



DRAFT

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



JANUARY 2008

ACRONYMS AND ABBREVIATIONS

ADA	Arizona Department of Agriculture
ADEQ	Arizona Department of Environmental Quality
ADES	Arizona Department of Economic Security
AO	Area of Operations
ASM	Arizona State Museum
ASTM	American Society for Testing and Materials
AZDC	Arizona Department of Commerce
BEA	Bureau of Economic Analysis
BFSA	Brian F. Smith & Associates
BLM	Bureau of Land Management
BMGR	Barry M. Goldwater Range
BMP	Best Management Practices
Caltrans	California Department of Transportation
CBP	Customs and Border Protection
CDFG	California Department of Fish and Game
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
CO	carbon monoxide
CRS	Congressional Research Service
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DHS	Department of Homeland Security
DNL	Day-night level
DO	dissolved oxygen
DOI	U.S. Department of the Interior
EO	Executive Order
EA	Environmental Assessment
ECSSO	Engineering and Construction Support Office
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FTHL	flat-tailed horned lizard
FY	Fiscal Year
HU	Hydrologic Unit
I-8	Interstate 8
IA	Illegal alien
IID	Imperial Irrigation District
INRMP	Integrated Natural Resource Management Plan
IVCDM	Imperial Valley College Desert Museum
JTF-6	Joint Task Force 6
JTF-N	Joint Task Force North
MBTA	Migratory Bird Treaty Act
MD	Management Directive
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
NAAQS	National Ambient Air Quality Standards

1 **DRAFT FINDING OF NO SIGNIFICANT IMPACT**
2 **For Proposed Construction, Operation, and Maintenance of Tactical Infrastructure**
3 **U.S. Border Patrol**
4 **Yuma Sector, Arizona and California**
5

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

12
13 During recent years, illegal aliens (IAs) and illegal entry into the U.S. along the U.S.-
14 Mexico border in southern Arizona has been a severe problem. Consequently, USBP
15 focused on accomplishing its goal of effective control of the border and is working to
16 implement the right combination of personnel, technology and infrastructure, and thus
17 deter illegal entries through improved enforcement. Deterrence is achieved when
18 USBP has the ability to create and convey the immediate, credible, and absolute
19 certainty of detection and apprehension. As such, tactical infrastructure (TI)
20 components, such as fencing and roads, are a critical element in the current
21 enforcement strategy. TI is a term used by USBP to describe physical structures that
22 facilitate their enforcement activities; these items typically include but are not limited to
23 roads, fences, lights, gates, boat ramps, and barriers. Developing trends, such as the
24 recognition of environmental preservation concerns and the increase of criminal cross-
25 border activities, continue to pose a border enforcement challenge and compound the
26 need for TI along the international border.

27
28 An Environmental Assessment (EA) was prepared in December 2004 by CBP to
29 address construction of TI and the development of a 150-foot wide border enforcement
30 zone on either side of the San Luis Port of Entry (POE), Yuma County, Arizona. That
31 EA was supplemented in March 2007 to extend TI northward along the Colorado River.
32 Actions contained in that document included vegetation clearing for camera lanes, and
33 construction of fence, lights, and roads to a point approximately 1.5 miles north of the
34 border enforcement zone. These projects have been completed.

35
36 Due to the recent Federal legislation and shifts in IA traffic, CBP/USBP recognized a
37 need to construct additional primary pedestrian fence. DHS, CBP, USBP proposes to
38 construct, maintain, and operate 14 miles of TI along the West Main Bypass Canal (also
39 known as the Salinity Canal) in Yuma County, Arizona and along the U.S.-Mexico
40 border in Imperial County, California. A Supplemental Environmental Assessment
41 (SEA) is needed to address the impacts of this additional fence construction. Due to the
42 similarity and proximity of past projects to the proposed project, applicable information
43 from the two documents mentioned above will be updated and, where appropriate, is
44 incorporated by reference to the extent practicable.

1 **PROJECT LOCATION:** The proposed project corridor is located about 1.5 miles north
2 of the U.S.-Mexico border, west of San Luis, Arizona, and extends northward for 3.7
3 miles along the Salinity Canal, Yuma County, Arizona. USBP also proposes to install TI
4 along the international border, beginning approximately 0.5 miles west of the Andrade
5 POE in Imperial County, California and extending 10.3 miles to the west, into Bureau of
6 Land Management's (BLM) Algodones Dunes Area. For the Arizona portion, the
7 southernmost 0.5 miles of primary pedestrian fence would be installed along the eastern
8 toe of the eastern Salinity Canal levee. The fence would then angle to the east and be
9 installed along the toe of the second levee road for approximately 3.2 miles. The
10 proposed fence and TI would be located within the 60-foot wide Roosevelt Reservation
11 for the California portion of the proposed project. The Salinity Canal Levees (managed
12 by U.S. Bureau of Reclamation [Reclamation]) and the Roosevelt Reservation
13 (managed by BLM) are public lands. The Proposed Action would occur within the USBP
14 Yuma Sector's Area of Operations (AO).

15
16 **PURPOSE AND NEED:** The purpose of the Proposed Action is to increase border
17 security within USBP Yuma Sector through the construction, operation, and
18 maintenance of TI in the form of fences, roads, and supporting technological and
19 tactical assets. USBP Yuma Sector has identified two discrete areas along the border
20 that experience high levels of illegal cross-border activity. This activity occurs in areas
21 near POEs where concentrated populations might live on either side of the border, or
22 have quick access to U.S. transportation routes. In addition, the western portion of the
23 California segment is fairly remote and not easily accessed by USBP agents.

24
25 The Proposed Action is needed to provide USBP agents with the tools necessary to
26 strengthen their control of the U.S. borders between POEs in USBP Yuma Sector. The
27 Proposed Action would help to deter illegal cross-border activities within the USBP
28 Yuma Sector by improving enforcement; preventing terrorists and terrorist weapons
29 from entering the U.S.; reducing the flow of illegal drugs; and enhancing USBP
30 response time by providing better driving conditions and impediments to cross-border
31 violators. The Proposed Action would also provide a safer work environment for USBP
32 agents by reducing the number of incursions.

33
34 **ALTERNATIVES:** Three alternatives were considered: The No Action Alternative, the
35 Proposed Action Alternative, and the Secure Fence Act Alignment Alternative.

36
37 **No Action Alternative:** Under the No Action Alternative, the primary pedestrian fence
38 would not be installed. The No Action Alternative would not meet USBP mission or
39 operational needs. However, inclusion of the No Action Alternative is required under
40 CEQ regulations and will be carried forward for analysis in this SEA. In addition, the No
41 Action Alternative will serve as a baseline against which the impacts of the other action
42 alternatives can be evaluated.

43
44 **Proposed Action Alternative:** The Proposed Action is to construct 14 miles of primary
45 pedestrian fence at two locations within the Yuma Sector's AO. Fence segment C-2B
46 would begin approximately 1.5 mile north of the U.S.-Mexico border, west of San Luis,

1 Arizona. This segment would extend northward approximately 0.5 miles along the
2 eastern toe of the east Salinity Canal levee and continue for approximately 3.2 miles
3 along the toe of the second levee road. A maintenance road, approximately 16 to 20
4 feet wide, would be constructed between the levee toe and the primary pedestrian
5 fence. The second fence segment (C-1) is proposed along the U.S.-Mexico border,
6 beginning approximately 0.5 miles west of the Andrade POE in Imperial County,
7 California and extending 10.3 miles to the west, into Algodones Dunes Area, which are
8 public lands managed by BLM. A construction and maintenance access road would
9 need to be installed in order to construct the fence. The construction road would be
10 expected to require the entire 60-foot wide Roosevelt Reservation. Access to this
11 portion of the fence corridor would be from the Andrade POE or south from the All-
12 American Canal.

13
14 Although the final fence design would be selected by the U.S. Army Corps of Engineers,
15 the current plan is to install a bollard-style fence within the C-1 segment and a steel
16 sheathing or wire mesh fence for the C-2B segment. Regardless of the fence design
17 selected for construction, all fence designs must meet the specific preliminary design
18 performance measures that dictate that the fence must: extend 15 to 18 feet above
19 ground and 3 to 6 feet below ground; be capable of withstanding an impact from a
20 10,000 pound gross weight vehicle traveling at 40 miles per hour; be semi-transparent,
21 as dictated by operational need; be designed to survive extreme climate changes of a
22 desert environment; be designed to allow movement of small animals from one side to
23 the other; and not impede the natural flow of water.

24
25 **Secure Fence Act Alignment Alternative:** The Secure Fence Act of 2006 (Public Law
26 [P.L.] 109-367) authorized the construction of at least two layers of reinforced fencing
27 along the U.S.-Mexico border. Under this alternative, two layers of fence, known as
28 primary and secondary pedestrian fence, would be constructed approximately 130 feet
29 apart along the same route as the Proposed Action Alternative. This alternative would
30 also include construction and maintenance of access and patrol roads. The patrol road
31 would be located between the primary and secondary fences and the maintenance road
32 would be on the north side of the secondary fence.

33
34 **ENVIRONMENTAL CONSEQUENCES:** The Proposed Action Alternative meets the
35 strategic needs and objectives of CBP. Therefore, the Proposed Action Alternative is
36 considered CBP/USBP's Preferred Alternative, as it appears to be the most strategically
37 effective and strikes the best balance between CBP/USBP enforcement needs and
38 protection of sensitive resources. The following description of environmental
39 consequences and mitigation are based on implementation of the Proposed Action
40 Alternative.

41
42 The Proposed Action Alternative would result in direct impacts to soils, water resources,
43 vegetation, wildlife, floodplains, noise levels, and aesthetic and visual resources within
44 the project corridor and the Region of Influence (ROI). However, all of these potential
45 impacts would be insignificant or minimized through the use of mitigation measures

1 and/or compensation. Furthermore, many of the adverse impacts would be offset as a
2 result of beneficial effect of reduced illegal activity within the ROI.

3
4 Regulatory floodplain permit(s) would mitigate and/or compensate minor impacts to
5 floodplains. The impacts to 102 acres of land general vegetation and wildlife habitat
6 would be insignificant to vegetation and wildlife since most of the area has been disturbed
7 by previous actions, including the levee construction, or is generally lacking native
8 vegetation communities. CBP has determined that no Federally protected species would
9 be impacted as a result of constructing the primary pedestrian fence; however, on-going
10 consultation with the U.S. Fish and Wildlife Service (USFWS) through Section 7 process
11 will be completed prior to initiation of construction. Aesthetic resources would be altered
12 by the presence of primary pedestrian fence; however, beneficial impacts resulting from
13 the reduction of illegal traffic would offset any adverse impacts. Mitigation measures
14 through Section 106 consultation would include avoidance and/or monitoring on any
15 known cultural resource sites; therefore, no adverse impacts would occur to known
16 eligible cultural resources sites.

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

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

34
35 **MITIGATION:** Mitigation measures are presented for each resource category that would
36 be potentially affected. Many of these measures have been incorporated as standard
37 operating procedures by USBP on past projects. It is USBP's policy to mitigate adverse
38 impacts through the sequence of avoidance, minimization, and finally, compensation.
39 These environmental design measures will be incorporated into the current Project
40 Management Plan to be carried forward. Mitigation measures to be implemented by
41 USBP as part of the Proposed Action Alternative of this EA include:

42
43 **General Construction Activities:** Best Management Practices (BMP) will be
44 implemented as standard operating procedures during all construction activities, and will
45 include proper handling, storage, and/or disposal of hazardous and/or regulated
46 materials. To minimize potential impacts from hazardous and regulated materials, all

1 fuels, waste oils and solvents will be collected and stored in tanks or drums within a
2 secondary containment system that consists of an impervious floor and bermed
3 sidewalls capable of containing the volume of the largest container stored therein. The
4 refueling of machinery will be completed following accepted industry guidelines and all
5 vehicles will have drip pans during storage to contain minor spills and drips. Although it
6 will be unlikely for a major spill to occur, any spill of reportable quantities will be
7 contained immediately within an earthen dike, and the application of an absorbent (e.g.,
8 granular, pillow, sock, etc.) will be used to absorb and contain the spill. Furthermore, a
9 spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4
10 (included as part of an Spill Prevention, Control and Countermeasure Plan [SPCCP]) of
11 a reportable quantity must be cleaned up and reported to the appropriate Federal and
12 state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table
13 302.4 will be included as part of the SPCCP. A SPCCP will be in place prior to the start
14 of construction and all personnel will be briefed on the implementation and
15 responsibilities of this plan.

16
17 All non-recyclable hazardous and regulated wastes will be collected, characterized,
18 labeled, stored, transported, and disposed of as regulated by the Environmental
19 Protection Agency and managed by CBP.

20
21 Solid waste receptacles will be maintained at staging areas. Non-hazardous solid waste
22 (trash and waste construction materials) will be collected and deposited in on-site
23 receptacles. Solid waste will be collected and disposed of properly in accordance with
24 the Solid Waste Disposal Act, P.L. 89-272, 79 Stat. 997, as amended by the Resource
25 Conservation and Recovery Act, P.L. 94-580, 90 Statute 2795 (1976).

26
27 To ensure that primary pedestrian fence designs do not impede or limit access to existing
28 border monuments for maintenance or exacerbate flooding conditions, all final
29 engineering designs will be submitted to U.S. Section, International Boundary Water
30 Commission (USIBWC) for review prior to start of construction activities.

31
32 Once activities in any given construction segment of the project corridor are completed,
33 active measures will be required to ensure the rehabilitation of areas outside of the 60-
34 foot construction area and established staging areas. USBP will coordinate with the
35 appropriate land managers to determine the most suitable and cost effective measures
36 required for successful rehabilitation. As required for successful rehabilitation, USBP
37 would implement all or some of the following measures:

- 38
- 39 • site preparation through ripping and disking to loosen compacted soils;
 - 40 • hydro mulch with native grasses and forbs in order to control soil erosion
41 and ensure adequate revegetation;
 - 42 • planting of native shrubs as required;
 - 43 • temporary irrigation (i.e., truck watering) for seedlings; and
 - 44 • periodic monitoring to determine if additional actions are required to
45 ensure that rehabilitated areas remain on a path to recovery.

1 Soils: Proper site specific BMPs are designed and utilized to reduce the impacts of non-
2 point source pollution during construction activities. BMPs include such things as buffers
3 around drainages to reduce the risk of siltation and proper placement of culverts with
4 energy dissipation. These BMPs will greatly reduce the amount of soil lost to runoff
5 during heavy rain events and ensure the integrity of the construction site. A dual benefit
6 of soil erosion BMPs is that they can also have secondary benefits of reducing impacts to
7 air quality by reducing the amount of fugitive dust.

8
9 Vehicular traffic associated with construction will remain on established roads to the
10 maximum extent practicable. Areas with highly erodible soils will be given special
11 consideration to ensure incorporation of various and effective compaction techniques,
12 aggregate materials, wetting compounds, and rehabilitated to reduce potential soil
13 erosion. Erosion control measures such as waterbars, gabions, straw bales, and
14 revegetation will be implemented during and after construction activities. Revegetation
15 efforts will be needed to ensure long term recovery of the area and to prevent significant
16 soil erosion problems.

17
18 Vegetation Communities: Construction equipment will be cleaned following BMPs
19 described in a Storm Water Pollution Prevention Plan (SWPPP) prior to entering and
20 departing the project corridor to minimize the spread and establishment of non-native
21 invasive plant species.

22
23 To minimize vegetation impacts, designated construction travel corridors will be marked
24 with easily observed removable or biodegradable markers, and travel will be restricted to
25 the project corridor, staging areas and access roads.

26
27 Wildlife Resources: Mitigation measures which will be considered, especially in areas
28 that support protected species, include coordination with local resource agencies
29 biologists, as deemed necessary and to have qualified biologists to monitor for sensitive
30 species potentially impacted by construction. To ensure that any impacts to less mobile
31 species (e.g., flat-tailed horned lizard) would remain at a less than significant level, CBP
32 will implement the conservation measures identified previously in Section 3.9.2.2. of the
33 Environmental Assessment. Construction crews will be informed of sensitive resources
34 and the need to avoid impacts to these resources. Once fence post holes or trenches
35 are excavated, construction crews will conduct daily inspections for trapped reptiles
36 under the guidance of qualified biologists, and will continue to do so until the concrete
37 foundations are set.

38
39 The Migratory Bird Treaty Act requires that Federal agencies coordinate with the USFWS
40 if a construction activity would result in the take of a migratory bird or bird parts. Since
41 avoidance of this season is unlikely (March through September) for this project, surveys
42 for migratory birds would be completed prior to clearing and grubbing activities. Any
43 active migratory bird nests observed in the project corridor will be flagged and avoided to
44 the extent practicable. If it is determined that construction activities will result in the take of
45 a migratory bird, then coordination with the USFWS and either Arizona Game and Fish
46 Department or California Department of Fish and Game, and applicable permits will be
47 obtained prior to construction or clearing activities.

1 To ensure free movement of small animals access across the border, primary
2 pedestrian fences would be equipped (to the extent practicable) with reptile and small
3 mammal tunnels or gaps at the base to allow small ground dwelling animals free
4 access. Within the C-1 segment, where flat-tailed horned lizards are known to occur,
5 the fence would be a bollard-style fence, which is designed with 4 to 6-inch gaps.
6 These gaps in other fence designs would not be installed near urban areas to impede
7 cross border migration of feral dogs and cats and other noxious animals.

8
9 Water Resources: The installation of TI would require a SWPPP as part of the NPDES
10 permit process because the area of disturbance exceeds 1 acre. All engineering
11 designs and subsequent hydrology reports will be reviewed by USIBWC prior to start of
12 construction activities so that the results of construction activities do not increase,
13 concentrate, or relocate overland surface flows into either country.

14
15 Air Quality: Standard construction BMPs such as routine watering of the roads will be
16 used as a primary means of fugitive dust control during the construction phases of the
17 proposed project. Additionally, all construction equipment and vehicles will be required
18 to be kept in good operating condition to minimize exhaust emissions.

19
20 Aesthetics: BLM will be afforded the opportunity to provide comments on the
21 design/build and performance specifications of the proposed primary pedestrian fence
22 for consistency with management goals for visual resources on BLM land.

23
24 Cultural Resources: Prior to ground disturbing activities near sites determined to
25 potentially eligible for listing on the NRHP, consultation will be completed with the
26 Arizona and California State Historic Preservation Officers, Reclamation, BLM, and the
27 appropriate Tribal Historic Preservation Officer. The appropriate mitigation measures
28 will be identified and implemented through the resulting Memorandum of
29 Understanding. The preferred mitigation measured will be to (1) avoid sites to the
30 extent practicable; (2) recover data; and (3) monitor construction activities to ensure
31 potential impacts are minimized.

