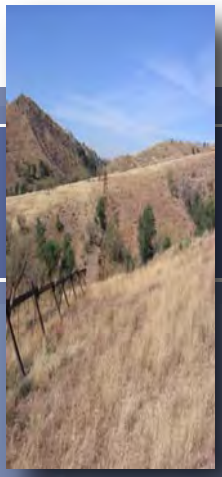
DRAFT

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
ECSO	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

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

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

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

PURPOSE AND NEED: 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 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 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 ports of entry 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 terrorists' weapons from entering the U.S., reducing the flow of illegal drugs, and enhancing the response time, while providing a safer work environment for USBP agents.

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

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

Proposed Action 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. Tucson Sector proposes to construct a bollard style fence design due to its low maintenance requirements, durability, and structural integrity. Regardless of the fence design selected for construction, all fence designs must meet the specific preliminary design performance measures that 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 would encompass the entire 60-foot wide project corridor. TVBs currently within the project corridor would be relocated to other areas of the U.S.-Mexico border or dismantled and recycled.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

_____ _____

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

_____ _____

Craig Weinbrenner Date
Assistant Chief Patrol Agent
Office of Border Patrol
Tucson Sector Headquarters

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*; by emailing *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*

(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.

DRAFT

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

January 2008

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 ALTERNATVE (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

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

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

ALTERNATIVES CONSIDERED

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

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

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION ALTERNATIVE

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

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

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

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

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

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

CONCLUSION

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

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INTRODUCTION

1.0 INTRODUCTION

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 (Figure 1-1). TI is a term used by USBP to describe physical structures that facilitate enforcement activities. These items typically include, but are not limited to, roads, fences, lights, gates, boat ramps, and barriers. TI would consist of primary pedestrian fence, minor improvements to existing roads, and construction of new unimproved construction/maintenance roads within 60 feet of the U.S.-Mexico border. The Proposed Action would occur within the USBP Tucson Sector, Nogales Station Area of Operations (AO).

