Acres to sq ft</b> | <b>Sq ft to acres</b> | <b>Sq ft in 0.5<br/>acres</b> |
|---------------------------|----------------------|-----------------------|-----------------------|-------------------------------|
|                           | 5,280                | 0                     | 43,560                | 21,780                        |

CALCULATION SHEET-SUMMARY OF EMISSIONS-PROPOSED ACTION

| Proposed Action Construction Emissions for Criteria Pollutants (tons per year) |             |              |              |              |              |                 |
|--------------------------------------------------------------------------------|-------------|--------------|--------------|--------------|--------------|-----------------|
| Emission source                                                                | VOC         | CO           | NOx          | PM-10        | PM-2.5       | SO <sub>2</sub> |
| Combustable Emissions                                                          | 5.84        | 22.77        | 57.55        | 4.67         | 4.54         | 7.17            |
| Construction Site-fugitive PM-10                                               | NA          | NA           | NA           | 28.18        | 5.64         | NA              |
| Construction Workers Commuter & Trucking                                       | 0.65        | 6.04         | 0.83         | 0.01         | 0.01         | NA              |
| <b>Total emissions</b>                                                         | <b>6.49</b> | <b>28.81</b> | <b>58.38</b> | <b>32.86</b> | <b>10.19</b> | <b>7.17</b>     |
| De minimis threshold                                                           | 100.00      | 100.00       | 100.00       | NA           | NA           | NA              |

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3

| Assumptions for Cumbustable Emissions |               |          |         |         |              |
|---------------------------------------|---------------|----------|---------|---------|--------------|
| Type of Construction Equipment        | Num. of Units | HP Rated | Hrs/day | Days/yr | Total hp-hrs |
| Water Truck                           | 1             | 300      | 10      | 240     | 720000       |
| Diesel Road Compactors                | 1             | 100      | 10      | 240     | 240000       |
| Diesel Dump Truck                     | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Excavator                      | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Hole Cleaners/Trenchers        | 2             | 175      | 10      | 240     | 840000       |
| Diesel Bore/Drill Rigs                | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Cement & Mortar Mixers         | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Cranes                         | 2             | 175      | 10      | 240     | 840000       |
| Diesel Graders                        | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Tractors/Loaders/Backhoes      | 2             | 100      | 10      | 240     | 480000       |
| Diesel Bull Dozers                    | 2             | 300      | 10      | 240     | 1440000      |
| Diesel Front End Loaders              | 1             | 300      | 10      | 240     | 720000       |
| Diesel Fork Lifts                     | 2             | 100      | 10      | 240     | 480000       |
| Diesel Generator Set                  | 10            | 40       | 10      | 240     | 960000       |

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3

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

| Emission Calculations            |              |               |               |               |                |               |                 |
|----------------------------------|--------------|---------------|---------------|---------------|----------------|---------------|-----------------|
| Type of Construction Equipment   | VOC tons/yr  | CO tons/yr    | NOx tons/yr   | PM-10 tons/yr | PM-2.5 tons/yr | SO2 tons/yr   | CO2 tons/yr     |
| Water Truck                      | 0.349        | 1.642         | 4.356         | 0.325         | 0.317          | 0.587         | 425.284         |
| Diesel Road Paver                | 0.098        | 0.391         | 1.296         | 0.090         | 0.087          | 0.196         | 141.814         |
| Diesel Dump Truck                | 0.698        | 3.285         | 8.712         | 0.651         | 0.635          | 1.174         | 850.568         |
| Diesel Excavator                 | 0.540        | 2.063         | 7.300         | 0.508         | 0.492          | 1.174         | 851.044         |
| Diesel Hole Cleaners\Trenchers   | 0.472        | 2.259         | 5.378         | 0.426         | 0.407          | 0.685         | 495.979         |
| Diesel Bore/Drill Rigs           | 0.952        | 3.634         | 11.346        | 0.793         | 0.778          | 1.158         | 840.570         |
| Diesel Cement & Mortar Mixers    | 0.968        | 3.682         | 11.552        | 0.762         | 0.746          | 1.158         | 840.570         |
| Diesel Cranes                    | 0.407        | 1.203         | 5.295         | 0.315         | 0.305          | 0.676         | 490.796         |
| Diesel Graders                   | 0.555        | 2.158         | 7.506         | 0.524         | 0.508          | 1.174         | 851.044         |
| Diesel Tractors/Loaders/Backhoes | 0.979        | 4.343         | 3.819         | 0.725         | 0.704          | 0.503         | 365.564         |
| Diesel Bull Dozers               | 0.571        | 2.190         | 7.554         | 0.524         | 0.508          | 1.174         | 851.044         |
| Diesel Front End Loaders         | 0.302        | 1.230         | 3.967         | 0.278         | 0.270          | 0.587         | 425.443         |
| Diesel Aerial Lifts              | 1.047        | 4.105         | 4.528         | 0.735         | 0.714          | 0.503         | 365.406         |
| Diesel Generator Set             | 1.280        | 3.978         | 6.316         | 0.772         | 0.751          | 0.857         | 621.316         |
| <b>Total Emissions</b>           | <b>9.218</b> | <b>36.162</b> | <b>88.925</b> | <b>7.427</b>  | <b>7.222</b>   | <b>11.607</b> | <b>8416.441</b> |

|                    |           |
|--------------------|-----------|
| Conversion factors |           |
| Grams to tons      | 1.102E-06 |