32
33 Hazardous Materials: To minimize potential impacts from solid and hazardous
34 materials, all fuels, waste oils, and solvents will continue to be collected and stored in
35 tanks or drums within secondary containment system that consist of an impervious floor
36 and bermed sidewalls capable of containing the volume of the largest container stored
37 therein. Refueling of machinery will be allowed only at a properly located and
38 designated fuel truck equipped with a proper spill containment kit. All vehicles will have
39 drip pans during storage to contain minor spills and drips.

40
41 All used oil and solvents will continue to be recycled if possible. All non-recyclable
42 hazardous and regulated wastes will continue to be collected, characterized, labeled,
43 stored, transported, and disposed of in accordance with all Federal, state, and local
44 regulations, including proper waste manifesting procedures. When construction
45 activities are planned adjacent to active agricultural areas, prior coordination will be
46 made with local farmers so that no construction activities are conducted during or
47 immediately after pesticide or herbicide applications.

1 **FINDING:** Based upon the results of the referenced EA and the mitigation measures to
2 be incorporated as part of the Proposed Action Alternative, it has been concluded that the
3 Proposed Action Alternative will have no significant effect on the environment. Therefore,
4 no further environmental impact analysis is warranted.
5
6
7
8
9

10 _____
11 Robert F. Janson
12 Acting Executive Director
13 Asset Management
14 U.S. Customs and Border Protection
15
16
17
18 _____

_____ Date

19 _____
20 Paul A. Beeson
21 Chief Patrol Agent
22 U.S. Border Patrol
23 Yuma Sector Headquarters

_____ Date

COVER SHEET

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR PROPOSED CONSTRUCTION, OPERATION AND MAINTENANCE OF TACTICAL INFRASTRUCTURE U.S. BORDER PATROL YUMA SECTOR, ARIZONA AND CALIFORNIA

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

Cooperating Agencies: Bureau of Land Management (BLM), El Centro and Yuma Field Offices; Bureau of Reclamation (Reclamation); U.S. Army Corps of Engineers (USACE) Los Angeles District; and the U.S. Section, International Boundary and Water Commission (USIBWC).

Affected Location: U.S.-Mexico international border in Yuma County, Arizona and Imperial County, California.

Proposed Action: The Proposed Action includes the construction, maintenance, and operation of tactical infrastructure (TI), to include a primary pedestrian fence, patrol roads and access roads along 14 miles of the U.S.-Mexico border within the USBP Yuma Sector. The Proposed Action would be implemented in two discrete sections; segment C-1 is 10.3 miles long, and segment C-2B is 3.7 miles long.

Report Designation: Preliminary Draft Supplemental Environmental Assessment (SEA).

Abstract: CBP proposes to construct, maintain, and operate approximately 14 miles of TI, including two sections of fence and construction/maintenance roads, and access roads along the U.S.-Mexico international border in Yuma County, Arizona and Imperial County, California. Individual sections are approximately 3.7 and 10.3 miles in length. The proposed TI would primarily involve public lands managed by BLM and Reclamation.

The SEA will analyze and document potential environmental consequences associated with the Proposed Action. If the analyses presented in the SEA 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 SEA 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, 819 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 website at *www.BorderFenceNEPA.com*
- (b) By email to *YSEAComments@BorderFenceNEPA.com*
- (c) By mail to Yuma Tactical Infrastructure EA, c/o Gulf South Research Corporation, 8081 GSRI Avenue, Baton Rouge, LA 70820
- (d) By fax to (225) 761-8077.

Privacy Notice

Your comments on this document are due by February 20, 2008. Comments will normally be addressed in the SEA and made available to the public. Any personal information included in comments will therefore be publicly available.

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FOR PROPOSED CONSTRUCTION, OPERATION AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
U.S. BORDER PATROL YUMA SECTOR, ARIZONA AND CALIFORNIA**

January 2008

Lead Agency: U.S. Department of Homeland Security
U.S. Customs & Border Protection
Office of Finance, Asset Management
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EXECUTIVE SUMMARY

INTRODUCTION

United States (U.S.) Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) proposes to construct, maintain, and operate 14 miles of tactical infrastructure (TI) along the West Main Bypass Canal (also known as the Salinity Canal) in Yuma County, Arizona, and along the U.S.-Mexico international border in Imperial County, California. 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.

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

This Supplemental Environmental Assessment (SEA) updates and supplements an Environmental Assessment (EA) prepared by CBP in 2004 and a supplemental document prepared by CBP in 2007. Both of these documents addressed various TI along the border within Yuma County, Arizona. This SEA has been prepared through coordination with Federal and state agencies to identify and assess the potential impacts associated with the proposed construction, maintenance, and operation of TI that will expand the project footprint addressed in the 2004 and 2007 documents. This SEA is also being prepared to fulfill the requirements of the National Environmental Policy Act (NEPA) of 1969.

PURPOSE AND NEED

The purpose of the Proposed Action is to increase border security within USBP Yuma Sector through the construction, operation, and maintenance of TI in the form of fences, roads, and supporting technological and tactical assets. USBP Yuma Sector has identified two discrete areas along the border that experience high levels of illegal

1 cross-border activity. This activity occurs in areas near POEs where concentrated
2 populations might live on either side of the border or have quick access to U.S.
3 transportation routes. In addition, the western portion of the California segment is fairly
4 remote and not easily accessed by USBP agents.

5
6 The Proposed Action is needed to provide USBP agents with the tools necessary to
7 strengthen their control of the U.S. borders between POEs in USBP Yuma Sector. The
8 Proposed Action would help to deter illegal cross-border activities within the USBP
9 Yuma Sector by improving enforcement, preventing terrorists and terrorist weapons
10 from entering the U.S., reducing the flow of illegal drugs, and enhancing response time,
11 while providing a safer work environment for USBP agents.

12 13 **PROPOSED ACTION ALTERNATIVE**

14
15 The proposed project corridor is located about 1.5 miles north of the U.S.-Mexico
16 border, west of San Luis, Arizona, and extends northward for 3.7 miles along the
17 Salinity Canal, Yuma County, Arizona. The Salinity Canal is located on lands managed
18 by the Bureau of Reclamation (Reclamation). USBP also proposes to install TI along
19 the international border, beginning approximately 0.5 miles west of the Andrade POE in
20 Imperial County, California, and extending 10.3 miles to the west, into Algodones Dunes
21 Area, which is composed of public lands managed by the Bureau of Land Management
22 (BLM). The fence would be installed along two different sections designated as C-1 and
23 C-2B for the California and Arizona reaches, respectively. Proposed TI is based on a
24 USBP Yuma Sector assessment of local operational requirements and includes fence
25 sections installed in areas of the border that are not currently fenced and where such
26 infrastructure would assist USBP agents in reducing illegal cross-border activities. The
27 Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295) provided
28 \$1,187,565,000 under the Border Security Fencing, Infrastructure, and Technology
29 appropriation for the installation of fencing, infrastructure, and technology along the
30 border (CRS 2006).

31
32 In accordance with 40 Code of Federal Regulations 1502.14(c), USBP has identified the
33 Proposed Action Alternative as the agency's Preferred Alternative.

34 35 **ALTERNATIVES CONSIDERED**

36
37 In addition to the Proposed Action Alternative, two other alternatives (the No Action and
38 Secure Fence Act Alignment Alternatives) were considered during the preparation of
39 this SEA. Under the No Action Alternative, no primary pedestrian fence components
40 would be constructed. The No Action Alternative will serve as a baseline against which
41 the impacts of the other two action alternatives can be evaluated. However, the No
42 Action Alternative would not meet USBP mission or operational needs.

43
44 The Secure Fence Act Alignment Alternative would consist of two layers of fence,
45 known as primary and secondary fence, constructed approximately 130 feet apart along
46 the same route as the Proposed Action Alternative. This alternative would also include

1 construction and maintenance of access and patrol roads. The patrol road would be
2 located between the primary and secondary fences and the maintenance road would be
3 on the north side of the secondary fence.

4 5 **ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION ALTERNATIVE**

6
7 Under the Proposed Action Alternative, no significant impact on land use, soils,
8 vegetation communities, protected species and their habitat, cultural resources, or
9 hazardous wastes is expected as a result of primary fence construction. Only negligible
10 or minor adverse impacts on some wildlife habitat, sensitive or unique areas, aesthetics,
11 water resources, air quality, and the socioeconomics of the region are expected.
12 Construction of 14 miles of primary pedestrian fence would increase the potential to
13 inhibit free movement of some transboundary migratory wildlife species. While the
14 extension of primary pedestrian fence would indirectly impact the visual resources
15 management goals for nearby BLM lands within the Algodones Dunes area, substantial
16 benefits of reduced vandalism, habitat degradation, and littering would outweigh any
17 adverse impact on appearance. Additional water for construction would be required to
18 facilitate the fence and road construction. However, impact on aquifer recharge would
19 remain minor to moderate when compared to the recharge potential in the Yuma and
20 Imperial Valley Groundwater basins. Minor increases in vehicle and fugitive dust
21 emissions are also expected with additional construction activities. However, it is not
22 expected to cause or contribute to a violation of Federal or state ambient air quality
23 standards. With the exception of additional materials for primary pedestrian fence
24 construction, no long-term changes to the socioeconomics of the region are anticipated.

25 26 **CONCLUSIONS**

27
28 Based upon the results of this SEA and the additional mitigation measures to be
29 implemented, the Proposed Action would not have a significant effect on the
30 environment. Therefore, no additional NEPA documentation (i.e., Environmental Impact
31 Statement) is warranted.

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SECTION 1.0
INTRODUCTION



1 **1.0 INTRODUCTION**

2
3 **1.1 BACKGROUND**

4
5 United States (U.S.) Customs and Border Protection (CBP) proposes to construct,
6 operate, and maintain 14 miles of tactical infrastructure (TI) along the West Main
7 Bypass Canal (also known as the Salinity Canal) in Yuma County, Arizona, and along
8 the U.S.-Mexico international border in Imperial County, California, for the U.S. Border
9 Patrol (USBP) Yuma Sector. TI is a term used by USBP to describe physical structures
10 that facilitate enforcement activities; these items typically include but are not limited to
11 roads, fences, lights, gates, boat ramps, and barriers. TI addressed in this document
12 would consist of primary pedestrian fence, improvements to existing roads, and
13 construction of access roads within USBP's Yuma Sector. The proposed fence and
14 road would be located along the eastern toe of the eastern levee of the Salinity Canal
15 near Yuma and within the 60-foot-wide Roosevelt Reservation for the California portion
16 of the proposed project. The Salinity Canal Levees (managed by the U.S. Bureau of
17 Reclamation [Reclamation]) and the Roosevelt Reservation (managed by the U.S.
18 Bureau of Land Management [BLM]) are public lands. The Proposed Action would occur
19 within USBP Yuma Sector's Area of Operations (AO).

20
21 In December 2004, CBP released the *Final Environmental Assessment (EA) for the*
22 *Installation of Permanent Lighting and a Border Infrastructure System, Office of Border*
23 *Patrol (OBP), Yuma Sector, Arizona* (CBP 2004). The December 2004 Final EA
24 Proposed Action involved the construction of a border infrastructure system, which
25 included the installation of permanent security lights, a secondary fence, all-weather
26 patrol road, maintenance road, and security fence and extension of the primary border
27 fence. The border infrastructure system has been completed, which created a 150-foot-
28 wide enforcement zone north of the U.S.-Mexico border on either side of the San Luis
29 Port of Entry (POE), Arizona. The construction was divided into three phases that
30 encompassed approximately 13 miles. Phases I and II included the installation of
31 permanent security lights, all-weather patrol road, secondary fence, maintenance road,

1 and security fence near the San Luis POE. Phase III included the installation of
2 permanent security lights near the town of Gadsden, Arizona.

3
4 In March 2007, CBP supplemented the December 2004 EA with the *Supplemental*
5 *Environmental Assessment for the Installation of Permanent Security Lighting and a*
6 *Border Infrastructure System, Office of Border Patrol, Yuma Sector, Arizona* (CBP
7 2007). The Proposed Action for the March 2007 Supplemental Environmental
8 Assessment (SEA) included the construction of road and fence from the U.S.-Mexico
9 border west of San Luis northward for 1.5 miles, clearance of brush to create camera
10 lanes along the Colorado River, installation of bridges over canals, realignment of the
11 enforcement zone near Friendship Park, and installation of permanent lights. This
12 document will supplement the March 2007 SEA to discuss the extension of road and
13 fence construction along the Salinity Canal another 3.7 miles and the construction of
14 10.3 miles of new road and fence along the U.S.-Mexico border in Imperial County. The
15 current SEA will incorporate by reference much of the data presented in these two
16 previous documents.

17 18 **1.2 USBP BACKGROUND**

19
20 The mission of CBP is to prevent terrorists and terrorist weapons from entering the U.S.,
21 while also facilitating the flow of legitimate trade and travel. In supporting CBP's
22 mission, USBP is charged with establishing and maintaining effective control of the
23 border of the U.S. USBP's mission strategy consists of five main objectives:

- 24
25 • Establish substantial probability of apprehending terrorists and their
26 weapons as they attempt to enter illegally between the POEs
- 27 • Deter illegal entries through improved enforcement
- 28 • Detect, apprehend, and deter smugglers of humans, drugs, and other
29 contraband
- 30 • Leverage "smart border" technology to multiply the effect of enforcement
31 personnel
- 32 • Reduce crime in border communities and consequently improve quality of
33 life and economic vitality of targeted areas

1 USBP has nine administrative sectors along the U.S.-Mexico border. Each sector is
2 responsible for implementing an optimal combination of personnel, technology, and
3 infrastructure appropriate for its operational requirements. The Yuma Sector is
4 responsible for Yuma, La Paz, and Mojave Counties in Arizona, the eastern portions of
5 Imperial and Riverside Counties in California, and the southernmost counties of
6 Nevada. The areas affected by the Proposed Action include the westernmost portion of
7 Yuma County, along the Colorado River, and the southernmost portion of Imperial
8 County.

9
10 **1.3 PURPOSE AND NEED**

11
12 The purpose of the Proposed Action is to increase border security within USBP Yuma
13 Sector through the construction, operation, and maintenance of TI in the form of fences,
14 roads, and supporting technological and tactical assets. USBP Yuma Sector has
15 identified two discrete areas along the border that experience high levels of illegal
16 cross-border activity. This activity occurs in areas near POEs where concentrated
17 populations might live on either side of the border or have quick access to U.S.
18 transportation routes. In addition, the western portion of the California segment is fairly
19 remote and not easily accessed by USBP agents.

20
21 The Proposed Action is needed to provide USBP agents with the tools necessary to
22 strengthen control of the U.S. borders between POEs in USBP Yuma Sector. It is
23 designed to help deter illegal cross-border activities within USBP Yuma Sector by
24 improving enforcement abilities, thus preventing terrorists and terrorist weapons from
25 entering the U.S., reducing the flow of illegal drugs, and enhancing agents' response
26 time, while providing a safer work environment for USBP agents.

27
28 **1.4 PROPOSED ACTION**

29
30 The proposed project corridor is located about 1.5 miles north of the U.S.-Mexico
31 border, west of San Luis, Arizona, and extends northward for 3.7 miles along the

1 Salinity Canal, Yuma County, Arizona. USBP also proposes to install TI along the
2 international border, beginning approximately 0.5 miles west of the Andrade POE in
3 Imperial County, California, and extending 10.3 miles to the west, into BLM's Algodones
4 Dunes Recreation Area (Figure 1-1). The fence would be installed along two different
5 segments designated as C-1 and C-2B for the California and Arizona reaches,
6 respectively. Proposed TI includes installation of fence sections in areas of the border
7 that are not currently fenced and where such infrastructure would assist USBP agents in
8 reducing illegal cross-border activities. The proposed locations of TI are based on a
9 USBP Yuma Sector assessment of local operational requirements. The Fiscal Year (FY)
10 2007 U.S. Department of Homeland Security (DHS) Appropriations Act (Public Law
11 [P.L.] 109-295) provided \$1,187,565,000 under the Border Security Fencing,
12 Infrastructure, and Technology appropriation for the installation of fencing,
13 infrastructure, and technology along the border (CRS 2006).

14

15 **1.5 PUBLIC INVOLVEMENT**

16

17 A Notice of Availability (NOA) for this SEA and proposed Finding of No Significant
18 Impact (FONSI) will be published in the *Yuma Sun*. This is done to solicit comments on
19 the Proposed Action and involve the local community in the decision-making process.
20 Comments from the public and other Federal, state, and local agencies will be
21 incorporated into the Final SEA and included in Appendix A. The NOA provides various
22 methods for submitting comments.

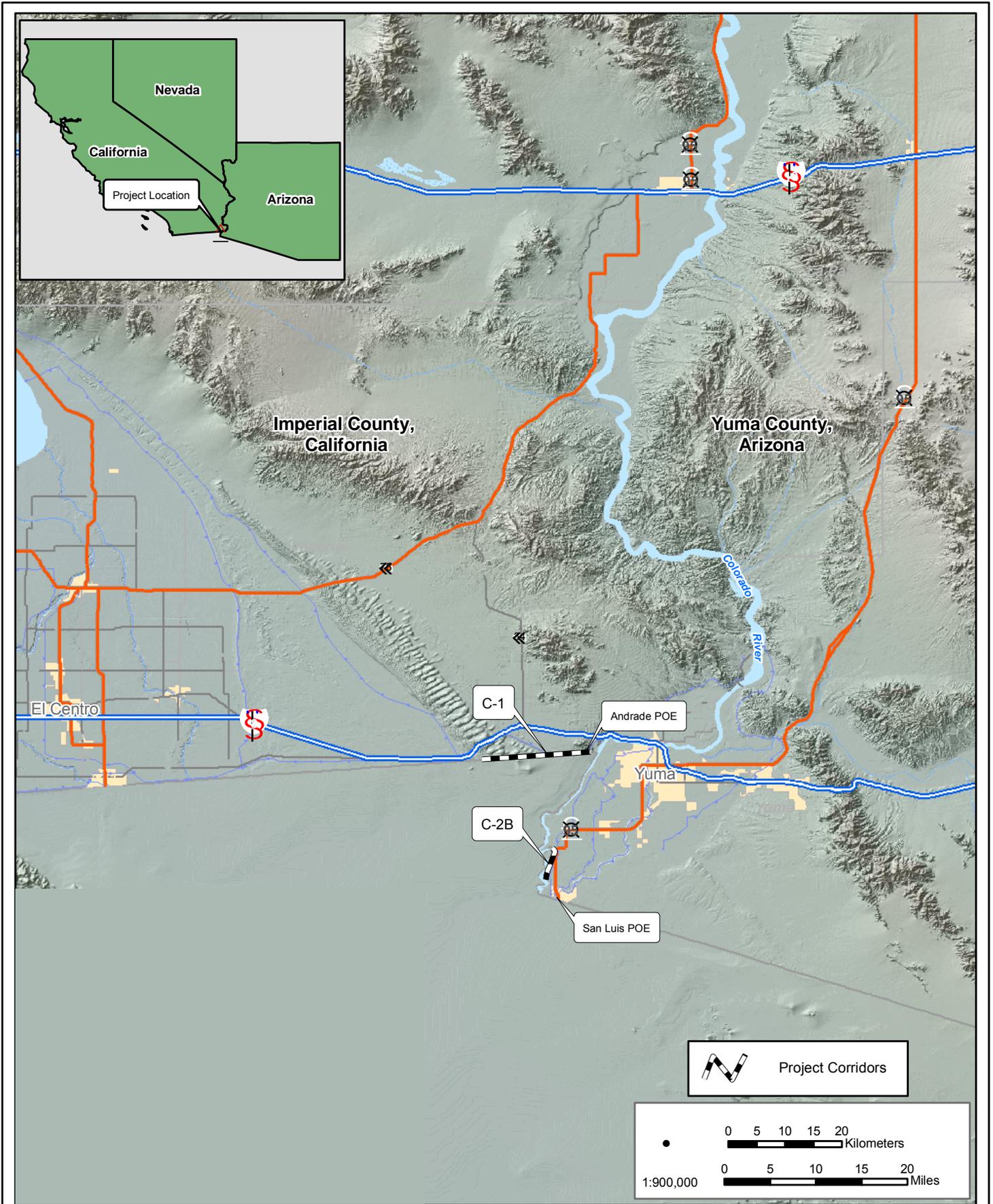


Figure 1-1: Vicinity Map

1 This Draft EA also serves as a public notice regarding impacts on floodplains.
2 Executive Order (EO) 11988 directs Federal agencies to avoid floodplains unless the
3 agency determines that there is no practicable alternative. Where the only practicable
4 alternative is to site in a floodplain, a specific process must be followed to comply with
5 EO 11988. This eight-step process is detailed in the Federal Emergency Management
6 Agency (FEMA) document "Further Advice on EO 11988 Floodplain Management." The
7 eight steps are as follows:

- 9 1. Determine whether the action will occur in, or stimulate development in, a
10 floodplain.
- 11 2. Receive public review/input of the Proposed Action.
- 12 3. Identify and evaluate practicable alternatives to locating in the floodplain.
- 13 4. Identify the impacts of the Proposed Action (when it occurs in a
14 floodplain).
- 15 5. Minimize threats to life, property, and natural and beneficial floodplain
16 values, and restore and preserve natural and beneficial floodplain values.
- 17 6. Reevaluate alternatives in light of any new information that might have
18 become available.
- 19 7. Issue findings and a public explanation.
- 20 8. Implement the action.