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

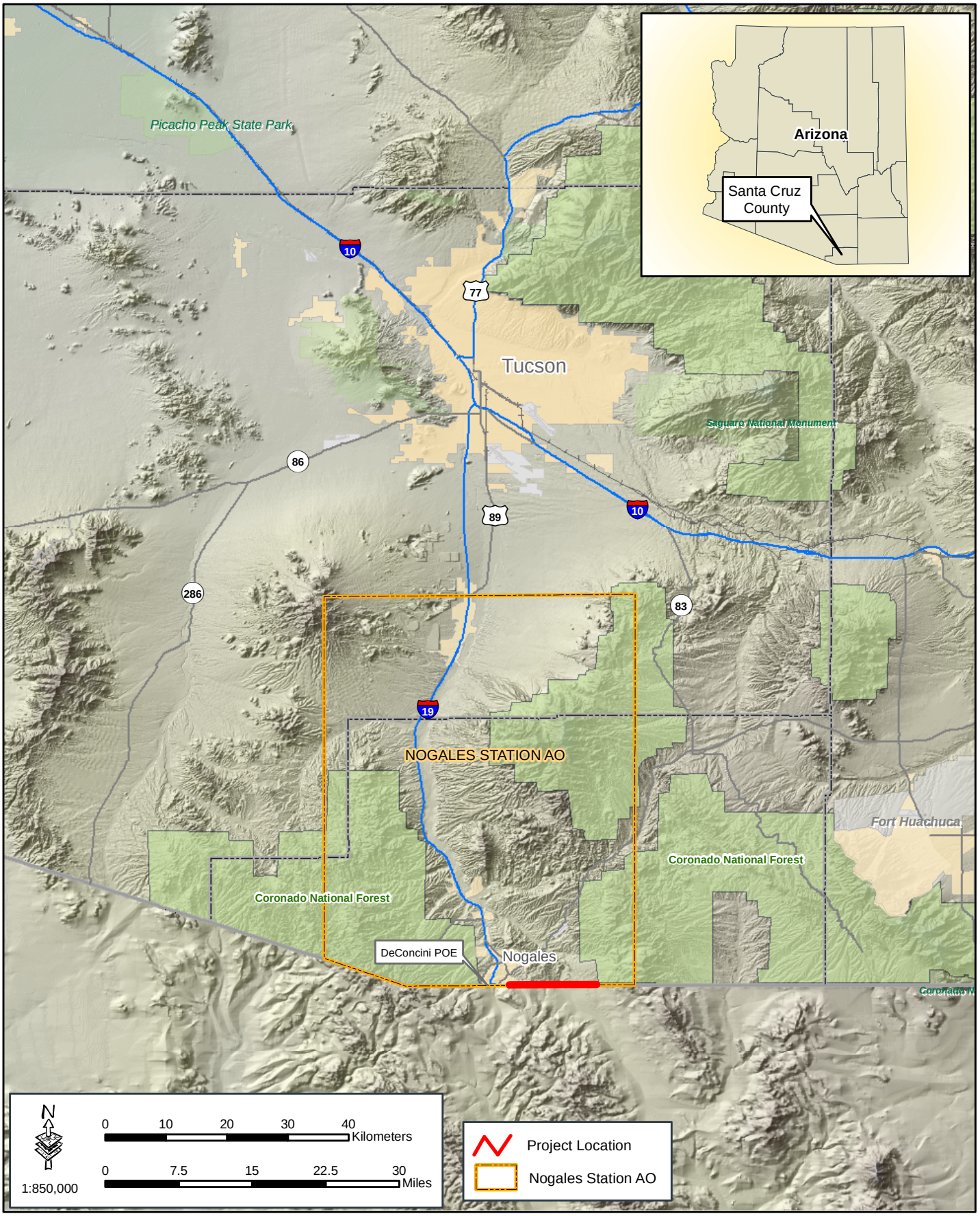

Figure 1-1: Vicinity Map

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

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

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

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

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

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

1.1 BACKGROUND

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

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

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

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

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is to increase border security within the USBP Tucson Sector through the construction, operation, and maintenance of TI in the form of fences and roads and other supporting technological and tactical assets. The USBP Tucson Sector has identified areas along the border that experience high levels of illegal cross-border activity. This activity occurs in areas that are not easily accessed by USBP agents, contain thick vegetation that can provide concealment, near 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 POEs in the USBP Tucson Sector.

The Proposed Action would help to 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.

