



**DRAFT**

**ENVIRONMENTAL ASSESSMENT  
FOR THE PROPOSED CONSTRUCTION, OPERATION, AND MAINTENANCE  
OF TACTICAL INFRASTRUCTURE  
U.S. BORDER PATROL TUCSON SECTOR, ARIZONA**



**JANUARY 2008**

## ABBREVIATIONS AND ACRONYMS

ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
AMA	Active Management Area
ANHP	Arizona Natural Heritage Program
AO	Area of Operation
BLM	Bureau of Land Management
BMP	Best Management Practices
CAA	Clean Air Act
CBP	Customs and Border Protection
CEQ	Council on Environmental Quality
CFE	Comision Federal de Electricidad
CFR	Code of Federal Regulations
CNF	Coronado National Forest
CWA	Clean Water Act
dBA	A-weighted decibels
DHS	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
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GSRC	Gulf South Research Corporation
HPS	high pressure sodium lights
IA	Illegal Alien
INS	Immigration and Naturalization Service
IIRIRA	Immigration Reform and Illegal Immigrant Responsibility Act
I-19	Interstate-19
JTF-6	Joint Task Force-6 (now JTF-N)
JTF-N	Joint Task Force North (formerly JTF-6)
MD	Management Directive
MBTA	Migratory Bird Treaty Act
MSO	Mexican spotted owl
(mWh)	Megawatt Hour
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NPS	National Park Service
P.L.	Public Law

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**DRAFT FINDING OF NO SIGNIFICANT IMPACT**  
**For The Proposed Construction, Operation, and Maintenance**  
**Of Tactical Infrastructure**  
**U.S. Border Patrol**  
**Tucson Sector, Arizona**

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**PROJECT HISTORY:** United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP), a component of U.S. Department of Homeland Security (DHS). USBP’s priority mission is to prevent the entry of terrorists and terrorist weapons and to enforce the laws that protect the U.S. homeland by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S.

During recent years, illegal aliens (IAs) and illegal entry into the U.S. along the U.S.-Mexico border in southern Arizona has been a severe problem. Consequently, USBP focused on accomplishing its goal of effective control of the border, and is working to implement the right combination of personnel, technology and infrastructure, and thus deter illegal entries through improved enforcement. Deterrence is achieved when USBP has the ability to create and convey the immediate, credible, and absolute certainty of detection and apprehension. As such, tactical infrastructure (TI) components, such as fencing and roads, are a critical element in the current enforcement strategy. Developing trends, such as the recognition of environmental preservation concerns and the increase of criminal cross-border activities, continue to pose a border enforcement challenge and compound the need for tactical infrastructure along the international border.

USBP Tucson Sector’s, Nogales Station, proposes to construct 7.6 miles of primary pedestrian fence and unimproved road along the U.S.-Mexico border on the east side of the DeConcini Port-of-Entry (POE), Nogales Arizona. Past projects have resulted in a total of 3 miles of pedestrian fence construction in between and on both sides of the Mariposa and DeConcini POEs. More recently in 2007, 2.4 miles of primary pedestrian fence was approved for construction west of the Mariposa POE. In addition, all-weather patrol road with lighting is currently under construction approximately 1 mile east of the DeConcini POE and overlapping with 0.5 mile of the western-most portion of the current project. The all-weather patrol road and lighting were addressed in the May 2007 Finding of No Significant Impact (FONSI) and *Supplemental Environmental Assessment (EA) and for Nogales Infrastructure Improvements, USBP, Tucson Sector, Nogales Station, Santa Cruz County, Arizona*. USBP has also installed 2.7 miles of temporary vehicle barriers (TVBs) along the border in several areas to the east and west of the Mariposa and DeConcini POEs. Installation of these TVBs was addressed in the December 2004 FONSI and *Final EA for Temporary Vehicle Barriers, Tucson Sector, Pima Santa Cruz, and Cochise Counties, Arizona*.

Due to the recent Federal legislation and shifts in IA traffic, CBP/USBP recognized a need to construct additional primary pedestrian fence. An EA is needed to address the impacts of this additional fence construction. Due to the similarity and proximity of past

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1 projects to the proposed project, applicable information from several EAs within and  
2 near the current project, is incorporated by reference to the extent practicable.

3  
4 **PROJECT LOCATION:** The project corridor is located in southern Santa Cruz County,  
5 Arizona, in USBP Nogales Station's Area of Operation, along the U.S.-Mexico border. It  
6 begins approximately 1 mile east of the DeConcini POE and extends eastward for a  
7 total of 7.6 miles. The project corridor lies entirely within lands that are privately owned.

8  
9 **PURPOSE AND NEED:** The purpose of the Proposed Action is to increase border  
10 security within USBP Tucson Sector through the construction, operation, and  
11 maintenance of TI in the form of fences, roads, and supporting technological and  
12 tactical assets. USBP Tucson Sector has identified areas along the border that  
13 experience high levels of illegal cross-border activity. This activity occurs in areas that  
14 are remote and not easily accessed by USBP agents, near POEs where concentrated  
15 populations might live on either side of the border, or have quick access to U.S.  
16 transportation routes.

17  
18 The Proposed Action is needed to provide USBP agents with the tools necessary to  
19 strengthen their control of the U.S. borders between the ports of entry in the USBP  
20 Tucson Sector. The Proposed Action would deter illegal cross-border activities within  
21 the USBP Tucson Sector by improving enforcement, preventing terrorists and terrorists'  
22 weapons from entering the U.S., reducing the flow of illegal drugs, and enhancing the  
23 response time, while providing a safer work environment for USBP agents.

24  
25 **ALTERNATIVES:** Three alternatives were considered: The No Action Alternative, the  
26 Proposed Action Alternative, and the Secure Fence Act Alternative.

27  
28 **No Action Alternative:** Under the No Action Alternative, the fence would not be  
29 constructed and 2.7 miles of TVBs and 0.5 mile of all-weather patrol road with lighting  
30 would remain in place. The No Action Alternative would serve as a baseline against  
31 which the impacts of the Proposed Action Alternative and the Secure Fence Act  
32 Alternative can be evaluated.

33  
34 **Proposed Action Alternative:** The Proposed Action Alternative is to construct primary  
35 pedestrian fence starting 1 mile east of the DeConcini POE and extending eastward for  
36 a total of 7.6 miles. Primary pedestrian fence would be installed approximately 3 feet  
37 north of the U.S.-Mexico border. Tucson Sector proposes to construct a bollard style  
38 fence design due to its low maintenance requirements, durability, and structural  
39 integrity. Regardless of the fence design selected for construction, all fence designs  
40 must meet the specific preliminary design performance measures that dictate that the  
41 fence must: extend 15 to 18 feet above ground and 3 to 6 feet below ground; be  
42 capable of withstanding an impact from a 10,000 pound gross weight vehicle traveling  
43 at 40 miles per hour; be semi-transparent, as dictated by operational need; be designed

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1 to survive extreme climate changes of a desert environment; be designed to allow  
2 movement of small animals from one side to the other; and not impede the natural flow  
3 of water.

4  
5 A maintenance road would be constructed adjacent to the border to allow installation of  
6 the fence; therefore, construction would encompass the entire 60-foot wide project  
7 corridor. TVBs currently within the project corridor would be relocated to other areas of  
8 the U.S.-Mexico border or dismantled and recycled.

9  
10 In order to facilitate operation of equipment, staging of materials, and construction  
11 access to the project corridor, four temporary staging areas and three existing access  
12 roads would be used.

13  
14 **Secure Fence Act Alternative:** The Secure Fence Act of 2006 (Public Law. 109-367)  
15 authorized the construction of at least two layers of reinforced fencing along the U.S.-  
16 Mexico border. Under this alternative, two layers of fence, known as primary and  
17 secondary pedestrian fence, would be constructed approximately 130 feet apart along  
18 the same route as the Proposed Action Alternative. The project corridor would be large  
19 enough to accommodate all TI components, construction activities, access, equipment  
20 staging, and future maintenance between the primary and secondary pedestrian fences.  
21 The design of the fence and lighting would be similar to the Proposed Action Alternative.

22  
23 **ENVIRONMENTAL CONSEQUENCES:** The Proposed Action Alternative meets the  
24 strategic needs and objectives of CBP. Therefore, the Proposed Action Alternative is  
25 considered CBP/USBP's preferred alternative, as it appears to be the most strategically  
26 effective, and strikes the best balance between CBP/USBP enforcement needs and  
27 protection of sensitive resources. The following description of environmental  
28 consequences and mitigation are based on implementation of the Proposed Action  
29 Alternative.

30  
31 Rights-of-entry were not obtainable within the required schedule for this EA; therefore  
32 pedestrian surveys of the project corridor were not conducted. Consequently, definitive  
33 statements about specific resources are based on a combination of a literature review, a  
34 map reconnaissance, and past surveys conducted within and near the project corridor  
35 on similar USBP projects.

36  
37 The Proposed Action Alternative would result in direct impacts to land use, soils, water  
38 resources, vegetation, wildlife, threatened and endangered species, noise levels, and  
39 aesthetic and visual resources within the project corridor and the Region of influence  
40 (ROI). However, all of these potential impacts would be insignificant or minimized  
41 through the use of mitigation measures and/or compensation. Furthermore, many of  
42 the adverse impacts would be offset as a result of beneficial effect of reduced illegal  
43 activity within the ROI.

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1  
2 Land use impacts would result from the loss of 55 acres of rangeland, yet would be offset  
3 by the benefits of greater protection of lands north of the project corridor. Land owners  
4 would be compensated at fair market values for their property. The loss of 55 acres of  
5 common soils would be insignificant to the biological productivity within the ROI.  
6 Applicable Section 404/401 and regulatory floodplain permit(s) would mitigate and/or  
7 compensate minor impacts to 0.3 acre of potentially jurisdictional Waters of the U.S  
8 (WUS) and 3 acres of floodplains. The loss of approximately 52 acres of general  
9 vegetation and wildlife habitat would be insignificant to the ROI. The loss of 3 acres of  
10 sensitive riparian habitat associated with 0.3 acre of aquatic habitat would be minimized  
11 through appropriate mitigation, and/or compensation. The potential to adversely impact  
12 Federally-listed species and non-Federal special status species would be determined  
13 through Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS).  
14 Aesthetic resources would be altered by the presence of primary pedestrian fence;  
15 however, beneficial impacts resulting from the reduction of illegal traffic would offset any  
16 adverse impacts. Mitigation measures through Section 106 consultation would include  
17 avoidance and/or monitoring on any known cultural resource sites; therefore, no adverse  
18 impacts would occur to known eligible cultural resources sites.

19  
20 The Proposed Action Alternative would also result in temporary impacts. An additional 26  
21 acres would be temporarily impacted through the use of staging areas. This would result  
22 in a temporary, negligible to minor impact to soils and vegetation. A one-time water  
23 usage (7.6 acre-feet) for construction would result in a negligible to minor impact to the  
24 availability of water in the ROI. Minor increases in fugitive dust emissions would be  
25 temporary and not result in permanent air quality impacts. Increases in vehicle-related  
26 noise levels would likely occur within residential areas during construction. Any increase  
27 in noise would be temporary and minor, and would not result in substantial permanent  
28 increases in ambient noise levels.

29  
30 The potential exists for IA traffic to shift to other locations without TI and could result in  
31 indirect adverse impacts to resources outside of the project corridor. However, because  
32 the proposed TI would act as a force multiplier allowing USBP to deploy agents  
33 efficiently and effectively to areas lacking TI; these indirect impacts would be reduced.  
34 Indirect beneficial impacts to all resources would result from the reduction in illegal  
35 traffic due to implementation of the Proposed Action Alternative.

36  
37 Through the use of mitigation measures addressed in Section 5 of this EA, no  
38 significant adverse effects to the natural or human environment, as defined in 40 Code  
39 of Federal Regulation, Section 1508.27 of the Council on Environmental Quality's  
40 Regulations for Implementing the National Environmental Policy Act, are expected upon  
41 the completion of the Proposed Action Alternative.

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1 **MITIGATION:** Mitigation measures are presented for each resource category that would  
2 be potentially affected. Many of these measures have been incorporated as standard  
3 operating procedures by USBP on past projects. It is USBP's policy to mitigate adverse  
4 impacts through the sequence of avoidance, minimization, and finally, compensation.  
5 These environmental design measures will be incorporated into the current Project  
6 Management Plan to be carried forward. Mitigation measures to be implemented by  
7 USBP as part of the Proposed Action Alternative of this EA include:

8  
9 **General Construction Activities:** Best Management Practices (BMPs) will be  
10 implemented as standard operating procedures during all construction activities. These  
11 BMPs will include proper handling, storage, and disposal of hazardous and regulated  
12 materials. To minimize potential impacts from hazardous and regulated materials, all  
13 fuels, petroleum oils and liquids, and solvents will be collected and stored in tanks or  
14 drums within a secondary containment system that consists of an impervious floor and  
15 bermed sidewalls capable of containing the volume of the largest container stored therein.  
16 The refueling of machinery will be completed following accepted guidelines, and all  
17 vehicles will have drip pans during storage to contain minor spills and drips. Although it  
18 will be unlikely for a major spill to occur, any spill of reportable quantities will be contained  
19 immediately within an earthen dike, and the application of an absorbent (e.g., granular,  
20 pillow, sock, etc.) will be used to absorb and contain the spill. Furthermore, spillage of  
21 any petroleum liquids (e.g., fuel) or material listed in 40 Code of Federal Regulations  
22 (CFR) 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the  
23 appropriate Federal and state agencies. Reportable quantities of those substances listed  
24 on 40 CFR 302 Table 302.4 will be included as part of a Spill Prevention, Control and  
25 Countermeasures Plan (SPCCP). A SPCCP will be in place prior to the start of  
26 construction, and all personnel will be briefed on the implementation and responsibilities  
27 of this plan.

28  
29 All waste oil and solvents will be recycled, if possible. All non-recyclable hazardous and  
30 regulated wastes will be collected, characterized, labeled, stored, transported, and  
31 disposed of in accordance with all Federal, state, and local regulations, including proper  
32 waste manifesting procedures.

33  
34 Solid waste receptacles will be maintained at staging areas, and non-hazardous solid  
35 waste (trash and waste construction materials) will be collected and deposited in on-site  
36 receptacles. Solid waste will be collected and disposed of by a local waste disposal  
37 contractor.

38  
39 Soils: Vehicular traffic associated with the construction activities will remain on  
40 established roads to the maximum extent practicable. Upon completion of the  
41 construction activities, rehabilitation of the staging areas will include loosening compacted  
42 soils, re-vegetating or the distribution of geological materials (i.e., boulders and rocks)  
43 over the disturbed area to reduce erosion while allowing the area to naturally vegetate.

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1 Erosion control measures and appropriate BMPs, as required and promulgated through a  
2 Stormwater Pollution Prevention Plan (SWPPP), will be implemented before, during, and  
3 after construction activities.

4  
5 Road construction and maintenance will avoid, to the extent practicable, making wind  
6 rows with the soils once grading activities are completed. Any excess soils not used  
7 during construction of the proposed TI will be distributed throughout the project corridor.

8  
9 Ground/Surface Water Resources and Waters of the U.S: Verification of the existence  
10 of jurisdictional WUS will be required. As appropriate, applicable Department of the  
11 Army Section 404 permit procedures, including Section 401 Water Quality Certifications,  
12 will be completed prior to initiation of the construction activities within drainages.  
13 Mitigation and compensation measures will be implemented, as appropriate, through  
14 the permit process to ensure no net loss of WUS functions and that surface water  
15 conveyance is not impeded.

16  
17 A SWPPP will be prepared and submitted to Arizona Department of Water Resources as  
18 part of the National Pollutant Discharge Elimination System permit process. The SWPPP  
19 will identify BMPs that will be implemented before, during, and after construction.

20  
21 Floodplains: In order to ensure compliance with EO 11988 and local floodplain  
22 regulations, coordination with the Santa Cruz Public Works Department and USIBWC will  
23 be required to ensure that construction activities do not adversely impact floodplains.  
24 The bid/build contractor will be required to acquire the appropriate floodplain permits to  
25 ensure fence and road design remain in compliance with local floodplain regulations  
26 *Santa Cruz Floodplain and Erosion Hazard Management Ordinance, No. 2001-03*.  
27 Information required for submittal of floodplain permit applications will include but are not  
28 limited to: specific site plans; an engineering Hydrology and Hydrologic analysis that  
29 incorporates fence and road designs; and debris clearing maintenance plan. As deemed  
30 necessary to ensure that the provisions of the local floodplain management ordinance are  
31 met, the fence and road design may require subsequent alterations prior to construction.  
32 In addition to local permit requirements, the NEPA process will be used as a tool to  
33 ensure that an eight-step floodplain management planning process is conducted to  
34 ensure compliance with EO 11988.

35  
36 Vegetation: Native seeds or plants, which are compatible with the enhancement of  
37 protected species, will be used to the extent feasible, as required under Section 7(a)(1) of  
38 the ESA, to revegetate staging areas. In addition, organic material will be collected and  
39 stockpiled during construction to be used for erosion control after construction while the  
40 areas naturally revegetate. Construction equipment will be cleaned at the temporary  
41 staging areas, in accordance with BMPs, prior to entering and departing the project  
42 corridor, to minimize the spread and establishment of non-native invasive plant species.

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1 Wildlife and Aquatic Resources: Migratory bird nesting surveys will be conducted prior to  
2 construction if clearing and grubbing activities take place during the breeding/nesting  
3 season (typically March 1 through September 1) to ensure that construction activities do  
4 not result in the take of nesting migratory birds. Night time construction activities will be  
5 conducted only when absolutely necessary for adequate concrete pours or, in the case of  
6 an accelerated construction schedule, to meet Federal mandates. Applicable,  
7 Department of the Army Section 404 permit procedures will serve the purpose of  
8 minimizing impacts, protecting both water resources and aquatic habitats.

9  
10 Threatened and Endangered Species: CBP/USBP are conducting Section 7  
11 consultation with the USFWS on affects to the jaguar (*Panthera onca*), lesser long-  
12 nosed bat (*Leptonycteris curasoae yerbabuena*), and Pima pineapple cactus  
13 (*Coryphantha scheeri* var. *robustispina*) within Tucson Sector. Through early and  
14 ongoing coordination with USFWS, a more definitive list of protected species with the  
15 potential to occur within the project corridor will be developed. Surveys will be  
16 completed in order to confirm/refute the presence or absence of these species or  
17 suitable habitat that could support these species. If such surveys reveal evidence of the  
18 presence of protected species, appropriate BMPs (as presented in Appendix D of the  
19 referenced EA) would be implemented. As appropriate, CBP/USBP will implement any  
20 conservation recommendations identified as a result of the consultation process.  
21 Coordination with Arizona Game and Fish Department staff regarding avoidance and/or  
22 conservation measures, as appropriate, to minimize adverse impact to state-protected  
23 species, will occur prior to the start of construction.

24  
25 Cultural Resources: Pedestrian surveys and completion of the Section 106 process with  
26 Arizona SHPO, as well as coordination with the USIBWC, will be completed prior to  
27 construction in order to document the presence or absence of historic properties. Upon  
28 completion of the Section 106 process and implementation of any requirements identified  
29 in that coordination, all construction and construction activities will be kept within  
30 previously surveyed areas.

31  
32 A temporary barrier will be placed around the monuments during construction activities. If  
33 any cultural material is discovered during the construction efforts, the Arizona State  
34 Historic Preservation Officer (SHPO) will be notified immediately and all activities halted  
35 until a qualified archaeologist assesses the cultural remains. Based on past CBP actions,  
36 USIBWC will be allowed maintenance access to the monuments, and the line of sight  
37 view from monument to monument would not be obstructed.

38  
39 Air Quality: Standard construction BMPs, such as routine watering of the construction  
40 and access roads, will be used to control fugitive dust during the construction phases of  
41 the proposed project. Additionally, all construction equipment and vehicles will be  
42 required to be kept in good operating condition to minimize exhaust emissions.

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1 **Noise:** Standard noise attenuation equipment, such as mufflers, shall be used on all  
2 construction equipment and vehicles, and will be maintained in good operating condition,  
3 free from leaks. Because of the increased noise sensitivity along transport routes,  
4 transport operations will be limited to daylight hours and weekdays for transportation of  
5 heavy equipment and materials. Deviations to this schedule will be coordinated with the  
6 Santa Cruz County Public Works Department-Transportation Division on a case by case  
7 basis.

8  
9 **Hazardous Materials:** Prior to start of construction activities, a site survey or Phase 1  
10 environmental site assessment of the project corridor will be conducted to confirm the  
11 presence of existing hazardous material. As appropriate, any *Recognized*  
12 *Environmental Conditions* will be removed and the site cleaned as appropriate.

13  
14 **Roadways and Traffic:** Prior to the start of construction activities, the bid/build  
15 contractor will coordinate and comply with transportation requirements and safety  
16 measures identified by the Santa Cruz County Public Works Department-Transportation  
17 Division to ensure safe and efficient movement of equipment and materials to the  
18 project corridor.

19  
20 **FINDING:** Despite the fact that rights-of-entry could not be obtained and pedestrian field  
21 surveys could not be conducted, the analysis within the referenced EA remains reliable.  
22 Therefore, based on the results of the referenced EA, a commitment to conduct pre-  
23 construction surveys, and a commitment to perform the appropriate mitigation measures  
24 and BMPs as part of the Proposed Action Alternative, it has been concluded that the  
25 Proposed Action Alternative will have no significant effect on the environment. No further  
26 environmental impact analysis is warranted.

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31 \_\_\_\_\_  
32 Robert F. Janson  
33 Acting Executive Director  
34 Asset Management  
35 U.S. Customs and Border Protection

\_\_\_\_\_ Date

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39  
40 \_\_\_\_\_  
41 Craig Weinbrenner  
42 Assistant Chief Patrol Agent  
43 Office of Border Patrol  
Tucson Sector Headquarters

\_\_\_\_\_ Date



## COVER SHEET

### DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE U.S. BORDER PATROL TUCSON SECTOR, ARIZONA

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

**Cooperating Agencies:** U.S. Army Corps of Engineers (USACE) Los Angeles District and the U.S. Section of the International Boundary and Water Commission (USIBWC).

**Affected Location:** U.S.-Mexico international border in Santa Cruz County, Arizona.

**Proposed Action:** The Proposed Action includes the construction, maintenance, and operation of tactical infrastructure, to include a primary pedestrian fence and an unimproved construction/maintenance road, starting 1.0 mile east of the DeConcini Port of Entry in Nogales, Arizona and extending eastward for a total of 7.6 miles. Primary pedestrian fence would be installed approximately 3 feet north of the U.S.-Mexico border and the construction and maintenance road would be constructed parallel to the proposed fence.

**Report Designation:** Draft Environmental Assessment (EA).

**Abstract:** CBP proposes to construct, maintain, and operate approximately 7.6 miles of tactical infrastructure, including fence, and unimproved road along the U.S.-Mexico international border in Santa Cruz County, Arizona. The proposed tactical infrastructure would encroach on the first 60 feet of U.S. land north of the border comprised of parcels held by multiple private owners.

The EA will analyze and document potential environmental consequences associated with the Proposed Action. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental or socioeconomic impacts, then a Finding of No Significant Impact (FONSI) will be prepared. If potential environmental concerns arise that cannot be mitigated to insignificance, a Notice of Intent to prepare an Environmental Impact Statement (EIS) would be required.

Throughout the National Environmental Policy Act (NEPA) process, the public may obtain information concerning the status and progress of the Proposed Action and the EA via the project Web site at [www.BorderFenceNEPA.com](http://www.BorderFenceNEPA.com); by emailing [information@BorderFenceNEPA.com](mailto:information@BorderFenceNEPA.com); 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: (225) 761-8077.

You may submit written comments to CBP by contacting the SBI Tactical Infrastructure Program Office. To avoid duplication, please use only one of the following methods:

- (a) Electronically through the Web site at *www.BorderFenceNEPA.com*
- (b) By email to [TSEAComments@BorderFenceNEPA.com](mailto:TSEAComments@BorderFenceNEPA.com)
- (c) By Mail 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
- (d) By fax to (757) 761-8077.

#### **Privacy Notice**

Your comments on this document are due by February 16, 2008. Comments will normally be addressed in the EA and made available to the public. Any personal information included in comments will therefore be publicly available.

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**January 2008**

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Lead Agency: U.S. Department of Homeland Security  
U.S. Customs & Border Protection  
Office of Finance, Asset Management  
1300 Pennsylvania Ave NW  
Washington, D.C. 20229

Point of Contact: George Hutchinson  
U.S. Department of Homeland Security  
U.S. Customs and Border Protection, Headquarters  
1300 Pennsylvania Ave NW, Room 3.4-D  
Washington, D.C. 20229

Cooperating Agencies: U.S. International Boundary and Water Commission  
U.S. Army Corps of Engineers-Los Angeles District





**EXECUTIVE SUMMARY**

**BACKGROUND**

United States (U.S.) Customs and Border Protection (CBP) and U.S. Border Patrol (USBP) propose to construct, operate, and maintain approximately 7.6 miles of tactical infrastructure (TI) along the U.S.-Mexico International border in Santa Cruz County, Arizona east of the City of Nogales, Arizona. TI would consist of primary pedestrian fence, construction/maintenance road, and improvements to existing roads within the USBP's Tucson Sector. The proposed TI would be located within 60 feet of the U.S.-Mexico border, all of which is privately owned. The Proposed Action would occur within the USBP Nogales Station's Area of Operations.

**PURPOSE AND NEED FOR THE PROPOSED PROJECT**

The purpose of the Proposed Action is to increase border security within USBP Tucson Sector through the construction, operation, and maintenance of TI in the form of fences, roads, and supporting technological and tactical assets. USBP Tucson Sector has identified two distinct areas along the border that experience high levels of illegal cross-border activity. This activity occurs in areas that are remote and not easily accessed by USBP agents, near Ports of Entry (POEs) where concentrated populations might live on either side of the border or have quick access to U.S. transportation routes.

The Proposed Action is needed to provide USBP agents with the tools necessary to strengthen their control of the U.S. borders between the POEs in the USBP Tucson Sector. The Proposed Action would deter illegal cross-border activities within the USBP Tucson Sector by improving enforcement, preventing terrorists and terrorist weapons from entering the U.S., reducing the flow of illegal drugs, and enhancing response time, while providing a safer work environment for USBP agents.

**PROPOSED ACTION ALTERNATIVE (PREFERRED ALTERNATIVE)**

The Proposed Action Alternative is to construct primary pedestrian fence starting 1 mile east of the DeConcini POE and extending eastward for a total of 7.6 miles. Primary pedestrian fence would be installed approximately 3 feet north of the U.S.-Mexico border. USBP proposes to construct a bollard style fence. The performance measures of such a design dictate that the fence must: extend 15 to 18 feet above ground and 3 to 6 feet below ground; be capable of withstanding an impact from a 10,000 pound gross weight vehicle traveling at 40 miles per hour; be semi-transparent, as dictated by operational need; be designed to survive extreme climate changes of a desert environment; be designed to allow movement of small animals from one side to the other; and not impede the natural flow of water.

A maintenance road would be constructed adjacent to the border to allow installation of the fence; therefore, construction of the Proposed Action Alternative would encompass the entire 60-foot wide project corridor. Temporary vehicle barriers currently within the project corridor would be relocated to other areas of the U.S.-Mexico border or

1 dismantled and recycled. In order to facilitate operation of equipment, staging of  
2 materials, and construction access to the project corridor, four temporary staging areas  
3 and three existing access roads would be used.

4  
5 The Council of Environmental Quality's implementing regulation 40 Code of Federal  
6 Regulations (CFR) 1502.14(c) instructs Natural Environmental Policy Act (NEPA)  
7 preparers to "identify the agency's preferred alternative or alternatives, if one or more  
8 exists, in the draft statement and identify such alternative in the final statement unless  
9 another law prohibits the expression of such a preference." CBP/USBP has identified  
10 its Preferred Alternative as the Proposed Action Alternative.

## 11 **ALTERNATIVES CONSIDERED**

12  
13 In addition to the Proposed Action Alternative, two other alternatives (the No Action  
14 Alternative and the Secure Fence Act Alternative) were considered during the  
15 preparation of this Environmental Assessment (EA). Under the No Action Alternative,  
16 no primary pedestrian fence components would be constructed. The No Action  
17 Alternative will serve as a baseline against which the impacts of the other two action  
18 alternatives can be evaluated. However, the No Action Alternative does not satisfy the  
19 purpose and need or Congressional mandates.

20  
21 The Secure Fence Act Alternative would consist of two layers of fence, known as  
22 primary and secondary pedestrian fences, constructed approximately 130 feet apart  
23 along the same route as that of the Proposed Action Alternative. This alternative would  
24 also include construction and maintenance of access and patrol roads. The patrol road  
25 would be located between the primary and secondary pedestrian fences and the  
26 maintenance road would be on the north side of the secondary pedestrian fence.

## 27 **ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION ALTERNATIVE**

28  
29 Rights-of-entry were not obtainable within the required schedule for this EA; therefore  
30 pedestrian surveys of the project corridor were not conducted. Consequently, definitive  
31 statements about specific resources are based on a combination of a literature review, a  
32 map reconnaissance, and past surveys conducted within and near the project corridor  
33 on similar USBP projects.

34  
35 The Proposed Action Alternative would result in direct impacts on land use, soils, water  
36 resources, vegetation, wildlife, threatened and endangered species, noise levels, and  
37 aesthetic and visual resources within the project corridor and the Region of Influence  
38 (ROI). However, all of these potential impacts would be insignificant or minimized  
39 through the use of mitigation measures and/or compensation. Furthermore, many of  
40 the adverse impacts would be offset as a result of the beneficial effects of reduced  
41 illegal activity within the ROI.

42  
43 Land use impacts would result from the loss of 55 acres of rangeland, yet would be  
44 offset by the benefits of greater protection of lands north of the project corridor. Land  
45 owners would be compensated at fair market values for their property. The loss of 55

1 acres of common soils would be insignificant to the biological productivity within the  
2 ROI. Applicable Section 404/401 and regulatory floodplain permit(s) would mitigate  
3 and/or compensate for minor effects on 0.3 acre of potentially jurisdictional Waters of  
4 the U.S (WUS) and 3 acres of floodplains. The loss of approximately 52 acres of  
5 common vegetation and wildlife habitat would be insignificant to the ROI. The loss of 3  
6 acres of sensitive riparian habitat associated with 0.3 acre of aquatic habitat would be  
7 minimized through appropriate mitigation and/or compensation. The potential to  
8 adversely impact Federally-listed species and non-Federal special status species would  
9 be determined through ongoing Section 7 consultation with the U.S. Fish and Wildlife  
10 Service (USFWS). Aesthetic resources would be altered by the presence of primary  
11 pedestrian fence; however, the beneficial effects of the reduction of illegal traffic would  
12 offset any adverse impact. Mitigation measures through Section 106 consultation would  
13 include avoidance and/or monitoring of any known cultural resource sites; therefore, no  
14 adverse impact would occur on known eligible cultural resources sites.

15  
16 The Proposed Action Alternative would also have temporary impacts. An additional 26  
17 acres would be temporarily affected by the use of staging areas. This would result in a  
18 temporary, negligible to minor impact on soils and vegetation. A one-time water usage  
19 (7.6 acre-feet) for construction would result in a negligible to minor impact on the  
20 availability of water in the ROI. Minor increases in fugitive dust emissions would be  
21 temporary and not result in permanent impact on air quality. Increases in vehicle-  
22 related noise levels would likely occur within residential areas during construction. Any  
23 increase in noise would be temporary and minor, and would not result in substantial  
24 permanent increases in ambient noise levels.