21
22 Steps 1, 3, and 4 have been undertaken as part of this Draft EA and are further
23 discussed in Section 3.6. Steps 2 and 6 through 8 are being conducted simultaneously
24 with the EA development process, including public review of the Draft EA. Step 5 relates
25 to mitigation and is currently undergoing development.

26
27 Throughout the National Environmental Policy Act (NEPA) process, the public may
28 obtain information concerning the status and progress of the EA via the project web site
29 at www.BorderFenceNEPA.com; by emailing information@BorderFenceNEPA.com; by
30 written request to Mr. Charles McGregor, Environmental Manager, U.S. Army Corps of
31 Engineers (USACE), Fort Worth District, Engineering and Construction Support Office
32 (ECSO), 819 Taylor Street, Room 3B10, Fort Worth, TX 76102; or by facsimile at (225)
33 761-8077.

1 **1.6 COOPERATING AGENCIES**

2
3 The U.S. Section, International Boundary and Water Commission (USIBWC), USACE-
4 Los Angeles District Regulatory Functions Branch, and U.S. Fish and Wildlife Service
5 (USFWS) also have decision-making authority for components of the proposed action.
6 Council on Environmental Quality (CEQ) regulations implementing NEPA instruct
7 agencies to combine environmental documents in compliance with NEPA to reduce
8 duplication and paperwork (40 Code of Federal Regulations [CFR] 1506.4).

9
10 One of USIBWC’s missions is to maintain the international boundary between Mexico
11 and the U.S. As part of this mission, USIBWC is required to ensure that any
12 construction along the international border does not adversely affect International
13 Boundary Monuments (including their line of sight) or substantially impede floodwater
14 conveyance within international drainages. A copy of a Memorandum of Agreement
15 (MOA) between CBP and USIBWC is included in Appendix A.

16
17 USACE-Los Angeles District will act on applications for Department of the Army
18 permits, as appropriate, pursuant to Section 10 of the River and Harbor Act of 1899 (33
19 United States Code [U.S.C.] 403) and Section 404 of the Clean Water Act (CWA) (33
20 U.S.C. 1344).

21
22 Section 7 of the Endangered Species Act (ESA) (Public Law 93-205, December 28,
23 1973) states that any project authorized, funded, or conducted by any Federal agency
24 should not “jeopardize the continued existence of any endangered species or
25 threatened species or result in the destruction or adverse modification of habitat of such
26 species which is determined ... to be critical.” USFWS declined to be a cooperating
27 agency on this Proposed Action but is assisting USBP in the determination of whether
28 any Federally-listed or -proposed endangered or threatened species or their designated
29 critical habitats would be adversely impacted by the Proposed Action. USFWS is also
30 assisting USBP in completing Section 7 consultation, identifying the nature and extent
31 of potential effects, and developing measures that would avoid or reduce potential

1 effects on the species. If appropriate, CBP and USFWS will enter formal Section 7
2 consultation regarding any potentially affected listed species, and USFWS will issue a
3 Biological Opinion (BO) on the potential for jeopardy. If USFWS determines that the
4 project is not likely to jeopardize any listed species, it can also issue an incidental take
5 statement as an exception to the prohibitions in Section 9 of the ESA.

6
7 BLM and Reclamation would also be invited to be cooperating agencies, since portions
8 of the fence are proposed for construction within the Algodones Dunes and along the
9 Salinity Canal. A copy of a MOA between CBP and the U.S. Department of the Interior
10 (DOI) regarding cooperation relative to environmental planning is included in Appendix
11 A.

13 **1.7 FRAMEWORK FOR ANALYSIS**

14
15 NEPA is a Federal statute requiring the identification and analysis of potential
16 environmental impacts of proposed Federal actions before those actions are taken. Its
17 intent is to protect, restore, or enhance the environment through well-informed Federal
18 decisions. The process for implementing NEPA is codified in 40 CFR 1500–1508,
19 Regulations for Implementing the Procedural Provisions of the NEPA, and Department
20 of Homeland Security’s Management Directive (MD) 5100.1, Environmental Planning
21 Program. This process evaluates potential environmental consequences associated
22 with a proposed action and considers alternative courses of action.

23
24 CEQ was established under NEPA to implement and oversee Federal policy in this
25 process and ensure agency compliance with NEPA. CEQ regulations mandate that all
26 Federal agencies use a systematic interdisciplinary approach to environmental planning
27 and the evaluation of actions that might affect the environment. CEQ regulations specify
28 that the following must be accomplished when preparing an EA:

- 1 • Briefly provide evidence and analysis for determining whether to prepare
2 an Environmental Impact Statement (EIS) or a FONSI;
- 3 • Aid in an agency's compliance with NEPA when an EIS is unnecessary;
4 and
- 5 • Facilitate preparation of an EIS when one is necessary.

6
7 To comply with NEPA, the planning and decision-making process for actions proposed
8 by Federal agencies involves a study of other relevant environmental statutes and
9 regulations. The NEPA process, however, does not replace procedural or substantive
10 requirements of other environmental statutes and regulations. It addresses them
11 collectively in the form of an EA or EIS, which enables the decision-maker to have a
12 comprehensive view of major environmental issues and requirements associated with
13 the Proposed Action. According to CEQ regulations, the requirements of NEPA must
14 be integrated "with other planning and environmental review procedures required by law
15 or by agency so that all such procedures run concurrently rather than consecutively."

16
17 In addition to NEPA, authorities that will be addressed during the preparation of this EA
18 will include Immigration Reform and Illegal Immigrant Responsibility Act (IIRIRA),
19 Secure Fence Act (SFA), Clean Air Act, CWA (including a National Pollutant Discharge
20 Elimination System [NPDES] storm water discharge permit), Noise Control Act, ESA,
21 National Historic Preservation Act, Archaeological Resources Protection Act, Resource
22 Conservation and Recovery Act, Toxic Substances Control Act, Environmental Quality
23 Improvement Act of 1970, as amended, and Migratory Bird Treaty Act.

24
25 Executive Orders (EOs) bearing on the Proposed Action include EO 11988 (Floodplain
26 Management), EO 11990 (Protection of Wetlands), EO12088 (Federal Compliance with
27 Pollution Control Standards), EO 12580 (Superfund Implementation), EO 12898
28 (Federal Actions to Address Environmental Justice in Minority Populations and Low-
29 Income Populations), EO 13045 (Protection of Children from Environmental Health
30 Risks and Safety Risks), EO 13423 (Strengthening Federal Environmental, Energy, and
31 Transportation Management), EO 13175 (Consultation and Coordination with Indian
32 Tribal Governments), EO 13148 (Greening the Government through Leadership in

1 Environmental Management), EO 13186 (Responsibilities of Federal Agencies to
2 Protect Migratory Birds), EO 11514 (Protection and Enhancement of Environmental
3 Quality, as amended by EO 11991), EO 12114 (Environmental Effects Abroad of Major
4 Federal Actions), EO 13101 (Greening the Government through Waste Prevention,
5 Recycling, and Federal Acquisition), EO 13123 (Greening the Government through
6 Efficient Energy Management), and EO 13149 (Greening the Government through
7 Federal Fleet and Transportation Efficiency).

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 within USBP Yuma Sector, Arizona and California. The range of reasonable alternatives considered in this EA is constrained to those that would meet the purpose and need described in Section 1.3: to provide USBP agents with the tools necessary to achieve effective control of the border in the USBP Yuma 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.

2.1 SCREENING CRITERIA FOR ALTERNATIVES

This section presents USBP's proposal to construct, maintain, and operate new tactical infrastructure within the USBP Yuma Sector, Arizona and California. Each alternative concerning location, construction, and operation of TI must meet USBP's purpose and need (as described in Section 1.3) and essential technical, engineering, and economic threshold requirements to ensure that a proposed action is environmentally sound, economically viable, and complies with governing standards. The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives. These criteria are presented in no particular order of priority.

- *USBP Operational Requirements:* The selected alternative must support USBP mission needs to hinder or delay individuals crossing the border illegally. It is much more difficult for USBP agents to identify and apprehend suspects engaged in unlawful border entry once they have entered an urban area or suburban neighborhood. In addition, around populated areas it is relatively easy for cross-border violators to find transportation into the interior away from the USBP patrol areas. For these reasons, primary border fencing could be constructed in urban population centers adjacent to the border. However, other operational criteria are also considered, including protection of natural resource areas north of the border and deterrence of illegal aliens from remote areas with harsh conditions.

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

22 **2.2 ALTERNATIVES ANALYSIS**

23
24 CBP evaluated a range of possible alternatives to be considered for the Proposed
25 Action. During the early planning staging and public involvement process described in
26 Section 1.5, the following potential alternatives were proposed: (1) stronger
27 enforcement and harsher penalties for employers that hire illegal immigrants;
28 (2) additional USBP agents in lieu of primary pedestrian fence; and (3) manned towers
29 and electronic surveillance in lieu of primary pedestrian fence. Alternative fence
30 designs were also proposed to make the fence taller, wider, or more impenetrable.

31
32 The following sections describe the alternative analysis for this Proposed Action.
33 Sections 2.2.1 through 2.2.3 describe alternatives considered but eliminated from
34 further detailed analysis. Sections 2.2.4 and 2.2.5 provide specific details of the
35 Proposed Action and the Secure Fence Act Alignment Alternative, both of which will be
36 carried forward for analysis. Section 2.2.6 presents the No Action Alternative.
37 Section 2.3 is the identification of the preferred alternative.

1 **2.2.1 Stronger Enforcement and Harsher Penalties for Employers That Hire**
2 **Illegal Immigrants**

3 Public comments that have been submitted regarding other TI projects have
4 encouraged CBP to consider stronger enforcement of current immigration laws and
5 harsher penalties for employers that hire illegal immigrants. This alternative was not
6 studied in detail, primarily because it would not meet the USBP Yuma Sector's purpose
7 and need and the screening criteria established for viable alternatives. The Proposed
8 Action is needed to provide USBP agents with the tools necessary to strengthen their
9 control of the U.S. border between POEs in the USBP Yuma Sector. USBP enforces
10 current laws vigorously within its scope of authority. The alternative of stronger
11 enforcement and harsher penalties would not prevent terrorists and terrorist weapons
12 from entering the U.S., reduce the flow of illegal drugs, or provide a safer work
13 environment for USBP agents. This alternative would also not meet the USBP
14 operational screening criteria of hindering or delaying individuals crossing the border
15 illegally. For these reasons, this alternative is not a practical alternative to the
16 construction of TI in the USBP Yuma Sector and will not be carried forward for detailed
17 analysis.

18
19 **2.2.2 Additional USBP Agents in Lieu of Tactical Infrastructure**

20 CBP considered the alternative of increasing the number of USBP agents assigned to
21 the U.S.-Mexico border as a means of gaining more effective control of the border.
22 Under this alternative, USBP would hire and deploy a significantly larger number of
23 agents than are currently deployed along the U.S.-Mexico border and increase patrols
24 to apprehend cross-border violators. USBP would deploy additional agents as
25 determined by operational needs, but patrols might include the use of 4-wheel drive
26 vehicles, all-terrain vehicles, helicopters, or fixed-wing aircraft. Currently, USBP
27 maintains an aggressive hiring program and a cadre of well-trained agents.

28
29 This alternative was determined not to meet the screening criteria of USBP operational
30 requirements. The physical presence of an increased number of agents could provide
31 an enhanced level of deterrence against illegal entry into the U.S., but the use of
32 additional agents alone, in lieu of the proposed TI, would not provide a practical solution

1 to achieving the level of effective control of the border necessary in the USBP Yuma
2 Sector. The use of physical barriers has been demonstrated to slow cross-border
3 violators and provide USBP agents with additional time to make apprehensions
4 (USACE 2000). Additionally, as TI is built, agents could be more effectively redeployed
5 to secure other areas.

6
7 A Congressional Research Service (CRS) report concluded that USBP border security
8 initiatives such as the 1994 San Diego Sector's "Operation Gatekeeper" required a 150
9 percent increase in USBP manpower, lighting, and other equipment. The report states,
10 "It soon became apparent to immigration officials and lawmakers that USBP needed,
11 among other things, a 'rigid' enforcement system that could integrate infrastructure (i.e.,
12 multi-tiered fence and roads), manpower, and new technologies to further control the
13 border region" (CRS 2006).

14
15 Increased patrol agents would aid in interdiction activities, but not to the extent
16 anticipated by the construction of primary pedestrian fence and other TI along sections
17 within the Yuma Sector AO. As such, this alternative is not practical in the USBP Yuma
18 Sector and will not be carried forward for further detailed analysis.

19 20 **2.2.3 Technology in Lieu of Tactical Infrastructure**

21 CBP does and would continue to use various forms of technology to identify cross-
22 border violators. The use of technology is a critical component of the Secure Border
23 Initiative (SBI) and an effective force multiplier that allows USBP to monitor large areas,
24 deploy agents to where they could be most effective, and apprehend cross-border
25 violators. However, due to developed and other urban areas in Mexico along the U.S.-
26 Mexico border, physical barriers represent the most effective means to control illegal
27 entry into the U.S., as noted above. The use of technology alone would not provide a
28 practical solution for achieving the level of effective control of the U.S.-Mexico border
29 necessary in the USBP Yuma Sector. Since current USBP Yuma Sector operations
30 include the use of technology to identify cross-border violations and the deployment of
31 agents to make apprehensions, this alternative is very similar to the No Action

1 Alternative discussed in Section 2.2.6. Therefore, this alternative would not meet the
2 purpose and need as described in Section 1.3 and will not be carried forward for further
3 detailed analysis.

4 5 **2.2.4 Proposed Action**

6 USBP Yuma Sector proposes to construct 14 miles of primary pedestrian fence (Figures
7 2-1 and 2-2). For the Arizona portion, 3.7 miles of primary pedestrian fence would be
8 installed along the eastern toe of the eastern Salinity Canal levee for approximately 0.5
9 mile and then along the toe of the second levee road (Figure 2-3). A maintenance road,
10 approximately 16 to 20 feet wide, would be constructed between the levee toe and the
11 primary pedestrian fence (Figure 2-3). A total of 10.3 miles of primary pedestrian fence
12 within California would be installed approximately 3 feet north of the U.S.-Mexico
13 border. A construction and maintenance access road would need to be installed in
14 order to construct the fence. The construction road is expected to require the entire 60-
15 foot-wide Roosevelt Reservation. Access to this portion of the fence corridor would be
16 from the Andrade POE or south from the All-American Canal.

17
18 Although the final fence design would be selected by USACE, the current plan is to
19 install a bollard-style fence (PV-1) in the C-1 segment and a steel sheathing or wire
20 mesh fence (PV-2A, PV-2B, or PV-2C) in the C-2B segment. Examples of these fence
21 designs are presented in Appendix B. However, preliminary design performance
22 measures dictate that the fence must:

- 23
24
- 25 • extend 15 to 18 feet above ground and 3 to 6 feet below ground;
 - 26 • be capable of withstanding an impact from a 10,000-pound gross weight
27 vehicle traveling at 40 miles per hour (mph);
 - 28 • be resistant to vandalism, cutting, or penetrating;
 - 29 • be semi-transparent, as dictated by operational need;
 - 30 • be designed to survive extreme climate changes of a desert environment;
 - 31 • be designed to allow movement of small animals from one side to the
32 other; and
 - not impede the natural flow of water.