1.3 PROPOSED ACTION

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

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

1.4 FRAMEWORK OF ANALYSIS

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

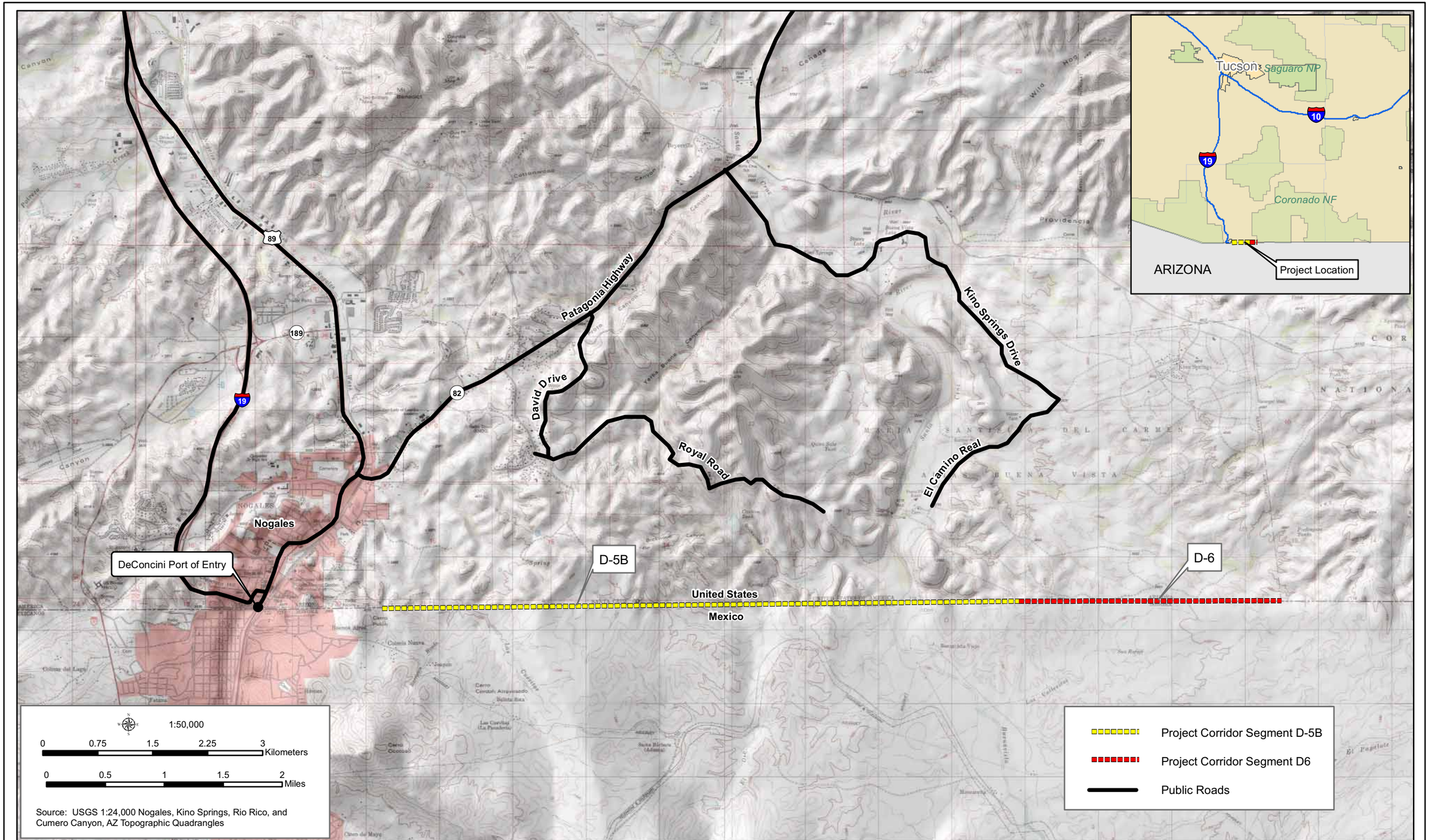

Figure 1-2: Project Location

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

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

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

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

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

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

Table 1-1. Major Permits, Approvals, and Interagency Coordination

Agency	Permit/Approval/Coordination
U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS)	- Section 7 ESA consultation - MBTA coordination
U.S. Environmental Protection Agency (USEPA)	- CWA NPDES permit
U.S. Army Corps of Engineers	- CWA Section 404 permit
Arizona Department of Environmental Quality	- CWA Section 401 State Water Quality Certification - CAA permit consultation
Arizona Game and Fish Department (AGFD)	- Arizona Endangered Species coordination
Arizona State Historic Preservation Officer (SHPO)	- NHPA Section 106 consultation
Federally recognized American Indian Tribes	- Consultation regarding potential effects on cultural resources
Advisory Council on Historic Preservation (ACHP)	- NHPA Section 106 consultation

1.5 PUBLIC INVOLVEMENT

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

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

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

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

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

1.6 COOPERATING AND COORDINATING AGENCIES

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

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

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

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

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

The CNF was also invited to be a cooperating agency since there is a potential for indirect impact on adjacent CNF lands. However, on October 30, 2007 the Nogales District responded to CBP, declining to be a cooperating agency, since no actions would 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

2.0 PROPOSED ACTION AND ALTERNATIVES

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.