25  
26 The potential exists for IA traffic to shift to other locations without TI, which could result  
27 in an indirect adverse impact on resources outside of the project corridor. However,  
28 because the proposed TI would act as a force multiplier, the impact would be reduced.  
29 Indirect beneficial impacts on all resources would result from the reduction in illegal  
30 traffic due to implementation of the Proposed Action Alternative.

31  
32 **CONCLUSION**

33 Despite the fact that of rights-of-entry could not be obtained and pedestrian field  
34 surveys could not be conducted for the purpose of making definitive statements about  
35 specific resources, this analysis remains reliable. Furthermore, CBP/USBP has  
36 committed to conduct pre-construction surveys and implement appropriate Best  
37 Management Practices (BMPs) and mitigation measures as part of the Proposed Action  
38 Alternative. Therefore, it has been concluded that the Proposed Action Alternative will  
39 have no significant effect on the environment and no further environmental impact  
40 analysis is warranted.

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***SECTION 1.0***  
***INTRODUCTION***





1 **1.0 INTRODUCTION**

---

2  
3 United States (U.S.) Customs and Border Protection (CBP) and U.S. Border Patrol  
4 (USBP) propose to construct, operate and maintain approximately 7.6 miles of tactical  
5 infrastructure (TI) along the U.S.-Mexico international border in Santa Cruz County,  
6 Arizona, east of the City of Nogales, Arizona (Figure 1-1). TI is a term used by USBP to  
7 describe physical structures that facilitate enforcement activities. These items typically  
8 include, but are not limited to, roads, fences, lights, gates, boat ramps, and barriers. TI  
9 would consist of primary pedestrian fence, minor improvements to existing roads, and  
10 construction of new unimproved construction/maintenance roads within 60 feet of the  
11 U.S.-Mexico border. The Proposed Action would occur within the USBP Tucson Sector,  
12 Nogales Station Area of Operations (AO).

13  
14 This Environmental Assessment (EA) is tiered from the Immigration and Naturalization  
15 Service's (INS's) *Supplemental Programmatic Environmental Impact Statement (SPEIS)*  
16 *for the Continuation of Immigration and Naturalization Service and Joint Task Force Six*  
17 *Activities along the Southwestern Border* (INS 2001). The SPEIS addressed past and  
18 proposed infrastructure projects for USBP along the entire southwestern border. Future  
19 infrastructure projects, such as those described herein, were identified in the SPEIS,  
20 and a commitment was made to prepare site-specific documents, such as this EA, as  
21 the need for future projects is identified. This EA incorporates by reference much of the  
22 information from several previous EAs within the project corridor and Region of  
23 Influence (ROI). For the purposes of this EA, the ROI is defined as the southern portion  
24 of the Tucson Sector, within the Nogales Station's AO and the general vicinity of  
25 Nogales, Arizona (see Figure 1-1). Many of these past projects consisted of similar  
26 types of TI within the ROI. The following paragraphs provide a brief description of each  
27 of these documents and their relationship to the current project.

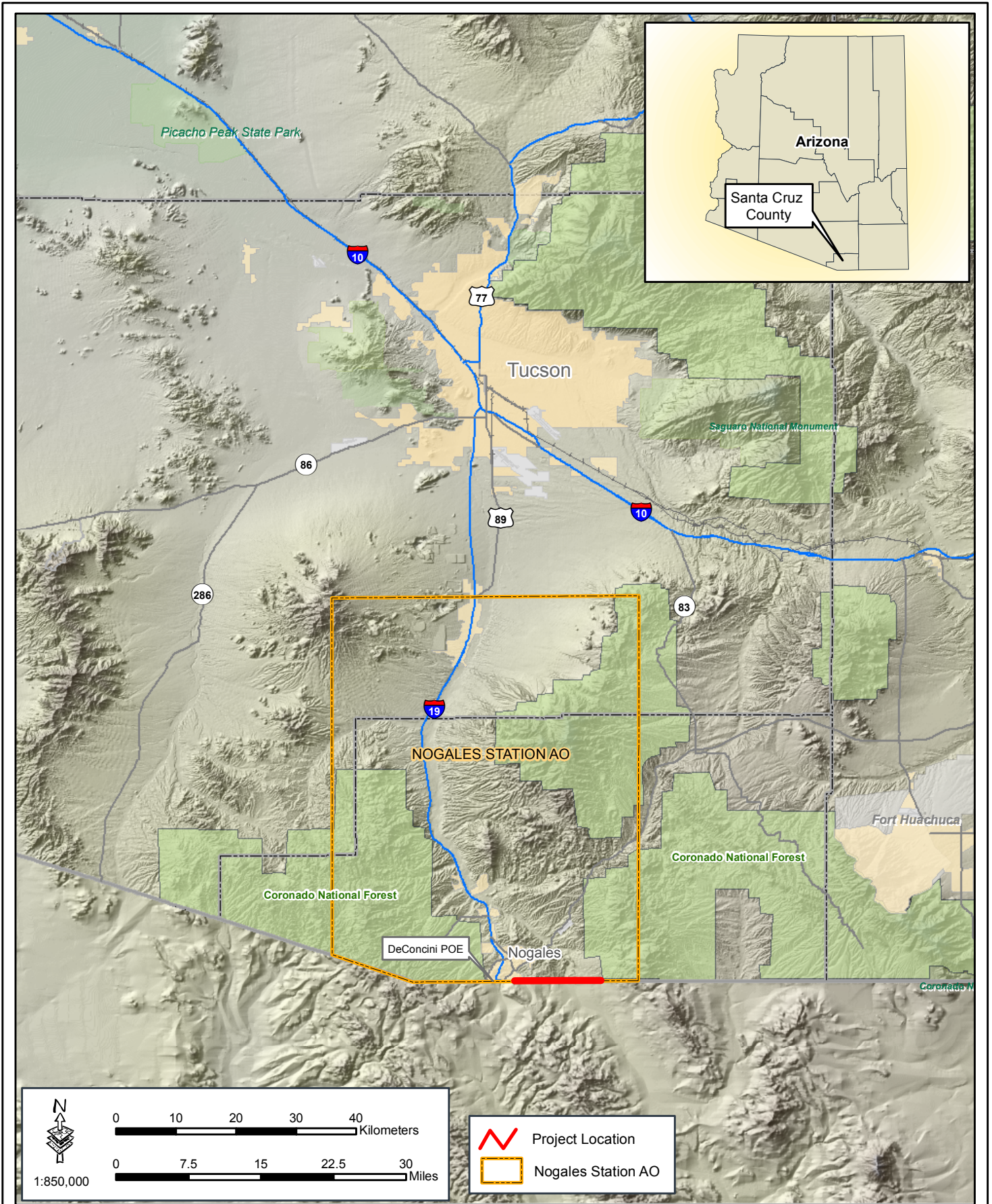


Figure 1-1: Vicinity Map



1 In October 2003, CBP issued a signed Finding of No Significant Impact (FONSI) and  
2 *Final EA for Nogales Infrastructure Improvements, USBP, Tucson Sector, Nogales*  
3 *Station, Santa Cruz County, Arizona* (CBP 2003). This EA addressed the continued  
4 operation of up to 60 portable lights, construction of 1.5 miles of all-weather patrol roads  
5 and improvements to 0.5 mile of roadway, installation of 1 mile of primary pedestrian  
6 fence, and installation and operation of 15 remote video surveillance systems (CBP  
7 2003). All proposed TI was located east of the DeConcini Port of Entry (POE) in  
8 Nogales, Arizona. A short segment of the proposed lighting and all-weather patrol road  
9 overlapped with the western-most portion of the current project corridor. In May 2007,  
10 CBP issued a signed FONSI and a Final Supplemental Environmental Assessment  
11 (SEA), *Nogales Infrastructure Improvements, USBP, Tucson Sector, Nogales Station,*  
12 *Santa Cruz County, Arizona*, herein referred to as the 2007 SEA (CBP 2007a). This  
13 SEA addressed proposed all-weather patrol road realignments to 0.34 mile of road and  
14 relocation of 55 permanent lights (CBP 2007a). The all-weather patrol road and  
15 permanent lights were proposed approximately 150 feet north of the U.S.-Mexico  
16 border.

17  
18 In December 2004, USBP issued a signed FONSI and *Final EA for Temporary Vehicle*  
19 *Barriers (TVB), Tucson Sector, Pima, Santa Cruz, and Cochise Counties, Arizona* (CBP  
20 2004a), herein referred to as the 2004 TVB EA. The 2004 TVB EA addressed 37 miles  
21 of TVBs in 21 different locations throughout the Tucson Sector AO, of which 2.7 miles of  
22 TVBs currently overlap with proposed primary pedestrian fence alignments. The  
23 existing TVBs would be removed and either dismantled and recycled or placed in other  
24 border areas.

25  
26 Two other EAs addressing projects in the ROI, and from which information is  
27 incorporated by reference, include the March 2007 FONSI and *Final EA for the*  
28 *Construction of New Patrol and Drag Roads, Office of Border Patrol, Nogales Station,*  
29 *Santa Cruz County, Arizona* (CBP 2007b), herein referred to as the 2007 Road EA, and  
30 the November 2007 FONSI and *Final EA for Construction of 2.4 miles of Primary*  
31 *Pence, USBP, Tucson Sector, Nogales Station, Santa Cruz County, Arizona* (CBP

1 2007c), herein referred to as the 2007 Fence EA. These two EAs included construction  
2 of 3 miles of all-weather patrol roads and 2.4 miles of primary pedestrian fence  
3 approximately 1 mile west of the Mariposa POE. The purpose of these projects was to  
4 address USBP agent safety issues and enhance enforcement effectiveness in the area.  
5

6 This EA has been prepared in accordance with the National Environmental Policy Act  
7 (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing  
8 NEPA (Title 40 of the U.S. Code of Federal Regulations [CFR], Parts 1500-1508), and  
9 U.S. Department of Homeland Security (DHS) Management Directive (MD) 5100.1.  
10 The analysis identifies, documents, and evaluates potential environmental effects of the  
11 proposed construction of approximately 7.6 miles of primary pedestrian fence, lighting,  
12 and maintenance road. All primary pedestrian fence construction would occur within 3  
13 feet of the U.S.-Mexico border. Gulf South Research Corporation (GSRC) prepared this  
14 EA for U.S. Army Corps of Engineers (USACE), Fort Worth District on behalf of CBP  
15 and USBP, Tucson Sector.  
16

17 This EA addresses potential impacts on the affected environment within the project  
18 corridor for the three alternatives outlined in Section 2 of this document. This report is  
19 organized into seven major sections, including this introduction and four appendices.  
20 Section 2 describes all alternatives considered for the project. Section 3 describes, in  
21 detail, the existing environmental conditions and potential environmental impacts of  
22 each alternative. Section 4 discusses potential cumulative and other impacts of  
23 implementation of the Proposed Action, combined with foreseeable future actions.  
24 Section 5 discusses potential mitigation measures to reduce adverse effects. Sections  
25 6 and 7 provide a list of references and preparers for the EA, respectively.  
26

## 27 **1.1 BACKGROUND**

28

29 The mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S.,  
30 while also facilitating the flow of legitimate trade and travel. In supporting CBP's



1 mission, USBP is charged with establishing and maintaining effective control of the  
2 border of the U.S. USBP's mission strategy consists of five main objectives:

- 3
- 4 • Establish substantial probability of apprehending terrorists and their  
5 weapons as they attempt to enter illegally between the POEs
- 6 • Deter illegal entries through improved enforcement
- 7 • Detect, apprehend, and deter smugglers of humans, drugs, and other  
8 contraband
- 9 • Leverage "smart border" technology to multiply the effect of enforcement  
10 personnel
- 11 • Reduce crime in border communities and consequently improve quality of  
12 life and economic vitality of targeted areas
- 13

14 USBP has nine administrative sectors along the U.S.-Mexico border. Each sector is  
15 responsible for implementing an optimal combination of personnel, technology, and  
16 infrastructure appropriate to its operational requirements. Border areas under the  
17 Tucson Sector's responsibility include Cochise, Pima, and Santa Cruz Counties in  
18 Arizona. The areas affected by the Proposed Action include the southern-most portion  
19 of Santa Cruz County, east of the City of Nogales, Arizona.

## 20

### 21 **1.2 PURPOSE AND NEED**

## 22

23 The purpose of the Proposed Action is to increase border security within the USBP  
24 Tucson Sector through the construction, operation, and maintenance of TI in the form of  
25 fences and roads and other supporting technological and tactical assets. The USBP  
26 Tucson Sector has identified areas along the border that experience high levels of  
27 illegal cross-border activity. This activity occurs in areas that are not easily accessed by  
28 USBP agents, contain thick vegetation that can provide concealment, near POEs where  
29 concentrated populations might live on either side of the border, or have quick access to  
30 U.S. transportation routes.

31

32 The Proposed Action is needed to provide USBP agents with the tools necessary to  
33 strengthen their control of the U.S. borders between POEs in the USBP Tucson Sector.

1 The Proposed Action would help to deter illegal cross-border activities within the USBP  
2 Tucson Sector by improving enforcement, preventing terrorists and terrorist weapons  
3 from entering the U. S., reducing the flow of illegal drugs, and enhancing response time,  
4 while providing a safer work environment for USBP agents.

### 6 **1.3 PROPOSED ACTION**

7  
8 USBP proposes to construct, operate, and maintain approximately 7.6 miles of primary  
9 pedestrian fence and construction/maintenance road along the U.S.-Mexico border in  
10 USBP Tucson Sector. TI would begin approximately 1 mile east of the DeConcini POE  
11 and extend eastward across the Santa Cruz River and end near the western boundary  
12 of the Coronado National Forest (CNF), Sierra Vista Ranger District. The proposed  
13 locations of TI are based on a USBP Tucson Sector assessment of local operational  
14 requirements where such infrastructure would assist USBP agents in reducing illegal  
15 cross-border activities.

16 The Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295)  
17 provided \$1,187,565,000 under the Border Security Fencing, Infrastructure, and  
18 Technology appropriation for the installation of fencing, infrastructure, and technology  
19 along the border (Congressional Research Service 2006). Figure 1-2 illustrates the  
20 location of the proposed TI within the Tucson Sector noted as segments D-5b (5.2 miles  
21 and D-6 (2.4 miles). Details of the Proposed Action are included in Section 2.2.2.

### 23 **1.4 FRAMEWORK OF ANALYSIS**

24  
25 The process for implementing the NEPA is codified in 40 CFR Parts 1500–1508,  
26 *Regulations for Implementing the Procedural Provisions of the National Environmental*  
27 *Policy Act*, and DHS’s related MD 5100.1, *Environmental Planning Program*. CEQ was  
28 established under NEPA to implement and oversee Federal policy in this process.



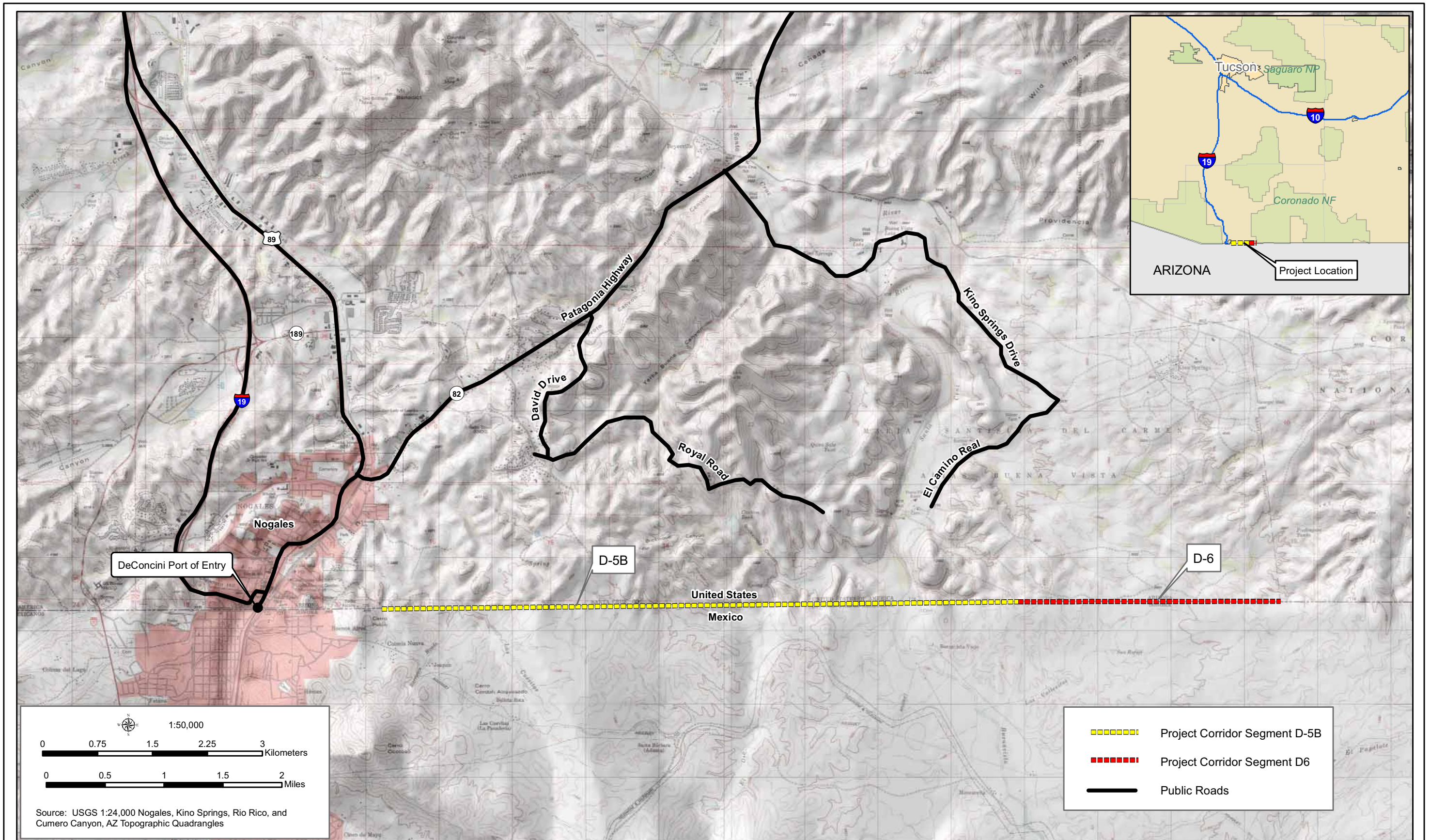


Figure 1-2: Project Location



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1 An EA is prepared when a proposed action is anticipated to have potentially “significant”  
2 environmental impacts, or a proposed action is environmentally controversial. CEQ  
3 regulations specify that the following must be accomplished when preparing an EA:

- 4
- 5 • Briefly provide evidence and analysis for determining whether to prepare  
6 an Environmental Impact Statement (EIS) or a Finding of No Significant  
7 Impact (FONSI);
- 8 • Aid in an agency’s compliance with NEPA when an EIS is unnecessary;  
9 and
- 10 • Facilitate preparation of an EIS when one is necessary.
- 11

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

21

22 Within the framework of environmental impact analysis under NEPA, additional  
23 authorities that may be applicable include the Clean Air Act (CAA), Clean Water Act  
24 (CWA) (including a National Pollutant Discharge Elimination System [NPDES] Storm  
25 Water Discharge permit and Section 404 permit), Section 10 of the River and Harbor  
26 Act of 1899, Noise Control Act, Endangered Species Act (ESA), Migratory Bird Treaty  
27 Act (MBTA), National Historic Preservation Act (NHPA), Archaeological Resources  
28 Protection Act (ARPA), Resource Conservation and Recovery Act (RCRA), Toxic  
29 Substances Control Act (TSCA), and various Executive Orders (EOs). A summary of  
30 EOs that might be applicable to the Proposed Action include EO 11988 (Floodplain  
31 Management), EO 11990 (Protection of Wetlands), EO12088 (Federal Compliance with  
32 Pollution Control Standards), EO 12580 (Superfund Implementation), EO 12898  
33 (Federal Actions to Address Environmental Justice in Minority Populations and Low-

1 Income Populations), EO 13045 (Protection of Children from Environmental Health  
 2 Risks and Safety Risks), EO 13423 (Strengthening Federal Environmental, Energy, and  
 3 Transportation Management), EO 13175 (Consultation and Coordination with Indian  
 4 Tribal Governments), EO 13148 (Greening the Government through Leadership in  
 5 Environmental Management), EO 13186 (Responsibilities of Federal Agencies to  
 6 Protect Migratory Birds), EO 11514 (Protection and Enhancement of Environmental  
 7 Quality, as amended by EO 11991), EO 12114 (Environmental Effects Abroad of Major  
 8 Federal Actions), EO 13101 (Greening the Government through Waste Prevention,  
 9 Recycling, and Federal Acquisition), EO 13123 (Greening the Government through  
 10 Efficient Energy Management), EO 13148 (Greening the Government through  
 11 Leadership in Environmental Management), and EO 13149 (Greening the Government  
 12 through Federal Fleet and Transportation Efficiency).

13

14 Table 1-1 lists major Federal and state permits, approvals, and interagency coordination  
 15 required to construct, maintain, and operate the proposed TI.

16

17 **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>
U.S. Environmental Protection Agency (USEPA)	<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>
Arizona Department of Environmental Quality	<ul style="list-style-type: none"> <li>- CWA Section 401 State Water Quality Certification</li> <li>- CAA permit consultation</li> </ul>
Arizona Game and Fish Department (AGFD)	<ul style="list-style-type: none"> <li>- Arizona Endangered Species coordination</li> </ul>
Arizona State Historic Preservation Officer (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 (ACHP)	<ul style="list-style-type: none"> <li>- NHPA Section 106 consultation</li> </ul>

18

19

1 **1.5 PUBLIC INVOLVEMENT**

2  
3 Agency and public involvement in the NEPA process promotes open communication  
4 between the public and the government and enhances the decision-making process. All  
5 persons or organizations having a potential interest in the Proposed Action are  
6 encouraged to participate in the decision-making process.

7  
8 NEPA and implementing regulations from the President's CEQ and DHS direct  
9 agencies to make their EAs and EISs available to the public during the decision-making  
10 process and prior to actions being taken. The premise of NEPA is that the quality of  
11 Federal decisions will be enhanced if proponents provide information to the public and  
12 involve the public in the planning process.

13  
14 Through the public involvement process, USBP notified relevant Federal, state, and  
15 local agencies of the Proposed Action and requested input regarding environmental  
16 concerns they might have regarding the Proposed Action. The public involvement  
17 process provides USBP with the opportunity to cooperate with the public and consider  
18 state and local views of its decision regarding implementation of this Federal proposal.  
19 As part of the EA process, USBP has coordinated with agencies such as Bureau of  
20 Land Management (BLM); USEPA; USFWS; Arizona SHPO; and other Federal, state,  
21 and local agencies (see Appendix A). Input from agency responses has been  
22 incorporated into the analysis of potential environmental impacts.

23  
24 A Notice of Availability (NOA) for this EA and proposed FONSI has been published in  
25 the *Arizona Daily Star newspaper*. This is done to solicit comments on the Proposed  
26 Action Alternative and involve the local community in the decision-making process.  
27 Comments from the public and other Federal, state, and local agencies will be  
28 incorporated into the Final EA and included in Appendix A.

1 Throughout the NEPA process, the public may obtain information concerning the status  
2 and progress of the EA via the project web site at [www.BorderFenceNEPA.com](http://www.BorderFenceNEPA.com); by  
3 emailing [information@BorderFenceNEPA.com](mailto:information@BorderFenceNEPA.com); by written request to Mr. Charles  
4 McGregor, Environmental Manager, USACE, Fort Worth District, Engineering  
5 Construction Support Office (ECSO), 819 Taylor Street, Room 3B10, Fort Worth, TX  
6 76102; or by facsimile at 225-761-8077.

## 8 **1.6 COOPERATING AND COORDINATING AGENCIES**

9  
10 The U.S. Section, International Boundary and Water Commission (USIBWC) and  
11 USACE-Los Angeles District Regulatory Functions Branch have decision-making  
12 authority for components of the Proposed Action and are therefore participating as  
13 cooperating agencies. CEQ regulations implementing NEPA instruct agencies to  
14 combine environmental documents in compliance with NEPA to reduce duplication and  
15 paperwork (40 CFR 1506.4).

16  
17 One of USIBWC's missions is to maintain the international boundary between Mexico  
18 and the U.S. As part of this mission, USIBWC is required to ensure that any  
19 construction along the international border does not adversely affect International  
20 Boundary Monuments (including their line of sight) or substantially impede floodwater  
21 conveyance within international drainages.

22  
23 USACE-Los Angeles District will act on applications for Department of the Army  
24 permits, as appropriate, pursuant to Section 10 of the River and Harbor Act of 1899 (33  
25 United States Code [U.S.C.] 403), and Section 404 of the CWA (33 U.S.C. 1344).

26  
27 Section 7 of the ESA (P.L. 93-205, December 28, 1973) states that any project  
28 authorized, funded, or conducted by any Federal agency should not "jeopardize the  
29 continued existence of any endangered species or threatened species or result in the  
30 destruction or adverse modification of habitat of such species which is determined ... to  
31 be critical." While USFWS will not participate as a cooperating agency on this Proposed



1 Action Alternative, it will coordinate with CBP to assist in the determination of whether  
2 any Federally listed or proposed endangered or threatened species or their designated  
3 critical habitats would be adversely impacted by the Proposed Action Alternative, to  
4 identify the nature and extent of potential effects, and to jointly develop measures that  
5 would avoid or reduce potential effects on the species. CBP has initiated and is  
6 currently in consultation with USFWS, pursuant to Section 7 of the Endangered Species  
7 Act, on potential impacts to protected species within the USBP Tucson Sector. If  
8 appropriate, CBP and USFWS will enter formal Section 7 consultation regarding any  
9 potentially affected listed species, and USFWS will issue a Biological Opinion on the  
10 potential for jeopardy. If USFWS determines that the project is not likely to jeopardize  
11 any listed species, it can also issue an incidental take statement as an exception to the  
12 prohibitions in Section 9 of the ESA.

13

14 The CNF was also invited to be a cooperating agency since there is a potential for  
15 indirect impact on adjacent CNF lands. However, on October 30, 2007 the Nogales  
16 District responded to CBP, declining to be a cooperating agency, since no actions would  
17 occur on National Forest System lands. A copy of this letter is provided in Appendix A.

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***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, operate, and maintain TI along the U.S.-Mexico border in the USBP Tucson Sector, Arizona. The range of reasonable alternatives considered in this EA is constrained to those that would meet the purpose and need described in Section 1.2 to provide USBP agents with the tools necessary to achieve effective control of the border in the USBP Tucson 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 alternatives are described in Section 2.1, followed by the analysis of the No Action Alternative (Section 2.2.1), the Proposed Action Alternative (Section 2.2.2), and the Secure Fence Act Alternative (Section 2.2.3). Other alternatives that were considered during the preparation of the EA, including those that were ultimately eliminated, are discussed in subsequent subsections.

### 2.1 SCREENING CRITERIA FOR ALTERNATIVES

The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives. USBP Tucson 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 Tucson Sector.

- *USBP Operational Requirements.* The selected alternative must support USBP mission needs to hinder or delay individuals crossing the border illegally. Once individuals have entered an urban area or suburban neighborhood, it is much more difficult for USBP agents to identify and apprehend suspects engaged in unlawful border entry. In addition, around populated areas it is relatively easy for cross-border violators to find transportation into the interior of the U.S.

- 1 • Threatened or Endangered Species and Critical Habitat. The selected  
2 alternative would be designed to minimize adverse impact on threatened  
3 or endangered species and their critical habitat to the maximum extent  
4 practical. USBP is working with USFWS to identify potential conservation  
5 and mitigation measures.
- 6 • Wetlands and Floodplains. The selected alternative would be designed to  
7 avoid and minimize impact on wetlands, surface waters, and floodplain  
8 resources to the maximum extent practicable. USBP is working with the  
9 USACE-Los Angeles District to avoid, minimize, and mitigate potential  
10 impacts on wetlands, surface waters, and floodplains.
- 11 • Cultural and Historic Resources. The selected alternative would be  
12 designed to minimize impact on cultural and historic resources to the  
13 maximum extent practicable.
- 14 • Suitable Landscape. Some areas of the border have steep topography or  
15 highly erodible soils, are in a floodway, or have other characteristics that  
16 could compromise the integrity of a fence or other tactical infrastructure.  
17 For example, in areas susceptible to flash flooding, fence and other  
18 tactical infrastructure might be prone to erosion that could undermine the  
19 fence's integrity. Areas with suitable landscape conditions would be  
20 prioritized.

## 22 **2.2 ALTERNATIVES ANALYSIS**

### 24 **2.2.1 Alternative 1: No Action Alternative**

25 CEQ regulations require inclusion of the No Action Alternative. Under the No Action  
26 Alternative, fence and road improvements would not be constructed. The No Action  
27 Alternative will serve as a baseline against which the impacts of the Proposed Action  
28 Alternative and the Secure Fence Act Alternative can be evaluated. However, the No  
29 Action Alternative does not satisfy the purpose and need or Congressional mandates.

### 31 **2.2.2 Alternative 2: Proposed Action Alternative (Preferred Alternative)**

32 USBP Tucson Sector proposes to construct primary pedestrian fence starting 1 mile  
33 east of the DeConcini POE and extending eastward for a total of 7.6 miles (see Figure  
34 2-1). Currently, USBP envisions that the primary pedestrian fence would be installed  
35 approximately 3 feet north of the U.S.-Mexico border.