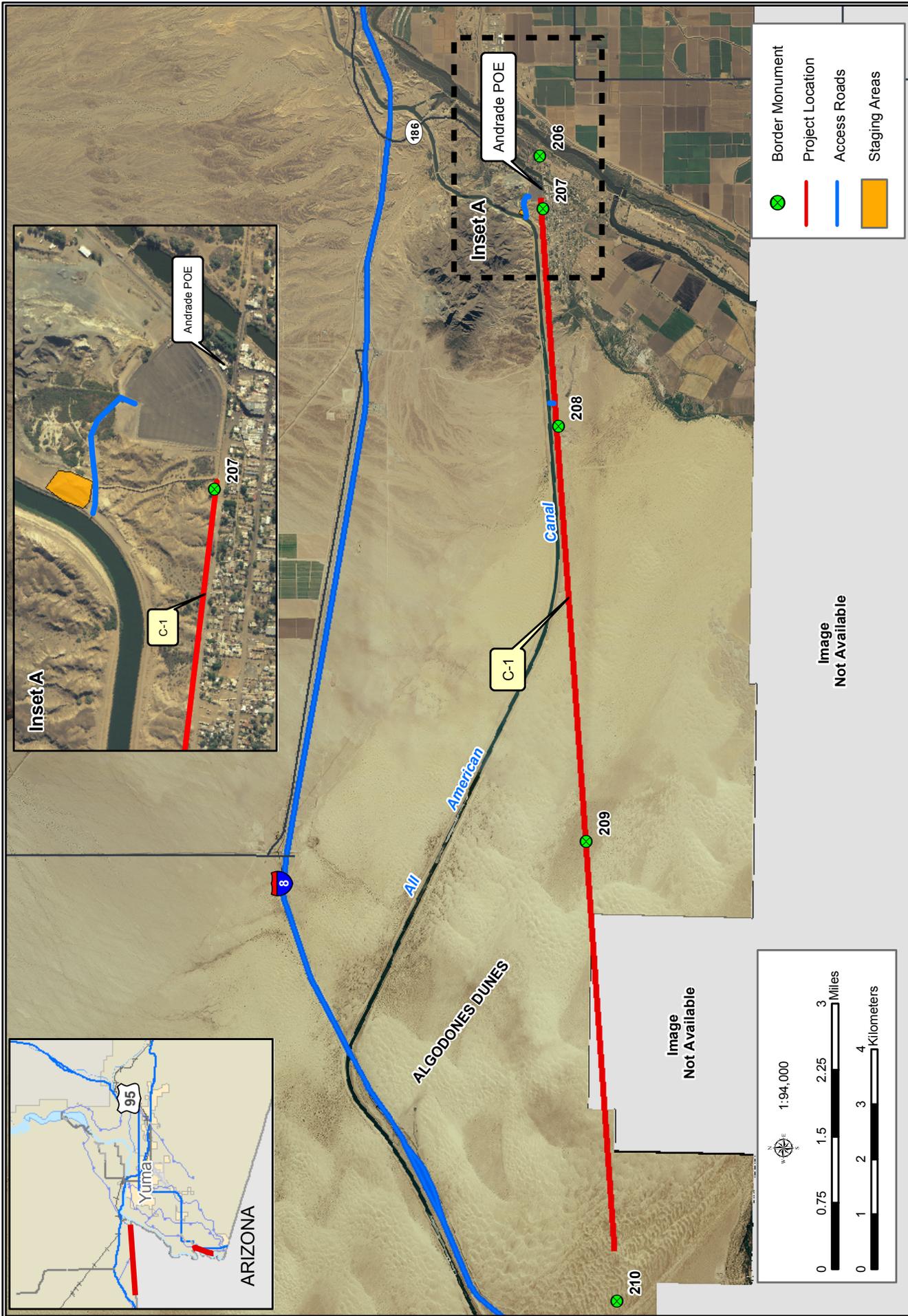


Figure 2-1: C-1 Location Map

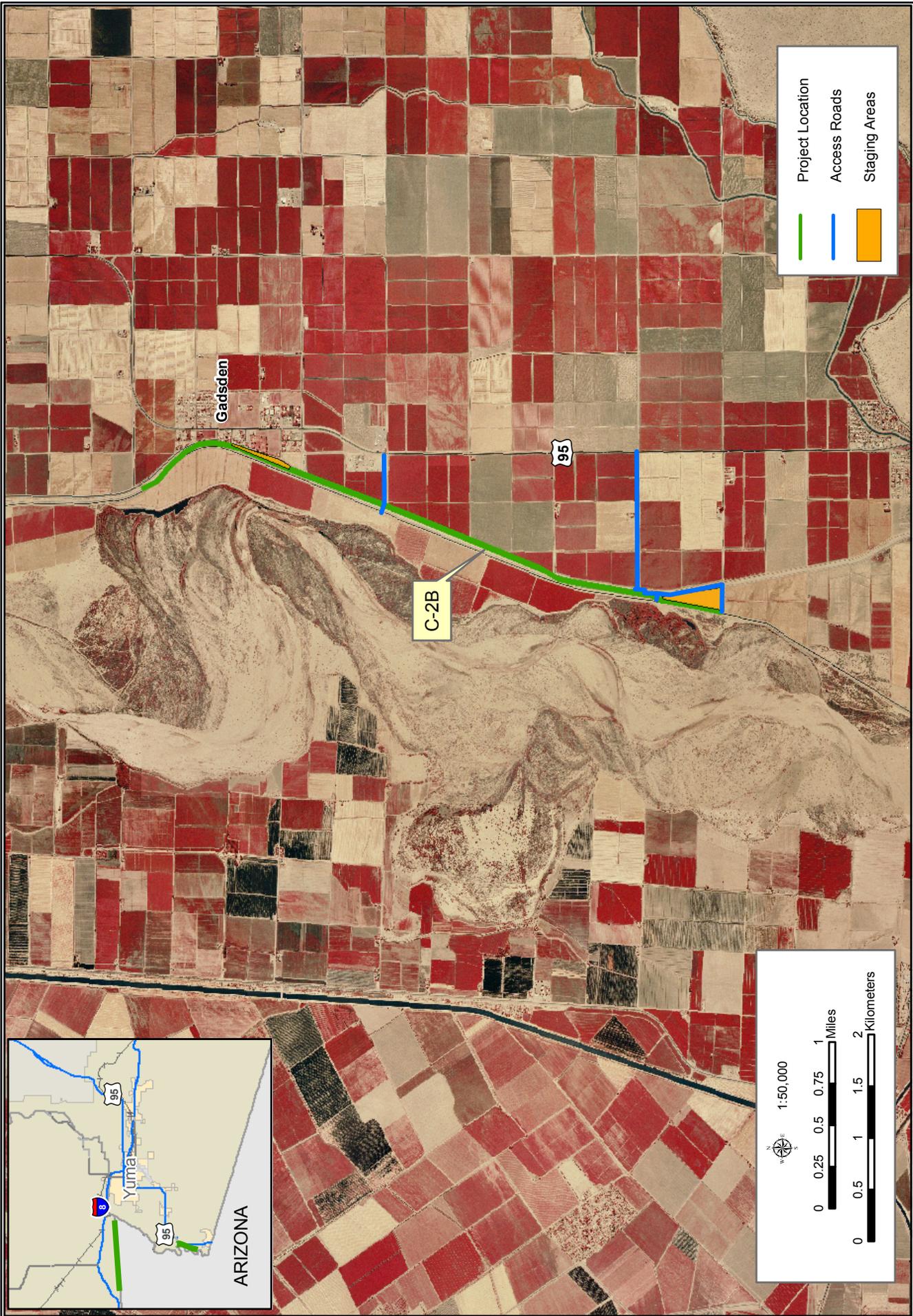


Figure 2-2: C-2B Location Map

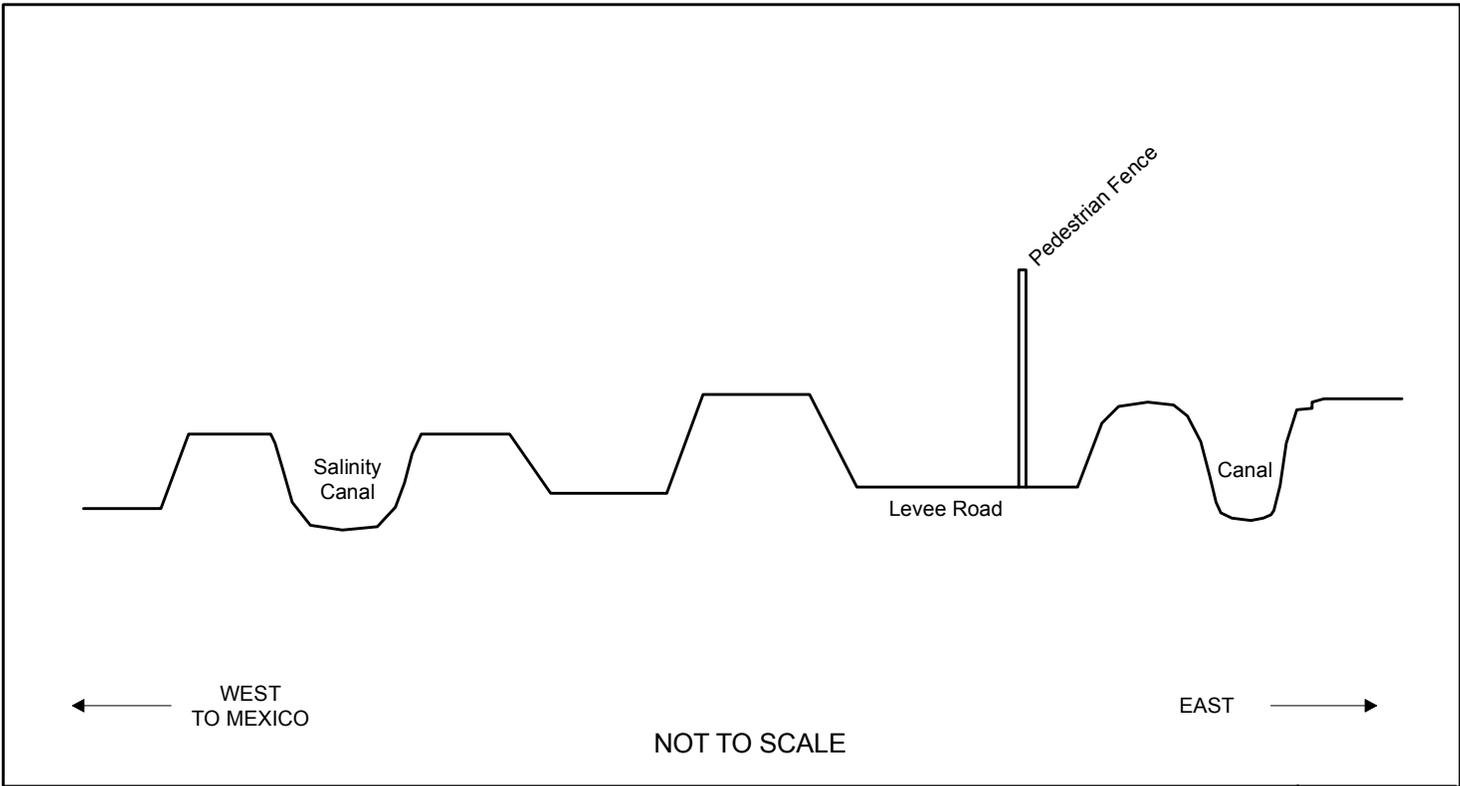
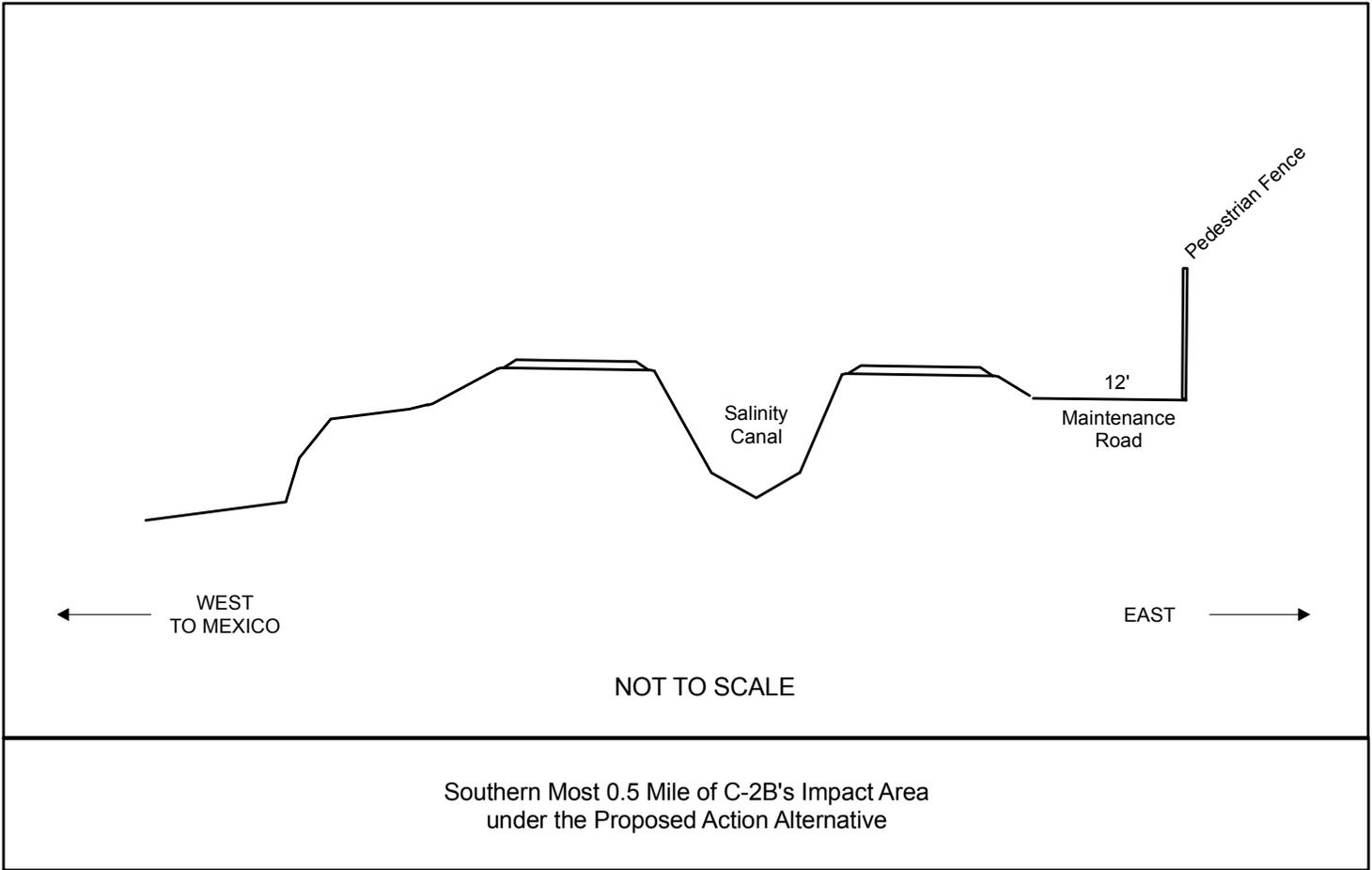


Figure 2-3: Remaining 3.2 Miles of C-2B's Impact Area under the Proposed Action Alternative



January 2008

1 Table 2-1 presents the general locations and lengths of each segment of the proposed
 2 fence.

3

4

Table 2-1. Proposed Fence Segments for USBP Yuma Sector

Map Number	Border Patrol Station	General Location	Land Ownership	Length (mi) of Fence Segment
C-1	Yuma	Andrade POE westward into Algodones Dunes	Public: BLM	10.3
C-2B	Yuma	From existing fence to County Road 18 along Salinity Canal	Public: Reclamation	3.7
Total				14

5

6 **2.2.5 Secure Fence Act Alignment Alternative**

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

12

13 This alternative would also include construction and maintenance of access and patrol
 14 roads. The patrol road would be located between the primary and secondary fences.
 15 Figure 2-4 shows a typical schematic of permanent and temporary impact areas for this
 16 alternative. The design of the TI for this alternative would be similar to that of the
 17 Proposed Action Alternative.

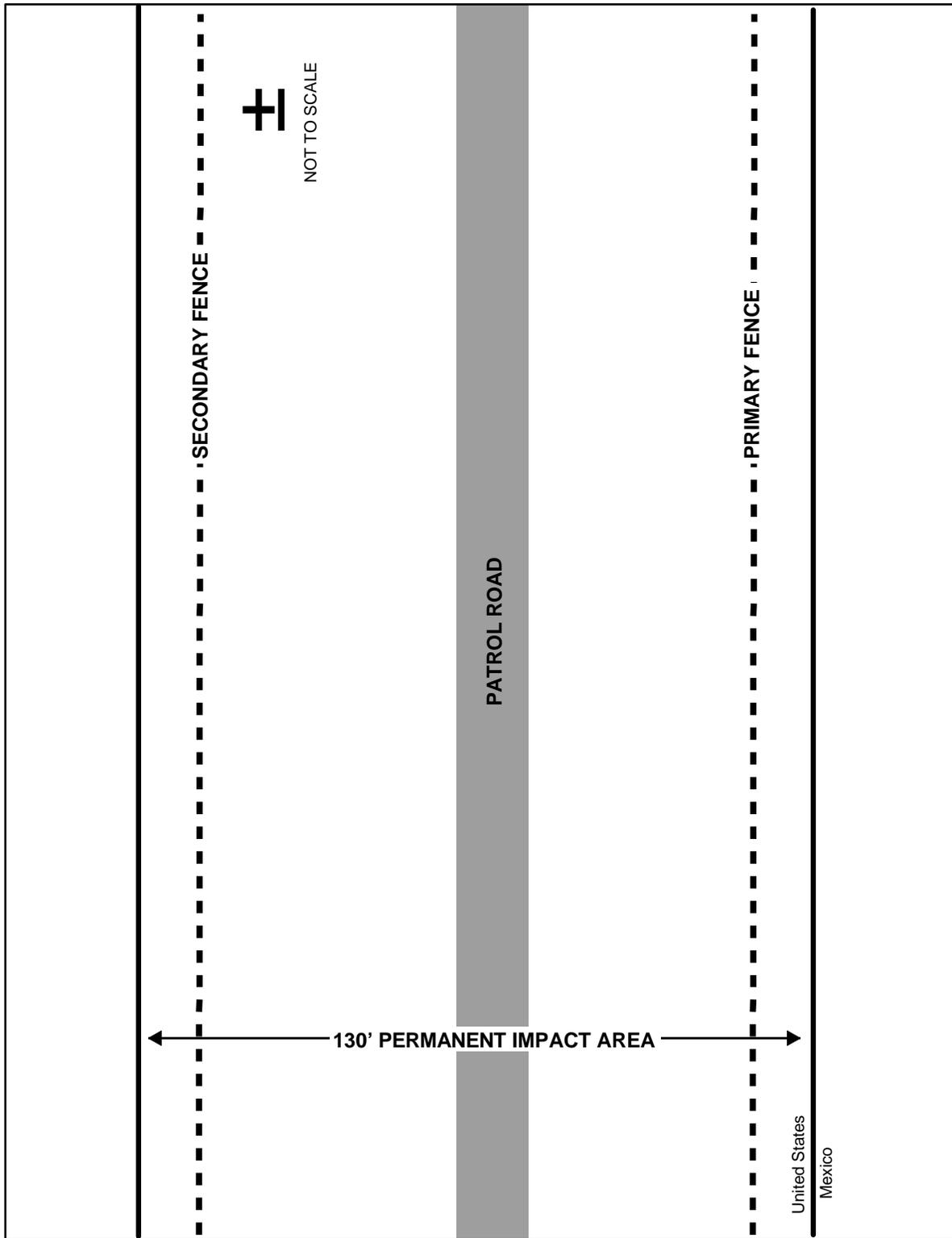
18

19 Construction of the proposed TI would impact an approximate 130-foot-wide corridor for
 20 14 miles along the two fence segments. This construction corridor would accommodate
 21 access roads and construction staging areas. Vegetation would be cleared and grading
 22 may occur where needed. Wherever possible, existing roads would be used for
 23 construction access. This is a viable alternative and will be evaluated in the EA.