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

2.2 ALTERNATIVES ANALYSIS

2.2.1 Alternative 1: No Action Alternative

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

2.2.2 Alternative 2: Proposed Action Alternative (Preferred Alternative)

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

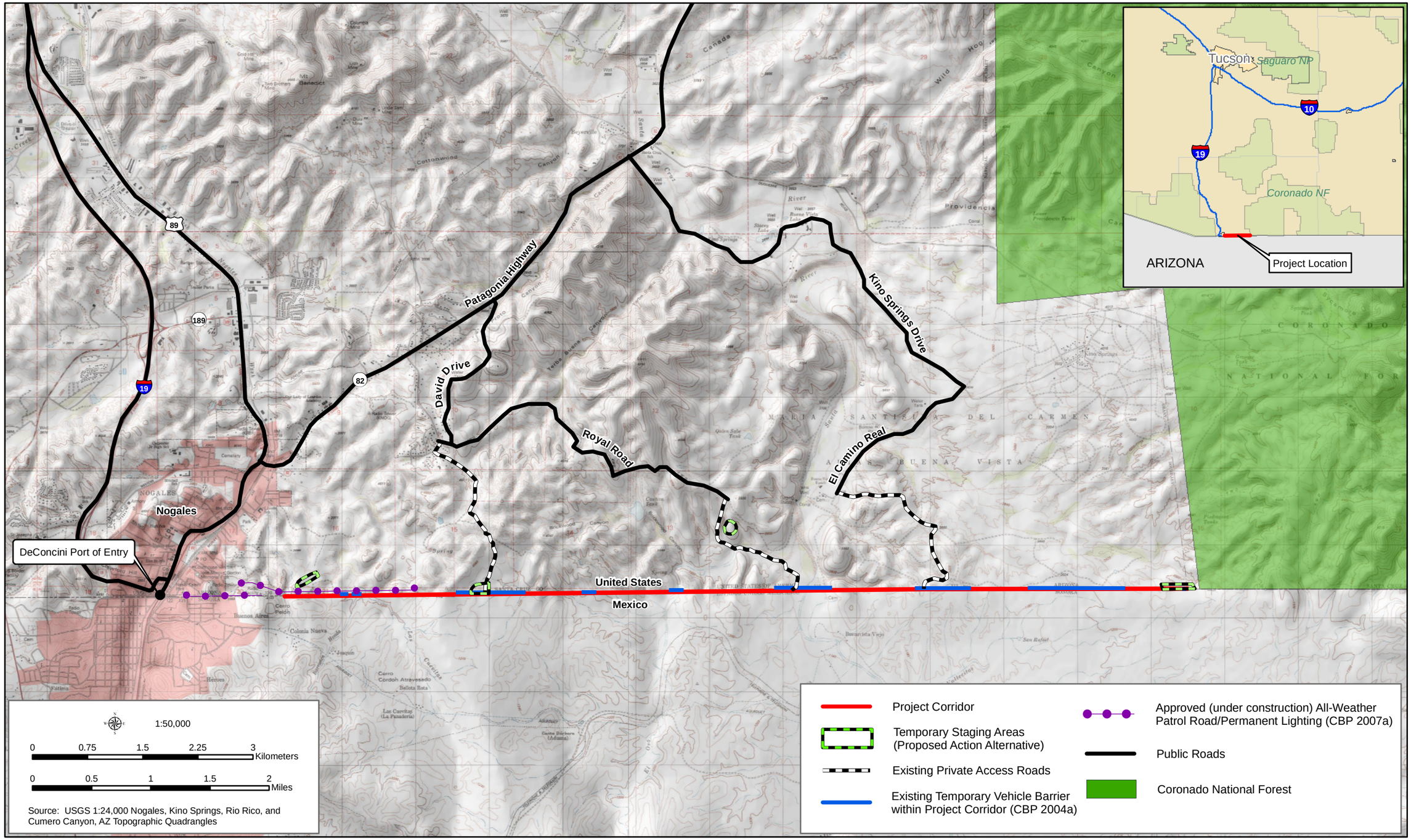

Figure 2-1: Project Corridor

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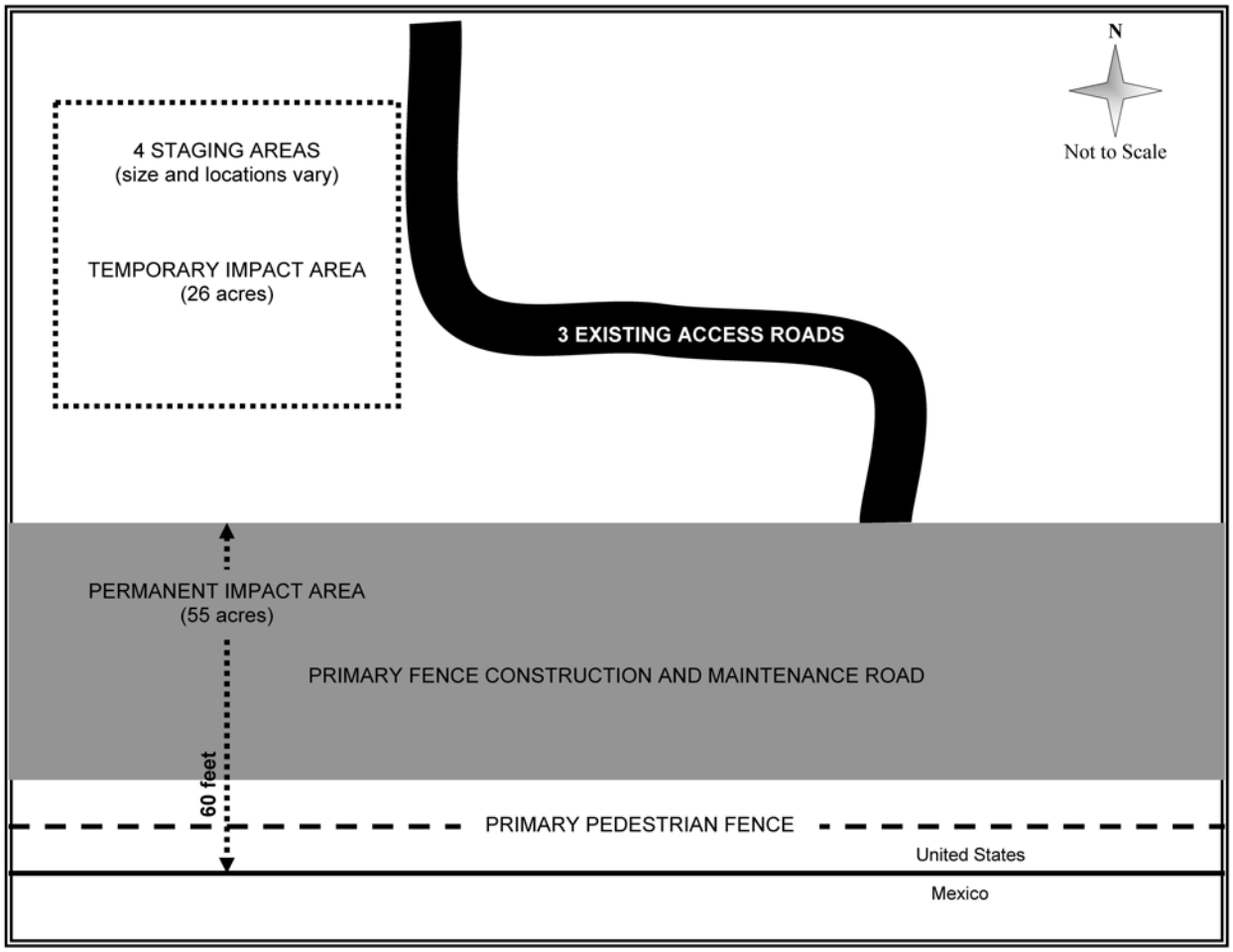
Figure 2-2 shows a typical schematic of TI positions as well as permanent and temporary impact areas for this alternative. Each of the proposed TI components is furthered described in the follow paragraphs.

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



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

pedestrian fence design selected by USBP, preliminary design performance measures 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 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.