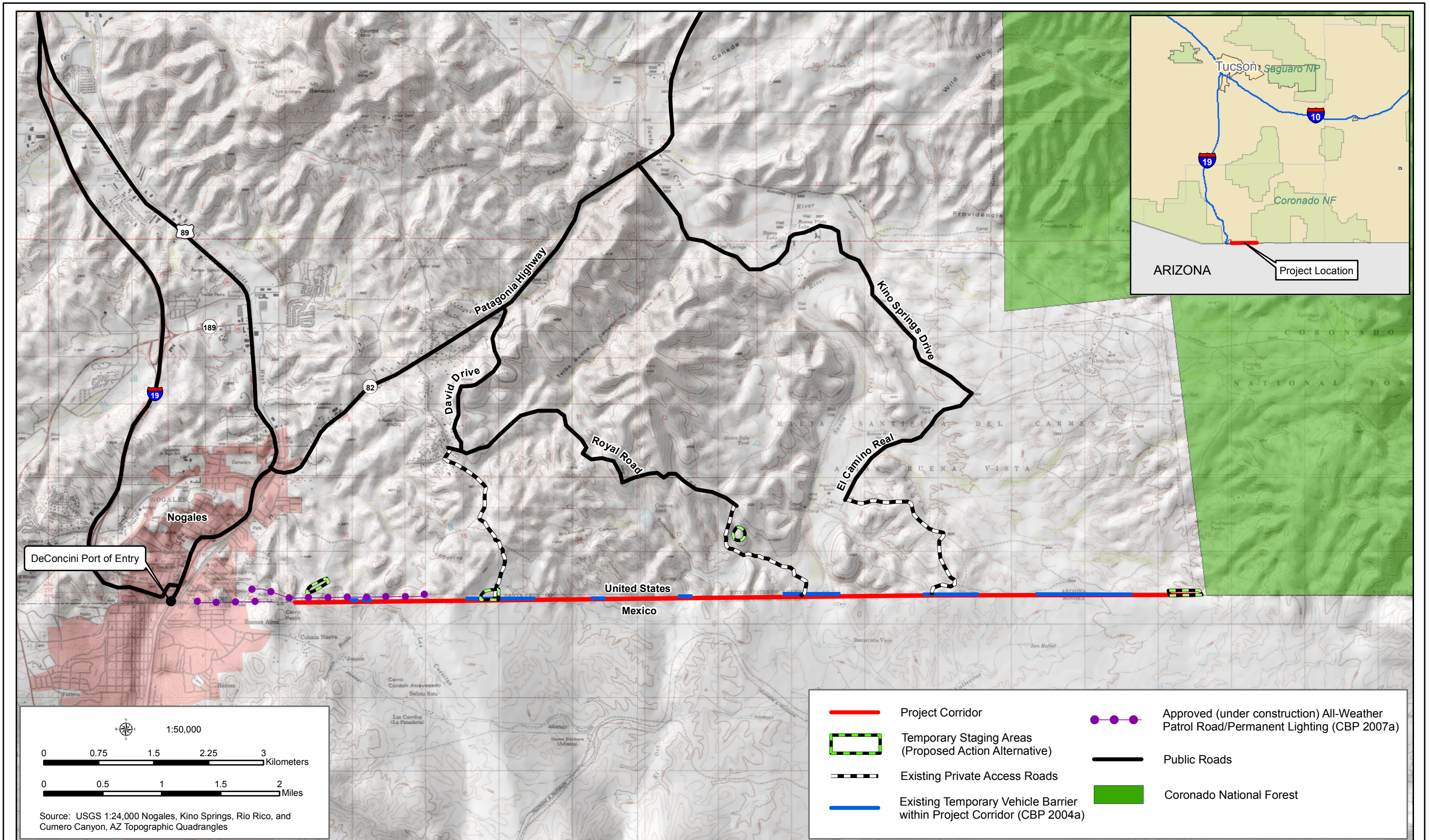


Figure 2-1: Project Corridor



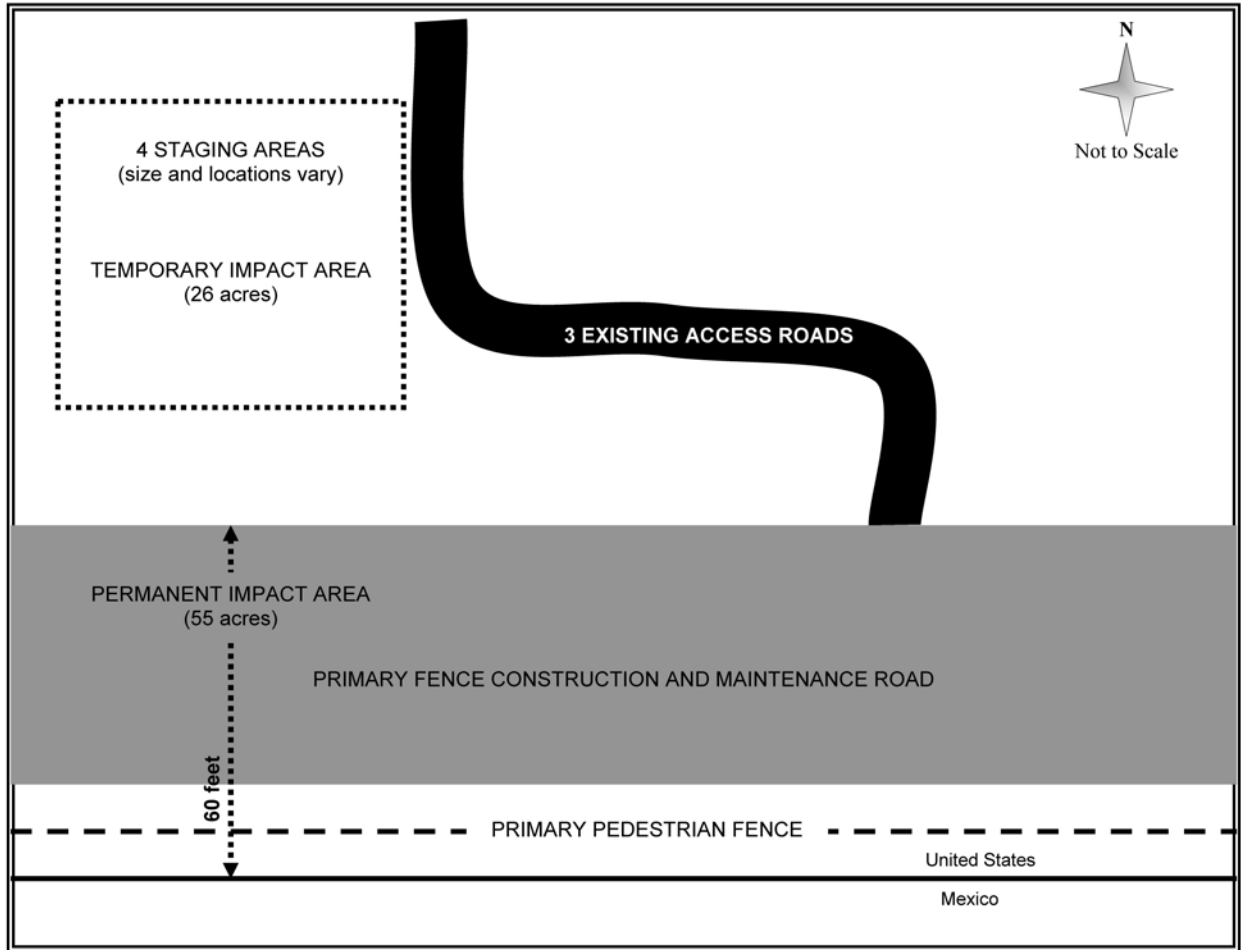
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1 Figure 2-2 shows a typical schematic of TI positions as well as permanent and  
 2 temporary impact areas for this alternative. Each of the proposed TI components is  
 3 furthered described in the follow paragraphs.

4  
 5

**Figure 2-2. Schematic of Proposed Impact Areas—Alternative 2**



6  
 7

8 Dependant on location, terrain, and the specific tactical need of USBP operations,  
 9 several primary pedestrian fence designs are available as a “tool box” of fence designs  
 10 from which to select the best suited fence at any given location along the U.S.-Mexico  
 11 border. However, Tucson Sector proposes to construct a bollard-style fence design due  
 12 to its low maintenance requirements, durability, and structural integrity. The specific  
 13 design schematic for this bollard-style fence is provided in Appendix B. As for any

1 pedestrian fence design selected by USBP, preliminary design performance measures  
2 dictate that the fence must:

- 3
- 4 • extend 15 to 18 feet above ground and 3 to 6 feet below ground;
- 5 • be capable of withstanding an impact from 10,000-pound gross weight
- 6 vehicle traveling at 40 miles per hour;
- 7 • be semi-transparent, as dictated by operational need;
- 8 • be designed to survive extreme climate changes of a desert environment;
- 9 • be designed to allow movement of small animals from one side to the
- 10 other; and
- 11 • not impede the natural flow of water.
- 12

13 In order to facilitate operation of equipment, staging of materials, and construction  
14 access to the project corridor, four temporary staging areas, totaling 26 acres, and three  
15 existing access roads have been identified along the project corridor. Vegetation would  
16 be cleared and grading may occur where needed in the staging areas. Upon  
17 completion of construction activities, the temporary staging areas would be  
18 rehabilitated. No improvements to existing access roads are anticipated, as these  
19 roads are currently maintained through use agreements between USBP and  
20 landowners. These minor maintenance activities are expected to continue, yet are not  
21 expected to be a result of construction activities.

22

23 Additionally, in washes, arroyos, and the Santa Cruz River, the fence would be  
24 designed and constructed, as appropriate, to ensure proper conveyance of floodwaters  
25 and to eliminate the potential to cause ponding on either side of the border. Portable  
26 lights with generators would be used during nighttime construction.

27

28 The existing TVBs currently within the project corridor were constructed off-site,  
29 transported into the border corridor, and placed using cranes and forklifts. This action  
30 required minimal clearing of vegetation and ground disturbance. Similar construction  
31 techniques are not feasible for the installation of the primary pedestrian fence, and  
32 construction/maintenance road. Consequently, a road would need to be constructed  
33 adjacent to the border to allow installation of the fence. Construction of the Proposed

1 Action Alternative would encompass a 60-foot-wide project corridor beginning at the  
2 U.S.-Mexico border and extending northward.

3  
4 Nighttime construction activities would occur only when absolutely necessary for  
5 adequate concrete pours or in the case of an accelerated construction schedule to meet  
6 Federal mandates. Therefore, to account for heat restrictions for adequate concrete  
7 drying and curing processes, most concrete pours for low-water crossings, other  
8 drainage structures, and fencing would need to take place during the pre-dawn hours of  
9 summer months. However, the possibility exists that work would have to occur on a 24-  
10 hour basis. A 24-hour schedule would be implemented only when additional efforts are  
11 needed in order to maintain the work task schedule due to weather or other unforeseen  
12 situations. In order to facilitate construction activities during these work hours, portable  
13 lights would be used. It is estimated that no more than 10 lights would be in operation  
14 at any one time at each project site.

15  
16 A 6-kilowatt self-contained diesel generator powers these lights (Photograph 2-1). Each  
17 unit typically has four 400 to 1000-watt lamps. The portable light systems can be towed  
18 to the desired construction location, as needed. Upon completion of construction  
19 activities, all portable lights would be removed from  
20 the project corridor. Lights would be oriented to  
21 illuminate the work area. The area affected by  
22 illumination is limited to 200 feet from the light  
23 source. Also, the lights may or may not have  
24 shields placed over the lamps to reduce or eliminate  
25 the effects of backlighting because they are work  
26 lights and would not be deployed specifically for  
27 providing lighting for enforcement purposes.



Photograph 2-1. Portable lights

28  
29 It is anticipated that private contractors would perform the work. Upon signature of a  
30 FONSI, and only if deemed appropriate, it is anticipated that construction would begin in  
31 March 2008 and be completed by December 2008. It is estimated that approximately 8

1 months of work (approximately 1 mile of TI constructed per month) would be needed to  
2 complete the construction. Equipment anticipated to be used during the construction  
3 would include bulldozers, dump trucks, portable light generators, graders, cement  
4 trucks, front-end loaders or forklifts, and flatbed trucks.

### 6 **2.2.3 Alternative 3: Secure Fence Act Alternative**

7 The Secure Fence Act of 2006 (P.L. 109-367) authorized the construction at least two  
8 layers of reinforced fencing along the U.S.-Mexico border. Two layers of bollard-style  
9 fence, known as primary and secondary pedestrian fence, would be constructed  
10 approximately 130 feet apart along the same route as that of the Proposed Action  
11 Alternative.

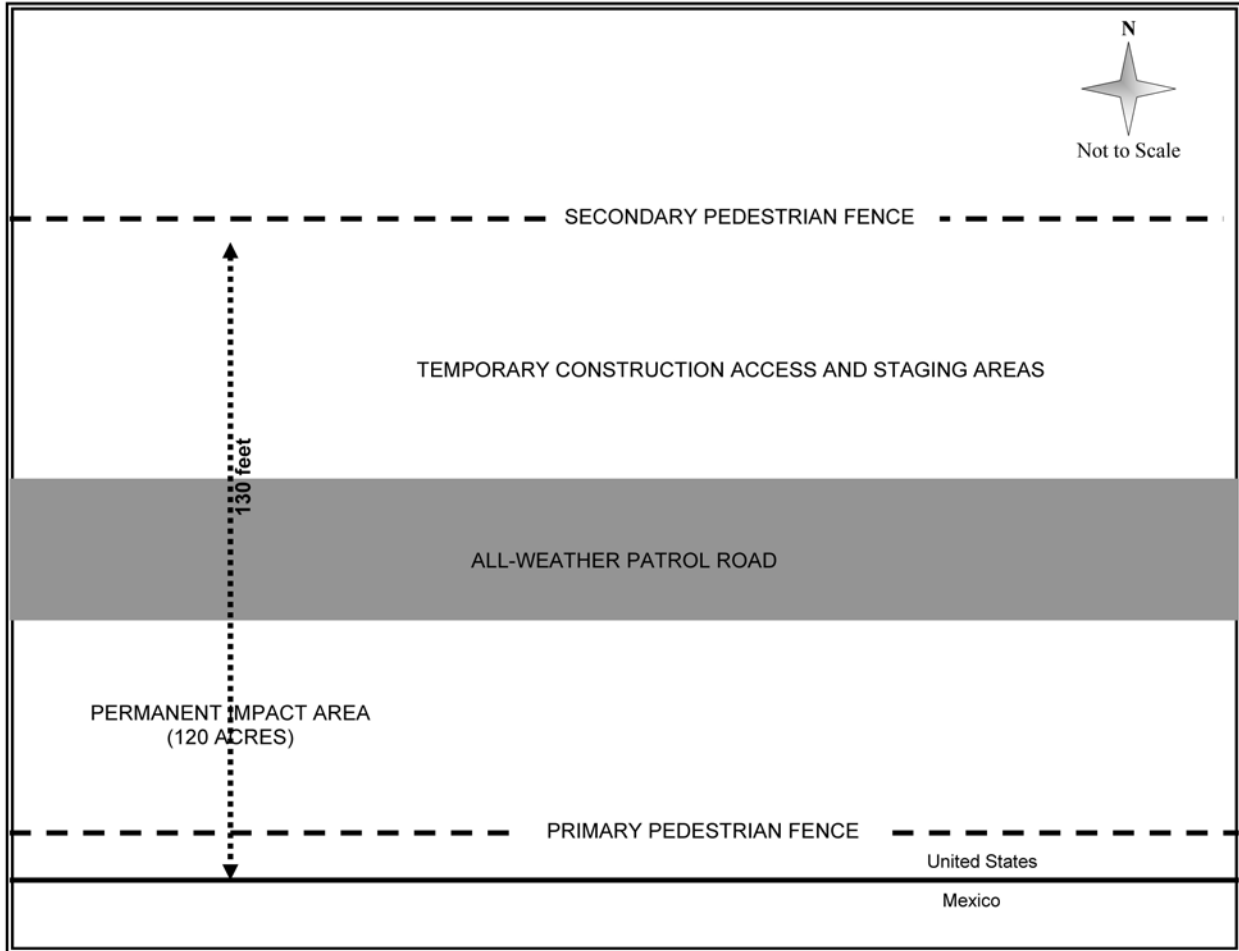
12  
13 This alternative would also include construction and maintenance of access and all-  
14 weather patrol roads. The patrol road and all TI components would be located between  
15 the primary and secondary pedestrian fences. Figure 2-3 shows a typical schematic of  
16 impact areas for this alternative; no temporary construction footprint would be required.  
17 The design of the fence and road would be similar to that of the Proposed Action  
18 Alternative.

## 20 **2.3 OTHER ALTERNATIVES EVALUATED BUT ELIMINATED FROM** 21 **CONSIDERATION**

22  
23 Several other alternatives to the Proposed Action Alternative were evaluated but  
24 eliminated from further consideration due to impediments to construction or failure to  
25 meet the purpose and need for the project. These are discussed in the following  
26 subsections.

1

**Figure 2-3. Schematic of Proposed Impact Areas—Alternative 3**



2

3

**2.3.1 Vehicle Fence in Lieu of Primary Pedestrian Fence**

The option to construct vehicle fence in lieu of the proposed primary pedestrian fence would restrict vehicles from illegally entering the U.S.; however, a vehicle fence would not be an impediment to potential terrorists, IAs, or drug smugglers entering the U.S. on foot. For these reasons, construction of a vehicle fence, rather than a primary pedestrian fence, was eliminated from further consideration.

10

**2.3.2 Additional USBP Agents in Lieu of Tactical Infrastructure**

USBP maintains an aggressive hiring program and a cadre of well-trained and disciplined agents. The physical presence of an increased number of agents may provide an enhanced level of deterrence against illegal entry into the U.S. However,

1 additional agents alone, in lieu of the proposed tactical infrastructure, would not provide  
2 a practical solution to achieving effective control of the border in USBP Tucson Sector.  
3 Furthermore, this alternative would result in additional USBP agents working under  
4 conditions that are not as safe, effective, or efficient as the conditions would be with the  
5 construction of the proposed TI. As such, this alternative will not be carried forward for  
6 further analysis.

7  
8 **2.3.3 Technology in Lieu of Tactical Infrastructure**

9 Under this alternative, USBP would use radar, cameras, lights, and other technology to  
10 identify illegal border crossings. The use of technology in certain sparsely populated  
11 areas is a critical law enforcement component and an effective force multiplier that  
12 allows USBP to monitor large areas and deploy agents to where they will be most  
13 effective. However, within and near the more densely populated areas within the  
14 Tucson Sector, physical barriers represent the most effective means to control illegal  
15 entry into the U.S. The use of technology alone would not provide a practical solution to  
16 achieving effective control of the border in USBP Tucson Sector. Therefore, this  
17 alternative would not meet the purpose and need as described in Section 1.2, and will  
18 not be carried forward for further analysis.

19  
20 **2.4 SUMMARY**

21  
22 Only three alternatives, the No Action Alternative, the Proposed Action Alternative, and  
23 the Secure Fence Act Alternative will be carried forward for analysis. A summary matrix  
24 (Table 2-1) shows how each of the alternatives satisfies the purpose and need of this  
25 project. Table 2-2 presents a summary matrix of the potential impacts and how they  
26 may affect the environmental resources in the ROI.

1

**Table 2-1. Alternatives Matrix**

Purpose and Need	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alternative
To comply with the Federal legislation.	○	●	●
To provide USBP agents with the tools necessary to prevent terrorists and terrorist weapons from entering the U.S.	⊙	●	●
To provide a safer work environment for USBP agents.	○	●	●
To enhance the response time of USBP agents and to reduce the flow of illegal drugs.	○	●	●

2

**Legend:** ○ NO      ● YES      ⊙ PARTIALLY

**Table 2-2. Summary Matrix of Potential Impacts**

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alternative
LAND USE	No impact.	Minor direct impact on land use, as 55 acres of rangeland would be converted to TI and law enforcement zone.	Moderate direct impact on land use in the ROI, as 120 acres of rangeland would be converted to TI.
SOILS	No direct impact; indirect impact would continue from IA traffic and consequent enforcement activities.	Minor impact on soils, as approximately 55 acres of soils would be removed from biological production. An additional 26 acres within temporary staging areas would be disturbed yet stabilized and allowed to revegetate following construction activities.	Moderate impact on soils, as approximately 120 acres of soils would be removed from biological production.
HYDROLOGY AND GROUNDWATER	No impact.	A one-time water usage of 7.6 acre-feet of water would result in a temporary, negligible to minor impact on the availability of water in the region.	A one-time water usage of 15.2 acre-feet of water would result in a moderate impact on the availability of water in the region.
SURFACE WATERS AND WATERS OF THE U.S.	No direct impact; indirect impact would continue as illegal foot traffic and USBP apprehension activities would continue to cause erosion and sedimentation into washes, arroyos, and other drainages.	Construction would cause a minor and temporary impact on surface water resources from sedimentation and erosion. Impact would be minimized through required mitigation measures. Direct impact on approximately 27 potentially jurisdictional WUS (0.3 acre) would be offset through mitigation plans as required by the appropriate Department of the Army Section 404 permit and Section 401 Water Quality Certification.	Impact similar to that of the Proposed Action Alternative. Impact on approximately 0.5 acre of potentially jurisdictional WUS would be minimized through required mitigation measures and appropriate permits.
FLOODPLAINS	No direct impact; indirect impact would continue as illegal foot traffic and USBP apprehension activities would continue to cause erosion and sedimentation into washes, arroyos, and other drainages.	There would be a direct impact on approximately 3 acres of jurisdictional floodplains. However, the fence/road would be designed and constructed to ensure that flood elevations, risks, or velocities are not increased, in compliance with EO 11988. Local floodplain regulations would also ensure that any potential adverse impact on the beneficial value of the floodplain is offset.	Direct impact on approximately 6 acres of jurisdictional floodplains. However, the fence/road would be designed and constructed to ensure that flood elevations, risks, or velocities are not increased, in compliance with EO 11988. Compliance with local floodplain regulations would offset any adverse impact.



Table 2-2, continued

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alternative
VEGETATIVE HABITAT	No direct impact; IA traffic would continue to indirectly impact vegetation communities.	Approximately 49 acres of Scrub-Grassland, 3 acres of Riparian Deciduous Forest and Woodland, and 3 acres of Cottonwood - Willow communities would be lost. Indirect benefits of reduced illegal traffic would offset any adverse impact on these communities.	There would be a permanent loss of 108 acres of Scrub-Grassland, 6 acres of Riparian Deciduous Forest and Woodland, and 6 acres of Cottonwood - Willow communities. While the loss of Cottonwood - Willow series is expected to be twice that of the Proposed Action Alternative, indirect benefits of reduced illegal traffic would offset any adverse impact on this community.
WILDLIFE AND AQUATIC RESOURCES	No direct impact; IA traffic would continue to damage vegetation and aquatic habitat, thereby causing adverse impact on wildlife.	Minor direct impact on land use, as 55 acres of rangeland would be converted to TI and law enforcement zone.	While direct impact would be greater, as 120 acres of wildlife (120 acres) and aquatic (0.6 acre) habitat would be lost, moderate impact within the ROI is expected. Beneficial impact would be the same as described for the Proposed Action Alternative.
THREATENED AND ENDANGERED SPECIES	Indirect impact due to IA traffic trampling habitat and threatened and endangered plant species would continue.	Section 7 consultation with USFWS and subsequent conservation measures and best management practices (BMPs) would ensure that the Proposed Action Alternative does not jeopardize the continued existence of any species. Coordination with AGFD would occur to identify measures to minimize impacts on sensitive species. Protection of threatened and endangered species is likely to occur as an indirect result of this alternative.	The potential impact, required Section 7 consultation, and AGFD coordination would be the same as those of the Proposed Action Alternative.

Table 2-2, continued

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alternative
CULTURAL RESOURCES	No direct impact.	No adverse impact; mitigation measures through Section 106 consultation would include avoidance and/or monitoring.	The potential impact would be similar to that of the Proposed Action Alternative. There is a potential to affect additional sites, as the project corridor is wider than the Proposed Action Alternative. However, mitigation measures through Section 106 consultation would include avoidance and/or monitoring.
AIR QUALITY	No direct impact.	There would be a minor and temporary impact on air quality during construction; air emissions would remain below <i>de minimis</i> levels.	There would be a minor and temporary impact on air quality during construction; air emissions would remain below <i>de minimis</i> levels.
NOISE	No direct impact.	There would be minor temporary increases to ambient noise during construction activities. Upon completion of construction and/or maintenance operations, noise levels would return to ambient conditions.	The potential impact would be the same as that of the Proposed Action Alternative.
AESTHETIC AND VISUAL RESOURCES	No direct impact; IA traffic would continue to detract from the general appearance of CNF areas by creating trails and discarding trash.	Minor temporary impact would be associated with the presence of construction equipment. Minor permanent impact would be associated with the fence, which would be conspicuous from adjacent hilltops. Beneficial effects, such as reduced vandalism, habitat degradation, debris left by IAs, and wildfires, would be expected.	The potential impact would be the same as that of the Proposed Action Alternative, yet greater in magnitude. Under this alternative, installation of two fences would result in moderate impact on the appearance of nearby areas compared to a single fence.
HAZARDOUS MATERIAL	No direct impact; indirect impact from unregulated solid waste generated by IA traffic would continue.	No significant hazard is expected from the transport, use, or disposal of unregulated or regulated material.	The potential impact would be the same as that of the Proposed Action Alternative.
ROADWAYS AND TRAFFIC	No direct impact.	Impact on public roadways and traffic would be insignificant on the local and regional level and would return to near-normal conditions following the construction period.	The potential impact would be the same as that of the Proposed Action Alternative.

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Table 2-2, continued

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alternative
SOCIOECONOMICS	No direct impact.	There would be a minor long-term adverse economic impact on the Santa Cruz County tax base as a result in the loss of 55 acres of private land. Temporary insignificant increases in population from the addition of construction crews in the area would occur. Direct beneficial effects on the local area would result from procurement of materials.	The potential impact would be the same as that of the Proposed Action Alternative, yet greater in magnitude. The loss of property taxes would double when compared to the Proposed Action Alternative. There would be a greater demand in temporary housing. However, temporary beneficial effects would result from an increase in purchased materials. A net beneficial, long-term impact on the ROI from a reduction in illegal activities would offset additional adverse impacts.

1 **2.5 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED ALTERNATIVE**

2  
3 CEQ's implementing regulation 40 CFR 1502.14(c) instructs NEPA preparers to  
4 "identify the agency's preferred alternative or alternatives, if one or more exists, in the  
5 draft statement and identify such alternative in the final statement unless another law  
6 prohibits the expression of such a preference." CBP/USBP has identified its Preferred  
7 Alternative as the Proposed Action Alternative.

8  
9 Implementation of the Proposed Action Alternative would meet USBP's purpose and  
10 need described in Section 1.2. The No Action Alternative would not meet USBP's  
11 purpose and need. The Secure Fence Act Alternative would meet USBP's purpose and  
12 need but would have greater environmental impact compared to the Preferred  
13 Alternative. USBP might need to implement this alternative at some point in the future,  
14 depending on future IA traffic and USBP operational needs and strategies. At the  
15 present time, however, USBP believes that this level of TI is not necessary. Still, it will  
16 be carried forward for evaluation as a viable alternative.

**SECTION 3.0**  
***AFFECTED ENVIRONMENT AND CONSEQUENCES***





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## 3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

---

### 3.1 PRELIMINARY IMPACT SCOPING

This section of the EA describes the natural and human environment that exists in the project corridor and its ROI and addresses potential impacts of each of the alternatives. Only those parameters that have the potential to be affected by the alternatives are described, as per CEQ guidance (40 CFR 1501.7 (3)). Some topics are limited in scope due to the lack of potential effect of the Proposed Action Alternative on the resource, or because that particular resource is not located within the project corridor. Therefore, resources such as climate, designated Wild and Scenic Rivers, utilities, geology, prime farmlands, environmental justice and protection of children, and human health and safety are not addressed for the following reasons:

- Climate: The project would not affect or be affected by the climate.
- Wild and Scenic Rivers: The proposed project would not affect any designated Wild and Scenic Rivers, because no such rivers are located within or near the project corridor.
- 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.
- Geology: The proposed project would only disturb topsoil layers. While some digging, scraping, or post drilling would be required for installation of fence posts, any resulting impacts would be localized and negligible, as there are no geologic outcrops of particular significance or containing any unique features, and underlying geologic formations are pervasive and common throughout the general area.
- Prime Farmlands: No soils exist within the project corridor that satisfy the criteria for prime farmland soils (U.S. Department of Agriculture [USDA] 1979).
- Environmental Justice and Protection of Children: There are no residential areas or persons living in the vicinity of the project corridor; therefore, it is not likely that minority, low-income communities, or children, would be affected by the implementation of the Proposed Action.

- Human Health and Safety: Due to the remote location of the project corridor, the likelihood of this project impacting the health and safety of humans other than USBP agents and contractors or military personnel performing the road improvements is extremely low. All occupational safety standards and BMPs, as outlined in Section 5.0 of this document, would be implemented.

An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. Impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. The effects can be temporary, short-term, long-term or permanent. 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]). 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 will 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.

As discussed in Section 2.2.2, the primary pedestrian fence would be positioned approximately 3 feet north of the U.S.-Mexico border, with an unimproved maintenance road immediately adjacent to the north side of the proposed fence. The anticipated direct permanent and temporary impacts from the proposed TI construction for Alternatives 2 and 3 are summarized in Table 3-1. Construction activities would be restricted to the footprint of the project corridor and the temporary staging areas located along the border.



1

**Table 3-1. Summary of Impacted Acreage**

Alternatives	Impacted Acreage		
	Permanent Impacts	Temporary Impacts	Total Impacts
Alternative 2: Proposed Action Alternative (60 feet wide x 7.6 miles)	55	26	<b>81</b>
Alternative 3: Secure Fence Act Alternative (130 feet wide x 7.6 miles)	120	0	<b>120</b>

2

3 Due to the limited width of the project corridor under Alternative 2, an additional 26  
4 acres would be temporarily required to facilitate equipment and material staging during  
5 construction, as noted in Figure 2-2 and Table 3-1. However, as noted previously in  
6 Figure 2-3, the 130-foot-wide project corridor needed for Alternative 3 would  
7 accommodate construction access and material staging.

8

9 Because rights-of-entry were not obtainable within the required schedule for this EA,  
10 site-specific surveys of the project corridor were not conducted; therefore, the basis of  
11 the impact analysis is a combination of the literature review, map reconnaissance,  
12 general knowledge of the area, and past surveys conducted within and near the project  
13 corridor on similar USBP projects. Portions of the project corridor have been surveyed  
14 for biological and cultural resources in recent years. In November 2004, a  
15 reconnaissance survey was conducted to delineate vegetation communities present in  
16 the vicinity of the project corridor. This survey was performed in support of the  
17 December 2004 TVB EA (CBP 2004a). Most recently, in January 2007, a pedestrian  
18 survey was conducted in support of the 2007 SEA. This survey overlapped the  
19 western-most 0.5 mile segment of the project corridor. While general resource  
20 conditions were analyzed, biologists concentrated their efforts on the presence of  
21 protected species, wetlands, and general biological conditions (CBP 2003).

22

23 No recent biological or cultural surveys have been conducted for the entire boundaries  
24 of the project corridor. Such surveys will be conducted prior to initiation of construction

1 to confirm the presence of any sensitive resource. Therefore, supplemental NEPA  
2 documentation to identify, evaluate, and disclose any additional effects not addressed in  
3 this document may be required.

## 4 5 **3.2 LAND USE**

### 6 7 **3.2.1 Affected Environment**

8 The major land uses in the region include agriculture, rangeland, urban, forest,  
9 recreation or special use, water, and border security. Federal agencies that control  
10 large land areas in Santa Cruz County are U.S. Forest Service (USFS) and BLM  
11 (Arizona Department of Commerce 2007). The major state agencies controlling large  
12 areas of land are Arizona State Land Department, AGFD, and Arizona State Parks.  
13 The remaining land ownership category includes land controlled by other Federal  
14 agencies, such as National Park Service (NPS), along with county and municipal lands.

15  
16 Land use within the project corridor is currently open cattle rangeland under private  
17 ownership. USBP routinely uses existing roads along the U.S.-Mexico border as patrol  
18 roads, and maintains approximately 2.7 miles of intermittently positioned TVBs along  
19 the U.S.-Mexico border to control illegal vehicle traffic.

### 20 21 **3.2.2 Environmental Consequences**

#### 22 **3.2.2.1 Alternative 1: No Action Alternative**

23 Under the No Action Alternative, no construction would occur; therefore, no impact on  
24 land use would occur. Although land use would not change, IA pedestrian traffic in the  
25 project corridor would continue and could potentially increase.

#### 26 27 **3.2.2.2 Alternative 2: Proposed Action Alternative**

28 There would be a minor insignificant direct impact on land use upon implementation of  
29 the Proposed Action Alternative, as 55 acres of private rangeland would be converted to  
30 TI and law enforcement zone. There would be a temporary direct impact on 26 acres of  
31 land used for equipment staging, but the land would return to its original functions

1 following the construction period. Land would be acquired through lease, easement, or  
2 fee title to the government. Landowners would be compensated at fair market values.