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3

| Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks |                          |                                   |             |        |                   |                     |                                   |                                  |              |
|------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------|-------------|--------|-------------------|---------------------|-----------------------------------|----------------------------------|--------------|
| Pollutants                                                                                           | Emission Factors         |                                   | Assumptions |        |                   |                     | Results by Pollutant              |                                  |              |
|                                                                                                      | Passenger Cars<br>g/mile | Pick-up<br>Trucks, SUVs<br>g/mile | Mile/day    | Day/yr | Number of<br>cars | Number of<br>trucks | Total<br>Emissions<br>Cars tns/yr | Total Emissions<br>Trucks tns/yr | Total tns/yr |
| VOCs                                                                                                 | 1.36                     | 1.61                              | 120         | 240    | 15                | 15                  | 0.65                              | 0.77                             | 1.41         |
| CO                                                                                                   | 12.4                     | 15.7                              | 120         | 240    | 15                | 15                  | 5.90                              | 7.47                             | 13.38        |
| NOx                                                                                                  | 0.95                     | 1.22                              | 120         | 240    | 15                | 15                  | 0.45                              | 0.58                             | 1.03         |
| PM-10                                                                                                | 0.0052                   | 0.0065                            | 120         | 240    | 15                | 15                  | 0.00                              | 0.00                             | 0.01         |
| PM 2.5                                                                                               | 0.0049                   | 0.006                             | 120         | 240    | 15                | 15                  | 0.00                              | 0.00                             | 0.01         |

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

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

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

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

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3

|                    |             |
|--------------------|-------------|
| Conversion factor: | gms to tons |
|                    | 0.000001102 |



CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3

| Fugitive Dust Emissions at New Construction Site. |                                           |                                           |           |                                    |                     |
|---------------------------------------------------|-------------------------------------------|-------------------------------------------|-----------|------------------------------------|---------------------|
| Construction Site                                 | Emission Factor<br>tons/acre/month<br>(1) | Total Area-<br>Construction<br>Site/month | Months/yr | Total PM-10<br>Emissions<br>tns/yr | Total PM-2.5<br>(2) |
| Fugitive Dust Emissions                           | 0.11                                      | 18.55                                     | 12        | 24.48                              | 4.90                |

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

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

| Costruction Site Area<br>Proposed Priject | Demension (ft) |       |       | Total<br>Acres/month |
|-------------------------------------------|----------------|-------|-------|----------------------|
|                                           | Length         | Width | Units |                      |
| Construction Area-Fence                   | 2,640          | 130   | 1     | 7.88                 |
| Construction Area-New Road                | 5,280          | 28    | 1     | 3.39                 |
| Construction Area-Road Improvements       | 5,280          | 60    | 1     | 7.27                 |
| Low Water Crossings (LWC)                 | 40             | 25    | 1     | 0.02                 |
| <b>Total</b>                              |                |       |       | <b>18.55</b>         |

| Conversion Factors | Miles to feet | Acres to sq ft | Sq ft to acres | Sq ft in 0.5<br>acres |
|--------------------|---------------|----------------|----------------|-----------------------|
|                    | 5280          | 0.000022957    | 43560          | 21780                 |

| Assumptions                       | Sections/day | Length of Section<br>(ft) | Length/day (ft) | Days/Month | Length/Month<br>(ft) |
|-----------------------------------|--------------|---------------------------|-----------------|------------|----------------------|
| Fencing installed per day (1)     | 11           | 10                        | 110             | 24         | 2640                 |
| Length of fence/month (miles)     | 0.50         |                           |                 |            |                      |
| Length of new road per month      | 1            |                           |                 |            |                      |
| Length of road improvements/month | 1            |                           |                 |            |                      |

1. OBP reported that construction crew complete 22 sections of fence per day. Alternative 3 requires 2 fences to be built per section and there twice as long to complete per section. Therefore, instead of assuming that 22 sections of fence will be completed per day, we are assuming th fence will be completed per day.

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3

|                    |
|--------------------|
| <b>Miles/Month</b> |
| 0.50               |

efore will take  
at 11 sections of

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 3

| <b>Proposed Action Construction Emissions for Criteria Pollutants (tons per year)</b> |              |              |              |              |              |                 |
|---------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|-----------------|
| Emission source                                                                       | VOC          | CO           | NOx          | PM-10        | PM-2.5       | SO <sub>2</sub> |
| Combustable Emissions                                                                 | 9.22         | 36.16        | 88.92        | 7.43         | 7.22         | 11.61           |
| Construction Site-fugitive PM-10                                                      | NA           | NA           | NA           | 24.48        | 4.90         | NA              |
| Construction Workers Commuter & Trucking                                              | 1.44         | 13.52        | 1.59         | 0.02         | 0.02         | NA              |
| <b>Total emissions</b>                                                                | <b>10.66</b> | <b>49.68</b> | <b>90.52</b> | <b>31.93</b> | <b>12.14</b> | <b>11.61</b>    |
| De minimis threshold                                                                  | 100.00       | 100.00       | 100.00       | NA           | NA           | 100.00          |