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

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

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

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

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

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

Photograph 2-1. Portable lights

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

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

2.2.3 Alternative 3: Secure Fence Act Alternative

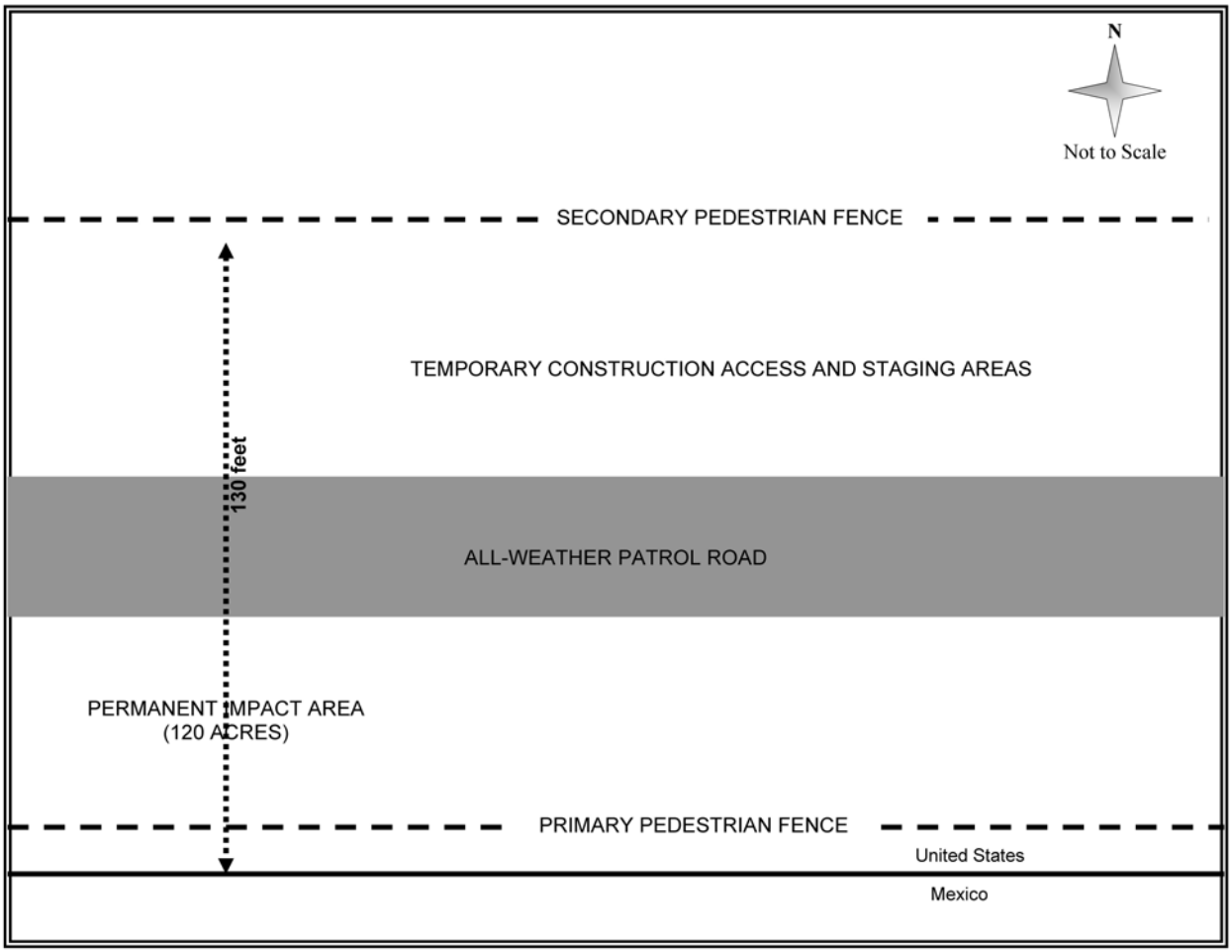
The Secure Fence Act of 2006 (P.L. 109-367) authorized the construction at least two layers of reinforced fencing along the U.S.-Mexico border. Two layers of bollard-style fence, known as primary and secondary pedestrian fence, would be constructed approximately 130 feet apart along the same route as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

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

2.3 OTHER ALTERNATIVES EVALUATED BUT ELIMINATED FROM CONSIDERATION

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

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

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,

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

2.3.3 Technology in Lieu of Tactical Infrastructure

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

2.4 SUMMARY

Only three alternatives, the No Action Alternative, the Proposed Action Alternative, and the Secure Fence Act Alternative will be carried forward for analysis. A summary matrix (Table 2-1) shows how each of the alternatives satisfies the purpose and need of this project. Table 2-2 presents a summary matrix of the potential impacts and how they 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.

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 *de minimis* levels.	There would be a minor and temporary impact on air quality during construction; air emissions would remain below *de minimis* 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.

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.

2.5 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

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

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

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

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.

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	**81**
Alternative 3: Secure Fence Act Alternative (130 feet wide x 7.6 miles)	120	0	**120**