3  
4 There could be indirect effects outside of the project corridor as IAs attempt to  
5 circumvent the proposed infrastructure. These effects cannot be quantified at this time  
6 because IA patterns and migration routes are completely out of USBP's control.  
7 However, the primary pedestrian fence would act as a force multiplier and allow for  
8 USBP to deploy agents to areas without fence; thus, the potential adverse indirect  
9 impact could be minimized. Indirect beneficial effects are expected as a result of  
10 decreased illegal traffic north of the project corridor. By reducing illegal traffic within and  
11 adjacent to the project corridor, damage to grazing lands north would also be reduced  
12 or possibly eliminated by affording greater protection from the IAs, smugglers and  
13 terrorists to private lands.

14  
15 **3.2.2.3 Alternative 3: Secure Fence Act Alternative**

16 Potential impacts on land use would be similar to that of the Proposed Action  
17 Alternative. There would be a moderate direct impact on land use in the ROI, as 120  
18 acres of rangeland would be converted to TI and law enforcement zone. Similar to the  
19 Proposed Action Alternative, Alternative 3 would not significantly affect those resources  
20 that are required for support of, or to benefit, the current land use.

21  
22 **3.3 SOILS**

23  
24 **3.3.1 Affected Environment**

25 The soils in the vicinity of the project corridor were described in detail in the 2004 TVB  
26 EA, and those discussions are incorporated herein by reference (CBP 2004a). Two soil  
27 associations are present within the project corridor: the Comoro-Pima and the  
28 Caralampi-White House-Hathaway.

29  
30 The Comoro-Pima soil association consists of deep sandy loams and clay loams.  
31 These soils are found on the Santa Cruz River floodplain; they comprise only 1 percent

1 of the entire county and account for 10 percent of the project corridor. These soils  
2 formed in recent alluvium and tend to be more than 60 inches deep. They exhibit only a  
3 slight erosion potential, likely due to the low-lying areas in which they exist.

4  
5 The Caralampi-White House-Hathaway soil association consists of gravelly loams or  
6 gravelly sandy loams (USDA 1979). This association can be found on deeply dissected  
7 old alluvial fans and piedmonts. These soils have a slight to high erosion potential  
8 depending on the slope. This association comprises approximately 3 to 6 percent of  
9 soils within the county and makes up the remaining 90 percent of the project corridor.

### 11 **3.3.2 Environmental Consequences**

#### 12 **3.3.2.1 Alternative 1: No Action Alternative**

13 Soils in the project corridor would not be directly impacted by the No Action Alternative  
14 because there would be no ground disturbance. However, indirect impacts from IA  
15 activity to soils within the project corridor, as well as areas located to the north, would  
16 continue. Soils in this area have been, and would continue to be, susceptible to erosion  
17 caused by trampling as a result of illegal traffic, creation of trails, and alteration of  
18 drainage patterns.

#### 20 **3.3.2.2 Alternative 2: Proposed Action Alternative**

21 Soil disturbance required under the Proposed Action Alternative would permanently  
22 remove 55 acres from biological production. Approximately 3 acres of Comoro-Pima  
23 soils within the Santa Cruz River floodplain and 52 acres of Caralampi-White House-  
24 Hathaway soils in the remaining portions of the project corridor would be converted into  
25 a maintenance road and primary pedestrian fence. An additional 26 acres of  
26 Caralampi-White House-Hathaway soils located within temporary staging areas would  
27 likely be scraped and bladed to accommodate material staging. Upon completion of  
28 construction activities, the soils would be stabilized and allowed to revegetate, resulting  
29 in only minor temporary impact. These soil associations comprise a small percentage  
30 of soils existing within Santa Cruz County and none are considered prime farmland  
31 soils; thus, there would be only a negligible adverse impact.

1 A Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent under the Clean  
2 Water Act's NPDES would be required for the Proposed Action Alternative (33 U.S.C.  
3 §1342). The SWPPP would identify BMPs that would be implemented to minimize or  
4 avoid erosion and downstream sedimentation during and after construction.  
5

### 6 **3.3.2.3 Alternative 3: Secure Fence Act Alternative**

7 Soil disturbance required under Alternative 3 would permanently remove 120 acres from  
8 biological production, including approximately 6 acres of Comoro-Pima soils, and 114  
9 acres of Caralampi-White House-Hathaway soils. No temporary disturbance would  
10 occur, as all staging would be accomplished within the project corridor. While there is a  
11 greater impact on biological productivity, the permanent removal of soils from biological  
12 production would comprise a small percentage of soils existing within Santa Cruz  
13 County and, thus, adverse impacts would remain minor. Appropriate BMPs identified in  
14 the SWPPP would be implemented as described in the Proposed Action Alternative.  
15

## 16 **3.4 HYDROLOGY AND GROUNDWATER**

17

### 18 **3.4.1 Affected Environment**

19 The groundwater resources of Santa Cruz County were discussed in detail in the 2004  
20 TVB EA and are incorporated herein by reference (CBP 2004a). Groundwater  
21 resources affected in the project corridor are located in the Santa Cruz Active  
22 Management Area (AMA) (Arizona Department of Water Resources [ADWR] 2007).  
23 This AMA consists of 716 square miles located in the Basin and Range physiographic  
24 province and includes groundwater and surface water resources in the Santa Cruz  
25 River Valley. Water quality assessments for the affected region indicate that the major  
26 causes of surface water non-attainment include heavy metals, ammonia, low dissolved  
27 oxygen, turbidity, total dissolved solids, and fecal coliform bacteria. Groundwater  
28 resources in the Upper Santa Cruz River Valley form three aquifer units: the Nogales  
29 formation, older alluvium, and younger alluvium (ADWR 2007). According to the ADWR  
30 Third Management Plan (1999), the average total recharge within the Upper Santa Cruz  
31 AMA was approximately 98,800 acre-feet/year. In 1995, the total use of groundwater

1 within the AMA by the municipal, agricultural, and industrial sectors totaled  
2 approximately 21,000 acre-feet. The projected withdrawal of groundwater from the  
3 Santa Cruz AMA for year 2010 is 56,100 acre-feet (ADWR 2007); thus, the recharge in  
4 the Upper Santa Cruz AMA exceeds the withdrawal from the aquifer. Sustained yield  
5 management of water resources within the AMA includes plans for greater use of  
6 effluent as recharge so the reserve of good-quality water is preserved.

### 8 **3.4.2 Environmental Consequences**

#### 9 **3.4.2.1 Alternative 1: No Action Alternative**

10 The No Action Alternative would not have a direct impact on surface water or  
11 groundwater resources because no new construction would occur. Illegal traffic and  
12 subsequent USBP apprehension activities would continue to cause erosion and  
13 sedimentation into washes, arroyos, and other drainages.

#### 15 **3.4.2.2 Alternative 2: Proposed Action Alternative**

16 Water required for construction purposes (e.g., fugitive dust control and concrete pours)  
17 would be obtained from the City of Nogales municipal water supply and trucked to the  
18 project corridor. Depending on the method employed for fence construction,  
19 construction activities could require as little as 10,000 gallons of water per mile (dust  
20 suppression only) or up to 325,000 gallons per mile (equivalent of 1 acre-foot) for  
21 concrete footing, dust suppression and limited soil compaction. These estimated  
22 amounts would have a negligible to minor impact on the availability of water in the  
23 region. Since no more than 7.6 acre-feet of water usage would be required for  
24 construction (worst-case scenario), no significant impact on regional groundwater  
25 supplies or quality is anticipated.

#### 27 **3.4.2.3 Alternative 3: Secure Fence Act Alternative**

28 Additional water supplies required to construct a secondary pedestrian fence parallel to  
29 the primary pedestrian fence would result in only a moderate increase in impacts on the  
30 regional water supply as compared to the Proposed Action Alternative. Based on use  
31 estimates for the Proposed Action Alternative and a similar worst-case assumption (an

1 additional 1 acre-foot per mile), only 15.2 acre-feet would be required for construction.  
2 While this assumption essentially doubles the water requirements of the Proposed  
3 Action, the majority of the water requirements are for fugitive dust suppression and not  
4 concrete needs. While the water requirement for Alternative 3 would result in the  
5 greatest increase in water usage, the total usage would remain substantially less than  
6 the recharge potential within the Santa Cruz Basin. Therefore, Alternative 3 would not  
7 significantly impact groundwater resources.

### 8 9 **3.5 SURFACE WATERS AND WATERS OF THE U.S**

#### 10 11 **3.5.1 Affected Environment**

12 The Santa Cruz River is the primary surface waterway influencing the project corridor  
13 and ROI. The Santa Cruz River is characterized as an intermittent stream that contains  
14 perennial and effluent dominated reaches. Within the project corridor and ROI, it is  
15 considered a perennial stream. The river flows south into Mexico from its head waters  
16 in the San Rafael Valley, located approximately 15 miles east of the project corridor.  
17 From Mexico, it meanders back northward and re-enters Arizona 5 miles east of  
18 Nogales, within the project corridor, at which point the river continues northward  
19 towards Tucson, Arizona.

20  
21 Water supply and quality issues for this river system were described in detail in the  
22 2004 TVB EA and are incorporated herein by reference (CBP 2004a). In summary,  
23 elevated levels of turbidity, copper, and cadmium have been documented as issues of  
24 concern between the U.S.-Mexico border and the Nogales Waste Water Treatment  
25 Facility in Nogales (USEPA 2004a). The river typically supports most uses within the  
26 ROI; however, aquatic ecosystems and warm water fisheries are only partially  
27 supported (USEPA 2004a and 2004b).

28  
29 Because ROEs were not obtained within the required schedule for this EA, pedestrian  
30 surveys of the project corridor were not conducted. However, recent review of aerial  
31 photographs and USGS topographic maps suggest a total of 27 ephemeral and

1 perennial streams bisect the project corridor. Figure 3-1 identifies all of the potential  
2 surface water crossings located within the project corridor. All of these streams are  
3 likely to be classified as jurisdictional waters of the U.S. (WUS) by the USACE Los  
4 Angeles District, Arizona/Nevada Area Office.

### 6 **3.5.2 Environmental Consequences**

#### 7 **3.5.2.1 Alternative 1: No Action Alternative**

8 The No Action Alternative would not result in a direct impact on surface water resources  
9 because no new construction would occur. Illegal traffic and subsequent USBP  
10 apprehension activities would continue to cause erosion and sedimentation into  
11 washes, arroyos, and other drainages.

#### 13 **3.5.2.2 Alternative 2: Proposed Action Alternative**

14 Implementation of the Proposed Action Alternative would result in a minor, temporary  
15 impact on surface water resources from sedimentation and erosion caused by  
16 construction. However, this impact would be minimized through the use of pre- and  
17 post-construction BMPs as specified in the SWPPP.

18  
19 The construction of 7.6 miles of fence and maintenance road could impact 27 potentially  
20 jurisdictional WUS. The amount of impact would be accurately quantified after specific  
21 delineations are conducted and designs are completed. However, for the purposes of  
22 this EA, it is assumed that 20 of the 27 potential WUS are 5 feet wide, six are 10 feet  
23 wide, and one (Santa Cruz River) is 40 feet wide, including adjacent potential  
24 jurisdictional wetland areas. Using these assumptions, the 60-foot-wide construction  
25 footprint would impact approximately 0.3 acre of potential wetland.

26  
27 This would fall within the threshold for Nationwide Permit 14 or 18. However, a  
28 jurisdictional determination would be required. Therefore, pedestrian surveys and  
29 road/fence designs for these potential stream crossings would be required prior to  
30 coordination and preparation of applicable permits. If it is determined that an individual



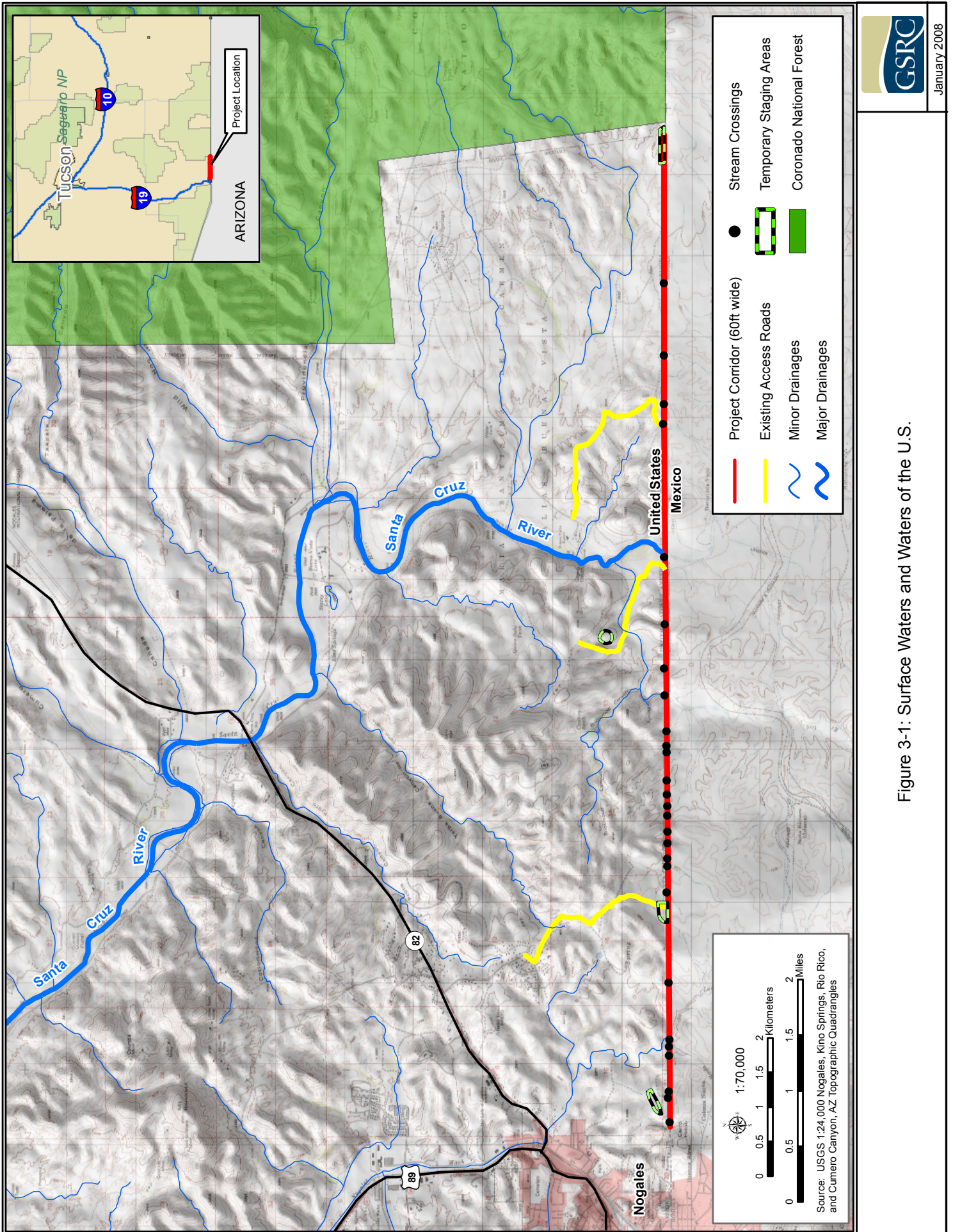


Figure 3-1: Surface Waters and Waters of the U.S.

1 permit is required, it is expected that effects would be offset by appropriate mitigation  
2 plans, as required by the Department of the Army Section 404 permit and Section 401  
3 Water Quality Certification.

4  
5 The bid/build contractor would be the responsible party for obtaining any applicable  
6 permits. In areas where primary pedestrian fencing must cross a wash, fences would  
7 be designed to ensure that the normal flow of water is not impeded. Regular  
8 maintenance of the fence would occur to remove any debris or snags that could block  
9 normal flows. Energy dissipation measures, as prescribed by the SWPPP, would be  
10 installed at each wash crossing to prevent long-term erosion and sedimentation.

11  
12 To prevent any contamination from the accidental spill of petroleum, oil and lubricants  
13 (POL) into surface waters, equipment and maintenance activities would not be staged  
14 within 100 feet of any surface water resources. In addition, a Spill Prevention, Control  
15 and Countermeasures Plan (SPCCP) would be put in place prior to the start of  
16 construction, and all personnel would be briefed on the implementation and  
17 responsibilities of this plan. The bid/build contractor would be required to prepare and  
18 implement the SPCCP.

19  
20 **3.5.2.3 Alternative 3: Secure Fence Act Alternative**

21 Under Alternative 3, placement of primary and secondary pedestrian fences is likely to  
22 result in additional erosion and sedimentation effects on surface water resources as  
23 compared to the Proposed Action Alternative. Similar to the Proposed Action  
24 Alternative, BMPs prescribed by the required SWPPP and SPCCP would ensure that  
25 impact on surface waters would remain less than significant.

26  
27 Alternative 3 would produce a similar, yet potentially greater, impact on the same 27  
28 potentially jurisdictional WUS described in the Proposed Action Alternative, since the  
29 width of the Alternative 3 project corridor is 130 feet as opposed to 60 feet. Using the  
30 assumptions presented previously for the stream widths, the 130-foot-wide construction  
31 corridor proposed under this alternative would impact up to 0.6 acre of potential

1 jurisdictional WUS. However, since each of the 27 crossings would be granted  
2 independent utility, the potential impact on any one crossing would be less than 0.5 acre  
3 and thus fall within the threshold for Nationwide Permit 14. As with the Proposed Action  
4 Alternative, coordination and a jurisdictional determination would be required prior to  
5 preparation of applicable permits. If required by the appropriate Department of the  
6 Army permitting process, mitigation plans would offset any impact.

## 8 **3.6 FLOODPLAINS**

### 10 **3.6.1 Affected Environment**

11 Pursuant to the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et  
12 seq.), and the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975), EO  
13 11988, floodplain management requires that each Federal agency take actions to  
14 reduce the risk of flood loss, minimize the impact of floods on human safety, health and  
15 welfare, and preserve the beneficial values which floodplains serve. EO 11988 requires  
16 that agencies evaluate the potential effects of actions within a floodplain and to avoid  
17 floodplains unless the agency determines that there is no practicable alternative.  
18 Where the only practicable alternative is to site in a floodplain, a planning process is  
19 followed to ensure compliance with EO 11988. In summary, this process includes the  
20 following eight steps:

- 21
- 22 • Determine whether or not the action is in the regulatory floodplain;
- 23 • Conduct early public notice;
- 24 • Identify and evaluate practicable alternatives, if any;
- 25 • Identify the impacts of the action;
- 26 • Minimize the impacts;
- 27 • Reevaluate alternatives;
- 28 • Present the findings and a public explanation; and
- 29 • Implement the action.
- 30

31 This process is further outlined on the Federal Emergency Management Agency's  
32 (FEMA's) Environmental Planning and Historic Preservation Program web site (FEMA  
33 2006). As a planning tool, the NEPA process incorporates floodplain management  
34 through analysis and public coordination, ensuring that the floodplain management

1 planning process is adhered to. In addition, floodplains are managed at the local  
2 municipal level through the assistance and oversight of FEMA. The Santa Cruz County  
3 Public Works Department is tasked with regulating developments within a floodplain  
4 through a variety of flood control and natural resource management activities.

5  
6 According to the FEMA floodplain maps (FEMA 1981), approximately 1,510 linear feet  
7 of the project corridor, specifically the Santa Cruz River floodplain, are bisected by a  
8 jurisdictional floodplain (Figure 3-2). Therefore, any action within these areas would  
9 require appropriate coordination and evaluation of the potential effects.

### 11 **3.6.2 Environmental Consequences**

#### 12 **3.6.2.1 Alternative 1: No Action Alternative**

13 The No Action Alternative would not result in a direct impact on floodplains or be  
14 inconsistent with EO 11988, as no new construction would occur.

#### 16 **3.6.2.2 Alternative 2: Proposed Action Alternative**

17 Due to the general north/south orientation of floodplains within the project corridor and  
18 the need to place infrastructure parallel to the U.S.-Mexico border, the Proposed Action  
19 Alternative would result in the unavoidable direct impact on approximately 3 acres of  
20 jurisdictional floodplains. However, compliance with EO 11988 and adherence to local  
21 floodplain regulations would ensure that any potential adverse impact on the beneficial  
22 value of the floodplain is offset.

23  
24 The bid/build contractor would be required to acquire the appropriate floodplain permits  
25 from the Santa Cruz Public Works Department that ensure fence and road designs do  
26 not impede conveyance or increase flood elevations, frequencies, and durations. As  
27 outlined in Section 4.0 of the Santa Cruz Floodplain and Erosion Hazard Management  
28 Ordinance No. 2001-03 (Santa Cruz County 2001), information required for submittal of  
29 floodplain permit applications includes but is not limited to specific site plans, an  
30 engineering hydrology and hydrologic analysis that incorporates fence and road  
31 designs, and a debris clearing maintenance plan. As deemed necessary to ensure that



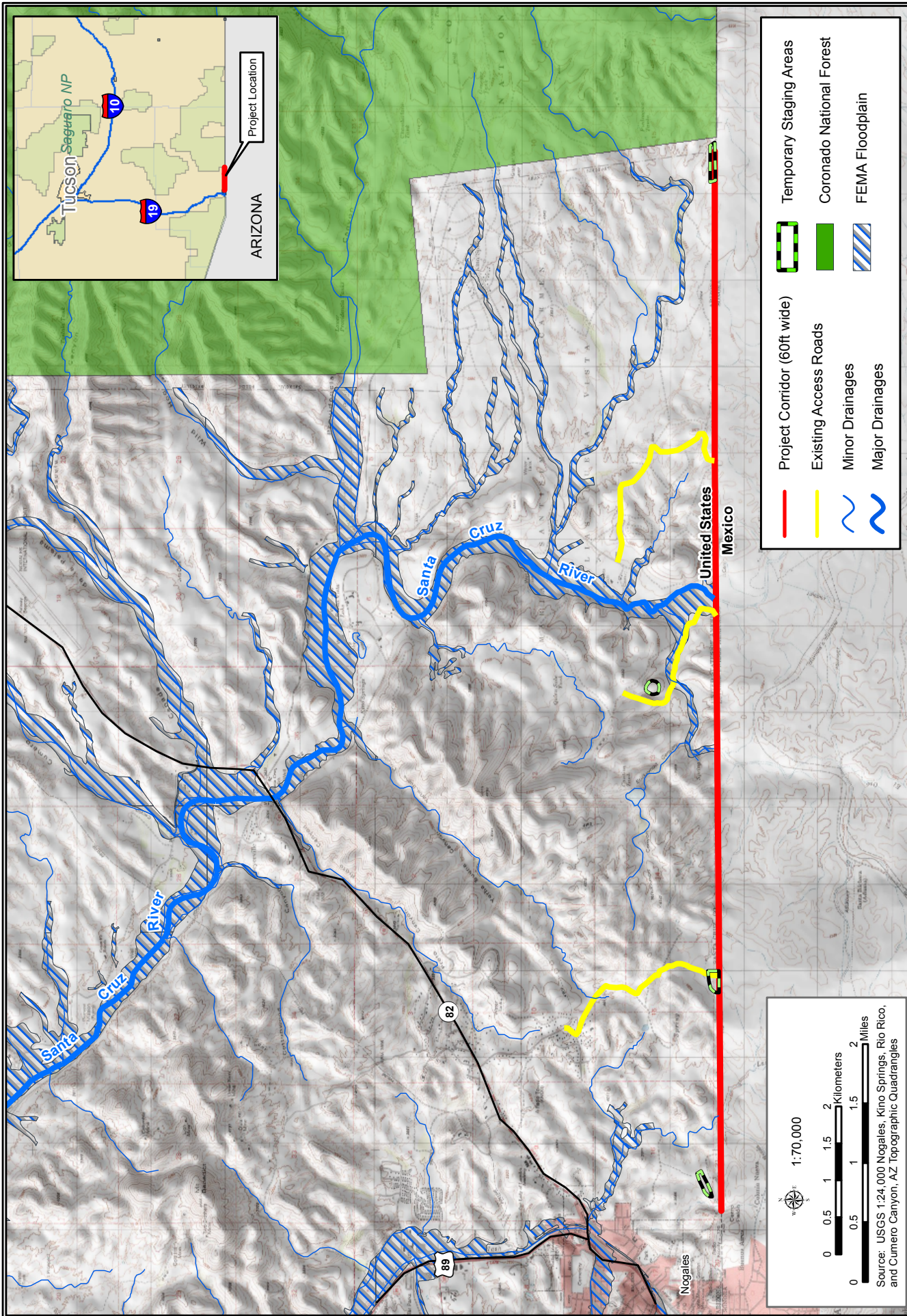


Figure 3-2: FEMA Floodplain Map

1 provisions of the local floodplain management ordinance are met, the fence and road  
2 design may require subsequent alterations prior to construction. However, any  
3 alteration or design change is expected to be minor and would further minimize any  
4 potential adverse impact on floodplains.

5  
6 CBP has determined that there is no other practicable alternative to constructing  
7 sections of fence and road within a floodplain, as the border bisects the floodplain and  
8 the proposed fence and road must be located on the border. However, by design, the  
9 bollard-style fence would minimize potential impacts on flood flows, as it would allow for  
10 free flow of flood waters. Routine maintenance operations would further ensure that  
11 accumulated debris is removed on a regular basis. By ensuring that the provisions of  
12 the local floodplain ordinance are met, the Proposed Action Alternative would remain in  
13 compliance with EO 111988.

### 14 15 **3.6.2.3 Alternative 3: Secure Fence Act Alternative**

16 Alternative 3 would result in an unavoidable impact on approximately 6 acres of  
17 jurisdictional floodplains. However, the compliance process with EO 11988 and local  
18 floodplain regulations would be similar to that described for the Proposed Action  
19 Alternative; therefore, any potential adverse impact on jurisdictional floodplains would  
20 be minimized.

## 21 22 **3.7 VEGETATIVE HABITAT**

### 23 24 **3.7.1 Affected Environment**

25 Past biological and reconnaissance surveys within and near the project corridor have  
26 identified three Chihuahuan desert communities that exist in and near the project  
27 corridor. The classification of these communities follows Brown (1994) and utilizes  
28 variation in general species composition and appearance. The following discussions  
29 are summaries of the communities described in the 2004 TVB EA, which are  
30 incorporated by reference (CBP 2004a). Without data obtained from pedestrian  
31 surveys, delineation of habitat transitions must be estimated; therefore, percentages

1 and acreages noted within the following subsections are estimates based on aerial  
2 photograph interpretation and general knowledge of the area.

3  
4 **3.7.1.1 Interior Southwestern, Cottonwood—Willow Series**

5 Dominated by Fremont cottonwood (*Populus fremontii*) and narrow-leaf cottonwood (*P.*  
6 *angustifolia*), this series is typically found in open riparian canyons or on bajadas.  
7 Vegetation communities of the Cottonwood - Willow series are exposed to full sunlight  
8 and warm, dry air. The typical forest structure in this series is an open crowned forest  
9 with lower shrub and forb layers. Within the project corridor, this series is limited to the  
10 Santa Cruz floodplain and one of its major tributaries and comprises approximately 5  
11 percent of the entire project corridor.

12  
13 **3.7.1.2 Riparian Deciduous Forest and Woodland, Mixed Broadleaf Series**

14 These highly diverse vegetation communities are typically associated with riparian  
15 canyons and washes. Forest structure consists of a canopy of deciduous broadleaf  
16 trees having broad crowns with abundant shrub and forb layers. This series is limited to  
17 moist areas of other washes that bisect the project corridor, and comprises  
18 approximately 5 percent of the entire project corridor.

19  
20 **3.7.1.3 Scrub-Grassland (Semidesert), Mixed Grass Series**

21 Found on a variety of soils at elevations, this community is the most important grassland  
22 series in Arizona and is quite diverse. Native bunch-grasses and fire-tolerant species of  
23 this series have suffered from cattle grazing and fire suppression, thus permitting the  
24 proliferation of invasive shrubs and cacti. The community is typically made up of  
25 shrubs and succulents scattered among mixed stands of perennial bunch-grasses and  
26 annual grasses of uniform height. It is the most widely distributed community within the  
27 project corridor, and is composed of grassy landscapes broken up by widely scattered  
28 scrub trees. This community comprises the remaining 90 percent of the project corridor  
29 and 100 percent of the temporary staging areas.



1 **3.7.2 Environmental Consequences**

2 **3.7.2.1 Alternative 1: No Action Alternative**

3 Natural vegetation communities would not be directly impacted under the No Action  
4 Alternative. Illegal traffic has resulted in the trampling of plants, creation of trails, and  
5 alteration of drainage patterns, and these effects would be expected to continue. Illegal  
6 foot and vehicle traffic would continue to passively promote the establishment of non-  
7 native and invasive plant species. IAs can carry propagules (*i.e.*, seeds or spores) of  
8 non-native invasive plant species into the project corridor. Accidental wildfires caused  
9 by IAs also have devastating effects in native habitats not adapted to a regular fire  
10 regime.

11

12 **3.7.2.2 Alternative 2: Proposed Action Alternative**

13 The Proposed Action Alternative would result in the permanent loss of 55 acres of  
14 vegetation, which includes 49 acres of Scrub-Grassland, 3 acres of Riparian Deciduous  
15 Forest and Woodland, and 3 acres of Cottonwood - Willow. Scrub-Grassland is  
16 dominated by herbaceous species, therefore would be the most resistant to  
17 disturbance. While not as abundant due to its affinity for washes, Riparian Deciduous  
18 Forest and Woodland is common both locally and regionally; thus, degradation or loss  
19 of a small portion of this community would not be significant within a local or regional  
20 context. Cottonwood - Willow is rather unique to major washes and southwestern river  
21 systems. This community is important habitat to many riparian wildlife and aquatic  
22 species; therefore, the loss of any such community, regardless of size, is undesirable.  
23 However, the loss of 3 acres of such habitat would be offset by the indirect benefits to  
24 this community from preventing the impact of illegal traffic as discussed in Alternative 1.  
25 It is also likely that the losses to these communities would require compensatory  
26 mitigation under the Section 404 permit process.

27

28 Storage of equipment and materials at the temporary staging areas would result in the  
29 temporary disturbance of 26 acres of the common Scrub-Grassland community. Upon  
30 completion of construction activities, natural vegetation would be allowed to regenerate  
31 from the existing seed bank, undamaged root stocks of shrubs, and stem segments of



1 cacti, or undergo active rehabilitation if deemed necessary. Therefore, there would be  
2 no significant impact within staging areas.

3  
4 Operation of temporary lighting would result in only negligible indirect impact on  
5 vegetation adjacent to the project corridor. The impact on vegetation communities from  
6 temporary lighting would not inhibit ecological processes, population size, or individual  
7 fecundity of any plant species adjacent to the project corridor.

### 9 **3.7.2.3 Alternative 3: Secure Fence Act Alternative**

10 Effects under Alternative 3 would be similar to that of the Proposed Action Alternative,  
11 yet greater in magnitude in terms of impacted acres. To accommodate construction of  
12 the primary and secondary pedestrian fences, roads, and staging areas, Alternative 3  
13 would result in the permanent loss of 120 acres of vegetation, including 108 acres of  
14 Scrub-Grassland, 6 acres of Riparian Deciduous Forest and Woodland, and 6 acres of  
15 Cottonwood - Willow series. Compensation for the loss of the Cottonwood - Willow  
16 series would be expected to be required under the Section 404 permit process. The  
17 impacts on Scrub-Grassland and riparian communities would still be considered  
18 insignificant given their local and regional abundance.