24

25

26



1
2
3

Figure 2-4. Schematic of the Proposed Impact Area under the Secure Fence Act Alignment Alternative

1 **2.2.6 No Action Alternative**

2 Under the No Action Alternative, the primary pedestrian fence would not be installed.
3 The No Action Alternative would not meet USBP mission or operational needs.
4 However, inclusion of the No Action Alternative is required under CEQ regulations and
5 will be carried forward for analysis in this SEA. In addition, the No Action Alternative will
6 serve as a baseline against which the impacts of the other action alternatives can be
7 evaluated.

8
9 **2.3 IDENTIFICATION OF THE ENVIRONMENTALLY PREFERRED ALTERNATIVE**

10
11 CEQ's implementing regulation 40 CFR 1502.14(c) instructs NEPA preparers to
12 "[i]dentify the agency's preferred alternative or alternatives, if one or more exists, in the
13 draft statement and identify such alternative in the final statement unless another law
14 prohibits the expression of such a preference." USBP has identified its Preferred
15 Alternative as the Proposed Action Alternative. Throughout the remainder of this EA,
16 Preferred Alternative and Proposed Action are synonymous.

17
18 Implementation of Alternative 2 would meet USBP's purpose and need described in
19 Section 1.2. The No Action Alternative would not meet USBP's purpose and need. The
20 Secure Fence Act Alignment Alternative would meet USBP's purpose and need but
21 would have greater environmental impacts compared to the Preferred Alternative.
22 USBP might need to implement this alternative at some point in the future, depending
23 on future illegal alien (IA) traffic and USBP operational needs and strategies. At the
24 present time, however, USBP believes that this level of TI is not necessary. Still, it will
25 be carried forward as a viable alternative.

26
27 **2.4 SUMMARY**

28
29 The three alternatives carried forward for analysis are the No Action Alternative,
30 Proposed Action Alternative, and Secure Fence Act Alignment Alternative. An
31 alternative matrix (Table 2-2) compares the three viable alternatives relative to the

1 purpose and need. Table 2-3 presents a summary matrix of the impacts of the three
 2 alternatives analyzed and how they affect the environmental resources in the region.

3

4 **Table 2-2. Relationship between Purpose and Need and Alternatives**

Requirements	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alignment Alternative
Deter illegal entries	NO	YES	YES
Enhance the response time for USBP agents	NO	YES	YES
Enhance the safety of USBP agents	NO	YES	YES
Reduce the current enforcement footprint	NO	YES	YES
Create a defensible and enforceable zone that reduces cross-border violations.	NO	YES	YES

Table 2-3. Summary Matrix of Potential Impacts

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alignment Alternative
LAND USE	No impact.	No additional impact, as these areas are currently part of the 60-foot Roosevelt Reservation or are under Reclamation management and consistent with a Memorandum of Understanding between DHS and Department of the Interior (DOI)	Minor to moderate direct impact on land use in the region, as 119 acres of agriculture and BLM recreation lands would be converted to TI.
SOILS	No direct impacts; indirect impact would continue from IA traffic and consequent enforcement activities.	Negligible to minor impact on soils. Most soils in the Yuma Sector have been previously disturbed by agricultural activities. A portion of prime or unique soils would be affected.	Minor to moderate impact on soils, as approximately 221 acres of soils would be removed from biological production. Prime farmlands would be affected.
HYDROLOGY AND GROUNDWATER	No impact.	A temporary and one-time water usage would require 23 acre-feet of water. There would be a negligible to minor impact on the availability of water in the region.	A temporary and one-time water usage would require 25 acre-feet of water. There would be a minor impact on the availability of water in the region.
SURFACE WATERS AND WATERS OF THE U.S.	No impact would be expected.	Minor and temporary impact on surface water resources from sedimentation and erosion caused by construction. Impact would be minimized through Best Management Practices (BMPs).	Impact similar to that of the Proposed Action Alternative.
FLOODPLAINS	No direct impact; indirect impact would continue as illegal foot traffic and USBP apprehension activities cause erosion and sedimentation into washes, arroyos, and other drainages.	Direct impact on jurisdictional floodplains along the C-2B segment. However, the fence 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.	Impact similar to that of the Proposed Action Alternative. However, there is the potential for greater impact because of the second fence. The final design and footprint would be required to determine the potential effects. It is anticipated that the fence would be designed and constructed to ensure that flood elevations, risks, or velocities are not increased, in compliance with EO 11988.
VEGETATION COMMUNITIES	No direct impact; IA traffic would continue to indirectly impact vegetation communities.	No additional impact on vegetation communities, since no native communities occur within the project corridor.	Permanent impact on 221 acres; however, vegetation communities within the project corridor are sparse and degraded.
WILDLIFE AND AQUATIC	No direct impact; IA traffic would continue to damage vegetation	No significant adverse direct effects on wildlife populations. Fragmentation of wildlife habitat	Impacts to wildlife would be similar to the Proposed Action Alternative.

Table 2-3, continued

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alignment Alternative
RESOURCES	and aquatic habitat, thereby adversely impacting wildlife.	would occur along the C-1 segment, although the effect is expected to be minimal due to urban development and other disturbances. Beneficial impact on wildlife populations is anticipated as a result of protecting habitat from IA traffic.	Fragmentation effects would be greater due to the presence of the 2-tier fence system. Beneficial impact would also be similar to that described for the Proposed Action Alternative.
THREATENED AND ENDANGERED SPECIES	Indirect impact due to IA traffic trampling habitat and threatened and endangered plant species.	No effect on Pierson's milk vetch is expected, as none were observed within the project corridor. Flat-tailed horned lizards are known to occur; conservation measures would be implemented to reduce potential effects to less than significant. Southwestern willow flycatcher would not be affected, as none were observed in the project corridors, although there is potential habitat adjacent to the C-2B project corridor.	Although no effect on Pierson's milk vetch is expected, additional surveys would be required to accurately determine the potential effects. Adverse effects on the flat-tailed horned lizard would be greater due to the larger construction footprint. Conservation measures would be implemented to reduce potential effects on this species.
CULTURAL RESOURCES	No direct impact.	Minor adverse impact on 11 sites; these sites are currently not considered eligible for listing. 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 that of the Proposed Action Alternative. Mitigation measures through Section 106 consultation would include avoidance and/or monitoring.
AIR QUALITY	No direct impact.	Minor and temporary impact on air quality would occur during construction; air emissions would remain below <i>de minimis</i> levels.	Minor and temporary impact on air quality would occur during construction; air emissions would remain below <i>de minimis</i> levels.
NOISE	No direct impact.	Minor temporary increases to ambient noise during construction activities would occur.	The potential impact would be the same as that of the Proposed Action Alternative but longer in duration.

Table 2-3, continued

Affected Environment	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Secure Fence Act Alignment Alternative
AESTHETIC AND VISUAL RESOURCES	No direct impact; IA traffic would continue to detract from the general appearance of the adjacent state- and BLM-managed lands by creating trails and discarding trash.	Minor temporary impact would be associated with the presence of construction equipment. There would be a minor permanent impact on visual resources and the character of BLM land, as the fence 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 a 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.
SOCIOECONOMICS	No direct impact.	No significant impact on local or regional socioeconomic resources. 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. Temporary beneficial effects would result from an increase in purchased materials. A net beneficial, long-term impact on the region of influence (ROI) with a reduction in illegal activities would offset additional adverse impact.

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SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

3.1 PRELIMINARY IMPACT SCOPING

This section of the SEA describes the natural and human environment that exists within the project corridor and region of influence (ROI) and the potential impacts of the No Action Alternative and the two action alternatives outlined in Section 2.0 of this document. The ROI for this project is Yuma County, Arizona, and Imperial County, California. Only those parameters that have the potential to be affected by the Proposed Action Alternative are addressed in this EA, as per CEQ guidance (40 CFR 1501.7 [3]). Some topics are limited in scope due to the lack of direct effect from the proposed project on the resource, or because that particular resource is not located within the project corridor. Therefore, resources such as utilities, communications, geology, climate, designated Wild and Scenic Rivers, aquatic resources, sustainability and greening, and human health and safety are not addressed for the following reasons:

- Utilities: None of the action alternatives would affect any public utilities.
- Communications: None of the action alternatives would affect communications systems in the area.
- Geology: The Proposed Action would result in minor, localized effects on surficial geological features. Topography would be slightly altered within the project footprint; however, physiography of the project region would not be affected.
- Climate: The alternatives would not affect nor be affected by the climate.
- Wild and Scenic Rivers: None of the alternatives would affect any designated Wild and Scenic Rivers because no rivers designated as such are located within or near the project corridor.
- Aquatic Resources: There are no aquatic ecosystems that occur within the project corridor. Although the Salinity Canal is adjacent to the proposed construction footprint, the canal is separated from the footprint by a levee and, thus, would not be affected.

1 • Sustainability and Greening: EO 13423, *Strengthening Federal*
2 *Environmental, Energy, and Transportation Management* (January 24,
3 2007) promotes environmental practices, including acquisition of bio-
4 based products, environmentally preferable, energy-efficient, water-
5 efficient, and recycled-content products, and maintenance of cost-effective
6 waste prevention and recycling programs in their facilities. The Proposed
7 Action would use minimal amounts of resources during construction and
8 maintenance and there would be minimal changes in USBP operations.
9 Therefore, the Proposed Action would have negligible impact on
10 sustainability and greening.

11 • Human Health and Safety: Construction site safety is largely a matter of
12 adherence to regulatory requirements imposed for the benefit of
13 employees and implementation of operational practices that reduce risks
14 of illness, injury, death, and property damage. The Occupational Safety
15 and Health Administration (OSHA) and USEPA issue standards that
16 specify the amount and type of training required for industrial workers, the
17 use of protective equipment and clothing, engineering controls, and
18 maximum exposure limits with respect to workplace stressors.

19 Construction workers at any of the proposed construction sites would be
20 exposed to safety risks from the inherent dangers of construction sites.
21 Contractors would be required to establish and maintain safety programs
22 at the construction site. The proposed construction would not expose
23 members of the general public to increased safety risks. Therefore,
24 because the proposed construction would not introduce new or unusual
25 safety risks, and assuming carefully followed construction protocols,
26 detailed examination of safety is not included in this SEA.
27

28 Impacts (consequences or effects) can be either beneficial or adverse, and can be
29 either directly related to the action or indirectly caused by the action. Direct impacts are
30 those effects that are caused by the action and occur at the same time and place (40
31 CFR 1508.8[a]). Indirect impacts are those effects that are caused by the action and
32 are later in time or further removed in distance, but are still reasonably foreseeable (40
33 CFR 1508.8[b]). As discussed in this section, the alternatives may create temporary
34 (lasting the duration of the project), short-term (up to 3 years), long-term (3 to 10 years
35 following construction), or permanent impacts or effects. Significant impacts will receive
36 the greatest attention in the decision-making process. Whether an impact is significant
37 depends on the context in which the impact occurs and the intensity of the impact.
38

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

9
10 The amount of land impacted by the Secure Fence Act Alignment Alternative is based
11 on the expanded width of the footprint from 60 feet to 130 feet x 14 miles, for a total of
12 221 acres. The increased width would result in an additional 119 acres of disturbance
13 (70 feet x 14 miles) beyond that of the Proposed Action Alternative. This footprint may
14 not be totally accurate, as design concepts may dictate a much larger footprint. No
15 surveys have been conducted to identify resources that could occur within the entire
16 area of this larger footprint. Consequently, throughout the SEA, the Secure Fence Act
17 Alignment Alternative is analyzed using professional opinion and best data available.
18 Additionally, if the Secure Fence Act Alignment Alternative is ultimately selected, some
19 impacts may be potentially significant and subsequent site-specific surveys and NEPA
20 documentation will be needed to accurately analyze the potential impacts.

21 22 **3.2 LAND USE**

23 24 **3.2.1 Affected Environment**

25 **3.2.1.1 Yuma County, Arizona**

26 Yuma County, Arizona, covers 5,522 square miles of the southwest corner of Arizona
27 (Arizona Department of Commerce [AZDC] 2007a). Land use within Yuma County is
28 dependent upon soil characteristics and water availability. Agriculture, tourism, military,
29 and government are the area's principal industries. BLM accounts for 14.8 percent of
30 land ownership; Indian reservations, 0.2 percent; State of Arizona, 7.7 percent; private
31 or corporate entities, 10.5 percent; and other public lands, 66.8 percent (AZDC 2007a).

1 Agriculture production is the principal land use in Yuma County. Agriculture employs 35
2 percent of the labor force in Yuma County (AZDC 2007a).

3
4 The cities of San Luis and Gadsden are in the southwest corner of the county, near the
5 proposed project corridor. San Luis is a growing community, with an estimated 2006
6 population of 22,634 residents (City-Data 2007), directly adjacent to Mexico and
7 California (AZDC 2002b). Gadsden is a small community north of San Luis along U.S.
8 Highway 95. In 2000, the population of Gadsden was 953 residents (City-Data 2007).
9 Gadsden is located near the northern terminus of segment C-2B.

10
11 The project corridor is located along the Salinity Canal. The Salinity Canal levees are
12 managed by both Reclamation and BLM and are located adjacent to private lands.
13 Some agricultural fields encroach onto Reclamation lands.

14
15 **3.2.1.2 Imperial County, California**

16 Imperial County, California, has an approximate area of 4,482 square miles (City-Data
17 2007). Imperial County is a predominantly rural area with roughly 85 percent of lands
18 being undeveloped lake, dune, desert, or mountains, and 20 percent of lands being
19 used for irrigation agriculture or livestock production. Approximately 50 percent of the
20 land in Imperial County is undeveloped and under Federal ownership and jurisdiction.
21 About one-fifth of the nearly 3 million acres of the county is irrigated for agricultural
22 purposes. Incorporated cities, unincorporated communities, and support facilities
23 account for less than 1 percent of land use (Imperial County 1994). The project area is
24 considered eolian desert and dune lands by the county and, except for the Algodones
25 Dunes recreational area, is considered to be of little to no economic value to the area.
26 The eastern end of segment C-1 lies within BLM's Buttercup Recreation Management
27 Area, designated Multiple-use Class I "Intensive," and is used for camping, off-highway
28 vehicle (OHV) riding, sightseeing, commercial vending, education, filming, and highway
29 and utility rights-of-way (ROWs) (BLM 2003a).

1 The California Standards for Rangeland Health and Guidelines for Grazing
2 Administration apply to all lands managed by BLM. A majority of the lands managed by
3 BLM within the project area are previously disturbed and committed to other activities.
4 The lands in this area are in compliance with the California Standards for Rangeland
5 Health.

6

7 **3.2.2 Environmental Consequences**

8 **3.2.2.1 No Action Alternative**

9 The No Action Alternative would not change the land use in the project area. BLM- and
10 Reclamation-managed lands would remain in compliance with both Arizona and
11 California Standards for Rangeland Health. Illegal traffic would continue to adversely
12 affect land use in proximity to the border. Special use areas (i.e., sensitive and unique
13 areas, cultural/historical areas, and wildlife management areas) would continue to be
14 degraded by illegal traffic.

15

16 **3.2.2.2 Proposed Action Alternative**

17 Under the implementation of this alternative, approximately 23 acres of land managed
18 by Reclamation, some of which is used for agricultural purposes, and 79 acres of land
19 within the Roosevelt Reservation would be permanently converted for USBP
20 enforcement purposes. This direct impact would be localized and is not considered
21 significant due to the vast amount of similar lands surrounding the project corridor and
22 the fact that portions of the project corridor are currently degraded by past and on-going
23 activities. Reclamation would still be capable of managing the Salinity Canal and levee
24 system and, in fact, the TI would provide additional protection to this system.

25

26 In addition, a Memorandum of Understanding (MOU) exists among DHS, DOI, and the
27 U.S. Department of Agriculture (USDA) for cooperative national security and
28 counterterrorism efforts on Federal lands along the U.S. borders. A copy of the MOU is
29 contained in Appendix C. The MOU stipulates that CBP operations and tactical
30 infrastructure construction within the 60-foot Roosevelt Reservation is consistent with
31 the purpose of the Roosevelt Reservation and that any CBP activity within this

1 reservation is outside the oversight or control of Federal land managers. Therefore, the
2 proposed TI along the international border within the C-1 segment would be consistent
3 with this MOU and no significant impact on land use would result from implementation
4 of the Proposed Action Alternative.

5
6 Indirect effects would occur outside of the project corridor as IAs attempt to circumvent
7 the proposed infrastructure. However, these effects are non-quantifiable at this time
8 because IA patterns and migration routes are completely out of USBP control. In
9 addition, indirect beneficial effects are expected as a result of anticipated decreased
10 illegal traffic within the project corridor. Decreasing illegal traffic would protect sensitive
11 and wildlife management areas by reducing soil damage, vegetation damage, and
12 degradation of habitat.

13 14 **3.2.2.3 Secure Fence Act Alignment Alternative**

15 Under this alternative, the direct permanent impact on land use increases in width from
16 60 feet to 130 feet, resulting in permanent conversion of 221 acres of agricultural and
17 undeveloped conservation and recreation areas to a law enforcement zone. Indirect
18 beneficial and adverse impacts on land use would be similar in nature but greater in
19 area than those described in Section 3.2.2.2. There would be no impact on compliance
20 with the Arizona and California Standards for Rangeland Health under this alternative.

21 22 **3.3 SOILS**

23 24 **3.3.1 Affected Environment**

25 Soil surveys, general soil maps, and individual soil maps from the Natural Resources
26 Conservation Service (NRCS) were reviewed for Yuma County, Arizona (NRCS 2007).

27 28 **3.3.1.1 Yuma County, Arizona**

29 Within the project corridor of Yuma County, there are two soil associations composed of
30 several corresponding soil types. The extent of both associations in the project corridor
31 is approximately equal. These associations are:

- 1 • Holtville-Gadsden-Kofa association; and
- 2 • Indio-Ripley-Lagunita association.

3
4 The Holtville-Gadsden-Kofa association is typically described as deep, nearly level,
5 well-drained, clayey soils with sand to very fine sandy loam to silty clay loam as the
6 underlying material. Most of this association is utilized as irrigated farmland and
7 residential. Holtville, Gadsden, and Kofa soils are prime farmland soils.

8
9 The Indio-Ripley-Lagunita association is classified as deep, nearly level to gently
10 sloping, well drained and somewhat excessively drained, silty and sandy soils with sand
11 to silt loam as the underlying material. This association is utilized mainly for irrigated
12 farmland. Indio, Ripley, and Lagunita soils are prime farmland soils.

13
14 **3.3.1.2 Imperial County, California**

15 Currently there are no data available for the soils in the specific project area in Imperial
16 County, as no surveys have been conducted (Fahnestock 2007).