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

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

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

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

3.2 LAND USE

3.2.1 Affected Environment

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

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

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1: No Action Alternative

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

3.2.2.2 Alternative 2: Proposed Action Alternative

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

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

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

3.2.2.3 Alternative 3: Secure Fence Act Alternative

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

3.3 SOILS

3.3.1 Affected Environment

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

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

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

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

3.3.2 Environmental Consequences

3.3.2.1 Alternative 1: No Action Alternative

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

3.3.2.2 Alternative 2: Proposed Action Alternative

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

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

3.3.2.3 Alternative 3: Secure Fence Act Alternative

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

3.4 HYDROLOGY AND GROUNDWATER

3.4.1 Affected Environment

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

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

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1: No Action Alternative

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

3.4.2.2 Alternative 2: Proposed Action Alternative

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

3.4.2.3 Alternative 3: Secure Fence Act Alternative

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

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

3.5 SURFACE WATERS AND WATERS OF THE U.S

3.5.1 Affected Environment

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

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

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

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

3.5.2 Environmental Consequences

3.5.2.1 Alternative 1: No Action Alternative

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

3.5.2.2 Alternative 2: Proposed Action Alternative

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

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

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

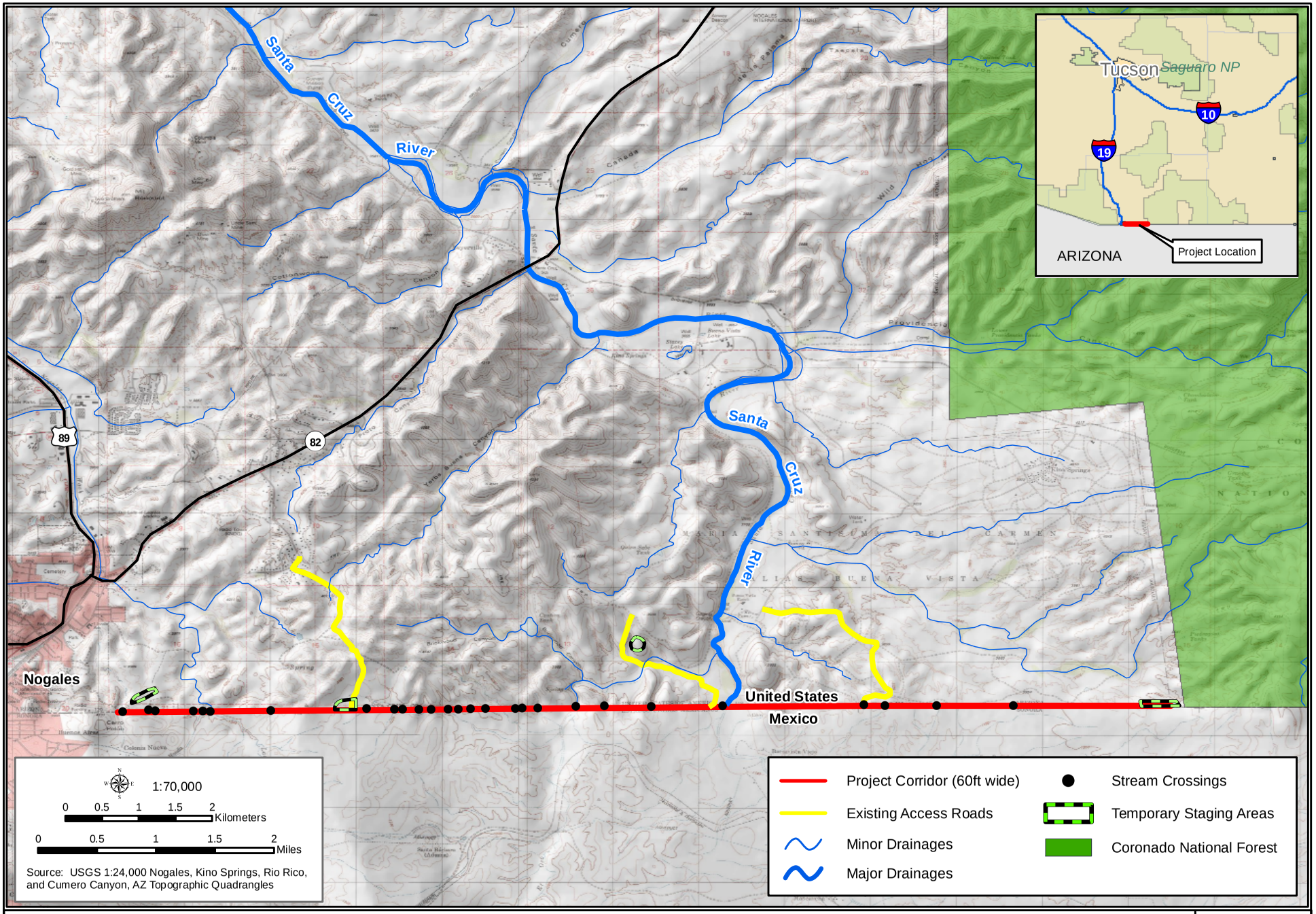


Figure 3-1: Surface Waters and Waters of the U.S.

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

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

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

3.5.2.3 Alternative 3: Secure Fence Act Alternative

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

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

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

3.6 FLOODPLAINS

3.6.1 Affected Environment

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

- Determine whether or not the action is in the regulatory floodplain;
- Conduct early public notice;
- Identify and evaluate practicable alternatives, if any;
- Identify the impacts of the action;
- Minimize the impacts;
- Reevaluate alternatives;
- Present the findings and a public explanation; and
- Implement the action.