19  
20 The same mitigation measures as those outlined for the Proposed Action Alternative  
21 would be followed to ensure that impact on vegetation communities would not be  
22 significant and the construction activities and subsequent operations do not inhibit  
23 ecological processes of any species within the project corridor.

## 24 25 **3.8 WILDLIFE AND AQUATIC RESOURCES**

### 26 27 **3.8.1 Affected Environment**

28 The native faunal components of southeastern Arizona include 370 species of birds,  
29 109 mammal species (Lowe 1964, Hoffmeister 1986), 23 amphibian species (Lowe  
30 1964, Lowe and Holm 1992), and 72 species of reptiles (Lowe 1964, U.S. Department  
31 of Interior [USDOI] 1989, USACE 1990). Fish diversity in the major river basins and

1 springs of the study area is relatively low and many species are not native (Minckley  
2 1973; Rinne and Minckley 1991; Robbins *et al.* 1991). The Santa Cruz River system is  
3 known to support 12 fish species.

4  
5 Numerous wildlife and aquatic species have been documented within and near the  
6 project corridor and its ROI as a result of past biological surveys. In-depth discussions  
7 of the wildlife and aquatic resources that occur within the ROI and project corridor are  
8 provided in the 2004 TVB EA and the 2007 Fence EA (CBP 2004a and 2007), and  
9 those discussions are incorporated herein by reference. In summary, some of the more  
10 common birds observed include: white-winged dove (*Zenaida asiatica*), Chihuahuan  
11 raven (*Corvus cryptoleucus*), Mexican jay (*Aphelocoma ultramarine*), northern harrier  
12 (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco*  
13 *sparverius*), turkey vulture (*Cathartes aura*), Gambel's quail (*Callipepla gambelii*),  
14 scaled quail (*Callipepla squamata*), ash-throated flycatcher (*Myiarchus cinerascens*),  
15 western kingbird (*Tyrannus verticalis*), black-throated sparrow (*Amphispiza bilineata*),  
16 and lark sparrow (*Chondestes grammacus*). Mammals observed include desert  
17 cottontail (*Sylvilagus auduboni*), antelope jackrabbit (*Lepus alleni*) and mule deer  
18 (*Odocoileus hemionus*). The Sonoran spotted whiptail (*Aspidoscelis sonorae*) is the  
19 only reptile species observed during recent surveys.

20  
21 Among the habitats found in the vegetation types described in the previous subsection,  
22 those occurring in riparian areas (Cottonwood - Willow and Riparian Deciduous Forest  
23 and Woodland) are the most important for supporting wildlife. These riparian-  
24 associated communities are particularly important to vertebrates, whose density and  
25 diversity within these communities are two to three times greater than in the surrounding  
26 habitats (CBP 2004a).

## 27 28 **3.8.2 Environmental Consequences**

### 29 **3.8.2.1 Alternative 1: No Action Alternative**

30 There would be no direct impact on wildlife as a result of the No Action Alternative.  
31 However, IAs crossing the border would continue to degrade the wildlife habitat within

1 the project corridor by eroding hillsides and riparian zones, destroying vegetation, and  
2 creating illegal trails. Illegal traffic and related activities could disturb nesting birds and  
3 rare wildlife species located north of the project corridor, affecting their reproduction.  
4

### 5 **3.8.2.2 Alternative 2: Proposed Action Alternative**

6 Direct impact on wildlife would occur as a result of the loss of 55 acres of habitat due to  
7 construction of the primary pedestrian fence and maintenance road. This impact would  
8 be negligible due to existing disturbances and the vast areas of similar habitat north of  
9 the project corridor. Additionally, some displacement of wildlife would occur due to  
10 construction-related disturbances (*e.g.*, noises and temporary nighttime lighting). Such  
11 effects would likely occur at any active construction site or access route within the 55-  
12 acre project corridor, as well as the 26 acres proposed for equipment staging.  
13 However, these effects would be considered insignificant due to the similar habitat  
14 adjacent to the project corridor and because of the short duration of construction  
15 activities.  
16

17 There would be a moderate impact associated with restriction of transboundary  
18 movement of wildlife. While a primary pedestrian fence would serve as a physical  
19 barrier to many wildlife species, particularly large mammals such as mule deer that  
20 migrate north and south of the U.S.-Mexico border, corridors for wildlife movement  
21 would still exist. By design, the proposed bollard-style fence would contain openings  
22 that are large enough to allow transboundary migration of small mammals and reptiles.  
23 Thus, the primary pedestrian fence would not affect the genetic variability of such  
24 species, especially since they are regionally common. The loss of 0.3 acre of aquatic  
25 habitat, as discussed in Section 3.5.2.2, would be offset by the indirect benefits of  
26 reduced illegal traffic and any mitigation required under the Section 404 permit process.  
27

28 Although the primary pedestrian fence would preclude transboundary migration of larger  
29 mammals (*e.g.*, mule deer), and thus fragment habitat within the project corridor, this  
30 impact would be considered minor. Habitat fragmentation typically affects species with  
31 small population sizes or that are dependent upon migration to obtain spatially- or

1 temporally-limited resources. No significant adverse effects are anticipated, as most  
2 large mammals are regionally common in both the U.S. and Mexico.

3  
4 There would be a temporary impact on wildlife species from increased noise during  
5 construction. Physiological responses from noise range from minor responses, such as  
6 an increase in heart rate, to more damaging effects on metabolism and hormone  
7 balance. Long-term exposure to noise can cause excessive stimulation to the nervous  
8 system and chronic stress that is harmful to the health of wildlife species and their  
9 reproductive fitness (Fletcher 1990). Behavioral responses vary among species of  
10 animals and even among individuals of a particular species. Variations in response  
11 may be due to temperament, sex, age, or prior experience. Minor responses include  
12 head-raising and body-shifting, and more disturbed mammals will usually travel short  
13 distances. Panic and escape behavior results from more severe disturbances, causing  
14 the animal to leave the area (Busnel and Fletcher 1978). Since, the highest period of  
15 movement for most wildlife species occurs during night time or low daylight hours, and  
16 construction activities would be conducted during daylight hours to the maximum extent  
17 practicable, temporary effects of noise on wildlife species are expected to be  
18 insignificant.

19  
20 There could be an indirect adverse impact on wildlife in other areas along the southwest  
21 border if the IAs choose to cross the border at other locations. The magnitude of the  
22 impact would depend upon several biotic and abiotic variables, including, but not limited  
23 to, proximity to developed or disturbed areas, number and season of illegal entries, and  
24 extant of vegetation community conditions and types where IAs choose to illegally  
25 cross.

26  
27 Beneficial effects on wildlife populations are also anticipated from the reduction of illegal  
28 pedestrian traffic and consequent USBP enforcement actions to wildlife habitats located  
29 north of the project corridor.

1 The Migratory Bird Treaty Act (MBTA) requires that Federal agencies coordinate with  
2 USFWS if a construction activity would result in the take of a migratory bird. Since  
3 construction is expected to begin some time in the beginning of 2008, avoidance of  
4 migratory bird nesting season (March through September) is not likely possible.  
5 Therefore, if construction begins on or around March 2008, preconstruction surveys to  
6 identify nesting activity would be conducted, and USFWS would be notified of the  
7 results. Any active nests occupied by migratory bird species would be avoided to the  
8 extent practicable.

### 10 **3.8.2.3 Alternative 3: Secure Fence Act Alternative**

11 Direct effects would be greater, as 120 acres of wildlife and aquatic habitat would be  
12 lost. Furthermore, the potential for mortality would be increased with the addition of a  
13 second pedestrian fence, as small animals (e.g., desert cotton tail, antelope jack rabbit,  
14 and Sonoran spotted whiptail) attempting to move through the project corridor may  
15 become confused and become trapped between the two fences. The long-term effects  
16 of such mortality potential are difficult to assess. However, due to the beneficial impacts  
17 similar to those of the Proposed Action Alternative, this additional impact would likely  
18 remain moderate within the ROI.

19  
20 Temporary noise impact on wildlife would be greater in duration as a result of an  
21 extended construction period and larger footprint. However, as described in Section  
22 3.8.2.2, such an impact is expected to remain insignificant over the ROI.

## 24 **3.9 PROTECTED SPECIES AND CRITICAL HABITAT**

### 26 **3.9.1 Affected Environment**

#### 27 **3.9.1.1 Federal**

28 A total of 16 Federally protected species and three candidate species (Table 3-2) have  
29 the potential to occur within Santa Cruz County (USFWS 2007). CBP/USBP are  
30 currently conducting Section 7 consultation on three species USFWS has determined  
31 can be potentially found within the ROI and project corridor. These are: jaguar

1 (*Panthera onca*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), and  
 2 Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*). A brief description of  
 3 these three species and their habitat requirements are presented in the following  
 4 paragraphs.

6 **Table 3-2. Federally Listed and Proposed Species Potentially Occurring within**  
 7 **Santa Cruz County, Arizona**

Common/Scientific Name	Federal Status	Habitat	Potential to occur within or near the Project Corridor
<b>PLANTS</b>			
Canelo Hills ladies'-tresses ( <i>Spiranthes delitescens</i> )	E	Finely grained, highly organic, saturated soils of cienegas.	No – No saturated soils located in the project corridor.
Huachuca water umbel ( <i>Lilaeopsis schaffneriana</i> spp. <i>recurva</i> )	E	Cienegas, perennial low gradient streams, wetlands	<b>Yes</b> –Potentially suitable habitat exists in the Santa Cruz River portion of the project corridor.
Pima pineapple cactus ( <i>Coryphantha scheeri</i> var. <i>robustispina</i> )	E	Sonoran desertscrub or semi-desert grassland communities.	<b>Yes</b> – Nogales represents the southernmost portion of its range.
<b>INVERTEBRATES</b>			
Stephan's riffle beetle ( <i>Hetremis stephani</i> )	C	Free-flowing springs and seeps.	No –The project corridor is not located in known habitat.
Huachuca springsnail ( <i>Pyrgulopsis thomsoni</i> )	C	Aquatic areas, small springs with vegetation and slow moderate flow.	No – No suitable habitat present.
<b>BIRDS</b>			
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	C	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	No – No suitable habitat is present.
California brown pelican ( <i>Pelecanus occidentalis californicus</i> )	E	Feed in shallow estuarine waters; nest on small coastal islands.	No – No suitable habitat present.
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	T	Nests in canyons and dense forests with multi-layered foliage structure.	<b>Yes</b> – Critical habitat designated east of project corridor. Suitable foraging habitat may occur within the Santa Cruz River floodplain.
Northern aplomado falcon ( <i>Falco femoralis septentrionalis</i> )	E	Grasslands and savannahs.	<b>Yes</b> – Potential foraging and nesting habitat present.
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	E	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	<b>Yes</b> – Potential foraging and nesting habitat may be present within the Santa Cruz River system.

Table 3-2, continued

Common/Scientific Name	Federal Status	Habitat	Potential to occur within or near the Project Corridor
<b>AMPHIBIANS</b>			
Chiricahua leopard frog ( <i>Rana chiricahuensis</i> )	T	Streams, rivers, backwaters, ponds, and stock tanks.	<b>Yes</b> –Potentially suitable habitat may exist in perennial pools of the areas of the Santa Cruz River floodplain and its tributaries.
Sonora tiger salamander ( <i>Ambystoma tigrinum stebbinsi</i> )	E	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains.	No –The project corridor is not located in known habitat.
<b>MAMMALS</b>			
Jaguar ( <i>Panthera onca</i> )	E	Found in tropical rainforests, arid scrub, and wet grasslands and prefer dense forests or swamps with a ready supply of water	<b>Yes</b> – Sightings have been documented west of the project corridor within the CNF.
Lesser long-nosed bat ( <i>Leptonycteris curasoae yerbabuena</i> )	E	Desert scrub habitat with agave and columnar cacti present as food plants.	<b>Yes</b> – Potential foraging habitat but no suitable roosting habitat present.
Ocelot ( <i>Leopardus pardalis</i> )	E	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	<b>Yes</b> –Potentially suitable habitat exists in densely vegetated areas of the Santa Cruz River floodplain and its tributaries.
<b>FISHES</b>			
Desert pupfish ( <i>Cyprinodon macularius</i> )	E	Shallow springs, small streams, and marshes.	No – Native Arizona populations located on Organ Pipe Cactus National Monument and additional refugia populations north of project corridor.
Gila chub ( <i>Gila intermedia</i> )	E	Pools, springs, cienegas, and streams.	<b>Yes</b> – Potentially suitable habitat exists in the Santa Cruz River system.
Gila topminnow ( <i>Poeciliopsis occidentalis occidentalis</i> )	E	Small streams, springs, cienegas and vegetated shallows.	<b>Yes</b> – Potentially suitable habitat exists in the Santa Cruz River system.
Sonora chub ( <i>Gila ditaenia</i> )	T	Perennial and intermittent shallow to moderate streams with boulders and cliffs.	No –The project corridor is not located in known habitat.

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

3  
4  
5  
6

1 The jaguar is the largest and most robust of the North American cats. The  
2 southwestern U.S. and Sonora, Mexico, are the extreme northern limits of the jaguar's  
3 range, which primarily extends from central Mexico, south through Central and South  
4 America to northern Argentina (Hatten *et al.* 2002). The jaguar is found near water in  
5 the warm tropical climate of savannahs and forests. Information on jaguar ecology and  
6 behavior, especially at the northern edge of the species' range, is very limited. Habitat  
7 studies in the core part of their range indicate a close association with water, dense  
8 cover, and sufficient prey, and an avoidance of highly disturbed areas (Hatten *et al.*  
9 2002). Jaguar distribution patterns over the last 50 years and recent observations of  
10 individuals suggest that southeast Arizona is the most likely area for future jaguar  
11 occurrence in the U.S. (Hatten *et al.* 2002).

12

13 The lesser long-nosed bat was listed as endangered on September 30, 1988 (53 FR  
14 38456). Lesser long-nosed bats are a nectar, pollen, and fruit-eating species that  
15 migrate into southern New Mexico and Arizona seasonally from Mexico. Scattered  
16 small agave plants have the potential to occur within the project corridor and could  
17 provide potential foraging habitat.

18

19 The Pima pineapple cactus was designated as endangered on September 23, 1993 (58  
20 CFR 49875). The Pima pineapple cactus is found at elevations between 2,300 and  
21 4,500 feet in Pima and Santa Cruz Counties. Pima pineapple cacti are 4- to 18-inches  
22 tall, dome-shaped, with silky yellow flowers that bloom in early July with summer rains  
23 (58 CFR 49875). They are found in alluvial basins or on hillsides in semi-desert  
24 grassland and Sonoran desert scrub. The project corridor lies in the southernmost  
25 portion of the Pima pineapple cacti known range. The species occupies habitats that  
26 are flat and sparsely vegetated. Suitable habitat for the Pima pineapple cactus exists  
27 throughout the project corridor.

28

29 Because ROEs were not obtainable within the required schedule for this EA, pedestrian  
30 surveys of the project corridor were not conducted. Consequently, definitive statements  
31 about potential habitat or evidence of species occurrences could not be made.



1 Therefore, based solely on literature review and map reconnaissance, an additional  
2 eight species identified in Table 3-2 may be supported by habitat within the project  
3 corridor. These include: Huachuca water umbel (*Lilaeopsis schaffneriana* spp. *recurva*),  
4 Mexican spotted owl (*Strix occidentalis lucida*), northern aplomado falcon, (*Falco*  
5 *femorialis septentrionalis*), southwestern willow flycatcher (*Empidonax traillii extimus*),  
6 ocelot (*Leopardus pardalis*), Chiricahua leopard frog (*Rana chiricahuensis*), Gila chub  
7 (*Gila intermedia*), and Gila topminnow (*Poeciliopsis occidentalis occidentalis*). Brief  
8 descriptions of the habitat requirements for these species were presented in Table 3-2.  
9 Detailed descriptions were contained in the 2007 Fence EA (CBP 2007c) and are  
10 incorporated herein by reference.

11

### 12 **3.9.1.2 State**

13 The Arizona Natural Heritage Program (ANHP) maintains a list of species with special  
14 status in Arizona. The ANHP list includes flora and fauna whose occurrence in Arizona  
15 is or may be in jeopardy, or has known or perceived threats or population declines  
16 (AGFD 2006). The ANHP list is provided in Appendix C. These species are not  
17 necessarily the same as those protected under the ESA of 1973, as amended.

18

19 The project corridor could be considered suitable habitat for various state-sensitive bird,  
20 mammal, and plant species; however, definitive statements about potential habitat or  
21 evidence of species occurrences cannot be made until pedestrian surveys are  
22 conducted.

23

## 24 **3.9.2 Environmental Consequences**

### 25 **3.9.2.1 Alternative 1: No Action Alternative**

26 There would be no direct impact on protected species if the No Action Alternative were  
27 selected, as no construction would occur. However, indirect adverse effects on  
28 protected species, such as habitat degradation as a result of continued illegal traffic  
29 would occur and could potentially increase.

30

1 **3.9.2.2 Alternative 2: Proposed Action Alternative**

2 Without data from pedestrian surveys, it is difficult to make a definitive assessment of  
3 the presence of suitable habitat conditions or potential presence of the jaguar, lesser  
4 long-nosed bat, and Pima pineapple cactus within the project corridor, or to make an  
5 accurate determination of the potential presence of any other protected species to exist.  
6 Through early and ongoing coordination with USFWS, a more definitive list of protected  
7 species with the potential to be found within the project corridor would be developed. If  
8 appropriate, CBP would enter into formal Section 7 consultation with USFWS. During  
9 consultation with USFWS, CBP/USBP would determine which, if any, species require  
10 surveys so that a definitive and accurate effect determination can be made.  
11 Preconstruction surveys would be completed in order to confirm or refute the presence  
12 or absence of these species, or suitable habitat that could support these species.

13  
14 While avoidance would be the primary conservation measure, CBP/USBP have  
15 prepared a list of appropriate BMPs (see Appendix D) for the jaguar, lesser long-nosed  
16 bat, and Pima pineapple cactus. This list of BMPs was developed in close coordination  
17 with CBP and USFWS; and is specific to USBP's proposed TI construction and  
18 operation activities. During the Section 7 consultation, if it is determined that there is a  
19 potential to adversely affect a protected species, the attached BMPs and appropriate  
20 conservation measures would be implemented. In addition, supplemental NEPA  
21 documentation might be required, to publicly disclose these potential effects and the  
22 appropriate conservation measures or BMPs.

23  
24 Habitats with the potential to support many of the state-protected species, especially  
25 plant species, are found within the project corridor (see Appendix C). Prior to  
26 construction activities, and upon verification of the presence of any such species,  
27 coordination with AGFD staff would be conducted regarding avoidance and/or  
28 conservation measures, as appropriate, to minimize adverse impact.

29

1 **3.9.2.3 Alternative 3: Secure Fence Act Alternative**

2 The potential impact, required Section 7 consultation, and AGFD coordination would be  
3 the same for Alternative 3 as those discussed for the Proposed Action Alternative.  
4

5 **3.10 CULTURAL RESOURCES**

6  
7 The procedures to evaluate and manage cultural resources, as well as the cultural history  
8 of the region, were described in the 2007 Road EA, and those discussions are  
9 incorporated herein by reference (CBP 2007b). In summary, Section 106 of the NHPA  
10 requires Federal agencies to identify and assess the effects of their actions on cultural  
11 resources. The historic preservation review process mandated by Section 106 is outlined  
12 in regulations issued by the ACHP. Revised regulations, "Protection of Historic  
13 Properties" (36 CFR Part 800), became effective January 11, 2001.  
14

15 **3.10.1 Affected Environment**

16 **3.10.1.1 Cultural Resources Overview**

17 A cultural resources overview of the project region is incorporated by reference from the  
18 2003 EA (CBP 2003). In summary, the cultural setting of the project area is generally  
19 divided into six different periods: Pre-Clovis, Paleoindian, Archaic, Formative, Late  
20 Prehistory and Protohistory, and Spanish Exploration and Settlement. These periods are  
21 commonly subdivided into smaller temporal phases based on particular characteristics of  
22 the artifact assemblages encountered in each of three archeological regions within  
23 southern Arizona.  
24

25 **3.10.1.2 Previous Investigations**

26 Past cultural investigations for the project corridor are described in the 2003 EA and are  
27 herein incorporated by reference (CBP 2003). In summary, a literature review was  
28 conducted at the Arizona State Museum, Arizona SHPO office, and CNF. A total of 38  
29 recorded cultural resources surveys were previously conducted within 1 mile of the  
30 proposed project corridor.  
31

1 **3.10.1.3 Current Investigations**

2 Because ROEs were not obtainable within the required schedule for this EA, pedestrian  
3 surveys of the project corridor were not conducted. Consequently, definitive statements  
4 about prehistoric and historic sites cannot be made at this time. There is a high  
5 probability of prehistoric sites on terraces along the Santa Cruz River, as well as other  
6 major washes that transect the project corridor. In addition, Border Monuments 118 and  
7 119 are known to be located within the project corridor and are considered to be  
8 significant historic properties. However, archival research indicated no other sites within  
9 the project corridor.

10  
11 **3.10.2 Environmental Consequences**

12 **3.10.2.1 Alternative 1: No Action Alternative**

13 Under the No Action Alternative, there would be no additional construction or ground-  
14 disturbing activities and thus no impact on cultural resources.

15  
16 **3.10.2.2 Alternative 2: Proposed Action Alternative**

17 Based on the current literature review, two Border Monuments (118 and 119) are the  
18 only known historic properties within the project corridor and are eligible for listing on  
19 the National Register of Historic Places (NRHP). The monuments would not be directly  
20 affected by construction activities. A temporary barrier would be placed around the  
21 monuments during construction activities as a mitigation measure, and all construction  
22 and earthwork in the proximity would be monitored by a qualified archeologist.  
23 Pedestrian surveys and Section 106 coordination with Arizona SHPO, as well as  
24 coordination with USIBWC, would be completed prior to construction in order to  
25 document the presence or absence of other historic properties, assess any potential for  
26 adverse impact, and identify appropriate mitigation measures. Based on past CBP  
27 actions, it is anticipated that USIBWC would be allowed maintenance access to the  
28 monuments, and the line of sight from monument to monument would not be  
29 obstructed.

1 Indirect effects to known and unknown cultural resources sites would be both beneficial  
2 and adverse. In the areas immediately north of the project corridor, the primary  
3 pedestrian fence would protect known and unknown cultural resources by reducing the  
4 amount of IA traffic and the consequent USBP enforcement activities. Conversely,  
5 there would be an adverse indirect impact on cultural resources sites in other areas  
6 where IAs attempt to circumvent the primary pedestrian fence. The magnitude of these  
7 effects is unknown, since the frequency and location of the illegal entry attempts are at  
8 the discretion of the IAs. However, the primary pedestrian fence would serve as a force  
9 multiplier by deterring IAs in the area and allowing USBP to deploy agents to other  
10 unprotected reaches of the border.

11

### 12 **3.10.2.3 Alternative 3: Secure Fence Act Alternative**

13 Without data that can only be obtained from pedestrian surveys, it is difficult to assess  
14 the potential for Alternative 3 to adversely affect historic properties. It is likely that any  
15 sites that are encountered under the Proposed Action Alternative would also be affected  
16 under this alternative, since cultural resources sites typically encompass areas that  
17 extend well beyond 60 feet. There is a potential for Alternative 3 to affect additional  
18 sites that the Proposed Action Alternative would avoid, if the southern boundary of a site  
19 is located more than 60 feet north of the U.S.-Mexico border. Again, pedestrian surveys  
20 and Section 106 would need to be completed prior to the initiation of construction  
21 activities to ensure no adverse effects on potentially significant sites would occur. In  
22 addition, supplemental NEPA documentation to disclose these potential effects might be  
23 required.

24

## 25 **3.11 AIR QUALITY**

26

### 27 **3.11.1 Affected Environment**

28 Air quality issues and conditions for the ROI were discussed in the 2004 TVB EA and  
29 most recently in the 2007 Road EA (CBP 2004, 2007b). Those discussions are  
30 incorporated herein by reference.

31

1 In summary, the USEPA Office of Air Quality Planning and Standards has set National  
2 Ambient Air Quality Standards (NAAQS) for six criteria pollutants. The major pollutants  
3 of concern, or “criteria pollutants,” are carbon monoxide, sulfur dioxide, nitrogen dioxide,  
4 ozone, suspended particulate matter less than 10 microns (PM-10), and lead. Areas  
5 that do not meet the NAAQS are called “non-attainment” areas; conversely, areas that  
6 meet both primary and secondary standards are known as “attainment” areas.

7  
8 According to air quality information received from USEPA Region 9 during the  
9 development of the 2007 Road EA, unincorporated areas of Santa Cruz County are in  
10 attainment of established NAAQS for all criteria pollutants (CBP 2007b). However, the  
11 Nogales metropolitan area is currently in violation of the NAAQS for PM-10. The  
12 emission sources have been identified as unpaved roads, cleared areas, and paved  
13 roads (USEPA 2007).

### 14 15 **3.11.2 Environmental Consequences**

#### 16 **3.11.2.1 Alternative 1: No Action Alternative**

17 The No Action Alternative would not result in any direct impact on the region’s air quality  
18 because no additional construction is proposed. However, indirect adverse effects on  
19 air quality from illegal traffic and subsequent USBP enforcement activities would occur  
20 and could potentially increase.

#### 21 22 **3.11.2.2 Alternative 2: Proposed Action Alternative**

23 Calculations of the emissions created by construction activities required by the  
24 Proposed Action Alternative were conducted to determine the potential impact on the  
25 region’s airshed (Appendix E). Table 3-3 presents a summary of these emissions.  
26 Based on these estimates, the fence and maintenance road construction would result in  
27 a minimal and temporary impact on local air quality. During construction, fugitive dust  
28 (PM-10) levels would increase in the ROI. However, fugitive dust generated during  
29 construction would be minimized by applying water or other wetting solutions as  
30 outlined in Section 5 of this EA. As indicated in Table 3-3, the PM-10 emissions would  
31 be well below the *de minimis* threshold and thus do not require an air conformity

1 analysis. Furthermore, transportation and construction vehicles would be maintained to  
 2 conform to state and local air quality requirements. No significant long-term impact on  
 3 air quality is expected under the Proposed Action Alternative. Conversely, ambient air  
 4 quality conditions would most likely incur slight improvements due to a reduction in off-  
 5 road IA traffic and consequent USBP enforcement actions.

6  
 7 **Table 3-3. Total Air Emissions (tons/year) from Construction Activities of the**  
 8 **Proposed Action Alternative vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>de minimis</i> Thresholds (tons/year)
Carbon monoxide	28.62	NA
Volatile Organic Compounds	6.41	NA
Nitrogen oxides	54.55	NA
Particulate matter (< 10 microns)	14.22	100
Particulate matter (< 2.5 microns)	6.41	NA
Sulfur dioxide	6.53	NA

9 Source: 40 CFR 51.853 and GSRC model projections.

10  
 11 **3.11.2.3 Alternative 3: Secure Fence Act Alternative**

12 Calculations of the emissions created by construction activities required by Alternative 3  
 13 to account for the additional construction footprint requirements for a secondary  
 14 pedestrian fence were conducted to determine the potential impact on the region's  
 15 airshed (Appendix E). Air emission calculations suggest that local PM-10 emissions  
 16 would be greater than those of the proposed action. This is a direct result of an  
 17 increase in project construction time and corridor surface area (130 feet as opposed to  
 18 60 feet) that would be susceptible to an increased release of fugitive dust. As indicated  
 19 in Table 3-4, PM-10 emissions would not exceed the *de minimis* threshold.

**Table 3-4. Total Air Emissions (tons/year) from Construction Activities of Alternative 3 vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>de minimis</i> Thresholds (tons/year)
Carbon monoxide	45.79	NA
Volatile Organic Compounds	10.26	NA
Nitrogen oxides	87.28	NA
Particulate matter (< 10 microns)	17.79	100
Particulate matter (< 2.5 microns)	9.27	NA
Sulfur dioxide	10.45	NA

Source: 40 CFR 51.853 and GSRC model projections.

### 3.12 NOISE

#### 3.12.1 Affected Environment

Ambient noise conditions within the project corridor were described in the 2004 TVB EA and are incorporated herein by reference. Briefly, noise levels are generally 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 USEPA and has been adopted by most Federal agencies (Federal Interagency Committee on Noise 1992). A DNL of 65 decibels A-weighted scale (dBA) is most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities such as construction. Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. The ambient noise levels within the project corridor are expected to be less than 55 dBA due to its remote location. Furthermore, there are no noise-sensitive receptors near the project corridor.

#### 3.12.2 Environmental Consequences

##### 3.12.2.1 *Alternative 1: No Action Alternative*

There would be no additional impact, beneficial or adverse, on noise levels with the implementation of the No Action Alternative. Noise levels from daily USBP operations would remain the same.



1 **3.12.2.2 Alternative 2: Proposed Action Alternative**

2 Construction noise levels created by transport vehicles, portable light generators, and  
3 other construction equipment would vary greatly depending on climatic conditions,  
4 season, equipment type and model, and construction activity. Although increased noise  
5 levels would occur during construction activities, the project corridor is undeveloped and  
6 does not contain noise-sensitive receptors (e.g., hospitals, schools, residences).  
7 However, during transport operations via public roads and private access roads to and  
8 from the project corridor, temporary increases in vehicle-related noise levels would likely  
9 occur within residential areas. The potential for extended periods of noise levels above  
10 the DNL average would be minimized as transport operations would not occur on a daily  
11 basis. Rather, heavy equipment transport would occur intermittently, so that equipment  
12 and materials could be stockpiled. In order to further minimize noise increases,  
13 transport operations would also be restricted to daylight hours and weekdays when the  
14 normal DNL averages are likely at the highest levels. Deviations from such a restricted  
15 schedule would be coordinated through Santa Cruz County Public Works Department-  
16 Transportation Division. As previously described in Section 3.8.2.2, any potential  
17 impact on wildlife species due to increased noise levels would be temporary and minor.  
18 There would be no direct, long-term significant impact on ambient noise levels in the  
19 project corridor.

20  
21 Construction equipment and maintenance activities for the primary pedestrian fence  
22 road would periodically increase noise levels in the project corridor. However, upon  
23 completion of these activities, ambient noise levels would return to previous levels.  
24 Therefore, the impact would be temporary, localized, and insignificant.

25  
26 **3.12.2.3 Alternative 3: Secure Fence Act Alternative**

27 The impacts on ambient noise would be similar for Alternative 3 as those discussed for  
28 the Proposed Action Alternative. Noise intensity and duration would be increased due  
29 to the larger footprint; still, these increases would be temporary and localized.  
30 Therefore no significant impacts would occur.

1 **3.13 AESTHETIC AND VISUAL RESOURCES**

2  
3 **3.13.1 Affected Environment**

4 Aesthetic resources were discussed in the 2004 TVB EA, and are incorporated herein  
5 by reference. Aesthetic resources consist of the natural and man-made landscape  
6 features that give a particular environment its visual characteristics (see Exhibit 3-1).  
7 The current visual characteristics of the project corridor are mostly open areas with  
8 steep rolling hills and deep dissecting valleys covered by native grasses and other  
9 vegetation. Background vistas outside of the city consist of distant views of the  
10 surrounding mountains. The ROI and the entire southern Arizona region is known for its  
11 tranquil dark skies and scenic mountain ranges. Trails, trash, and wildfires caused by  
12 illegal traffic, have degraded many areas. In addition, overgrazing has also resulted in a  
13 diminished aesthetic quality in several locations along the border.