17
18 Based on the soil surveys immediately west of the project area, the general soils of the
19 project area are expected to consist of the Rositas association. Rositas soils are
20 undulating, sandy soils on higher terraces, alluvial fans, and sand dunes. The majority
21 of the project area is located on the Algodones Dunes; therefore, these soils are
22 expected to comprise the majority of the project corridor.

23
24 **3.3.2 Environmental Consequences**

25 **3.3.2.1 No Action Alternative**

26 With the implementation of the No Action Alternative, there would be no direct impact on
27 soils because no fence would be installed. However, the continuation of illegal traffic
28 and consequent enforcement activities would be expected to have an adverse impact
29 on soils (i.e., erosion) in the project region.

1 **3.3.2.2 Proposed Action Alternative**

2 Soil disturbance required under the Proposed Action Alternative would permanently
3 remove 102 acres from biological production. Additionally, 21 acres of soils located
4 within temporary staging areas would likely be scraped and bladed to accommodate
5 material staging. The staging areas are located in previously disturbed sites. Still, upon
6 completion of construction activities the soils in the staging area would be stabilized and
7 allowed to revegetate, resulting in only minor and temporary impacts. These soil
8 associations comprise a small percentage of soils existing within Yuma County.
9 However, soils within the two soil associations in Yuma County are considered prime
10 farmland soils; thus, there would be only a negligible adverse impact. A copy of the
11 NRCS 1006-AD form received from NRCS is included in Appendix A (Correspondence).

12
13 **3.3.2.3 Secure Fence Act Alignment Alternative**

14 Soil disturbance required under the Secure Fence Act Alignment Alternative would
15 permanently remove 221 acres from biological production. Impact related to the staging
16 areas would be the same as that described for the Proposed Action Alternative. While
17 there is a greater impact on soil under the Secure Fence Act Alignment Alternative, the
18 permanent removal of soils from biological production would represent a small
19 percentage of soils existing within Yuma and Imperial Counties and, thus, adverse
20 impacts would be considered minor to moderate.

21
22 **3.4 HYDROLOGY AND GROUNDWATER**

23
24 **3.4.1 Affected Environment**

25 **3.4.1.1 Yuma County**

26 The groundwater in the Yuma area occurs in basin fill deposits, which are divided into
27 two major subdivisions based on water-bearing characteristics. The first subdivision
28 forms the upper, principal water-producing part of the aquifer and consists of recent
29 Colorado and Gila River alluvial deposits. The second subdivision includes the lower
30 part of the basin, which is composed of the Bouse Formation, marine sedimentary
31 rocks, volcanic rocks, and non-marine sedimentary rocks. Water quality in the Yuma

1 Basin generally supports drinking water uses. In 1995, 171,326 acre-feet of water was
2 withdrawn from the Yuma Basin. The recharge rate for the basin is approximately
3 210,000 acre-feet per year (U.S. Geological Survey [USGS] 2005). Consequently, the
4 Yuma Basin has an excessive supply of water due to the large annual recharge rate
5 attributed to agricultural run-off.
6

7 **3.4.1.2 Imperial County**

8 The Imperial Valley Groundwater Basin is bounded on the east by the Sand Hills and on
9 the west by the Fish Creek Mountains and Coyote Mountains. Although its political
10 boundary ends at the U.S.-Mexico border, the basin's physical boundary extends south
11 into Baja California. Seepage from the extensive Imperial Irrigation District (IID)
12 irrigation system is the primary source of recharge for the basin; however, the lining of
13 major canals has reduced the amount of recharge from irrigation waters. Seepage and
14 other sources provide an estimated 250,000 acre-feet of recharge to the basin each
15 year, and subsurface flow provides an additional 173,000 acre-feet per year. Losses to
16 streams and discharge to other basins are estimated to be 170,000 and 270,000 acre-
17 feet per year, respectively. Groundwater levels in the basin were relatively stable from
18 1970 to 1990 (California Department of Water Resources 2005). Use of groundwater
19 from the basin for domestic and irrigation purposes requires treatment to remove high
20 concentrations of dissolved solids.
21

22 **3.4.2 Environmental Consequences**

23 **3.4.2.1 No Action Alternative**

24 The No Action Alternative would not require the use of water because there would be no
25 construction. Therefore, the No Action Alternative would have no impact on surface or
26 groundwater availability or quality.
27

28 **3.4.2.2 Proposed Action Alternative**

29 Under the Proposed Action, water would be required for pouring concrete during
30 installation of the new fence and for watering construction and access road surfaces to
31 compact road bed and minimize fugitive dust during construction activities. The volume

1 of water used for construction of new fencing and new access roads would be 1.7 acre-
2 foot per mile (554,000 gallons per mile) (Miranda 2006). Therefore, approximately 18
3 acre-feet of water would be required for the project in Imperial County and 5 acre-feet
4 for the project in Yuma County. These amounts would be temporary withdrawals and
5 would occur over the entire construction period of about 1 year. This is also far less
6 than the current recharge rates of the affected aquifers. Consequently, no significant
7 impact would be expected to occur.

8
9 Water not lost to evaporation during watering of road surfaces during construction would
10 potentially contribute to aquifer recharge through downward seepage. The fence and
11 roads would be designed and constructed to ensure that natural drainage patterns
12 would not be altered. The roads would be surfaced with aggregate generated from
13 within the project corridor or brought on-site from off-site commercial borrow sites.
14 Therefore, little impermeable surface would be created as a result of the construction of
15 the fence and road and, thus, would not interfere with groundwater recharge.

16
17 **3.4.2.3 Secure Fence Act Alignment Alternative**

18 The Secure Fence Act Alignment Alternative footprint is 2.3 times larger and two fences
19 would be installed along the borders instead of one. However, the water demands for
20 cement mixing and dust suppression would not be twice that of the Proposed Action
21 Alternative. It is estimated that an additional 2 acre-feet would be required to
22 accommodate the additional construction. Therefore, approximately 25 acre-feet would
23 be required for the Secure Fence Act Alignment Alternative. This amount would still be
24 considered insignificant compared to the capacity of the aquifers and the current
25 recharge rates.

1 **3.5 SURFACE WATERS AND WATERS OF THE U.S.**

2
3 **3.5.1 Affected Environment**

4 **3.5.1.1 Yuma County**

5 The project corridor is located in the Lower Colorado basin. The Lower Colorado
6 watershed (Arizona Department of Environmental Quality [ADEQ] # 15030107-001) is
7 on the Arizona 2006 Section 303(d) list for non-compliance with dissolved oxygen (DO)
8 and selenium water quality standards. The ADEQ has rated the Lower Colorado
9 watershed (# 15030107-001) with a Category 5 overall assessment, which means that it
10 is impaired for one or more public uses such as aquatic and wildlife warmwater fishery.
11 Suspected causes of impairment for low DO are agricultural and urban runoff. It is not
12 known if the selenium sources are natural or man-made; however, man-made sources
13 of selenium in Arizona may include: irrigated agriculture return flows and drainage,
14 combustion of fossil fuels, coal mining, sulfide ore mining (copper, lead, zinc mines),
15 and animal feed supplements (ADEQ 2006). USGS topographical maps show no
16 natural drainages near the project corridor other than the Colorado River (Figure 3-1).
17 Man-made canals are common near the Colorado River, as water is diverted from the
18 river for use in agricultural irrigation.

19
20 **3.5.1.2 Imperial County**

21 The California project corridor is located in two California Planning Areas: East
22 Colorado River and Imperial Valley. California further subdivides its watersheds into
23 sub-basins to manage lakes and streams. The project corridor is located in three sub-
24 basins. The Colorado River Planning Area sub-basin is called the 727.00 Yuma
25 Hydrologic Unit (HU) and is not listed on the California 2002 Section 303(d) List of
26 Water Quality Limited Segments. The project corridor is also located in two Imperial
27 Valley Planning Area sub-basins, called 726.00 Amos-Ogilby HU and 723.10 Brawley
28 HU. The 726.00 sub-basin is not listed on the California 2002 Section 303(d) List of
29 Water Quality Limited Segments for impaired waters; however, the 723.10 is listed for
30 several constituents: pathogens, silt, pesticides, trash, several species of organic
31 molecules, and selenium. Suspected causes of impairment to waters in the 723.10

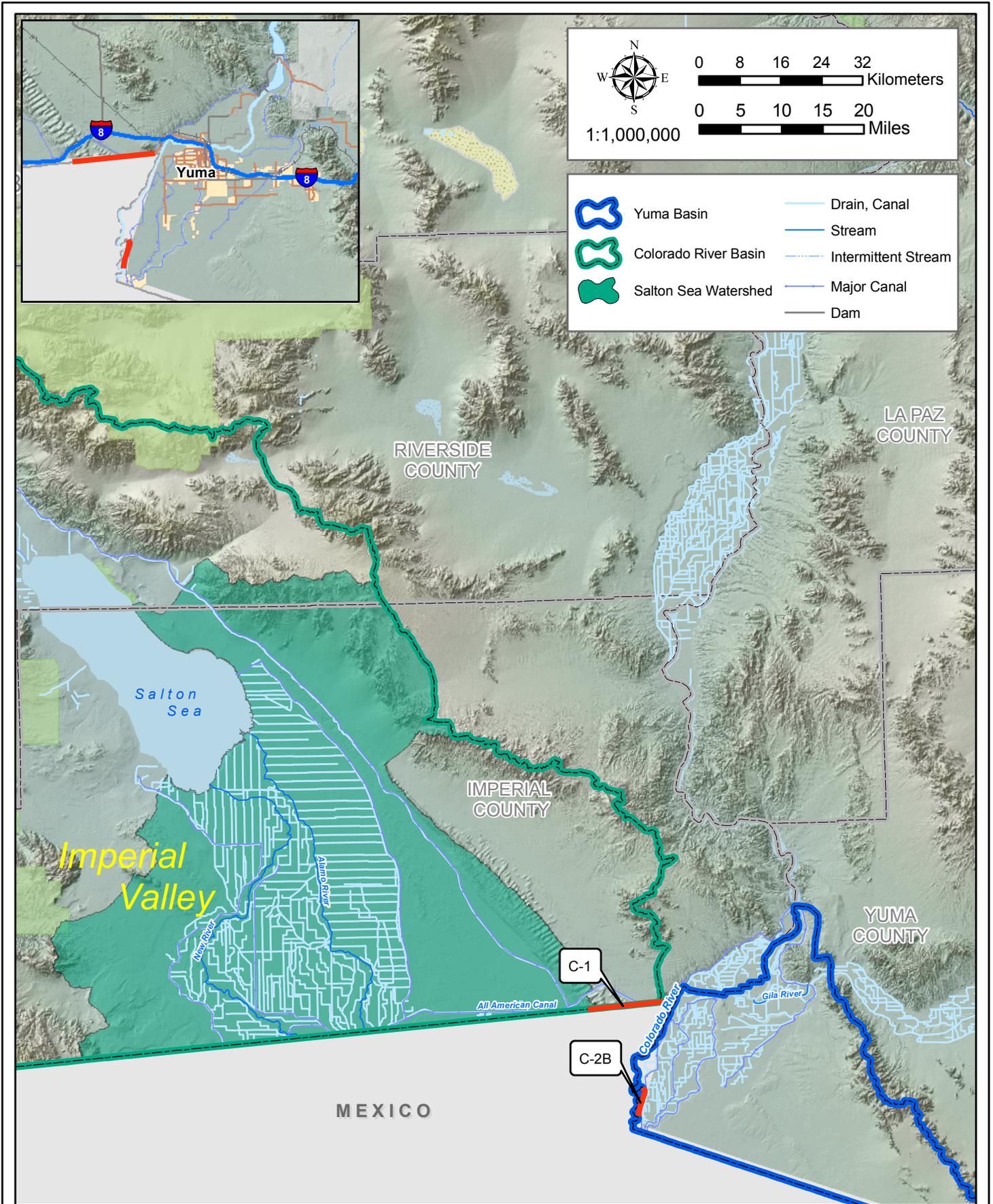


Figure 3-1: Waters Near the Proposed Project Corridors

1 sub-basin include agriculture runoff, wastewater treatment plants, and sources
2 originating in Mexico. The Colorado River water, imported via the All-American Canal,
3 is the predominant water supply and is used for irrigation, industrial, and domestic
4 purposes (California Regional Water Quality Control Board [RWQCB] 2006).

5
6 **3.5.1.3 Waters of the U.S. and Wetlands**

7 Any activities that result in the dredging or filling of Waters of the U.S. (WUS), including
8 wetlands, are regulated under Section 404 of the CWA. USACE has established
9 Nationwide Permits (NWP) to efficiently authorize common activities which do not
10 significantly impact WUS, including wetlands. USACE has the responsibility to authorize
11 permitting under an NWP or require an Individual Permit. Within the project region, the
12 Colorado River and its tributaries are jurisdictional Waters of the U.S. Based on recent
13 field surveys, seven small isolated wet areas occur along the C-1 segment. Although
14 these areas contained water and hydrophytic vegetation, there were no hydric soils
15 present; therefore, these areas were not considered jurisdictional Waters of the U.S.
16 (Appendix E).

17
18 **3.5.2 Environmental Consequences**

19 **3.5.2.1 No Action Alternative**

20 Surface water resources, including WUS, would not be affected by the No Action
21 Alternative, since no construction would occur.

22
23 **3.5.2.2 Proposed Action Alternative**

24 The Proposed Action Alternative would have minimal impact on surface water quality.
25 Some temporary water quality impairments may occur if there is a major rain event
26 during the construction efforts. Construction activities can disturb soils, which, in turn,
27 increase the probability of sediment migration.

28
29 Since the construction footprint is larger than 1 acre, the project would require the
30 issuance of an NPDES General Stormwater Permit. A stormwater permit for the
31 Proposed Action is contingent on the development of a Storm Water Pollution

1 Prevention Plan (SWPPP), which would then be subject to approval by the regional
2 water authority. SWPPP requirements include an outline of the storm water drainage
3 system for each discharge point, actual and potential pollutant contact, and surface
4 water locations. The SWPPP would also incorporate storm water management
5 controls. Compliance with the General Stormwater Permit and the SWPPP would
6 minimize potential impact on surface water quantity and quality.

7
8 Care would be taken to avoid impacting the project area with hazardous substances
9 (i.e., anti-freeze, fuels, oils, lubricants) used during construction. Although catch pans
10 would be used when refueling, accidental spills could occur as a result of maintenance
11 procedures to construction equipment. A spill could result in adverse effects on on-site
12 soils and waters, as well as threaten the health of wildlife and vegetation. However, the
13 amount of fuel, lubricants, and oil is limited, and equipment necessary to quickly contain
14 any spills would be present when refueling. A Spill Prevention, Control and
15 Countermeasure Plan (SPCCP) would be in place prior to the start of construction, and
16 all personnel would be briefed on the implementation and responsibilities of this plan.

17
18 Construction equipment and operations may create miscellaneous operational pollution,
19 such as oil leaks, mud spatters, and discards from human activities. The construction
20 crew will make sure that an adequate number of latrines and covered trash cans are
21 available at the job site, and that any leaks or spills from construction equipment are
22 cleaned up. Best Management Practices (BMP) for construction site soil erosion will be
23 implemented to prevent the migration of soils, oil and grease, and construction debris
24 into the local stream networks. No significant impact on surface water is expected. No
25 jurisdictional Waters of the U.S. would be affected by the implementation of the
26 Proposed Action Alternative, since none were observed within the project corridor.

27
28 **3.5.2.3 Secure Fence Act Alignment Alternative**

29 The Secure Fence Act Alignment Alternative would potentially have a minor additional
30 impact on surface water similar to that described in the Proposed Action Alternative, since

1 the construction footprint is 2.3 times larger. No Waters of the U.S. would be affected by
2 the implementation of the Proposed Project.

3 4 **3.6 FLOODPLAINS**

5 6 **3.6.1 Affected Environment**

7 Pursuant to the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et
8 seq.), and the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975), EO
9 11988, Floodplain management, requires that each Federal agency take actions to
10 reduce the risk of flood loss, minimize the impact of floods on human safety, health and
11 welfare, and preserve the beneficial values which floodplains serve. EO 11988 requires
12 that agencies evaluate the potential effects of actions within a floodplain and to avoid
13 floodplains unless the agency determines that there is no practicable alternative.
14 Where the only practicable alternative is to site in a floodplain, a planning process is
15 followed to insure compliance with EO 11988. As mentioned previously, this process
16 includes the following steps:

- 17
18
- 19 • Determination of whether or not the action is in the regulatory floodplain;
 - 20 • conduct early public notice;
 - 21 • identify and evaluate practicable alternatives, if any;
 - 22 • identify impacts of the action;
 - 23 • minimize the impacts;
 - 24 • reevaluate alternatives;
 - 25 • present the findings and a public explanation; and
 - 26 • implementation the action.

27 This process is further outlined on the Federal Emergency Management Agency's
28 (FEMA), Environmental Planning and Historic Preservation Program web site (FEMA
29 2006). As a planning tool, the NEPA process incorporates floodplain management
30 through analysis and public coordination, ensuring that the floodplain management
31 planning process is adhered to. In addition, floodplains are managed at the local
32 municipal level through the assistance and oversight of FEMA.

1 **3.6.1.1 Yuma County**

2 According to panel 0400990975C of the Federal Emergency Management Agency
3 (FEMA) floodplain map (FEMA 1985), the 100-year flood zone encompasses the
4 southernmost 0.5 mile of the C-2B project corridor. All construction activities within or
5 near the floodplain would have to be coordinated with the Floodplain Manager for the
6 area FEMA office as directed by EO 11988 (Flood Plain Management). The remainder
7 of this segment would be on the eastern toe of the flood protection levee and, thus,
8 would be outside of the 100-year floodplain. A general map of the 100-year floodplain
9 within the region is presented as Figure 3-2.

10
11 **3.6.1.2 Imperial County**

12 According to the 0600650900B FEMA floodplain map, the 100-year flood zone border
13 does not encompass the C-1 project corridor.

14
15 **3.6.2 Environmental Consequences**

16 **3.6.2.1 No Action Alternative**

17 Under the No Action Alternative, the proposed fence would not be installed. Therefore,
18 there would be no impacts to the 100-year floodplain.