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

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

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

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1: No Action Alternative

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

3.6.2.2 Alternative 2: Proposed Action Alternative

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

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

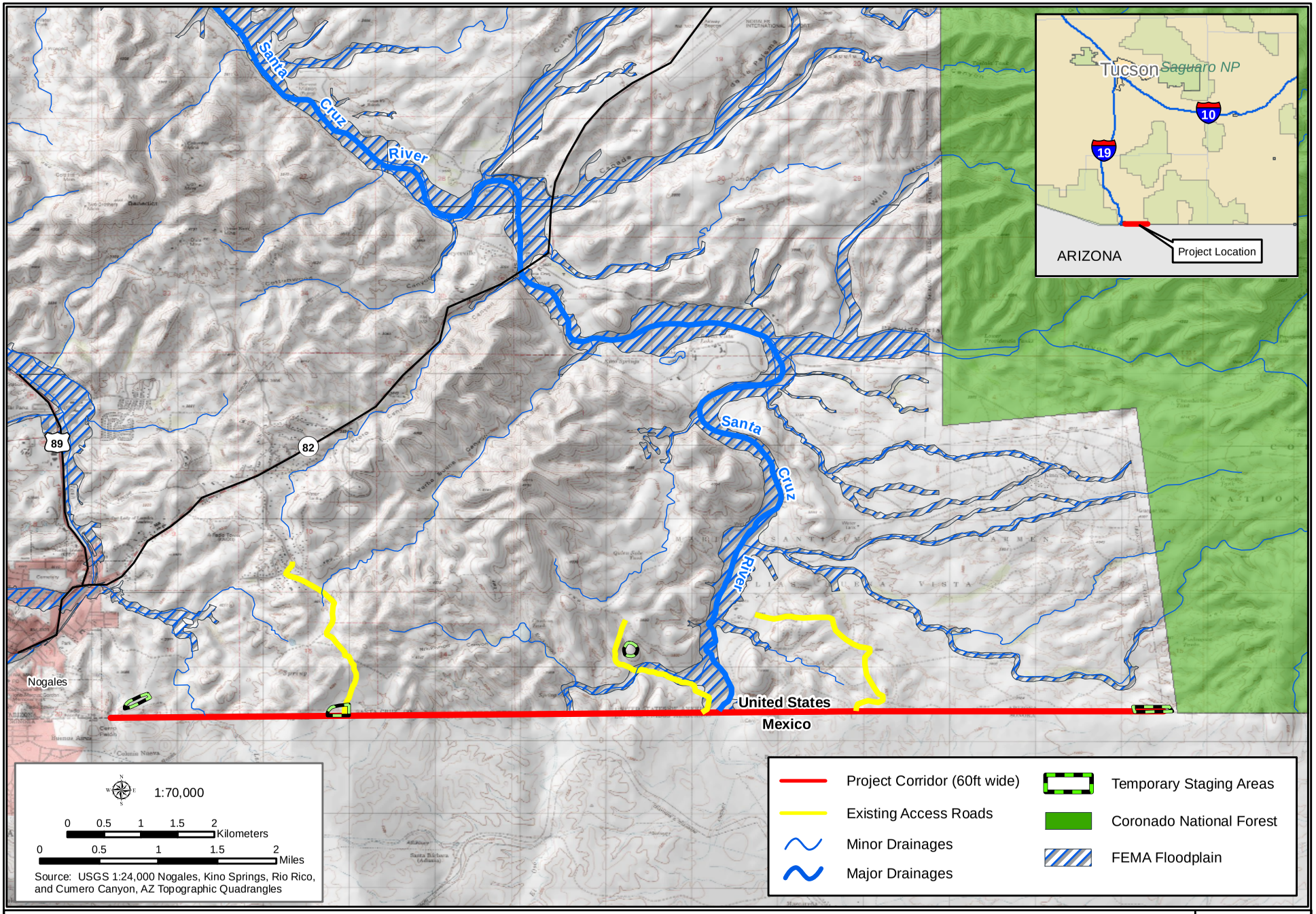

Figure 3-2: FEMA Floodplain Map

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

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

3.6.2.3 Alternative 3: Secure Fence Act Alternative

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

3.7 VEGETATIVE HABITAT

3.7.1 Affected Environment

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

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

3.7.1.1 Interior Southwestern, Cottonwood—Willow Series

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

3.7.1.2 Riparian Deciduous Forest and Woodland, Mixed Broadleaf Series

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

3.7.1.3 Scrub-Grassland (Semidesert), Mixed Grass Series

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

3.7.2 Environmental Consequences

3.7.2.1 Alternative 1: No Action Alternative

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

3.7.2.2 Alternative 2: Proposed Action Alternative

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

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

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

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

3.7.2.3 Alternative 3: Secure Fence Act Alternative

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

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

3.8 WILDLIFE AND AQUATIC RESOURCES

3.8.1 Affected Environment

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

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

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

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

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1: No Action Alternative

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

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

3.8.2.2 Alternative 2: Proposed Action Alternative

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

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

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

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

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

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

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

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

3.8.2.3 Alternative 3: Secure Fence Act Alternative

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

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

3.9 PROTECTED SPECIES AND CRITICAL HABITAT

3.9.1 Affected Environment

3.9.1.1 Federal

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

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

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

Common/Scientific Name	Federal Status	Habitat	Potential to occur within or near the Project Corridor
PLANTS			
Canelo Hills ladies'-tresses (*Spiranthes delitescens*)	E	Finely grained, highly organic, saturated soils of cienegas.	No – No saturated soils located in the project corridor.
Huachuca water umbel (*Lilaeopsis schaffneriana* spp. *recurva*)	E	Cienegas, perennial low gradient streams, wetlands	**Yes** –Potentially suitable habitat exists in the Santa Cruz River portion of the project corridor.
Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*)	E	Sonoran desertscrub or semi-desert grassland communities.	**Yes** – Nogales represents the southernmost portion of its range.
INVERTEBRATES			
Stephan's riffle beetle (*Hetrelmis stephani*)	C	Free-flowing springs and seeps.	No –The project corridor is not located in known habitat.
Huachuca springsnail (*Pyrgulopsis thomsoni*)	C	Aquatic areas, small springs with vegetation and slow moderate flow.	No – No suitable habitat present.
BIRDS			
Yellow-billed cuckoo (*Coccyzus americanus*)	C	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries).	No – No suitable habitat is present.
California brown pelican (*Pelecanus occidentalis californicus*)	E	Feed in shallow estuarine waters; nest on small coastal islands.	No – No suitable habitat present.
Mexican spotted owl (*Strix occidentalis lucida*)	T	Nests in canyons and dense forests with multi-layered foliage structure.	**Yes** – Critical habitat designated east of project corridor. Suitable foraging habitat may occur within the Santa Cruz River floodplain.
Northern aplomado falcon (*Falco femoralis septentrionalis*)	E	Grasslands and savannahs.	**Yes** – Potential foraging and nesting habitat present.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	**Yes** – 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