14  
15 **Exhibit 3-1. A Typical View along the Eastern Portion of the Project Corridor**



1 **3.13.2 Environmental Consequences**

2 **3.13.2.1 Alternative 1: No Action Alternative**

3 The No Action Alternative would result in an indirect adverse impact on the aesthetic  
4 qualities of the area, as illegal traffic would continue to occur within the project corridor  
5 and surrounding areas. The rate of illegal traffic could also increase as other areas  
6 along the border come under more intensive control.

7  
8 **3.13.2.2 Alternative 2: Proposed Action Alternative**

9 The primary pedestrian fence would result in a minor adverse impact on the aesthetic  
10 qualities of the specific location where it is installed. Exhibit 3-2 provides a simple visual  
11 representation of what the project corridor may look like with primary fence constructed.

12

13 **Exhibit 3-2. Digitally Enhanced Photo Representation of the Project Corridor at**  
14 **the Same Location as Exhibit 3-1**



15

16

17 While the addition of TI would result in an adverse impact, reducing or eliminating illegal  
18 foot traffic, which causes long-term changes to the environment, would be considered a  
19 benefit to the region's appearance. Of further benefit would be a reduction of trash (as

1 identified in Photograph 3-1) and wildfires set by IAs would also be considered a benefit  
2 to the region's aesthetics.

3



4

Photograph 3-1. Trash left behind by IAs, typical of the ROI

5  
6

### 7 **3.13.2.3 Alternative 3: Secure Fence Act Alternative**

8 The impact on aesthetic resources under Alternative 3 would be similar to that of  
9 Alternative 2. However, additional vegetation would be removed under this alternative,  
10 detracting from the area's aesthetic quality. The construction of a two-tiered system of  
11 infrastructure could further detract from the appearance of the project corridor.

12

## 13 **3.14 HAZARDOUS MATERIALS**

14

### 15 **3.14.1 Affected Environment**

16 Hazardous materials were discussed in the 2004 TVB EA and are incorporated herein  
17 by reference (CBP 2004a). Unregulated solid waste due to the increase of IA vehicle  
18 and foot traffic along the U.S.-Mexico border has become a severe problem in recent  
19 years. BLM estimates that approximately 4 million pounds of trash was deposited by  
20 IAs in southern Arizona in 2004 and 2005 (Davis 2006). Clothing, water bottles, food,  
21 and other debris have been the most common waste materials observed during past  
22 surveys of the project corridor.



1 Without data that can only be obtained from pedestrian surveys, it is difficult to make an  
2 accurate determination as to the presence or absence of hazardous material within the  
3 project corridor. In the future, a Phase I environmental site assessment or visual  
4 inspection would be completed within the project corridor to make a determination of the  
5 location of any *Recognized Environmental Conditions*. However, preliminary searches  
6 of data and maps on the of USEPA's *Envirofacts Data Warehouse* web site revealed no  
7 known hazardous waste sites located within the project corridor.

### 9 **3.14.2 Environmental Consequences**

#### 10 **3.14.2.1 Alternative 1: No Action Alternative**

11 There would be no direct impact as a result of the No Action Alternative because no  
12 construction activities would take place. The potential for indirect impact from  
13 unregulated solid waste generated by illegal traffic would remain at current levels. As IA  
14 traffic remains at current levels or increases within the project corridor, the associated  
15 unregulated solid waste (*i.e.*, clothes, water bottles, backpacks, and other debris) would  
16 also increase.

#### 18 **3.14.2.2 Alternative 2: Proposed Action Alternative**

19 Although no hazardous waste is anticipated to be stored within the project corridor, POL  
20 would be stored at the temporary staging areas in order to maintain and refuel  
21 construction equipment. However, these activities would include primary and  
22 secondary containment measures. Clean-up materials (*e.g.*, oil mops) would also be  
23 maintained at the site to allow an immediate response in case an accidental spill occurs.  
24 Drip pans would be provided for the power generators and other stationary equipment  
25 to capture any POL that is accidentally spilled during maintenance activities or from  
26 equipment leaks.

28 Sanitation facilities would be provided during construction activities, and waste would be  
29 collected and disposed of by licensed contractors. No gray water would be discharged  
30 to the ground. Disposal contractors would use only established roads to transport

1 equipment and supplies, and all waste would be disposed of in strict compliance with  
2 Federal, state, and local regulations, in accordance with the contractor's permits.

3  
4 A Phase 1 site survey would be required prior to the start of construction. If the  
5 presence of hazardous material is confirmed, then it would be avoided or removed and  
6 the site cleaned, as appropriate.

7  
8 **3.14.2.3 Alternative 3: Secure Fence Act Alternative**

9 Under Alternative 3, the potential impact and required surveys would be similar to those  
10 of Alternative 2.

11  
12 **3.15 ROADWAYS AND TRAFFIC**

13  
14 **3.15.1 Affected Environment**

15 The project is located within a remote and undeveloped area east of Nogales, Arizona,  
16 where no public roadways exist near the project corridor. The nearest roadways are  
17 rural all-weather aggregate roads connecting to Arizona State Highway (State Hwy) 80  
18 (Patagonia Hwy). As identified in Figure 2-1, these roadways include David Drive, Royal  
19 Road, Kino Springs Drive, and El Camino Real. Access to the project corridor is  
20 provided via connections between these public roadways and the three privately-owned  
21 access roads. There are two sparsely developed residential areas located between the  
22 project corridor and State Hwy 80. David Road and North Royal Road provide access  
23 to State Hwy 80 through a rural residential area approximately 1 mile north of the  
24 project corridor on the western portion of the corridor, while the El Camino Real and  
25 Kino Drive provide access through a small developed golf course community located  
26 almost 3 miles north of the project corridor.

1 **3.15.2 Environmental Consequences**

2 **3.15.2.1 Alternative 1: No Action Alternative**

3 There would be no direct impact as a result of the No Action Alternative because no  
4 construction activities and subsequent transport of equipment and materials would take  
5 place.

6  
7 **3.15.2.2 Alternative 2: Proposed Action Alternative**

8 The Proposed Action Alternative would have only a minor and temporary impacts to  
9 public roadways and traffic, as construction activities are expected to last only 8  
10 months. During construction, traffic from construction equipment would likely impose  
11 some minimal delays in traffic from over-sized vehicles and material transport through  
12 residential areas. The contractor would be required to coordinate and comply with  
13 transportation requirements and safety measures identified by the Santa Cruz County  
14 Public Works Department-Transportation Division to ensure safe and efficient  
15 movement of equipment and materials to the project corridor. The potential for delays  
16 and disruption of traffic would not occur on a daily basis, as the heavy equipment  
17 transport would occur intermittently, and the equipment would be stockpiled at one of  
18 the temporary staging areas. Therefore, local and regional impacts on public roadways  
19 and traffic would be insignificant and would return to near-normal conditions following  
20 the construction period.

21

22 **3.15.2.3 Alternative 3: Secure Fence Act Alternative**

23 Under Alternative 3, the potential impact and required coordination would be similar to  
24 those of the Proposed Action Alternative.

25

26 **3.16 SOCIOECONIMICS**

27

28 **3.16.1 Affected Environment**

29 The socioeconomic environment for the project region is described in detail in the 2003  
30 CBP Nogales Infrastructure Improvements EA, the 2004 TVB EA, the 2007 Road EA,  
31 and the 2007 Fence EA and is incorporated herein by reference (CBP 2003, CBP

1 2004a, CBP 2007a-c). In summary, the previous EAs examined population structure,  
2 housing, environmental justice, and protection of children.

3  
4 The ROI for the proposed project is Santa Cruz County. The estimated 2005 population  
5 of Santa Cruz County was 44,055. The City of Nogales accounts for almost half  
6 (21,830) of the total residents of Santa Cruz County (Arizona Department of Commerce  
7 2007). The racial mix of Santa Cruz County consists predominantly of Caucasians (76  
8 percent) and people claiming to be of some race other than Caucasian, African-  
9 American, Native American, Asian, Native Hawaiian, and other Pacific Islander (21  
10 percent). About 81 percent of the total Caucasian population of Santa Cruz County  
11 claim to be of Hispanic origin (Arizona Department of Commerce 2007).

12  
13 **3.16.1.1 Employment, Poverty Levels, and Income**

14 The total number of jobs in the study area in 2005 was 15,956, an increase of 18  
15 percent over the number of jobs in 1990 (13,491) (U.S. Bureau of Economic Analysis  
16 2003). The service industry provided the most jobs, followed by the retail trade industry  
17 and the government sector. The 2000 annual average unemployment rate for Santa  
18 Cruz County was 13.9 percent.

19  
20 **3.16.2 Environmental Consequences**

21 **3.16.2.1 Alternative 1: No Action Alternative**

22 Under the No Action Alternative, no construction of pedestrian fence would occur, and  
23 IAs and smugglers would continue to increase costs to U.S. citizens due to criminal  
24 activities. Increased costs would be associated with apprehension, detention, and  
25 incarceration of criminals and, indirectly, with loss of property, illegal participation in  
26 government programs, and increased insurance costs.

27  
28 **3.16.2.2 Alternative 2: Proposed Action Alternative**

29 While some residential areas and businesses (e.g., a golf course community) are  
30 located north of the project corridor along construction access routes, no housing units  
31 or businesses are located within the project corridor or adjacent to it, so no



1 displacement of people, houses, or businesses would occur. Land acquired through fee  
2 title would result in a loss of property taxes, as 55 acres of land would be transferred to  
3 the government, resulting in a minor, yet long-term adverse economic impact on the  
4 Santa Cruz County tax base.

5  
6 During construction of the primary pedestrian fence, there would be temporary,  
7 insignificant increases in population from the addition of construction crews in the area.  
8 Construction crews would likely stay at nearby hotels in Nogales. As a result, no  
9 additional demand for housing would be anticipated during construction. The  
10 construction of the primary pedestrian fence would not require any additional demands  
11 on public services during or after construction.

12  
13 The Proposed Action Alternative would have a direct beneficial impact on the income of  
14 the local area resulting from the rental of construction equipment and purchase of  
15 materials, such as fuel and cement, during the construction period. While the exact  
16 amount of raw material expenditures is not known, it is expected to result in a moderate,  
17 short-term beneficial impact on income.

18  
19 An indirect result of the Proposed Action Alternative is the potential for IA traffic to shift  
20 to areas with less TI. However, it is unknown where IAs would choose to cross the  
21 U.S.-Mexico border. Social costs, such as property damage, car theft, violent crime,  
22 drug treatment and rehabilitation, and entitlement programs on a regional and National  
23 level would potentially be reduced as the effectiveness of the USBP to gain and  
24 maintain control of the border reduces illegal cross-border traffic. Overall, social and  
25 economic resources would experience beneficial, long term and temporary impacts with  
26 a reduction in illegal activities.

27  
28 **3.16.2.3 Alternative 3: Secure Fence Act Alternative**

29 Impacts on the socioeconomic resources in the ROI would be similar in type to those of  
30 the Proposed Action Alternative, yet the magnitude of impacts, adverse and beneficial,  
31 would be much greater. Depending on the land acquisition process, Alternative 3 could

1 result in over twice (130 acres) the loss of property taxes available to the economy, an  
2 additional long-term adverse impact. However, a greater demand for hotel rooms and  
3 temporary housing during the construction period and raw material expenditures  
4 required for the addition of a secondary pedestrian fence and wider project corridor  
5 would have a temporary beneficial impact on the economy.

6

7 Social and economic resources within the ROI would experience a net beneficial, long-  
8 term impact from a reduction in illegal activities, offsetting any adverse impact.

**SECTION 4.0**  
**CUMULATIVE IMPACTS**





1 **4.0 CUMULATIVE IMPACTS**

---

2  
3 This section of the EA addresses the potential cumulative impacts associated with the  
4 implementation of the alternatives and other projects/programs that are planned for the  
5 region. The CEQ defines cumulative impacts as “the impact on the environment which  
6 results from the incremental impact of the action when added to other past, present, and  
7 reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or  
8 person undertakes such other actions” (40 CFR 1508.7). This section continues,  
9 “Cumulative impacts can result from individually minor but collectively significant actions  
10 taking place over a period of time.”

11  
12 USBP has been conducting law enforcement actions along the border since its  
13 inception in 1924, and has continually transformed its methods as new missions, IA  
14 modes of operations, agent needs, and national enforcement strategies have evolved.  
15 Development and maintenance of training ranges, station and sector facilities, detention  
16 facilities, and roads and fences have affected thousands of acres with synergistic and  
17 cumulative impacts on soil, wildlife habitats, water quality, and noise. Beneficial effects  
18 have resulted from the construction and use of these roads and fences, including but  
19 not limited to: increased employment and income for border regions and surrounding  
20 communities, protection and enhancement of sensitive resources north of the border,  
21 reduction in crime within urban areas near the border, increased land value in areas  
22 where border security has increased, and increased knowledge of the biological  
23 communities and pre-history of the region through numerous biological and cultural  
24 resources surveys and studies.

25  
26 With continued funding and implementation of CBP’s environmental conservation  
27 measures, including environmental education and training of its agents, use of biological  
28 and archeological monitors, wildlife water systems, and restoration activities, adverse  
29 effects of future and on-going projects would be avoided or minimized. However,  
30 recent, on-going and reasonably foreseeable proposed projects will result in cumulative

1 impacts. In particular, within the next 2 years, 225 miles are scheduled to be  
 2 completed. The first phase of construction would occur in areas that have already been  
 3 developed (e.g., currently contain permanent vehicle barrier or TVB), thus little or no  
 4 additional environmental impact would be expected. The second phase of construction  
 5 would generally occur in more remote areas and would inevitably result in cumulative  
 6 impacts. It should be noted that the final locations for the primary pedestrian fence  
 7 have not been determined yet, so these should be considered only as planning  
 8 estimates. A list of the past, on-going, and other proposed USBP projects within the  
 9 ROI surrounding the Nogales Station AO is presented in Table 4-1.

10

11 **Table 4-1. Recently Completed or Reasonably Foreseeable USBP projects within**  
 12 **and near the Project Corridor and ROI**

Project	Approximate Distance from Project Corridor (miles)	Approximate Acres Permanently Impacted
Leased an 80-acre parcel of land near the Mariposa POE for USBP operations (portable lights and maintenance of roads), Nogales Station	1	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.	1-5	40
Restoration of Ephraim Ridge near Nogales	2	1
Expansion of USBP checkpoint facilities near Three-Points	35	5
Proposed placement of TVBs at up to 21 different locations (approximately 37 miles) along the U.S.-Mexico border within the Tucson, Nogales, and Sonoita stations AO	0 to 60	0
Relocation of Nogales Interstate 19 (I-19) checkpoint	50	1
Installation of 15 remote video surveillance systems in the Nogales Station's AO	2-5	2
Installation of a relay tower at Crawford Hill in the Nogales Station's AO	2	0.1
Construction and improvements to 3 miles of USBP patrol roads and drag roads west of the Mariposa POE	0	37
Construction 2.4 miles of primary fence and maintenance road west of the Mariposa POE in Nogales, Arizona	2	18
Realignments to 0.34 mile of all-weather patrol road and relocation of 55 permanent lights east DeConcini POE	0	24
<b>Total</b>		<b>198 acres</b>

13

14

1 The NEPA analysis for the 2007 Fence EA was recently completed (CBP 2007c).  
2 Construction is expected to begin in early 2008.

3  
4 In addition to these phased projects, USBP might be required to implement other  
5 activities and operations that are currently not foreseen or mentioned in this document.  
6 These actions could be in response to national emergencies or security events like the  
7 terrorist attacks on September 11, 2001, or to changes in the mode of operations of  
8 potential IAs. One such USBP initiative that has only recently come to fruition is a  
9 proposal to identify locations (as much as 300 miles) along the southwestern border  
10 where vehicle fence would be the preferred fence design. While still in the planning  
11 stages, areas within the Tucson Sector that have been identified as potential projects  
12 include the Baboquivari Mountains to the west of the ROI and areas in eastern Arizona  
13 near the Arizona-New Mexico state line to the east.

14  
15 Plans by other agencies that would also affect the region's natural and human  
16 environment include various road improvements by Arizona Department of  
17 Transportation (ADOT) and/or Santa Cruz County. The majority of these projects would  
18 be expected to occur along existing corridors and/or within previously disturbed sites.  
19 The magnitude of the effects would depend upon the length and width of the road right-  
20 of-way (ROW) and the extant conditions within and adjacent to the ROW.

21  
22 The 2007 Road EA documented several ADOT projects planned in the next 5 years  
23 (CBP 2007b). The details of these projects are incorporated herein by reference.  
24 Following is a summary of the types of ADOT projects currently in the planning stage:

- 25 • Country Club Road-Ruby Road - design of frontage roads
- 26 • U.S.-Mexico border - Business I-19 roadway improvements
- 27 • Junction of State Route-189 and I-19 - roadway improvements
- 28 • Doe Street to Baffert Drive - retrofit, sidewalks, landscaping
- 29 • Patagonia Lake/Sonoita Creek - design planning
- 30 • State Route-82 between Mileposts 38 and 39.5 - slope flattening
- 31 • State Route-189 at Milepost 0.095 - drainage improvements
- 32 • Mariposa POE - parking lot and road improvements
- 33
- 34

1 In addition, projects are currently being planned by other Federal entities which could  
2 affect areas in use by USBP. CBP/USBP should maintain close coordination with these  
3 agencies to ensure that CBP/USBP activities do not conflict with other agencies'  
4 policies or management plans. CBP would consult with applicable state and Federal  
5 agencies prior to performing any construction activities and would coordinate operations  
6 so that they do not inappropriately impact the mission of other agencies. The 2007  
7 Road EA provided an extensive list of past or foreseeable Federal projects within the  
8 region. These projects are also incorporated herein by reference (CBP 2007b). Other  
9 agencies, such as BLM, U.S. Air Force, U.S. Marine Corps, NPS, and USFS, routinely  
10 prepare or update Resource Management Plans for the resources they manage. USFS  
11 has the responsibility of managing approximately half of all lands within Santa Cruz  
12 County. In addition to general rangeland management, the types of projects conducted  
13 by USFS include:

- 14
- 15 • lake maintenance projects;
- 16 • pasture divisions and grazing allotment management plans;
- 17 • fuelwood/hazardous fuel reduction plans;
- 18 • specific habitat improvement projects;
- 19 • facility planning;
- 20 • invasive exotic plant management programs;
- 21 • land exchanges;
- 22 • pipeline/transmission ROWs; and
- 23 • mechanical brush control plans
- 24

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



1 Many positive cumulative impacts have been realized through CBP activities. For  
2 example, construction and maintenance activities have had cumulative positive impacts  
3 on socioeconomic resources within the border area through reductions in illegal drug  
4 smuggling activities. INS (now CBP) activities completed from 1994 to 1999 have  
5 provided information on over 100 new cultural resources sites potentially eligible for  
6 NRHP listing.

7  
8 A summary of the anticipated cumulative impacts relative to the Proposed Action  
9 Alternative (*i.e.*, construction of 7.6 miles of TI east of the DeConcini POE) is presented  
10 below. Discussions are presented for each of the resources described previously.

#### 11 12 **4.1 LAND USE**

13  
14 A significant impact would result occur if any action is inconsistent with adopted land  
15 use plans, or the action would substantially alter those resources required for  
16 supporting, or benefiting, the current use. The Proposed Action Alternative would only  
17 affect 55 acres permanently. While an additional 26 acres of equipment staging areas  
18 would be temporarily affected, these areas would return to the current use upon  
19 completion of construction. Land that is primarily used for cattle grazing and USBP  
20 patrol activities would be acquired through lease, easement, or fee title to the  
21 government and would become part of the TI system that provides improved border  
22 enforcement. Therefore, this action would not be expected to result in a significant  
23 cumulative adverse effect.

#### 24 25 **4.2 SOILS**

26  
27 A significant impact would result if the action exacerbates or promotes long-term  
28 erosion, if the soils are inappropriate for the proposed construction, if the action would  
29 create a risk to life or property, or if there would be a substantial reduction in agricultural  
30 production or loss of prime farmland soils. The Proposed Action Alternative and other  
31 USBP actions have not reduced prime farmland soils or agricultural production. Pre-

1 and post-construction SWPPP measures would be implemented to control erosion. No  
2 inappropriate soil types are located at the project site that would present a safety risk.  
3 The impact to 55 acres of permanently altered and 26 acres of temporarily disturbed  
4 soils, when combined with past and proposed projects in the region, would not be  
5 considered to have a significant cumulative adverse impact.

### 6 7 **4.3 HYDROLOGY AND GROUNDWATER**

8  
9 The significance threshold for water resources includes any action that substantially  
10 depletes groundwater supplies or interferes with groundwater recharge. There would  
11 be no significant impact on groundwater resources as a result of the withdrawal of 7.6  
12 acre-feet of water for the construction and maintenance of the proposed fence and road.  
13 When combined with past and proposed projects in the region, the Proposed Action  
14 Alternative would not be considered to have a significant cumulative adverse impact.

### 15 16 **4.4 SURFACE WATERS AND WATERS OF THE U.S**

17  
18 Coordination with USACE Los Angeles District would occur prior to construction within  
19 potential jurisdictional WUS to ensure no net loss of the functions of these sensitive  
20 resources. The required SWPPP measures would reduce erosion and sedimentation  
21 during construction to negligible levels and would eliminate post-construction erosion  
22 and sedimentation from the site. The same measures would be implemented for other  
23 construction projects; therefore, the cumulative impact would not be significant.

### 24 25 **4.5 FLOODPLAINS**

26  
27 The significance threshold for adverse effects on floodplains would be any action or  
28 combination of actions that result in direct or indirect flood losses, affecting human  
29 safety, health, and welfare. No significant impact on floodplains would occur as a result  
30 of the Proposed Action Alternative. Fences and roads would be designed to ensure that  
31 floodwater conveyance is not impeded and that flood elevations, frequencies, and

1 durations would not be increased. Compliance with EO 11988 and the local floodplain  
2 regulations would also ensure that any potential adverse impact on the floodplain is  
3 offset. The Santa Cruz Floodplain and Erosion Hazard Management Ordinance, No.  
4 2001-03, bases its statutory authorization, in part, on analysis of the cumulative effects  
5 of obstructions within floodplains. Therefore, when combined with other existing and  
6 proposed projects in the region, any adverse impacts on floodplains would be  
7 insignificant.

8  
9 **4.6 VEGETATIVE HABITAT**

10  
11 The significance threshold for vegetative habitat includes a substantial reduction in  
12 ecological processes, communities, or populations that would threaten the long-term  
13 viability of a species or result in the substantial loss of a sensitive community that could  
14 not be offset or otherwise compensated for. Removal of Scrub-Grassland and Riparian  
15 Deciduous Forest and Woodland communities (as identified in the Proposed Action  
16 Alternative), would not result in a significant cumulative impact on vegetation, due to  
17 the vast amount of similar habitat contained within and surrounding the project corridor  
18 and the juxtaposition of the project corridor with other disturbed and developed areas.  
19 Without compensatory mitigation to offset potential impacts, the loss of 3 acres of  
20 Cottonwood-Willow community would result in a moderate cumulative impact, due to its  
21 importance to many riparian wildlife and aquatic species. However, prior to construction  
22 of any proposed project, mitigation measures as deemed appropriate would offset  
23 potential effects.

24  
25 Other USBP projects, including vegetation clearing and additional lighting, would result  
26 in cumulative adverse impacts. The extent of these impacts is not known, since the  
27 actions are not planned or defined to date. However, the long-term viability of  
28 vegetation communities in the ROI would not be threatened. This loss of vegetative  
29 habitat, when combined with other ground-disturbing or development projects in the  
30 ROI, would not result in a significant cumulative impact on the region's vegetation  
31 communities.

1 **4.7 WILDLIFE AND AQUATIC RESOURCES**

2  
3 The significance threshold for wildlife and aquatic resources include a substantial  
4 reduction in ecological processes or populations that threaten the long-term viability of a  
5 species or result in the substantial loss of a sensitive habitat that could not be offset or  
6 otherwise compensated for. Removal of wildlife habitat would result in insignificant  
7 cumulative impacts due to the vast amount of similar habitat contained within and  
8 surrounding the project corridor. As described in Section 4.6, the cumulative loss of 0.3  
9 acre of aquatic habitat and 3 acres of riparian habitat in a desert environment would  
10 likely be moderate.

11  
12 As a result of past and planned projects within the Tucson Sector, cumulative impacts  
13 due to fragmentation of habitat would be considered moderate to substantial. Most all  
14 of the border within the Tucson Sector would have physical barriers installed once all  
15 proposed and planned projects are completed. Many segments of these barriers would  
16 be vehicle fence rather than primary pedestrian fence. In addition, even future primary  
17 pedestrian fence that is constructed within arroyos or washes would be designed and  
18 constructed to allow conveyance of flood flows, which would require some small gaps in  
19 the fence panels. Thus, there would still be opportunities for transboundary migration.

20  
21 Due to the vast amount of similar habitat contained within and surrounding the project  
22 corridor, the juxtaposition of the project corridor with other disturbed and developed  
23 areas, and the fact that there will be gaps in the barriers, the long-term viability of  
24 species and communities in the project region would not be threatened. In addition,  
25 prior to construction, site surveys for migratory species and appropriate mitigation  
26 measures, as deemed necessary, would be implemented. This loss, when combined  
27 with other ground-disturbing or development projects in the project region, would not  
28 result in a significant cumulative negative impact on the region's biological resources.

1 **4.8 THREATENED AND ENDANGERED SPECIES**

2  
3 Impact on threatened and endangered species would be significant if any action results  
4 in jeopardizing the continued existence of any endangered, threatened, or rare species.  
5 USBP would complete ESA Section 7 consultation with USFWS for Federally-protected  
6 species, specifically for the jaguar, lesser long-nosed bat, and Pima pineapple cactus,  
7 prior to initiation of the Proposed Action Alternative. As part of the consultation process,  
8 conservation measures would be developed, as appropriate, to minimize cumulative  
9 impacts on protected species. Therefore, this action, when combined with other  
10 existing and proposed projects in the ROI, would not result in a significant cumulative  
11 impact on endangered, threatened, or rare species, or jeopardize the continued  
12 existence of any species.

13  
14 **4.9 CULTURAL, HISTORICAL, AND ARCHEOLOGICAL RESOURCES**

15  
16 With no site-specific data, it is difficult to accurately assess the potential for the  
17 Proposed Action Alternative to adversely affect historic properties. However, it is  
18 anticipated that the Proposed Action Alternative would not result in significant  
19 cumulative effects on any known cultural resources sites, provided that appropriate  
20 mitigation is identified through the Section 106 process and is implemented by  
21 CBP/USBP. Therefore, this action, when combined with other existing and proposed  
22 projects in the region, would not be expected to result in a significant cumulative impact  
23 on historical properties.

24  
25 **4.10 AIR QUALITY**

26  
27 Impact on air quality would be considered significant if the action results in a violation of  
28 air quality standards, obstructs implementation of an air quality plan, or exposes  
29 sensitive receptors to substantial pollutant concentrations. The emissions generated  
30 during and after the construction of the fence would be short-term and minor. Although  
31 maintenance of the fence and associated maintenance road would result in cumulative

1 impacts on the region's airshed, these impacts would not be considered significant. No  
2 violation of air quality standards, obstruction of air quality plans, or exposure of sensitive  
3 receptors would occur. Deterrence of and improved response time to IAs created by  
4 the construction of the fence and road would reduce off-road enforcement actions that  
5 are currently required by USBP agents, benefiting air quality.

#### 7 **4.11 NOISE**

8  
9 Actions would be considered to cause significant impacts if they permanently increase  
10 ambient noise levels over 65 dBA. Most of the noise generated by the Proposed Action  
11 Alternative would occur during construction and thus would not contribute to cumulative  
12 impacts on ambient noise levels. Routine maintenance of the fence and road would  
13 result in slight temporary and sporadic increases in noise levels that would continue to  
14 occur over the long-term. Potential sources of noise from other projects in combination  
15 with routine maintenance are not enough (temporal or spatial) to increase ambient noise  
16 levels above the 65 dBA range in the ROI. Thus, the noise generated by the  
17 construction and maintenance of the fence and road, when considered with the other  
18 existing and proposed projects in the region, would not have a significant cumulative  
19 adverse impact.

#### 21 **4.12 AESTHETIC AND VISUAL RESOURCES**

22  
23 Actions that cause a substantial permanent loss of the characteristics that make an area  
24 visually unique or sensitive would be considered to cause a significant impact. There  
25 would be no major impact on visual resources from implementing the Proposed Action  
26 Alternative, due in part to the surrounding development and the existing border TI.  
27 Construction and maintenance of the primary pedestrian fence, when considered with  
28 existing and proposed developments in the surrounding area, including other USBP-  
29 proposed TI components (e.g., relocation of 55 permanent lights adjacent to the project  
30 corridor [CBP 2007a]) would not result in a significant cumulative adverse impact on the  
31 visual quality of the region. Areas north of the border would experience beneficial,

1 indirect cumulative effects from the reduction of trash, soil erosion, and wildfires  
2 produced by IAs.

3

#### 4 **4.13 HAZARDOUS MATERIALS**

5

6 There would be significant impact if an action creates a public hazard, the site is  
7 considered a hazardous waste site that poses health risks, or the action would impair  
8 the implementation of an adopted emergency response or evacuation plan. Only minor  
9 increases in the use of hazardous substances (e.g., POLs) would occur as a result of  
10 the construction and maintenance of the fence and road. No health or safety risks  
11 would be created by the Proposed Action Alternative. Once confirmation of any existing  
12 hazards that may exist within the project corridor is complete, and if any discovered  
13 hazards are removed, the Proposed Action Alternative, when combined with other on-  
14 going and proposed projects in the region, would not be considered to have a significant  
15 cumulative impact.

16

#### 17 **4.14 ROADWAYS AND TRAFFIC**

18

19 The significance threshold for effects on roadways and traffic conditions includes major  
20 traffic delays and/or detours that affect the current transportation patterns to a degree  
21 that is above the current management capabilities of the Santa Cruz County Public  
22 Works Department-Transportation. The potential for delays and disruption of traffic  
23 would not occur on a daily basis, as heavy equipment transport would occur  
24 intermittently and equipment would be stockpiled at one of the temporary staging areas.  
25 Therefore, impacts would be insignificant on the local and regional level, and roadways  
26 and traffic would return to normal conditions following the construction period. The  
27 Proposed Action Alternative, when combined with other currently proposed or on-going  
28 projects within the region, would not have a significant cumulative impact.

29

30

1 **4.15 SOCIOECONOMICS**

2

3 The significance threshold for socioeconomic conditions includes displacement or  
4 relocation of residences or commercial buildings, increases in long-term demands for  
5 public services in excess of existing and projected capacities, and disproportionate  
6 impacts on minority and low-income families. Construction of the Proposed Action  
7 Alternative would result in a temporary, minor and beneficial impact on the region's  
8 economy. There would be no significant impact on residential areas, populations, or  
9 minority or low-income families. The Proposed Action Alternative, when combined with  
10 the other currently proposed or on-going projects within the region, would not have a  
11 significant cumulative impact.



**SECTION 5.0**  
**MITIGATION MEASURES**





1 **5.0 MITIGATION MEASURES**

---

2  
3 This chapter describes those measures that will be implemented to reduce or eliminate  
4 potential adverse impacts on the human and natural environment. Many of these  
5 measures have been incorporated as standard operating procedures by CBP on past  
6 projects. Environmental design measures are presented for each resource category  
7 that will be potentially affected. It should be emphasized that these are general  
8 mitigation measures and development of specific mitigation measures will be required  
9 for certain activities implemented under the action alternatives. The proposed mitigation  
10 measures will be coordinated through the appropriate agencies and land managers or  
11 administrators, as required.