19
20 **3.6.2.2 Proposed Action Alternative**

21 As indicated above, the southernmost 0.5 mile of the C-2B project corridor is within the
22 100-year floodplain. The fence is positioned on east side of the Salinity Canal and
23 parallel to the flow of the floodplain. The location and position of the fence would
24 minimize its interference to flow during major rain events. CBP (2007) conducted a
25 hydrology and hydraulics analysis to determine the potential effects on flood flows and
26 design the primary pedestrian fence for the March 2007 SEA and presented a report to
27 USIBWC. The results of the investigation indicated that the 100-year floodplain would
28 not be affected by a fence constructed along the Salinity Canal. A copy of that report is
29 contained in Appendix D. A maintenance plan would also be developed to identify the
30 procedures required to clean debris from the fence and inspect its structural integrity
31 after major rain events. CBP has determined that there is no other practicable

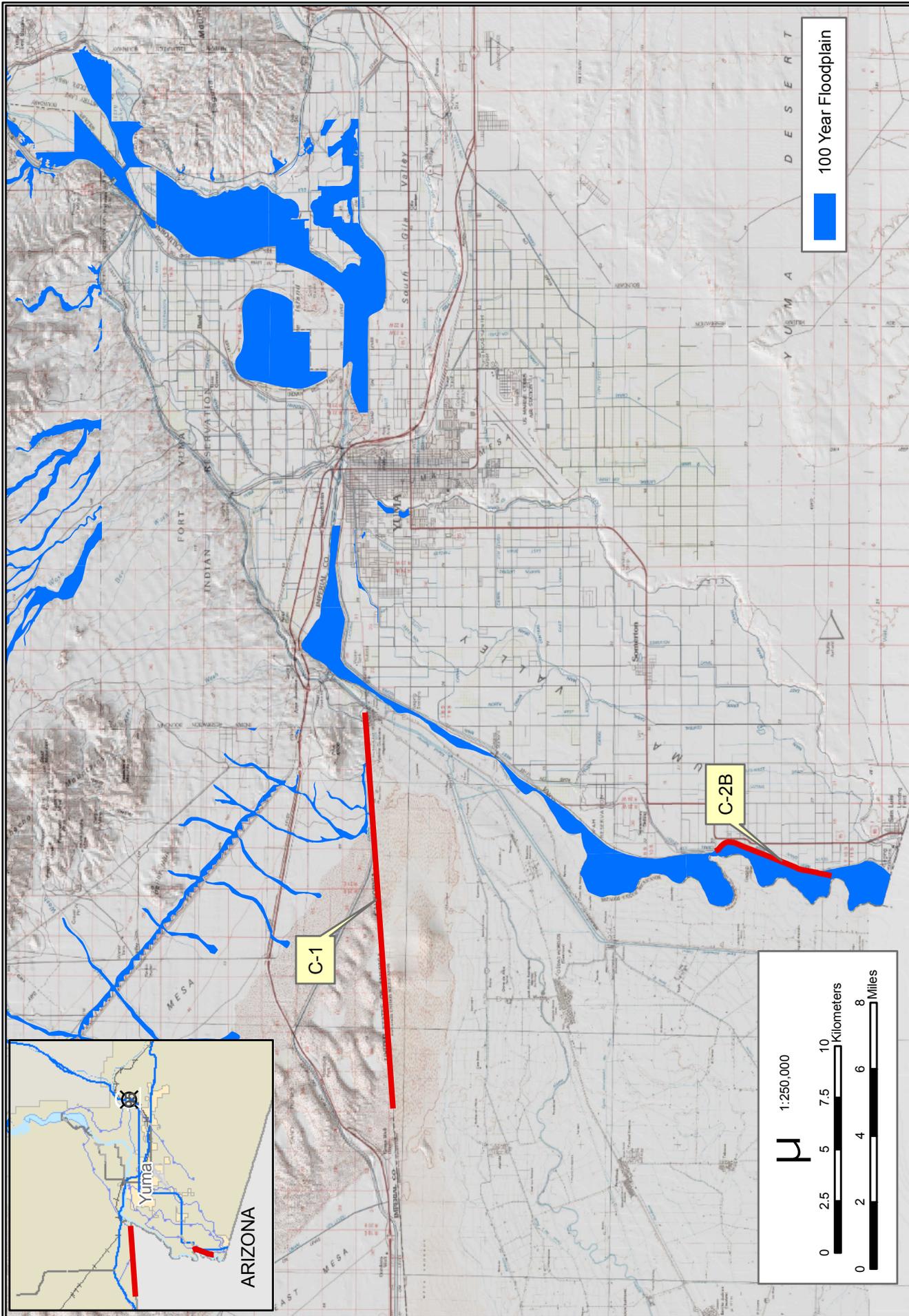


Figure 3-2: FEMA Floodplain Map

1 alternative to constructing this section of the fence within the floodplain, and meets
2 USBP's mission and operation of needs. CBP would consult with USIBWC and Yuma
3 County regarding floodplain permit applications before construction of the fence and
4 access road begins. The C-1 project corridor is outside the 100-year floodplain and
5 would not have any impacts to floodplains; thus, the construction within this segment
6 would be in compliance with EO 11988.

7 8 **3.6.2.3 Secure Fence Act Alignment Alternative**

9 Depending upon the final design, footprint, and alignment of the fences, the Secure
10 Fence Act Alignment Alternative could have moderate impacts to the Colorado River
11 floodplain. If this alternative were ultimately selected, additional analyses and possibly
12 subsequent NEPA documentation would be required to fully evaluate the potential
13 impacts to the floodplain. The California portion of the project corridor is not within the
14 within the 100-year floodplain and, thus, would not have any impacts on floodplains.

15 16 **3.7 VEGETATION COMMUNITIES**

17 18 **3.7.1 Affected Environment**

19 The vegetative habitats within the project region are part of the Sonoran Desert biome
20 (Brown 1984) and consist primarily of a creosote (*Larrea tridentata*)-bursage (*Ambrosia*
21 spp.) vegetation community typical of the Lower Colorado River Valley subdivision. The
22 creosote-bursage community is characteristically species poor and typically consists of
23 a single canopy of low shrubs and sparse herbaceous cover.

24
25 Surveys of the project corridor were conducted in December 2007; results of the
26 surveys are presented in Appendix E. The C-2B portion of the project corridor is
27 located adjacent to the Reclamation's Salinity Canal; thus, the vegetation is sparse and
28 consists primarily of invasive and exotic species including Russian thistle (*Salsola kali*),
29 Johnsongrass (*Sorghum halepense*), and Bermuda grass (*Cynodon dactylon*). Figure
30 2-1, shown previously, illustrates the lack of native vegetation in the corridor.

1 The C-1 portion also contains very sparse vegetation communities. Ground cover over
2 most of the corridor is less than 1 percent and consists of an occasional creosotebush,
3 palo verde (*Cercidium* sp.), salt cedar (*Tamarix* spp.), smoke tree (*Dalea spinosa*) or
4 four-wing saltbush (*Atriplex canescens*). Evidence of the lack of vegetation along the C-
5 1 segment can be observed in Figure 2-2, shown previously. More dense communities
6 occurred within the small isolated wetland areas described above. These communities
7 contained hydrophytic vegetation such as cattail (*Typha latifolia*), black willow (*Salix*
8 *goodingii*) and giant reed (*Arundo donax*). Due to the increased water, caused by
9 seepage from the All-American Canal, small areas are expected to support a greater
10 diversity of vegetation and wildlife species.

12 **3.7.2 Environmental Consequences**

13 **3.7.2.1 No Action Alternative**

14 Under the No Action Alternative, no direct impacts would occur to vegetation
15 communities. However, illegal alien activity would continue to degrade vegetation
16 communities within the region, resulting in synergistic impacts to vegetative populations,
17 including some rare species.

19 **3.7.2.2 Proposed Action Alternative**

20 Although the Proposed Action Alternative would disturb up to 102 acres of vegetation,
21 there would be minimal loss of vegetation communities since the project corridor is
22 either disturbed by past activities (e.g., Salinity Canal, agriculture) or is devoid of
23 vegetation.

25 **3.7.2.3 Secure Fence Act Alignment Alternative**

26 Impacts under the Secure Fence Act Alignment Alternative would be similar to the
27 Proposed Action Alternative, yet greater in magnitude in terms of impacted acres. To
28 accommodate construction of the primary and secondary fences, roads, lights and
29 staging areas, approximately 221 acres would be required. Still, the impacts to
30 vegetation communities would be minimal because of the existing disturbed conditions
31 and general lack of vegetation.

3.8 WILDLIFE RESOURCES

3.8.1 Affected Environment

Although the Sonoran Desert generally supports a diverse assemblage of wildlife, the general lack of vegetative communities and low native plant diversity within the project corridor limit the wildlife species that occur within the two proposed sections of primary pedestrian fence. Still, due to the proximity of the Colorado River riparian area, some wildlife species occur in the project region. Other species have also adapted to the harsh desert environs that exist within the Algodones Dunes areas of the C-1 reach of the project corridor.

For example, coyotes (*Canis latrans*) are extremely adaptable and likely occur throughout the ROI. Small mammals typical of the region include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), kangaroo rats (*Dipodomys spp.*) and pocket mice (*Perognathus spp.*). Several non-native bird species including, but not limited to rock dove (*Columba livia*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*) have become established in the region and are likely to be found near urban areas such as Gadsden, Arizona or the Andrade POE. The small isolated wetland areas could provide habitat for other passerine birds as well as for California black rail (*Laterallus jamaicaensis coturniculus*).

Reptiles are the most diverse animal group in the ROI (Stebbins 2003). A wide variety of lizards would be expected to occur in the ROI including the zebra-tailed lizard (*Callisaurus draconoides*), western whiptail lizard (*Aspidoscelis tigris*), desert iguana (*Dipsosaurus dorsalis*), chuckwalla (*Sauromalus obesus*), whiptails (*Cnemidoporus spp.*) and several more common species. Evidence of flat-tailed horned lizards (FTHL) (*Phrynosoma mcallii*) was observed within the C-1 portion of the project corridor. Snakes are also diverse and include several non-venomous species and six species of rattle snake (*Crotalus spp.*). Although less common, desert tortoise (*Gopherus agassizii*) is also found in the ROI.

1 **3.8.2 Environmental Consequences**

2 **3.8.2.1 No Action Alternative**

3 The No Action Alternative would have no direct effects on wildlife habitats or wildlife
4 populations. However, IA activity would continue to degrade wildlife habitats within the
5 region, resulting in synergistic impacts to wildlife populations, including some rare
6 species.

7
8 **3.8.2.2 Proposed Action Alternative**

9 As discussed previously, although the Proposed Action Alternative would disturb up to
10 102 acres, little impacts to wildlife habitats would occur since vegetation communities
11 are sparse and considered to be low quality. Some individuals of less mobile species
12 could be lost during construction, but these losses would not have significant adverse
13 impacts to wildlife populations.

14
15 Although the primary pedestrian fence would preclude transboundary migration of larger
16 mammals, and thus fragment habitat within the project corridor, these impacts would be
17 considered minor. Habitat fragmentation typically affects species with small population
18 sizes or that are dependent upon migration to obtain spatially or temporally limited
19 resources. No significant adverse effects are anticipated, as the majority of the project
20 corridor on either side of the international border is highly developed or disturbed and
21 would not be expected to be an important migratory route for large mammalian species
22 and any such species that do occur in the project region are common in both the U.S.
23 and Mexico.

24
25 Temporary impacts to wildlife species from increased noise during construction
26 activities would occur. Physiological responses from noise range from minor responses
27 such as an increase in heart rate to more damaging effects on metabolism and
28 hormone balance. Long-term exposure to noise can cause excessive stimulation to the
29 nervous system and chronic stress that is harmful to the health of wildlife species and
30 their reproductive fitness (Fletcher 1990). Behavioral responses vary among species of
31 animals and even among individuals of a particular species. Variations in response

1 may be due to temperament, sex, age, or prior experience. Minor responses include
2 head-raising and body-shifting, and usually, more disturbed mammals will travel short
3 distances. Panic and escape behavior results from more severe disturbances causing
4 the animal to leave the area (Busnel and Fletcher 1978).

5
6 Species that could be affected by construction noise would include passerine birds,
7 such as song sparrow (*Melospiza melodia*), black-throated sparrow (*Amphispiza*
8 *bilineata*) or western kingbird (*Tyrannus veticalis*); and small mammals such as
9 kangaroo rats (*Dipodomys* spp.), ground squirrels (*Spermophilus* spp.) or striped skunk
10 (*Mephitis mephitis*). Since the highest period of movement for most wildlife species
11 occurs during night time or low daylight hours, and construction activities would be
12 conducted during daylight hours to the maximum extent practicable, temporary noise
13 impacts on wildlife species are expected to be insignificant.

14
15 Some indirect adverse impacts would occur to wildlife in other areas along the
16 southwest border if IAs choose to cross the border at other locations. The magnitude of
17 these impacts would depend upon several biotic and abiotic variables, including, but not
18 limited to, proximity to developed or disturbed areas, number and season of illegal
19 entries, extant vegetation community conditions and types, and the condition of wildlife
20 populations in or near the new illegal crossings.

21
22 Beneficial effects to wildlife populations are also anticipated by reducing impacts of
23 illegal pedestrian traffic and consequent USBP enforcement actions to wildlife habitats
24 located north of the project corridor.

25 26 **3.8.2.3 Secure Fence Act Alignment Alternative**

27 Direct impacts associated with the Secure Fence Act Alignment Alternative would be
28 similar to the Proposed Action Alternative, although an additional 119 acres of wildlife
29 habitat would be disturbed. The primary species that would be impacted at a greater
30 magnitude would be reptiles, including the FTHL, which will be discussed in Section 3.9.

1 Fragmentation effects would be slightly greater due to the presence of the 2-tiered
2 fence system. This system would pose a greater physical and visual barrier to most
3 species. In addition, the potential for mortality would be increased with the addition of a
4 second fence as some small animals that attempt to move through the project corridor
5 may become disoriented and become trapped between the two fences. However, due
6 to the lack of important transboundary migratory corridors, these impacts would likely
7 remain minimal to moderate.

8
9 Temporary noise impacts to wildlife would occur in a greater in duration as a result of an
10 extended construction period and larger footprint. However, as described in Section
11 3.8.2.2, such impacts are expected to remain insignificant.

12 13 **3.9 PROTECTED SPECIES AND CRITICAL HABITAT**

14 15 **3.9.1 Affected Environment**

16 The USFWS is the primary agency responsible for implementing the ESA, and is
17 responsible for birds and other terrestrial and freshwater species. The USFWS has
18 identified species that are listed as threatened or endangered, as well as candidates for
19 listing as a result of identified threats to their continued existence. Although not
20 protected by the ESA, candidate species may be protected under other Federal or state
21 laws.

22 23 **3.9.1.1 Yuma County, Arizona**

24 3.9.1.1.1 Federal

25 Seven Federally endangered species and one candidate species for Federal protection
26 inhabit Yuma County, Arizona (Table 3-1) (USFWS 2007a). In addition, one
27 conservation agreement species, the FTHL is known to occur in central and eastern
28 Yuma County. None of these species has the potential to occur within the project
29 corridor; however, southwestern willow flycatcher has the potential to occur within the
30 Colorado River riparian area, adjacent to the C-2B project corridor.

1 **Table 3-1. Federally Listed Species Potentially Occurring Within Yuma County,**
 2 **Arizona**

Common/Scientific Name	Federal Status	Habitat	Potential to occur within Project Area
BIRDS			
Brown Pelican <i>Pelecanus occidentalis</i>	Endangered, Delisted Taxon (Recovered, Being Monitored First Five Years)	Usually found along costal regions. Inland they use lakes and rivers with islands and sand bars. Dry habitat is required for roosting.	No – No suitable habitat occurs within or near the project corridor.
Cactus ferruginous pygmy-owl <i>Glaucidium brasilianum cactorum</i>	Endangered	Riparian woodlands, mesquite, Sonoran desertscrub, semidesert grasslands, and Sonoran savanna grasslands and require dense vegetation, the presence of trees, saguaros or organ pipe cactus, and elevations below 4,000 feet.	No - No suitable habitat occurs within or near the project corridor.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	Endangered	Thickets, scrubby and brushy areas, open second growth, and riparian woodland.	No - However, potentially suitable habitat occurs adjacent to project area along the Colorado River.
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Candidate	Dense willow and cottonwood stands with low vegetation in river floodplains.	No - However, potentially suitable habitat occurs adjacent to project area along the Colorado River.
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	Endangered	Marshes with stands of cattail and bulrush.	No – No suitable habitat.
FISHES			
Razorback sucker <i>Xyrauchen texanus</i>	Endangered	Backwaters, sloughs, oxbow lakes, and seasonally inundated flood plain. Limited to the mainstream of the Colorado River, Lake Mohave, and upstream Lake Mead.	No - No suitable habitat occurs within or near the project corridor.
MAMMALS			
Sonoran pronghorn <i>Antilocapra americana sonoriensis</i>	Endangered	Broad alluvial valleys with creosote-bursage and palo verde-mixed cacti vegetation.	No

3 **Source:** USFWS 2007a.

4
5
6

1 3.9.1.1.2 Critical Habitat

2 The ESA also calls for the conservation of what is termed Critical Habitat - the areas of
3 land, water, and air space that an endangered species needs for survival (USFWS
4 2007c). No Federally designated or proposed critical habitat for any endangered or
5 threatened species occurs within or near the project corridor.

6
7 3.9.1.1.3 State

8 The AGFD Natural Heritage Program maintains lists of Wildlife of Special Concern
9 (WSC) in Arizona. This list includes fauna whose occurrence in Arizona is or may be in
10 jeopardy, or with known or perceived threats or population declines (AGFD 2007).
11 These species are not necessarily the same as those protected by the Federal
12 government under the ESA. Of the 17 WSC species known to occur in Yuma County,
13 none is likely to occur within the Yuma County section of the project corridor. Eight bird
14 species listed as WSC are, or have been known to occur within the riparian areas of the
15 Lower Colorado River. These species could occur near the project corridor, but would
16 not use the agricultural fields that comprise the project corridor.

17
18 The Arizona Department of Agriculture (ADA) maintains a list of protected plant species
19 within Arizona. The 1999 Arizona Native Plant Law defined five categories of protection
20 within the state. These include: Highly Safeguarded, no collection allowed; Salvage
21 Restricted, collection only with permit; Export Restricted, transport out of state
22 prohibited; Salvage Assessed, permit required to remove live trees; and Harvest
23 Restricted, permit required to remove plant by-products (ADA 2007). Only those plants
24 with HS and SR status are discussed here, as other regulated activities would not
25 occur. Of the nine HS or SR status species, only two have the potential to occur in
26 habitats near the project corridor, straw-top cholla (*Opuntia echinocarpa*) and sand food
27 (*Pholisma sonora*); however, neither species occurs within the project corridor due to
28 the extensive past development and disturbance.

1 **3.9.1.2 Imperial County, California**

2 **3.9.1.2.1 Federal**

3 Eleven Federally endangered species, three Federally threatened species, and one
 4 candidate for Federal protection species inhabit Imperial County, California (USFWS
 5 2007b, see Table 3-2). Of these, one species is likely to occur within the project area,
 6 Pierson’s milk-vetch (*Astragalus magdalenae* var. *piersonii*). The remaining 10 species
 7 would not be affected and are not discussed further.