AMPHIBIANS			
Chiricahua leopard frog (*Rana chiricahuensis*)	T	Streams, rivers, backwaters, ponds, and stock tanks.	**Yes** –Potentially suitable habitat may exist in perennial pools of the areas of the Santa Cruz River floodplain and its tributaries.
Sonora tiger salamander (*Ambystoma tigrinum stebbinsi*)	E	Stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains.	No –The project corridor is not located in known habitat.
MAMMALS			
Jaguar (*Panthera onca*)	E	Found in tropical rainforests, arid scrub, and wet grasslands and prefer dense forests or swamps with a ready supply of water	**Yes** – Sightings have been documented west of the project corridor within the CNF.
Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*)	E	Desert scrub habitat with agave and columnar cacti present as food plants.	**Yes** – Potential foraging habitat but no suitable roosting habitat present.
Ocelot (*Leopardus pardalis*)	E	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub.	**Yes** –Potentially suitable habitat exists in densely vegetation areas of the Santa Cruz River floodplain and its tributaries.
FISHES			
Desert pupfish (*Cyprinodon macularius*)	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 (*Gila intermedia*)	E	Pools, springs, cienegas, and streams.	**Yes** – Potentially suitable habitat exists in the Santa Cruz River system.
Gila topminnow (*Poeciliopsis occidentalis occidentalis*)	E	Small streams, springs, cienegas and vegetated shallows.	**Yes** – Potentially suitable habitat exists in the Santa Cruz River system.
Sonora chub (*Gila ditaenia*)	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

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

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

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

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

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

3.9.1.2 State

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

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

3.9.2 Environmental Consequences

3.9.2.1 Alternative 1: No Action Alternative

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

3.9.2.2 Alternative 2: Proposed Action Alternative

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

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

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

3.9.2.3 Alternative 3: Secure Fence Act Alternative

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

3.10 CULTURAL RESOURCES

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

3.10.1 Affected Environment

3.10.1.1 Cultural Resources Overview

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

3.10.1.2 Previous Investigations

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

3.10.1.3 Current Investigations

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

3.10.2 Environmental Consequences

3.10.2.1 Alternative 1: No Action Alternative

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

3.10.2.2 Alternative 2: Proposed Action Alternative

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

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

3.10.2.3 Alternative 3: Secure Fence Act Alternative

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

3.11 AIR QUALITY

3.11.1 Affected Environment

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

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

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

3.11.2 Environmental Consequences

3.11.2.1 Alternative 1: No Action Alternative

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

3.11.2.2 Alternative 2: Proposed Action Alternative

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

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

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

Pollutant	Total (tons/year)	*de minimis* 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

Source: 40 CFR 51.853 and GSRC model projections.

3.11.2.3 Alternative 3: Secure Fence Act Alternative

Calculations of the emissions created by construction activities required by Alternative 3 to account for the additional construction footprint requirements for a secondary pedestrian fence were conducted to determine the potential impact on the region's airshed (Appendix E). Air emission calculations suggest that local PM-10 emissions would be greater than those of the proposed action. This is a direct result of an increase in project construction time and corridor surface area (130 feet as opposed to 60 feet) that would be susceptible to an increased release of fugitive dust. As indicated 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)	*de minimis* 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.

3.12.2.2 Alternative 2: Proposed Action Alternative

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

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

3.12.2.3 Alternative 3: Secure Fence Act Alternative

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