12  
13 It is CBP's policy to reduce impacts through the sequence of avoidance, minimization,  
14 mitigation, and finally, compensation. Mitigation varies, and includes activities such as  
15 restoration of habitat in other areas, acquisition of lands, and implementation of BMPs  
16 and will be coordinated with CNF, USFWS, and other appropriate Federal and state  
17 resource agencies.

18  
19 **5.1 GENERAL CONSTRUCTION ACTIVITIES**

20  
21 BMPs will be implemented as standard operating procedures during all construction  
22 activities. These BMPs will include proper handling, storage, and disposal of hazardous  
23 and regulated materials. To minimize potential impacts from hazardous and regulated  
24 materials, all fuels, POLs and solvents will be collected and stored in tanks or drums  
25 within a secondary containment system that consists of an impervious floor and bermed  
26 sidewalls capable of containing the volume of the largest container stored therein. The  
27 refueling of machinery will be completed following accepted guidelines, and all vehicles  
28 will have drip pans during storage to contain minor spills and drips. Although it is  
29 unlikely a major spill will occur, any spill of reportable quantities will be contained  
30 immediately within an earthen dike, and the application of an absorbent (e.g., granular,

1 pillow, sock, etc.) will be used to absorb and contain the spill. Furthermore, spillage of  
2 any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a  
3 reportable quantity must be cleaned up and reported to the appropriate Federal and  
4 state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table  
5 302.4 will be included as part of the SPCCP. A SPCCP will be in place prior to the start  
6 of construction, and all personnel will be briefed on the implementation and  
7 responsibilities of this plan.

8  
9 All waste oil and solvents will be recycled, if possible. All non-recyclable hazardous and  
10 regulated wastes will be collected, characterized, labeled, stored, transported, and  
11 disposed of in accordance with all Federal, state, and local regulations, including proper  
12 waste manifesting procedures.

13  
14 Solid waste receptacles will be maintained at staging areas, and non-hazardous solid  
15 waste (trash and waste construction materials) will be collected and deposited in on-site  
16 receptacles. Solid waste will be collected and disposed of by a local waste disposal  
17 contractor.

## 18 19 **5.2 SOILS**

20  
21 Vehicular traffic associated with the construction activities will remain on established  
22 roads to the maximum extent practicable. Upon completion of the construction  
23 activities, rehabilitation of the staging areas will include loosening compacted soils, re-  
24 vegetating, or distributing of geological materials (i.e., boulders and rocks) over the  
25 disturbed area to reduce erosion while allowing the area to naturally vegetate. In  
26 addition, erosion control measures and appropriate BMPs, as required and promulgated  
27 through the SWPPP, will be implemented before, during, and after construction  
28 activities.

29  
30 Road construction and maintenance will avoid, to the extent practicable, making wind  
31 rows with the soils once grading activities are completed. Any excess soils not used

1 during construction of the proposed infrastructure will be distributed throughout the  
2 project corridor.

3

4 **5.3 GROUND/SURFACE WATER RESOURCES AND WATERS OF THE U.S.**

5

6 Verification of the location of potential jurisdictional WUS will be required. As  
7 appropriate, applicable Department of the Army Section 404 permit procedures,  
8 including Section 401 Water Quality Certifications, will be completed prior to initiation of  
9 the construction activities within drainages. Mitigation and compensation measures will  
10 be implemented, as appropriate, through the permit process to ensure no net loss of  
11 WUS functions and that surface water conveyance is not impeded.

12

13 Early coordination between CBP/USBP and USACE Los Angeles District, Regulatory  
14 Branch has been initiated. The proposed construction activities will require a SWPPP,  
15 which will be prepared and submitted to ADWR as part of the NPDES permit process.  
16 The SWPPP will identify BMPs that will be implemented before, during, and after  
17 construction. These BMPs will ensure that erosion and sedimentation in the waterways  
18 are minimized.

19

20 **5.4 FLOODPLAINS**

21

22 In order to ensure compliance with EO 11988 and local floodplain regulations,  
23 coordination with the Santa Cruz Public Works Department and USIBWC will be  
24 required so that construction activities do not adversely impact floodplains. The  
25 bid/build contractor will be required to acquire the appropriate floodplain permits to  
26 ensure fence and road design remain in compliance with the local floodplain regulation  
27 (*Santa Cruz Floodplain and Erosion Hazard Management Ordinance, No. 2001-03*).  
28 Information required for submittal of floodplain permit applications includes but is not  
29 limited to: specific site plans; an engineering hydrology and hydrologic analysis that  
30 incorporates fence and road designs; and a debris clearing maintenance plan. As  
31 deemed necessary to ensure that the provisions of the local floodplain management

1 ordinance are met, the fence and road design may require subsequent alterations prior  
2 to construction. In addition to local permit requirements, the NEPA process would be  
3 used as a tool to ensure compliance with the floodplain management planning process.  
4

## 5 **5.5 VEGETATION**

6  
7 Native seeds or plants, which are compatible with the enhancement of protected  
8 species, will be used to the extent feasible, as required under Section 7(a)(1) of the  
9 ESA, to revegetate staging areas and turnarounds. In addition, organic material will be  
10 collected and stockpiled during construction to be used for erosion control after  
11 construction while the areas naturally revegetate.  
12

13 Construction equipment will be cleaned at the temporary staging areas, in accordance  
14 with BMPs, prior to entering and departing the project corridor, to minimize the spread  
15 and establishment of non-native invasive plant species.  
16

## 17 **5.6 WILDLIFE AND AQUATIC RESOURCES**

18  
19 In compliance with the MBTA, migratory bird nesting surveys will be conducted prior to  
20 construction if clearing and grubbing activities take place during the breeding/nesting  
21 season (typically March 1 through September 1). This will ensure that construction  
22 activities do not result in the take of nesting migratory birds. Nighttime construction  
23 activities will be conducted only when absolutely necessary for adequate concrete pours  
24 or, in the case of an accelerated construction schedule, to meet Federal mandates.  
25 Conservation measures addressed in Sections 5.1 and 5.3 will further minimize impacts  
26 on water resources, terrestrial habitats, and aquatic habitats.  
27

## 28 **5.7 THREATENED AND ENDANGERED SPECIES**

29  
30 CBP/USBP are currently conducting Section 7 consultation with the USFWS to  
31 determine the affects to the jaguar, lesser long-nosed bat, and Pima pineapple cactus.

1 Through early and ongoing coordination with USFWS, a more definitive list of protected  
2 species with the potential to occur within the project corridor will be developed. Surveys  
3 will be completed in order to confirm or refute the presence or absence of these species  
4 or suitable habitat that could support these species. If such surveys reveal evidence of  
5 the presence of protected species, appropriate BMPs (as presented in Appendix D) will  
6 be implemented. As appropriate, CBP/USBP will implement any conservation  
7 recommendations identified as a result of the consultation process.

8  
9 Coordination with AGFD staff regarding avoidance and/or conservation measures to  
10 minimize adverse impact on state-protected species will occur as appropriate prior to  
11 the start of construction.

## 12 13 **5.8 CULTURAL RESOURCES**

14  
15 Pedestrian surveys and completion of the Section 106 process with Arizona SHPO, as  
16 well as coordination with USIBWC, will be completed prior to construction in order to  
17 document the presence or absence of historic properties. Upon completion of the  
18 Section 106 process and implementation of any requirements identified in that  
19 coordination, all construction and construction activities will be kept within previously  
20 surveyed areas.

21  
22 A temporary barrier will be placed around the monuments during construction activities.  
23 If any cultural material is discovered during the construction efforts, the Arizona SHPO  
24 will be notified immediately and all activities halted until a qualified archaeologist  
25 assesses the cultural remains. USIBWC will be provided maintenance access to the  
26 monuments, and the line of sight view from monument to monument will not be  
27 obstructed.

1 **5.9 AIR QUALITY**

2  
3 Standard construction BMPs, such as routine watering of the construction and access  
4 roads, will be used to control fugitive dust during the construction phases of the  
5 proposed project. Additionally, all construction equipment and vehicles will be required  
6 to be kept in good operating condition to minimize exhaust emissions.

7  
8 **5.10 NOISE**

9  
10 Standard noise attenuation equipment, such as mufflers, shall be used on all  
11 construction equipment and vehicles and will be maintained in good operating condition,  
12 free from leaks. Because of the increased noise sensitivity along transport routes,  
13 transport operations will be limited to daylight hours and weekdays for transportation of  
14 heavy equipment and materials. Deviations will be coordinated with the Santa Cruz  
15 County Public Works Department-Transportation Division on a case by case basis.

16  
17 **5.11 HAZARDOUS MATERIALS**

18  
19 Prior to acquisition (easement or fee title) of the project corridor, a site survey or Phase  
20 1 environmental site assessment of the project corridor will be conducted to determine  
21 the presence of existing hazardous material. As appropriate, any *Recognized*  
22 *Environmental Conditions* will be avoided or removed and the site cleaned as  
23 appropriate.

24  
25 **5.12 ROADWAYS AND TRAFFIC**

26  
27 Prior to the start of construction activities, the bid/build contractor will coordinate and  
28 comply with transportation requirements and safety measures identified by the Santa  
29 Cruz County Public Works Department-Transportation Division to ensure safe and  
30 efficient movement of equipment and materials to the project corridor.



***SECTION 6.0***  
***REFERENCES***





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**SECTION 7.0**  
**LIST OF PREPARERS**







## 7.0 LIST OF PREPARERS

Name	Agency/Organization	Discipline/Expertise	Experience	Role In Preparing EA
Charles McGregor	USACE, Ft. Worth District	Chemistry and Environmental Sciences	17 years geotechnical and environmental related studies	Environmental Manager, ECSO
Suna Adam Knaus	Gulf South Research Corporation	Forestry/Wildlife	18 years natural resources	EA Technical Review
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	31 years EA/EIS studies	Project Manager Technical Review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	18 years natural resources and NEPA studies	Technical Review
Stephen Oivanki, P.G.	Gulf South Research Corporation	Geology, Environmental Assessment	20 years environmental assessment and remediation experience	Technical Review
Josh McEnany	Gulf South Research Corporation	Biology	7 years natural resources and NEPA studies	Technical Review
John P. Mire	Gulf South Research Corporation	Natural Resources	15 years NEPA and natural resources studies	Co Project Manager EA Preparation
Shanna McCarty	Gulf South Research Corporation	Forestry	2 years natural resources	EA Preparation
Chris Cothron	Gulf South Research Corporation	GIS/graphics	1 year GIS/graphics experience	GIS/graphics
Ticia Bullion	Gulf South Research Corporation	Report Coordinator	1 year word processing	Editing/graphics

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*APPENDIX A*  
*AGENCY COORDINATION AND PUBLIC REVIEW*

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U.S. Department of Homeland Security  
Washington, DC 20229



U.S. Customs and  
Border Protection

Deputy Commissioner

Ms. Terri Raml  
District Manager  
Bureau of Land Management  
Phoenix District  
21605 N. 7<sup>th</sup> Avenue  
Phoenix, AZ 85027-2929

**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 Tucson Sector**

Dear Ms. Raml:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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.

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 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 2.23 miles to 5.40 miles in length. Maps presenting the proposed project sites are 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 7.63 miles of tactical infrastructure will be installed within USBP Tucson 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.


Page 2

Ms. Teri Raml

Your agency has been identified as a Federal authority with responsibilities for resources that may be affected by the Proposed Action. In accordance with the Council on Environmental Quality (CEQ) regulations addressing cooperating agencies (40 CFR 1501.6 and 1508.5) and CEQ's January 30, 2002, guidance, CBP is inviting you to participate in the development of the EA as a cooperating agency. Please contact Mr. Charles McGregor of the USACE, Fort Worth District, Engineering Construction Support Office by mail at P.O Box 17300, Fort Worth, Texas 76102-0300 if your agency would like to be a cooperating agency.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Charles McGregor at (817) 886-1585 or Assistant Chief Patrol Agent Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

Sincerely,



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

Enclosure

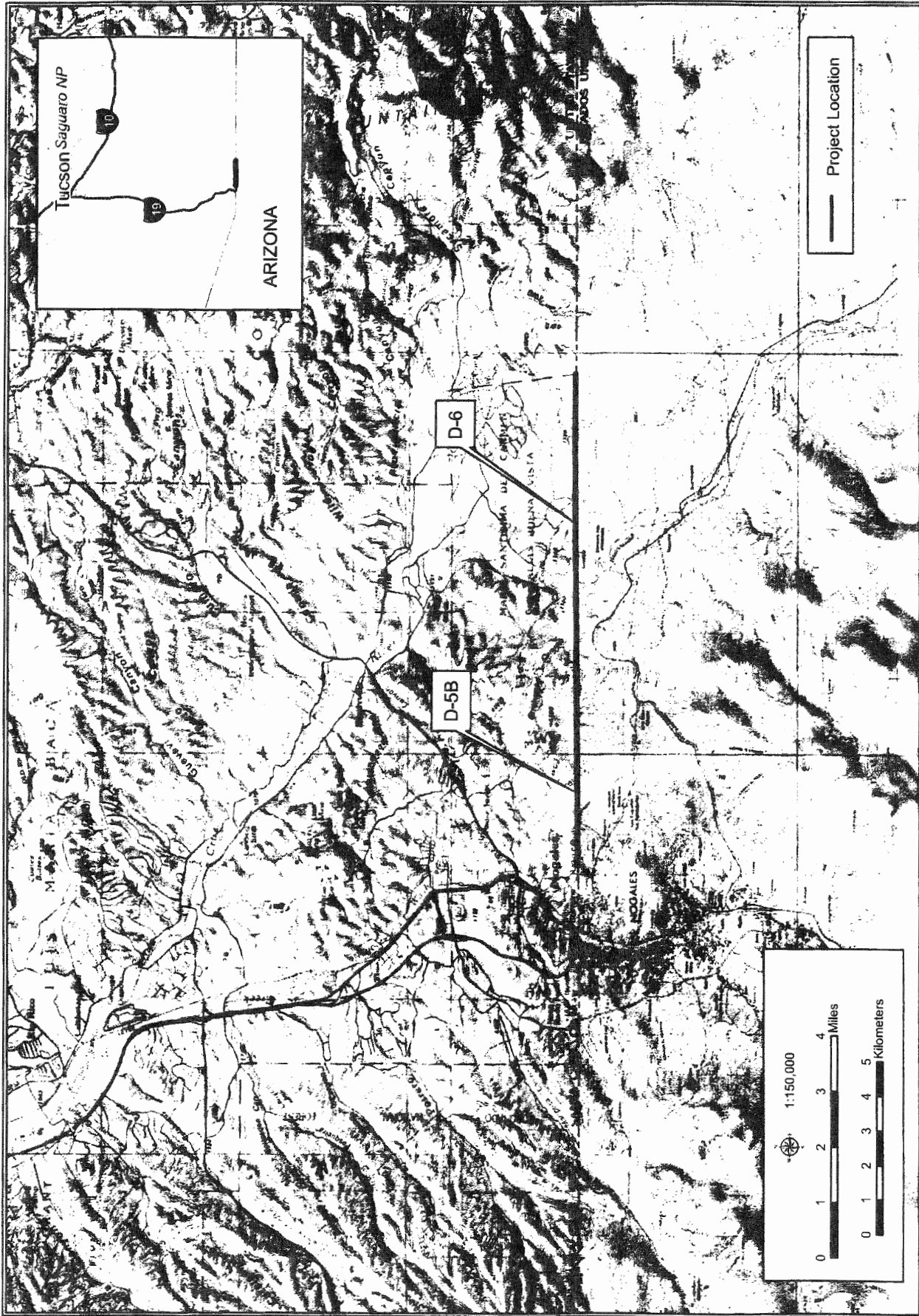


Figure 1-1: Project Location

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U.S. Department of Homeland Security  
Washington, DC 20229



U.S. Customs and  
Border Protection

Deputy Commissioner

Mr. Keith Graves, Supervisor  
U.S. Department of Agriculture  
Coronado National Forest  
303 Old Tucson Road  
Nogales, AZ 85621

001 18 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 Tucson Sector**

Dear Mr. Graves:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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.

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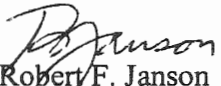
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Page 2  
Mr. Keith Graves

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Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Charles McGregor at (817) 886-1585 or Assistant Chief Patrol Agent Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

Sincerely,

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

Enclosure



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

Mr. Wayne Nastri  
Regional Administrator, Region 9  
U.S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

OCT 18 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 Tucson Sector**

Dear Mr. Nastri:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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.

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Page 2  
Mr. Wayne Nastri

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Sincerely,

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

Enclosure



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

COL Thomas H. Magness, IV  
US Army Corps of Engineers  
Los Angeles District  
915 Wilshire Blvd., Suite 980  
Los Angeles, CA 90017

**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 Tucson Sector**

Dear COL Magness:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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.

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Page 2

COL Thomas H. Magness, IV

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Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Mr. Charles McGregor at (817) 886-1585 or Assistant Chief Patrol Agent Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

Sincerely,



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

Enclosure



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

Dr. Benjamin Tuggle  
Regional Director  
U.S. Fish and Wildlife Service  
Southwest Regional  
P.O. Box 1306  
Albuquerque, NM 87103-1306

OCT 18 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 Tucson Sector**

Dear Dr. Tuggle:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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.

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Dr. Benjamin Tuggle

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Sincerely,



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

Enclosure

Cc: Mike Horton





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

OCT 25 2007

Honorable Benjamin H. Nuvamsa, Chairman  
**Attn: Mr. Leigh J. Kuwanwisiwma**  
Hopi Tribal Council  
P.O. Box 123  
Kykotsmovi, Arizona 86039

**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 Tucson Sector**

Dear Mr. Nuvamsa:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 2.23 miles to 5.40 miles in length. A map presenting the proposed project sites is enclosed.

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Honorable Benjamin H. Nuvamsa

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 Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

Sincerely,

A handwritten signature in black ink that reads "RFJ For R. Janson". The signature is written in a cursive style with a large, stylized "RFJ" followed by "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 Ronnie Lupe, Chairman  
**Attn: Mr. Mark Atalha**  
White Mountain Apache Tribal Council  
202 East Walnut Street  
Whiteriver, Arizona 85941

**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 Tucson Sector**

Dear Mr. Lupe:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 Ronnie Lupe

Page 2

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Sincerely,



*For 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 Delia Carlisle, Chairperson  
**Attn: Ms. Nancy Nelson**  
Ak Chin Indian Community  
47685 N. Eco Museum Rd.  
Maricopa, Arizona 85239

**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 Tucson Sector**

Dear Ms. Carlisle:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 Delia Carlisle

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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 William Rhodes, Governor  
**Attn: Mr. Barnaby Lewis**  
Gila River Indian Community  
315 W. Casa Blanco Road  
Sacaton, Arizona 85247

**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 Tucson Sector**

Dear Mr. Rhodes:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 2.23 miles to 5.40 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 7.63 miles of tactical infrastructure will be installed within USBP Tucson 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 William Rhodes

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 Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

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

Ms. Jill McCormick  
Cocopah Tribe Museum  
County 15th & Avenue G  
Somerton, Arizona 85350

**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 Tucson Sector**

Dear Ms. McCormick:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 2.23 miles to 5.40 miles in length. A map presenting the proposed project sites is enclosed.

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Ms. Jill McCormick  
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 Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

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 Joni M. Ramos, President  
**Attn: Ms. Dezbah Hatahli**  
Salt River Pima-Maricopa Indian Community  
10005 E. Osburn  
Scottsdale, Arizona 85256

**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 Tucson Sector**

Dear Ms. Ramos:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 Joni M. Ramos

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**

OCT 25 2007

Honorable Ned Norris, Jr., Chairman  
**Attn: Mr. Peter Steere, Cultural Resources Manager**  
Tohono O'odham Nation  
Cultural Affairs Department  
P.O. Box 837  
Sells, Arizona 85634

**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 Tucson Sector**

Dear Mr. Norris:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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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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 7.63 miles of tactical infrastructure will be installed within USBP Tucson 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 Ned Norris, Jr.

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**

State Historic Preservation Office  
Attn: JoAnne Medley  
1300 West Washington  
Phoenix, Arizona 85007

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 Tucson Sector**

Dear Ms. Medley:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 2.23 miles to 5.40 miles in length. A map presenting the proposed project sites is enclosed.


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State Historic Preservation Office

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, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Craig Weinbrenner, USBP Tucson Sector at (520) 670-6871.

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 Wendsler Nosie, Chairman  
**Attn: Ms. Vernelda Grant, THPO**  
San Carlos Apache Tribe  
Historic Preservation & Archaeology Department  
P.O. Box 0  
San Carlos, Arizona 85550

**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 Tucson Sector**

Dear Mr. Nosie:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 Wendsler Nosie

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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 Herminia Frias  
**Attn: Ms. Amalia Reyes**  
Pascua Yaqui Tribe  
7474 S Camino de Oeste  
Tucson, Arizona 85746

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 Tucson Sector**

Dear Ms. Frias:

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 a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 7.63 miles in length within USBP Tucson Sector, Arizona. 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 Herminia Frias

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



United States  
Department of  
Agriculture

Forest  
Service

Coronado National Forest  
Nogales Ranger District

303 Old Tucson Road  
Nogales, Arizona 85621  
Phone (520) 281-2296  
FAX (520) 281-2396

File Code: 1950-4/1500

Date: October 30, 2007

Charles McGregor  
USACE, Fort Worth District, Engineering Construction  
Support Office  
P.O. Box 17300  
Fort Worth, TX 76102-0300

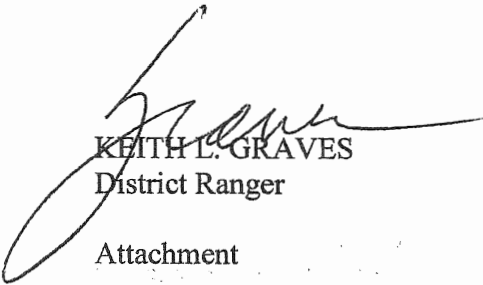
Dear Mr. McGregor:

This is in response to a letter received from Robert F. Janson, Acting Executive Director, Asset Management, U.S. Customs and Border Protection. Mr. Janson discussed the Tactical Infrastructure NEPA process and needs for preparing an Environmental Assessment to address 7.63 miles of tactical infrastructure east of Nogales, Arizona. The base map provided does not indicate activities occurring on National Forest System lands managed by the Coronado National Forest. The map shows that proposed activities would stop at the eastern boundary of the "Maria Santisma Del Carmen" private lands, also known as the "Buena Vista" private lands.

The Coronado National Forest is prepared to offer assistance in accomplishing your agency's objectives for this proposal by providing a Right of Entry to access National Forest System lands as necessary to meet the intent of the proposed action; and providing natural resource specialist information and Engineering guidance upon request. I am attaching a copy of the Right of Entry sent to the Executive Director, Asset Management, C&BP, September 20, 2007, which you may also utilize for this proposal.

Please contact me directly with any further needs or clarifications. I may be reached at 520.761.6000 and [klgraves@fs.fed.us](mailto:klgraves@fs.fed.us).

Sincerely,



KEITH L. GRAVES  
District Ranger

Attachment

cc: Jeanine Derby, Forest Supervisor



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United States  
Department of  
Agriculture

Forest  
Service

Coronado National Forest  
Supervisor's Office

300 W. Congress  
Tucson, Arizona 85701  
Phone (520) 388-8300  
FAX (520) 388-8305  
TTY (520) 388-8304

---

File Code: 1500/1950-4/2710

Date: September 20, 2007

Renee Smoot  
Executive Director  
Asset Management,   Office of Finance,   Customs  
and Border Protection  
1700 Pennsylvania Avenue, NW  
Suite 7.3-A  
Washington, DC 20229

Dear Renee:

I reviewed the request for a Right of Entry (RoE) for the purpose of conducting various site evaluations and investigations on National Forest System lands administered by the Coronado National Forest. This letter serves as your Right of Entry to perform the requested surveys within these boundaries, designated as the Nogales and Sierra Vista Ranger Districts. By this letter, I am authorizing your Right of Entry for site surveys necessary to address the National Environmental Policy Act processes to design security infrastructure along the international boundary with the Republic of Mexico. This authorization is in effect for three (3) years from the date of this letter to meet your project needs.

The environmental surveys will comply with the following items:

- All vehicular travel will be confined to existing Forest Service Road systems;
- No new roads will be constructed;
- No improvements to existing roadways will be performed;
- No lasting impacts on the lands being surveyed will be performed;
- No animal life will be removed or displaced by the survey activity;
- No plant materials will be removed;
- Locations of hazardous materials, illegal dumping/trash accumulation sites located during the surveys will be provided to the Nogales Ranger District;
- The targeted information gathered during the survey will be provided to District Ranger Keith Graves at: Nogales Ranger District, 303 Old Tucson Road, Nogales, Arizona 85621.



To reduce redundancy, the Nogales District will act as lead for the Coronado National Forest. All correspondence should be addressed to Keith L. Graves, District Ranger.

Thank you for keeping us informed. I look forward to assisting in meeting our mutual management goals and objectives.

Sincerely,

JEANINE A. DERBY  
Forest Supervisor



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

**To:** Craig Weinbrenner, USBP Assistance Chief Patrol Agent  
**Date:** December 06, 2007  
**Proposed Project:** Proposed construction, maintenance, and operation of Tactical Infrastructure, U.S. Dept of Homeland Security, U.S. CBP, U.S. Border Patrol, Tucson Sector.

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The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated October 25, 07. In regards to this, please attend to the checked items below;

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

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

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

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

We have received and reviewed the information regarding the proposed construction, maintenance, and operation of Tactical Infrastructure in segments totaling approximately 7.63 miles within the USBP Tucson Sector, AZ, and we have determined the proposed project *will not have an effect* on the tribe's Traditional Cultural Properties (TCPs) and/or historic properties. The project may proceed with the understanding that all ground disturbance be monitored and in the event subsurface materials or human remains are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

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

Sincerely,

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

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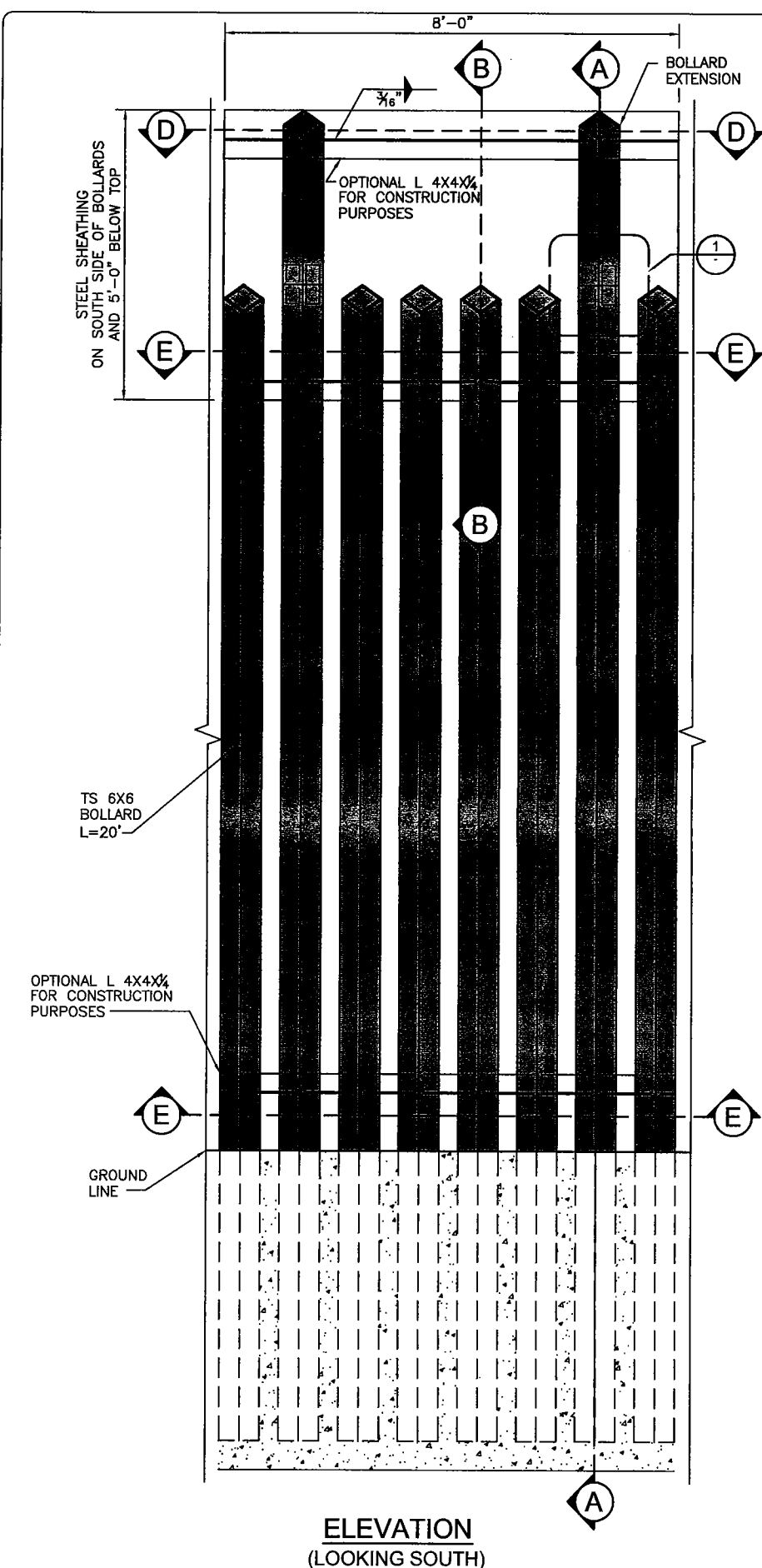
**RESERVED FOR  
PUBLIC REVIEW PERIOD**

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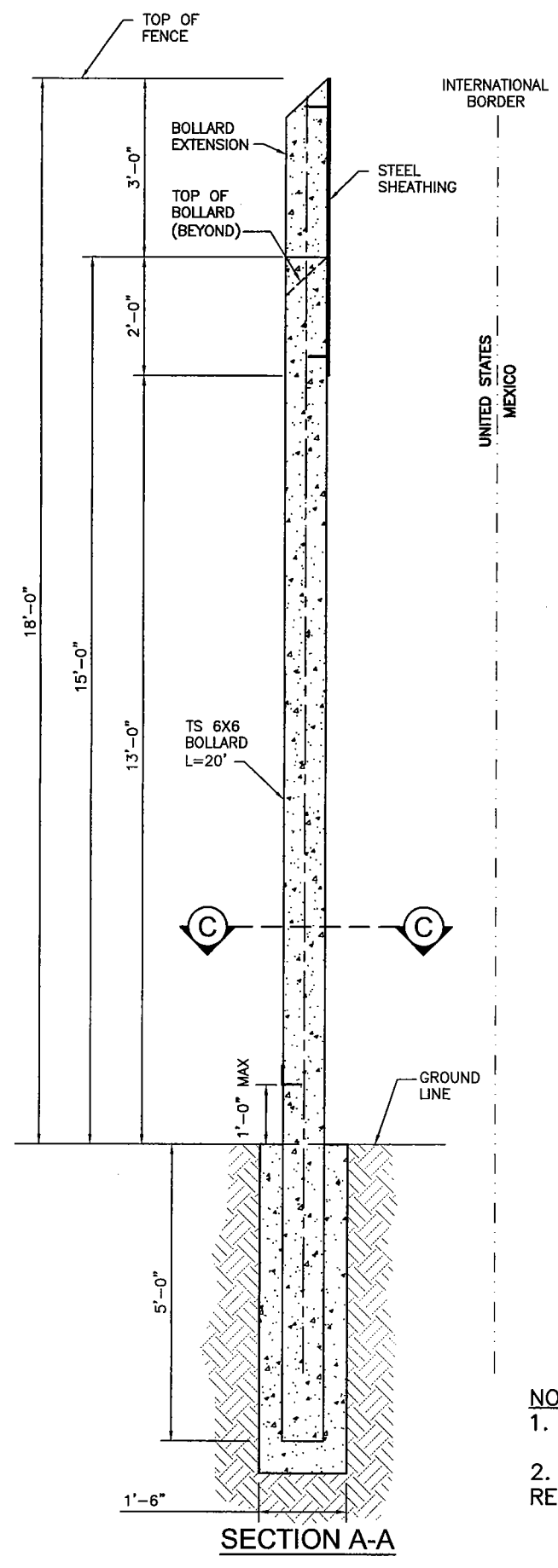
*APPENDIX B*  
*PROPOSED PRIMARY PEDESTRIAN FENCE DESIGN SCHEMATICS*



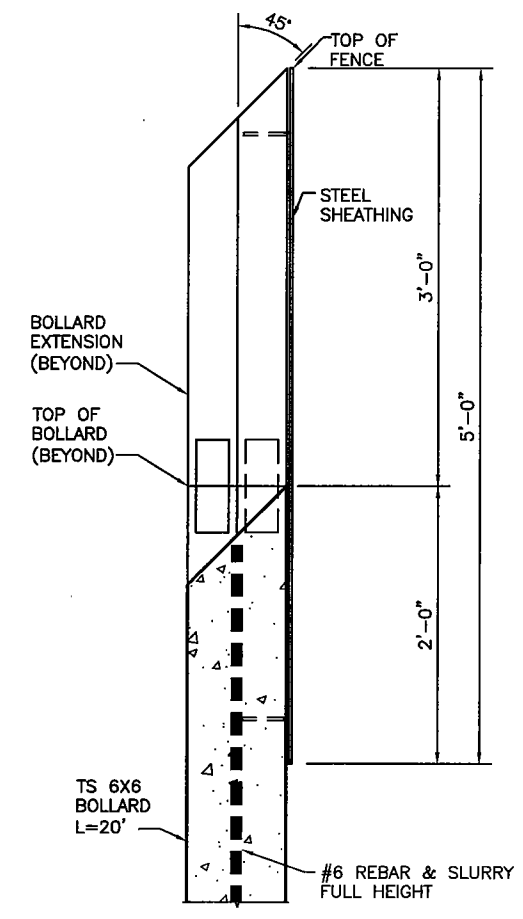




**ELEVATION**  
(LOOKING SOUTH)



**SECTION A-A**



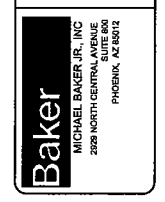
**SECTION B-B**

**NOTE:**  
 1. VALID FOR 90 MPH WIND  
 2. FOUNDATION DETAILS SHOWN REPRESENT MINIMUM DIMENSIONAL REQUIREMENTS AND MAY NEED TO BE INCREASED BASED ON FINAL DESIGN.



Rev.	Date	By	Check	Appr.

SCHEMATIC  
NOT FOR  
CONSTRUCTION



Designed by: KAS	Checked by: MCM/MLB	Submitted by: Michael Baker Jr., Inc.	Plot date: 11/18/07	Baker Project No: 112319
Date:	Rev.:			

**PF225  
CONCEPTUAL  
FENCE  
DESIGNS**

**PERSONNEL -  
VEHICLE  
TYPE 1**

**PV-1**





*APPENDIX C*  
*STATE PROTECTED SPECIES LISTS*





**Special Status Species Santa Cruz County, Arizona**

Arizona Game and Fish Department, Heritage Data Management System

Updated: June 28, 2007

Accessed November 21,2007

[http://www.azgfd.gov/w\\_c/edits/documents/ssspecies\\_bycounty.pdf](http://www.azgfd.gov/w_c/edits/documents/ssspecies_bycounty.pdf)

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	STATE	GRANK	S RANK
Santa Cruz	AMPHIBIAN	Ambystoma tigrinum stebbinsi	Sonora Tiger Salamander	WSC	G5T1T2	S1
Santa Cruz	AMPHIBIAN	Eleutherodactylus augusti cactorum	Western Barking Frog	WSC	G5T5	S2
Santa Cruz	AMPHIBIAN	Gastrophryne olivacea	Great Plains Narrow-mouthed Toad	WSC	G5	S3
Santa Cruz	AMPHIBIAN	Rana chiricahuensis	Chiricahua Leopard Frog	WSC	G3	S2
Santa Cruz	AMPHIBIAN	Rana tarahumarae	Tarahumara Frog	WSC	G3	SXS1
Santa Cruz	AMPHIBIAN	Rana yavapaiensis	Lowland Leopard Frog	WSC	G4	S3
Santa Cruz	BIRD	Accipiter gentilis	Northern Goshawk	WSC	G5	S3
Santa Cruz	BIRD	Amazilia violiceps	Violet-crowned Hummingbird	WSC	G5	S3
Santa Cruz	BIRD	Ammodramus bairdii	Baird's Sparrow	WSC	G4	S2N
Santa Cruz	BIRD	Anthus spragueii	Sprague's Pipit	WSC	G4	S2N
Santa Cruz	BIRD	Athene cunicularia hypugaea	Western Burrowing Owl		G4T4	S3
Santa Cruz	BIRD	Buteo nitidus maxima	Northern Gray Hawk	WSC	G5T4Q	S3
Santa Cruz	BIRD	Buteogallus anthracinus	Common Black-Hawk	WSC	G4G5	S3
Santa Cruz	BIRD	Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	WSC	G5T3Q	S3
Santa Cruz	BIRD	Dendrocygna autumnalis	Black-bellied Whistling-Duck	WSC	G5	S3
Santa Cruz	BIRD	Empidonax traillii extimus	Southwestern Willow Flycatcher	WSC	G5T1T2	S1
Santa Cruz	BIRD	Falco peregrinus anatum	American Peregrine Falcon	WSC	G4T4	S4
Santa Cruz	BIRD	Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	WSC	G5T3	S1
Santa Cruz	BIRD	Haliaeetus leucocephalus (wintering p	Bald Eagle	WSC	G5	S4N
Santa Cruz	BIRD	Pachyramphus aglaiae	Rose-throated Becard	WSC	G4G5	S1
Santa Cruz	BIRD	Pandion haliaetus	Osprey	WSC	G5	S2B,S4N
Santa Cruz	BIRD	Polioptila nigriceps	Black-capped Gnatcatcher	WSC	G5	S1
Santa Cruz	BIRD	Strix occidentalis lucida	Mexican Spotted Owl	WSC	G3T3	S3S4
Santa Cruz	BIRD	Trogon elegans	Elegant Trogon	WSC	G5	S3
Santa Cruz	BIRD	Tyrannus crassirostris	Thick-billed Kingbird	WSC	G5	S2
Santa Cruz	BIRD	Tyrannus melancholicus	Tropical Kingbird	WSC	G5	S3
Santa Cruz	FISH	Agosia chrysogaster chrysogaster	Gila Longfin Dace		G4T3T4	S3S4
Santa Cruz	FISH	Catostomus clarki	Desert Sucker		G3G4	S3S4
Santa Cruz	FISH	Catostomus insignis	Sonora Sucker		G3	S3
Santa Cruz	FISH	Cyprinodon macularius	Desert Pupfish	WSC	G1	S1
Santa Cruz	FISH	Gila ditaenia	Sonora Chub	WSC	G2	S1

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	STATE	GRANK	S RANK
Santa Cruz	FISH	<i>Gila intermedia</i>	Gila Chub	WSC	G2	S2
Santa Cruz	FISH	<i>Poeciliopsis occidentalis occidentalis</i>	Gila Topminnow	WSC	G3T3	S1S2
Santa Cruz	FISH	<i>Rhinichthys osculus</i>	Speckled Dace		G5	S3S4
Santa Cruz	INVERTEBRATE	<i>Agathymus aryxna</i>	Arizona Giant Skipper		G4G5	S?
Santa Cruz	INVERTEBRATE	<i>Argia sabino</i>	Sabino Canyon Damselfly		G1G2	S?
Santa Cruz	INVERTEBRATE	<i>Calephelis rawsoni arizonensis</i>	Arizona Metalmark		G3G4	S2
Santa Cruz	INVERTEBRATE	<i>Heterelmis stephani</i>	Stephan's Heterelmis Riffle Beetle		G1	S1
Santa Cruz	INVERTEBRATE	<i>Limenitis archippus obsoleta</i>	Obsolete Viceroy Butterfly		G5T3T4	S?
Santa Cruz	INVERTEBRATE	<i>Neophasia terlooii</i>	Chiricahua Pine White		G3G4	S2?
Santa Cruz	INVERTEBRATE	<i>Pyrgulopsis thompsoni</i>	Huachuca Springsnail		G2	S2
Santa Cruz	INVERTEBRATE	<i>Stygobromus arizonensis</i>	Arizona Cave Amphipod		G2G3	S1?
Santa Cruz	INVERTEBRATE	<i>Sympetrum signiferum</i>	Mexican Meadowfly		G2G3	S?
Santa Cruz	MAMMAL	<i>Choeronycteris mexicana</i>	Mexican Long-tongued Bat	WSC	G4	S3
Santa Cruz	MAMMAL	<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat		G4T4	S3S4
Santa Cruz	MAMMAL	<i>Lasiurus blossevillii</i>	Western Red Bat	WSC	G5	S3
Santa Cruz	MAMMAL	<i>Leptonycteris curasoae yerbabuenae</i>	Lesser Long-nosed Bat	WSC	G4	S2S3
Santa Cruz	MAMMAL	<i>Macrotus californicus</i>	California Leaf-nosed Bat	WSC	G4	S3
Santa Cruz	MAMMAL	<i>Myotis velifer</i>	Cave Myotis		G5	S3S4
Santa Cruz	MAMMAL	<i>Panthera onca</i>	Jaguar	WSC	G3	S1
Santa Cruz	MAMMAL	<i>Sigmodon ochrognathus</i>	Yellow-nosed Cotton Rat		G4G5	S4
Santa Cruz	MAMMAL	<i>Sorex arizonae</i>	Arizona Shrew	WSC	G3	S2
Santa Cruz	MAMMAL	<i>Thomomys umbrinus intermedius</i>	Southern Pocket Gopher		G5T3	S3
Santa Cruz	PLANT	<i>Abutilon parishii</i>	Pima Indian Mallow	SR	G2	S2
Santa Cruz	PLANT	<i>Acacia farnesiana</i>	Sweet Acacia		G5	S1S2
Santa Cruz	PLANT	<i>Agave parviflora ssp. parviflora</i>	Santa Cruz Striped Agave	HS	G3T3	S3
Santa Cruz	PLANT	<i>Allium rhizomatum</i>	Redflower Onion	SR	G3?Q	S1
Santa Cruz	PLANT	<i>Amoreuxia gonzalezii</i>	Saiya	HS	G1	S1
Santa Cruz	PLANT	<i>Amsonia grandiflora</i>	Large-flowered Blue Star		G2	S2
Santa Cruz	PLANT	<i>Arabis tricornuta</i>	Chiricahua Rock Cress		G1?	S1?
Santa Cruz	PLANT	<i>Asclepias lemmonii</i>	Lemmon Milkweed		G4?	S2
Santa Cruz	PLANT	<i>Asclepias uncialis</i>	Greene Milkweed		G3G4	S1?
Santa Cruz	PLANT	<i>Astragalus hypoxylus</i>	Huachuca Milk-vetch	SR	G1	S1
Santa Cruz	PLANT	<i>Browallia eludens</i>	Elusive New Browallia Species		G2?	S1
Santa Cruz	PLANT	<i>Capsicum annuum var. glabriusculum</i>	Chiltepin		G5T5	S2
Santa Cruz	PLANT	<i>Carex chihuahuensis</i>	A Sedge		G3G4	S2S3
Santa Cruz	PLANT	<i>Carex ultra</i>	Arizona Giant Sedge		G3?	S2

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	STATE	GRANK	S RANK
Santa Cruz	PLANT	Choisya mollis	Santa Cruz Star Leaf		G5?T2?	S2
Santa Cruz	PLANT	Conioselinum mexicanum	Mexican Hemlock Parsley		G2?	S1
Santa Cruz	PLANT	Coryphantha recurvata	Santa Cruz Beehive Cactus	HS	G3	S3
Santa Cruz	PLANT	Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	HS	G4T2	S2
Santa Cruz	PLANT	Coursetia glabella			G3?	S1
Santa Cruz	PLANT	Dalea tentaculoides	Gentry Indigo Bush	HS	G1	S1
Santa Cruz	PLANT	Erigeron arisolius			G2	S2
Santa Cruz	PLANT	Euphorbia macropus	Woodland Spurge	SR	G4	S2
Santa Cruz	PLANT	Graptopetalum bartramii	Bartram Stonecrop	SR	G3	S3
Santa Cruz	PLANT	Hedeoma dentatum	Mock-pennyroyal		G3	S3
Santa Cruz	PLANT	Heterotheca rutteri	Huachuca Golden Aster		G2	S2
Santa Cruz	PLANT	Hexalectris revoluta	Chisos Coral-root	SR	G1G2	S1
Santa Cruz	PLANT	Hexalectris spicata	Crested Coral Root	SR	G5	S3S4
Santa Cruz	PLANT	Hieracium pringlei	Pringle Hawkweed		G2Q	S1
Santa Cruz	PLANT	Ipomoea plummerae var. cuneifolia	Huachuca Morning Glory		G4T3	S3
Santa Cruz	PLANT	Ipomoea thurberi	Thurber's Morning-glory		G3	S1
Santa Cruz	PLANT	Laennecia eriophylla	Woolly Fleabane		G3	S2
Santa Cruz	PLANT	Lilaeopsis schaffneriana var. recurva	Huachuca Water Umbel	HS	G4T2	S2
Santa Cruz	PLANT	Lilium parryi	Lemmon Lily	SR	G3	S2
Santa Cruz	PLANT	Lobelia fenestralis	Leafy Lobelia	SR	G4	S1
Santa Cruz	PLANT	Lobelia laxiflora	Mexican Lobelia	SR	G4	S1
Santa Cruz	PLANT	Lotus alamosanus	Alamos Deer Vetch		G3G4	S1
Santa Cruz	PLANT	Lupinus huachucanus	Huachuca Mountain Lupine		G2	S2
Santa Cruz	PLANT	Macroptilium supinum	Supine Bean	SR	G2	S1
Santa Cruz	PLANT	Malaxis corymbosa	Madrean Adders Mouth	SR	G4	S3S4
Santa Cruz	PLANT	Malaxis porphyrea	Purple Adder's Mouth	SR	G4	S2
Santa Cruz	PLANT	Mammillaria wrightii var. wilcoxii	Wilcox Fishhook Cactus	SR	G4T4	S4
Santa Cruz	PLANT	Manihot davisiae	Arizona Manihot		G4	S2
Santa Cruz	PLANT	Marina diffusa	Escoba		G5?	S1
Santa Cruz	PLANT	Metastelma mexicanum	Wiggins Milkweed Vine		G3G4	S1S2
Santa Cruz	PLANT	Muhlenbergia dubioides	Box Canyon Muhly		G1Q	S1
Santa Cruz	PLANT	Muhlenbergia xerophila	Weeping Muhly		G3	S1
Santa Cruz	PLANT	Notholaena lemmonii	Lemmon Cloak Fern		G3?	S1S2
Santa Cruz	PLANT	Opuntia versicolor	Stag-horn Cholla	SR	G4	S2S3
Santa Cruz	PLANT	Paspalum virletii	Virlet Paspalum		G3?	S1
Santa Cruz	PLANT	Passiflora arizonica	Arizona Passionflower		G5T3T5	S2

COUNTY	TAXON	SCIENTIFIC NAME	COMMON NAME	STATE	GRANK	S RANK
Santa Cruz	PLANT	<i>Pectis imberbis</i>	Beardless Chinch Weed		G3	S1
Santa Cruz	PLANT	<i>Penstemon discolor</i>	Catalina Beardtongue	HS	G2	S2
Santa Cruz	PLANT	<i>Penstemon superbus</i>	Superb Beardtongue		G3?	S2?
Santa Cruz	PLANT	<i>Physalis latiphysa</i>	Broad-leaf Ground-cherry		G1	S1
Santa Cruz	PLANT	<i>Psilotum nudum</i>	Whisk Fern	HS	G5	S1
Santa Cruz	PLANT	<i>Samolus vagans</i>	Chiricahua Mountain Brookweed		G2?	S2
Santa Cruz	PLANT	<i>Schiedeella arizonica</i>	Fallen Ladies'-tresses	SR	GNR	S4
Santa Cruz	PLANT	<i>Senecio carlomasonii</i>	Seemann Groundsel		G4?Q	S2S3
Santa Cruz	PLANT	<i>Senecio multidentatus</i> var. <i>huachucan</i>	Huachuca Groundsel	HS	G2G4T2	S2
Santa Cruz	PLANT	<i>Sisyrinchium cernuum</i>	Nodding Blue-eyed Grass		G5	S2
Santa Cruz	PLANT	<i>Solanum lumholtzianum</i>	Lumholtz Nightshade		G3G4	S3
Santa Cruz	PLANT	<i>Spiranthes delitescens</i>	Madrean Ladies'-tresses	HS	G1	S1
Santa Cruz	PLANT	<i>Stenorrhynchos michuacanum</i>	Michoacan Ladies'-tresses	SR	G4	S3
Santa Cruz	PLANT	<i>Stevia lemmonii</i>	Lemmon's Stevia		G3G4	S2
Santa Cruz	PLANT	<i>Talinum humile</i>	Pinos Altos Flame Flower	SR	G2	S1
Santa Cruz	PLANT	<i>Talinum marginatum</i>	Tepic Flame Flower	SR	G2	S1
Santa Cruz	PLANT	<i>Tephrosia thurberi</i>	Thurber Hoary Pea		G4G5	S3
Santa Cruz	PLANT	<i>Tragia laciniata</i>	Sonoran Noseburn		G3G4	S3?
Santa Cruz	PLANT	<i>Viola umbraticola</i>	Shade Violet		G3G4	S2?
Santa Cruz	REPTILE	<i>Aspidoscelis burti stictogrammus</i>	Giant Spotted Whiptail		G4T4	S2
Santa Cruz	REPTILE	<i>Crotalus willardi willardi</i>	Arizona Ridge-nosed Rattlesnake	WSC	G5T4	S1S2
Santa Cruz	REPTILE	<i>Gopherus agassizii</i> (Sonoran Populatio	Sonoran Desert Tortoise	WSC	G4T4	S4
Santa Cruz	REPTILE	<i>Lampropeltis getula nigrita</i>	Western Black Kingsnake		G5T3T4Q	S1S2
Santa Cruz	REPTILE	<i>Oxybelis aeneus</i>	Brown Vinesnake	WSC	G5	S1
Santa Cruz	REPTILE	<i>Thamnophis eques megalops</i>	Northern Mexican Gartersnake	WSC	G5T5	S1

*APPENDIX D*  
*LIST OF BEST MANAGEMENT PRACTICES FOR PROTECTED SPECIES*

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## LIST OF BEST MANAGEMENT PRACTICES FOR PROTECTED SPECIES

**COORDINATION:** U.S. Fish and Wildlife Service/ U.S. Border Patrol Tucson Sector

**COMMITMENT:** To be implemented as deemed appropriate through Section 7 Consultation

Protected Species	Best Management Practice (BMP) Recommended by U.S. Fish and Wildlife Service	BMP Type
Jaguar	CBP should actively participate in Jaguar Conservation Team meetings and activities. This should also include provision of funds to support the monitoring program, such as funding for additional trip cameras at potential jaguar locations and radio telemetry. Camera monitoring currently costs \$48,000.00 per year. Radio telemetry would also assist in refining the location of travel corridors used by jaguars, which could assist in landscape-level planning.	Species Specific - Mitigation
Lesser long-nosed bat	When planning activities, avoid areas containing columnar cacti (saguaro, organ pipe) or agaves that provide the forage base for the bat. If they cannot be avoided, columnar cacti and agaves should be salvaged and transplanted. When salvage is not possible, columnar cacti and agaves should be purchased and planted. Salvage, transplantation, and container planting should be done in accordance with a restoration plan that includes success criteria and monitoring.	Species Specific - Modifications
Lesser long-nosed bat	Funding for surveys to locate bat roosts within the project area, particularly in coordination with /managers would facilitate avoidance.	Species Specific - Mitigation
Lesser long-nosed bat	Funding for continued monitoring of maternity and summer roost sites would assist in documenting the status of the species. Infra-red cameras could also be purchased to document bats at roosts.	Species Specific - Mitigation
Lesser long-nosed bat	Plant Palmer's agave in suitable areas as part of revegetation and erosion control actions. This will enhance foraging opportunities.	Species Specific - Mitigation
Lesser long-nosed bat	Placement of fences, barriers, or other means to deter IAs from using bat roosts for shelter would significantly reduce the risk of roost abandonment.	Species Specific - Mitigation

Continued.

Protected Species	Best Management Practice (BMP) Recommended by U.S. Fish and Wildlife Service	BMP Type
Pima pineapple cactus	Maintenance activities in cactus habitat should not increase the existing disturbed areas.	Species Specific - Modifications
Pima pineapple cactus	Use of existing roads and trails should be maximized in areas of suitable habitat for the cactus. Maps of suitable habitat areas should be available and protection of the cactus stressed in environmental education for CBP personnel and contractors involved in construction or maintenance of facilities.	Species Specific - Modifications
Pima pineapple cactus	A method to define the amount of ongoing disturbance from CBP activities is especially important to the cactus because of the large area of habitat that is affected, particularly by patrol operations. This method should be developed and implemented.	Species Specific - Mitigation
Pima pineapple cactus	Compensation for habitat degradation or loss should be provided on a 1 acre: 1 acre basis in either an established conservation bank or a new one set up for CBP purposes.	Species Specific - Mitigation
Pima pineapple cactus	Salvage of Pima pineapple cactus has shown very limited success with transplanted individuals experiencing high first-year mortality. Salvage of individual cacti will be considered only when on-site or off-site habitat conservation is not possible and death of the cacti is unavoidable.	Species Specific - Mitigation

*APPENDIX E*  
*AIR EMISSION CALCULATIONS*

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CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	1	300	12	150	540000
Diesel Road Compactors	0	100	12	150	0
Diesel Dump Truck	0	300	12	150	0
Diesel Excavator	0	300	12	150	0
Diesel Hole Cleaners/Trenchers	2	175	12	150	630000
Diesel Bore/Drill Rigs	2	300	12	150	1080000
Diesel Cement & Mortar Mixers	3	300	12	150	1620000
Diesel Cranes	2	175	12	150	630000
Diesel Graders	0	300	12	150	0
Diesel Tractors/Loaders/Backhoes	2	100	12	150	360000
Diesel Bull Dozers	2	300	12	150	1080000
Diesel Front End Loaders	2	300	12	150	1080000
Diesel Fork Lifts	3	100	12	150	540000
Diesel Generator Set	3	40	12	150	216000

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	0.262	1.232	3.267	0.244	0.238	0.440	318.963
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.354	1.694	4.034	0.319	0.305	0.514	371.985
Diesel Bore/Drill Rigs	0.714	2.725	8.510	0.595	0.583	0.869	630.428
Diesel Cement & Mortar Mixers	1.089	4.142	12.997	0.857	0.839	1.303	945.642
Diesel Cranes	0.305	0.903	3.971	0.236	0.229	0.507	368.097
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.734	3.257	2.864	0.544	0.528	0.377	274.173
Diesel Bull Dozers	0.428	1.642	5.665	0.393	0.381	0.881	638.283
Diesel Front End Loaders	0.452	1.845	5.951	0.417	0.405	0.881	638.164
Diesel Aerial Lifts	1.178	4.618	5.094	0.827	0.803	0.565	411.081
Diesel Generator Set	0.288	0.895	1.421	0.174	0.169	0.193	139.796
<b>Total Emissions</b>	<b>5.805</b>	<b>22.953</b>	<b>53.773</b>	<b>4.605</b>	<b>4.480</b>	<b>6.529</b>	<b>4736.611</b>

Conversion factors	
Grams to tons	1.102E-06

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	SO <sub>2</sub>
Combustable Emissions	5.81	22.95	53.77	4.61	4.48	6.53
Construction Site-fugitive PM-10	NA	NA	NA	9.60	1.92	NA
Construction Workers Commuter & Trucking	0.61	5.66	0.78	0.01	0.01	NA
<b>Total emissions</b>	<b>6.41</b>	<b>28.62</b>	<b>54.55</b>	<b>14.22</b>	<b>6.41</b>	<b>6.53</b>
De minimis threshold	NA	NA	NA	100.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	120	150	10	10	0.27	0.32	0.59
CO	12.4	15.7	120	150	10	10	2.46	3.11	5.57
NOx	0.95	1.22	120	150	10	10	0.19	0.24	0.43
PM-10	0.0052	0.0065	120	150	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	120	150	10	10	0.00	0.00	0.00

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Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	150	2	2	0.01	0.01	0.02
CO	1.32	3.21	60	150	2	2	0.03	0.06	0.09
NOx	4.97	12.6	60	150	2	2	0.10	0.25	0.35
PM-10	0.12	0.33	60	150	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	150	2	2	0.00	0.01	0.01

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

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

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



CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION

<b>Fugitive Dust Emissions at New Construction Site.</b>					
<b>Construction Site</b>	<b>Emission Factor tons/acre/month (1)</b>	<b>Total Area- Construction Site/month</b>	<b>Months/yr</b>	<b>Total PM-10 Emissions tns/yr</b>	<b>Total PM-2.5 (2)</b>
Fugitive Dust Emissions	0.11	7.27	12	9.60	1.92

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).

<b>Costruction Site Area</b>	<b>Demension (ft)</b>			
<b>Proposed Prioject</b>	<b>Length</b>	<b>Width</b>	<b>Units</b>	<b>Total Acres</b>
New Construction Area	5,280	60	1	7.27
New Construction Area	20	20	0	0.00
<b>Total</b>				<b>7.27</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 acres</b>
	5280	0.000022957	43560	21780

<b>Assumptions</b>	<b>Sections/day</b>	<b>Length of Section (ft)</b>	<b>Length/day (ft)</b>	<b>Days/Month</b>	<b>Length/Month (ft)</b>	<b>Miles/Month</b>
Fencing installed per day (ft)	22	10	220	24	5280	1.00
Length of fence/month (miles) (1)	1.00					

1. OBP reported that construction crew completes approximately 22 sections of fence per day and about 1 mile per month.

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	12	240	864000
Diesel Road Compactors	0	100	12	240	0
Diesel Dump Truck	0	300	12	240	0
Diesel Excavator	0	300	12	240	0
Diesel Hole Cleaners/Trenchers	2	175	12	240	1008000
Diesel Bore/Drill Rigs	2	300	12	240	1728000
Diesel Cement & Mortar Mixers	3	300	12	240	2592000
Diesel Cranes	2	175	12	240	1008000
Diesel Graders	0	300	12	240	0
Diesel Tractors/Loaders/Backhoes	2	100	12	240	576000
Diesel Bull Dozers	2	300	12	240	1728000
Diesel Front End Loaders	2	300	12	240	1728000
Diesel Fork Lifts	3	100	12	240	864000
Diesel Generator Set	3	40	12	240	345600

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-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	0.419	1.971	5.227	0.390	0.381	0.705	510.341
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.567	2.710	6.454	0.511	0.489	0.822	595.175
Diesel Bore/Drill Rigs	1.143	4.361	13.615	0.952	0.933	1.390	1008.684
Diesel Cement & Mortar Mixers	1.742	6.627	20.794	1.371	1.343	2.085	1513.027
Diesel Cranes	0.489	1.444	6.354	0.378	0.367	0.811	588.955
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	1.174	5.211	4.583	0.870	0.844	0.603	438.677
Diesel Bull Dozers	0.686	2.628	9.064	0.628	0.609	1.409	1021.252
Diesel Front End Loaders	0.724	2.952	9.521	0.666	0.647	1.409	1021.062
Diesel Aerial Lifts	1.885	7.389	8.150	1.323	1.285	0.905	657.730
Diesel Generator Set	0.461	1.432	2.274	0.278	0.270	0.308	223.674
<b>Total Emissions</b>	<b>9.289</b>	<b>36.724</b>	<b>86.037</b>	<b>7.368</b>	<b>7.169</b>	<b>10.447</b>	<b>7578.577</b>

Conversion factors	
Grams to tons	1.102E-06

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	9.29	36.72	86.04	7.37	7.17	10.45
Construction Site-fugitive PM-10	NA	NA	NA	10.40	2.08	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
<b>Total emissions</b>	<b>10.26</b>	<b>45.79</b>	<b>87.28</b>	<b>17.79</b>	<b>9.27</b>	<b>10.45</b>
De minimis threshold	NA	NA	NA	100.00	NA	NA

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 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	240	10	10	0.43	0.51	0.94
CO	12.4	15.7	120	240	10	10	3.94	4.98	8.92
NOx	0.95	1.22	120	240	10	10	0.30	0.39	0.69
PM-10	0.0052	0.0065	120	240	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	120	240	10	10	0.00	0.00	0.00

Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
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

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

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

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

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3

<b>Fugitive Dust Emissions at New Construction Site.</b>					
<b>Construction Site</b>	<b>Emission Factor tons/acre/month (1)</b>	<b>Total Area- Construction Site/month</b>	<b>Months/yr</b>	<b>Total PM-10 Emissions tns/yr</b>	<b>Total PM-2.5 (2)</b>
Fugitive Dust Emissions	0.11	7.88	12	10.40	2.08

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

<b>Coconstruction Site Area</b>	<b>Demension (ft)</b>			
<b>Proposed Prioject</b>	<b>Length</b>	<b>Width</b>	<b>Units</b>	<b>Total Acres</b>
New Construction Area	2,640	130	1	7.88
New Construction Area		20	0	0.00
<b>Total</b>				<b>7.88</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 acres</b>
	5280	0.000022957	43560	21780

<b>Assumptions</b>	<b>Sections/day</b>	<b>Length of Section (ft)</b>	<b>Length/day (ft)</b>	<b>Days/Month</b>	<b>Length/Month (ft)</b>	<b>Miles/Month</b>
Fencing installed per day (1)	11	10	110	24	2640	0.50
Length of fence/month (miles)	0.50					

1. OBP reported that construction crew complete 22 sections of fence per day. Alternative 3 requires 2 fences to be built per section and therefore will take twice as long to complete per section. Therefore, instead of assuming that 22 sections of fence will be completed per day, we are assuming that 11 sections of fence will be completed per day.

## ABBREVIATIONS AND ACRONYMS

← *continued from front cover*

POE	Port-Of-Entry
POL	Petroleum, oil and lubricants
ROI	Region of Influence
ROW	Right-of-way
SFA	Secure Fence Act
SHPO	State Historic Preservation Officer
SPCCP	Spill Prevention, Containment and Countermeasures Plan
SWPPP	Storm Water Pollution Prevention Plan
TI	Tactical infrastructure
TVB	Temporary Vehicle Barrier
UES	Unisource Energy Services
U.S.	United States
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USIBWC	U.S. Section, International Boundary and Water Commission
WUS	Waters of the U.S