8

9 **Table 3-2. Federally Listed Species Potentially Occurring Within Imperial County,**
 10 **California**

Common/Scientific Name	Federal Status	Habitat	Potential to occur within Project Area
BIRDS			
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Candidate	Dense willow and cottonwood stands with low vegetation in river floodplains.	No – No suitable habitat.
Southwestern willow flycatcher <i>Empidonax traillii extimus</i>	Endangered	Thickets, scrubby and brushy areas, open second growth, and riparian woodland.	No – No suitable habitat.
Brown Pelican <i>Pelecanus occidentalis</i>	Endangered	Usually found along coastal regions. Inland they use lakes and rivers with islands and sand bars. Dry habitat is required for roosting. In California, the Salton Sea is used as a roosting area for non-breeding juveniles and sub-adults.	No – No suitable habitat.
Yuma clapper rail <i>Rallus longirostris yumanensis</i>	Endangered	Marshes with stands of cattail and bulrush.	No – No suitable habitat.
California least turn <i>Sterna antillarum browni</i>	Endangered	Sandy beaches close to estuaries, coastal embayments, and river mouths. Known populations occur along the southern coast of California.	No – No suitable habitat.
Least Bell’s vireo <i>Vireo bellii pusillus</i>	Endangered	Dense shrubs and small trees of riparian zones along rivers and streams.	No – No suitable habitat.
REPTILES AND AMPHIBIANS			
Desert tortoise <i>Gopherus agassizii</i>	Threatened	Creosote, cactus, and shadscale scrub habitats and Joshua tree woodlands.	Yes – However, only the Mohave Population is protected.
FISHES			
Desert pupfish <i>Cyprinodon macularius</i>	Endangered	Desert springs, marshes, tributary streams, and slow moving reaches of large rivers. In California, known to have occurred in the San Felipe Creek system and associated San Sebastian Marsh and a few shoreline pools and irrigation drains along the Salton Sea.	No – No suitable habitat.

Table 3-2, continued

Common/Scientific Name	Federal Status	Habitat	Potential to occur within Project Area
Bonytail chub <i>Gila elegans</i>	Endangered	Big or mainstream rivers with warm and turbid pools and eddies. Known to occur in the Colorado River in California, but presently thought to only remain in Lake Mohave along the Arizona and Nevada border.	No – No suitable habitat.
Colorado squawfish <i>Ptychocheilus lucius</i>	Endangered	Rivers with swift flowing, turbid waters that have slow, warm backwaters. Occurs in the Colorado River and Salton Sea in California.	No – No suitable habitat.
Razorback sucker <i>Xyrauchen texanus</i>	Endangered	Backwaters, sloughs, oxbow lakes, and seasonally inundated flood plain. Limited to the mainstream of the Colorado River.	No – No suitable habitat.
MAMMALS			
Peninsular bighorn sheep <i>Ovis canadensis</i>	Endangered	Open lands in desert regions that are rough, rocky, and sparsely vegetated with steep slopes, canyons, and washes. Known populations occur from the northern San Jacinto Mountains southward into the Volcan Tres Virgenes Mountains.	No – No suitable habitat.
Jaguar <i>Panthera onca</i>	Endangered	Lowland wet habitats, typically swampy savannas or tropical rain forests. No known resident population in the U.S.	No – No suitable habitat.
PLANTS			
Peirson’s milk-vetch <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Threatened	Sandy flats or areas of fine, windblown sand.	Yes - Potentially suitable habitat occurs within the project area.

1 **Source:** USFWS 2007b.

2

3 Pierson’s milk vetch (Photograph 3-1) was listed
 4 as Federally threatened on October 6, 1998
 5 without determination of critical habitat (1998 FR
 6 63 (193):53596 – 53615). In 2005 and recent
 7 years, exploration trips to the Yuma, Pinta Sands,
 8 and Mohawk dune systems, including the area
 9 near the collection site in the Yuma Dunes have
 10 been made by the USFWS, individual botanists,
 11 and off road vehicle enthusiasts in an effort to
 12 relocate additional colonies; however, the species
 13 has yet to be confirmed outside of the Borrego



Photograph 3-1: Pierson’s Milk Vetch

© USFWS

1 Valley and Algodones Dunes (Pearce 2005, U.S. Department of Air Force *et al.* 2003).
2 Pierson's milk vetch has the largest seeds of any milk vetch and following germination,
3 the plant is able to emerge from greater depths within the shifting substrate of dune
4 systems. Pedestrian surveys were conducted along the entire California portion of the
5 project corridor during December 2007. Although suitable habitat (i.e., shifting dunes)
6 occurs within the western half of the C-1 segment, milk vetch was not observed during
7 recent (December 2007) surveys.

8
9 3.9.1.2.2 Critical Habitat

10 No Federally designated or proposed critical habitat for any endangered or threatened
11 species occurs within or near the California segment of the project corridor.

12
13 3.9.1.2.3 State

14 The California Department of Fish and Game (CDFG), Habitat Conservation Planning
15 Branch, maintains the California Natural Diversity Data Base (CNDDDB), which is a list of
16 state-protected species. These species are not necessarily the same as those
17 protected under the ESA. A search of the CNDDDB was conducted for Imperial County
18 within a 1-mile radius and four non-Federal species were identified (Figure 3-3); sand
19 food, burrowing owl (*Athene cunicularia hypugea*), Yuma clapper rail (*Rallus longirostris*
20 *yumanensis*), and FTHL could occur near the project area (Table 3-3). Of these, the
21 FTHL was the only species that was observed within the project corridor during the
22 December 2007 surveys. Five bird species listed by California utilize habitats
23 associated with the lower Colorado River, but these habitats occur outside of the project
24 corridor. There is a potential for the isolated wetlands to provide habitat for the
25 California black rail, which is listed as threatened by the state. However, these areas
26 are small and adjacent to urban areas of Andrade, Mexico and, thus, are considered to
27 provide low-suitability for the black rail.

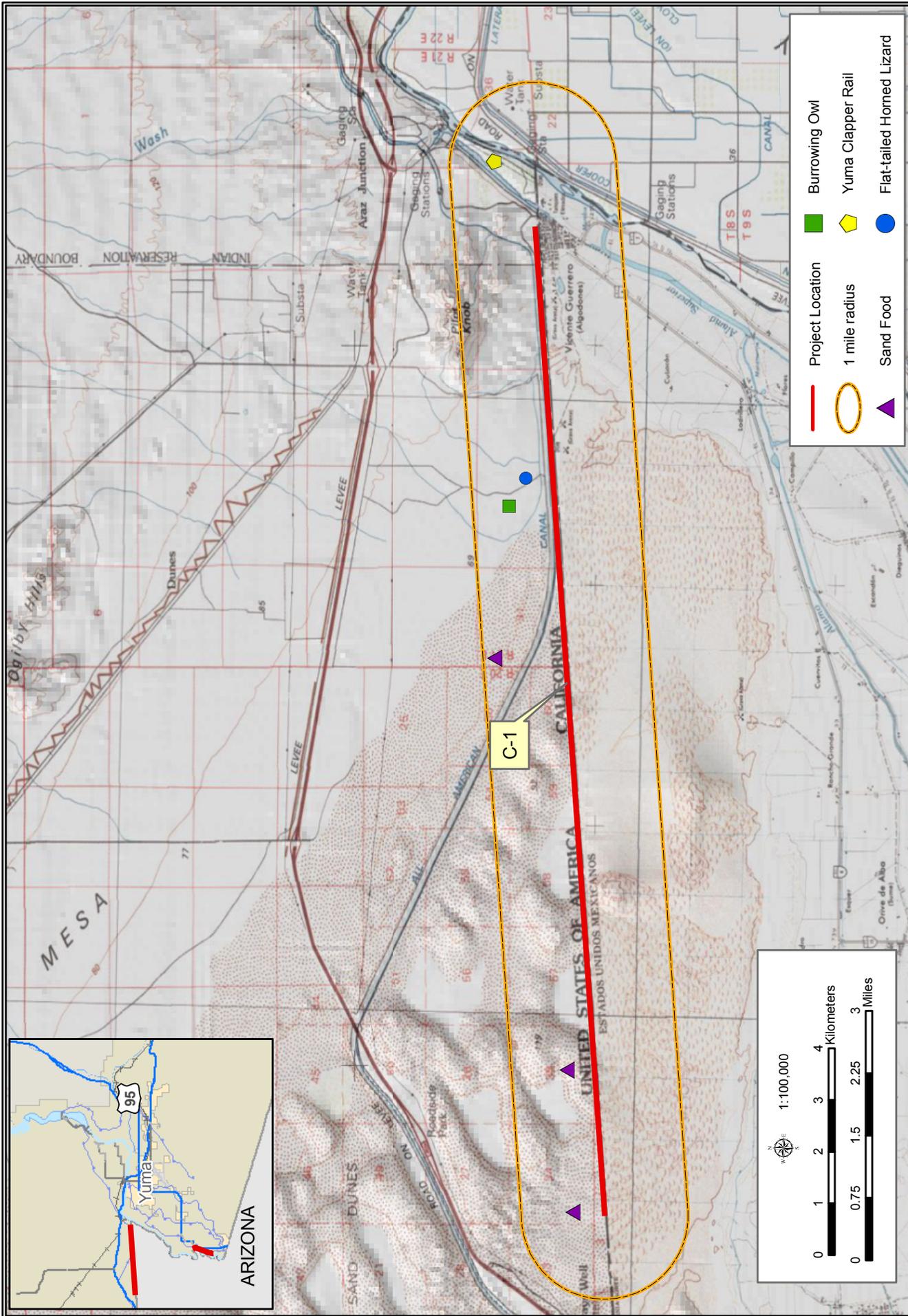


Figure 3-3: CNDBB records within 1-mile of the project location

1 **Table 3-3. California Listed Species Potentially Occurring Within the Proposed**
 2 **Project Area**

Species	State Status	Preferred Habitat
Sand food (<i>Pholisma sonorae</i>)	E	Loose shifting sand of the unstable dunes.
Burrowing owl (<i>Athene cunicularia hypugea</i>)	SSC	Dry open rolling hills, grasslands, deserts and open bare ground with gullies and arroyos with preformed burrows that have been created and vacated by squirrels, prairie dogs, or rabbits.
Yuma clapper rail (<i>Rallus longirostris yumanensis</i>)	T	Shallow, freshwater marshes containing dense stands of cattails and bulrushes.
Flat-tailed horned lizard (<i>Phrynosoma mcallii</i>)	SSC	Typically in sandy desert flatlands with sparse vegetation and low plant species diversity; occasionally in low hills, mud hills, alkali flats, or areas covered with small pebbles or desert pavement; most abundant where surface soils contain some loose or windblown sand, but rarely occurs on dunes.

3 Key: R = rare; E = endangered; T = threatened; SSC = species of special concern
 4 Source: CDFG 2007

5

6 **3.9.2 Environmental Consequences**

7 **3.9.2.1 No Action Alternative**

8 Under the No Action Alternative, there would be no direct impacts to threatened or
 9 endangered species or their habitats. However, the impacts of IA activity on habitats
 10 throughout the area would continue to disturbed threatened or endangered species and
 11 their habitats, especially within the Algodones Dunes Area. The species that would be
 12 most affected by the continued IA activity would include Pierson’s milk vetch, sand food,
 13 burrowing owl, and FTHL north of the C-1 segment and southwestern willow flycatcher
 14 and Yuma clapper rail along the Colorado River riparian area. IA traffic creates trails,
 15 damages vegetation, promotes the dispersal and establishment of invasive species, and
 16 can result in catastrophic wild fires. These actions have an indirect adverse impact on
 17 threatened and endangered species by causing harm to individuals and degrading
 18 habitats occupied by these species.

19

20 **3.9.2.2 Proposed Action Alternative**

21 Under the Proposed Action Alternative, only one Federally protected species, Pierson’s
 22 milk vetch, has the potential to be affected. However, based on recent surveys and the
 23 amount of disturbances that has occurred within this area of the Algodones Dunes, CBP
 24 believes that no specimens of Pierson’s milk vetch occur within the project corridor.

1 Consequently, CBP has determined that the proposed construction of the primary
2 pedestrian fence would have no effect to this species. The remaining Federally
3 protected species occurring in Imperial and Yuma counties occupy habitats not affected
4 by the Proposed Action Alternative or do not occur in the vicinity of the Proposed Action
5 Alternative and, thus, would not be affected.

6
7 A total of eight state-protected species utilize habitats similar to those affected by the
8 Proposed Action Alternative. Due to the general habitat requirements of state protected
9 animal species and the vast amounts of similar habitat found in the region, the minimal
10 loss and degradation resulting from the Proposed Action Alternative would have a
11 negligible effect on these species and their habitat, with the possible exception of the
12 FTHL.

13
14 The following conservation measures have been identified through consultation with the
15 USFWS and would be implemented to the fullest extent applicable and practicable.

- 16
17 1. The FTHL Rangewide Management Strategy contains a comprehensive
18 list of avoidance and minimization measures to limit adverse effects to the
19 lizard (BLM 2003b). These measures will be implemented by CBP for all
20 activities as appropriate.
- 21 2. Barriers and fences along the border will contain spaces to allow for
22 lizards to pass through the structures. The bollard fence design will
23 provide ample spaces.
24

25 **3.9.2.3 Secure Fence Act Alignment Alternative**

26 The potential impacts to listed species under the Secure Fence Act Alignment
27 Alternative would be similar to those discussed for the Proposed Action Alternative.
28 However, the entire footprint that would be required under this alternative has not been
29 surveyed for protected species and specimens of Pierson's milk vetch, Algodones
30 Dunes sunflower, and Wiggin's croton could be located within the 130-foot wide
31 corridor. Additional impacts from the modification of habitat for the FTHL would occur,
32 since this species is known to be present in the project corridor.

1 **3.10 CULTURAL RESOURCES**

2

3 **3.10.1 Affected Environment**

4 The National Historic Preservation Act (NHPA) of 1966 establishes the Federal
5 government's policy to provide leadership in the preservation of historic properties and
6 to administer Federally owned or controlled historic properties in a spirit of stewardship.
7 Section 106 of the NHPA requires CBP to identify and assess the effects of its actions
8 on cultural resources. CBP must consult with appropriate state and local officials,
9 Indian tribes, and members of the public and consider their views and concerns about
10 historic preservation issues when making final project decisions. The historic
11 preservation review process mandated by Section 106 is outlined in regulations issued
12 by the ACHP. Revised regulations, "Protection of Historic Properties" (36 CFR Part
13 800), became effective January 11, 2001.

14

15 **3.10.2 Cultural Overview**

16 The archaeology of southwestern Arizona and southeastern California is relatively
17 complex considering the various geographic and related cultural features. For purposes
18 of clarity, the following text will present a broad overview of the region's prehistory
19 before outlining the various investigations that are important to the understanding of the
20 study area. The cultural chronology of southern Arizona is composed of four periods,
21 namely:

22

Paleoindian	10,000 to 7500 BC
Archaic	7500 to 400 BC
Ceramic	AD 150 to 1500
Historic	AD 1500 to Present

23

24 These periods are commonly subdivided into smaller temporal phases based on
25 particular characteristics of the artifact assemblages. The prehistoric periods and
26 corresponding phases are defined by the presence of particular diagnostic artifacts such
27 as projectile points, certain types of pottery, and occasionally, particular site locations.

1 The Paleoindian people were hunters and gatherers who exploited the late Pleistocene
2 environment of North America, with its more diverse fauna featuring larger, and now
3 extinct, mammal species. According to Cordell (1997), the San Dieguito Complex of the
4 Paleoindian people dated between 9200 and 5500 B.C.

5
6 The Archaic people lived much the same way as the Paleoindians had, but in a
7 essentially modern, post-Pleistocene desert environment. In contrast to the Paleoindian
8 period, there is an increased dependence on plant foods. This period dated from 6300
9 BC to 4300 BC (Cordell 1997).

10
11 The end of the Archaic period has traditionally been associated with the first
12 appearance of ceramic pottery (AD 150 to 1500). Sometimes referred to as the
13 Formative Stage, the Ceramic period is a brief episode between the Archaic and the
14 Historic periods in the southwest that gives way to complex, socially stratified societies.
15 The use of the term Formative may not be appropriate in the project area because, by
16 definition, the stage requires a secure resource base and the social mechanism that is
17 needed to sustain settled communities.

18
19 The final unit, Historic, covers the time for which we have written records, in addition to
20 archeological evidence, beginning at the time of the Spanish penetration of the
21 American southwest in the 16th century (DHS 2004).

22 23 **3.10.3 Previous Investigations**

24 A records search was conducted to identify all previously completed cultural resource
25 projects and previously recorded archeological sites and historic properties that occur
26 within 1 mile of the proposed project corridor. As stated earlier, the Yuma Sector
27 Project APE includes one portion in Imperial County, California (C-1) and the other in
28 Yuma County, Arizona (C-2B). Therefore, records searches had to be obtained from
29 multiple locations. The Southeast Information Center (SEIC) at the Imperial Valley
30 College Desert Museum (IVCDM), Arizona State Museum (ASM) AZSITE database,
31 Arizona and California State Historic Preservation Officers (SHPO), BLM, Reclamation,

1 and Brian F. Smith & Associates (BFSA) archival materials were consulted during the
2 records search.

3
4 For the C-1 portion of the project, the SEIC records search indicated that approximately
5 91 cultural resources have been identified within one half mile of the project APE.
6 Some of these resources have been subsumed under the numerical designation of
7 other site numbers. For example, 11 previously recorded sites are now referred to as
8 IMP-1475 (BFSA 2007).

9
10 The resources include a wide range of site types including isolated prehistoric artifacts,
11 ceramic scatters, lithic scatters, rock alignments (geoglyphs, clearings, and cairns),
12 petroglyphs, trails, historic trash scatters, and mining. Prehistoric activity was focused
13 around the cobble terraces found around the base of Pilot's Knob near the Colorado
14 River. The Colorado River's meanderings have left large cobble terraces exposed
15 providing lithic procurement areas where cobbles could be tested and manufactured
16 into tools. In addition, the thin cobble veneer present at the surface provides a "canvas"
17 with which prehistoric, historic, and modern populations remove cobbles, resulting in a
18 contrast between the light-colored soil and the darker surrounding rocks. These forms
19 of geoglyphs are referred to as "intaglios" and typically consist of representational
20 (animalistic and anthropomorphic), linear, curving, geometrical, and amorphous shapes.
21 None of the prerecorded intaglios were located within the project APE or the additional
22 45-foot wide buffer that was surveyed. However, four resources have been previously
23 recorded within the project APE. Site IMP-34 was recorded as a ceramic scatter by
24 Harner (1952); neither a 2004 archaeological survey nor the current investigation
25 relocated the site. Sites IMP-3448H, 3461H, and 3465H are all recorded historic trails
26 and roads. During the current survey, it was impossible to differentiate between these
27 and the thousands of modern immigrant trails now present in the project area. The
28 SEIC record search also indicated that portions of the Algodones Dunes Recreation
29 Area are labeled as "Moving Picture Desert Studio," where silent to modern movies
30 have been filmed.

31

1 The USGS topographic maps corresponding to the C-1 portion of the APE show Border
2 Monument Nos. 206 through 209. Earlier investigations along the International
3 Boundary indicate they were erected between March and August 1894 under the
4 authority of the Treaties of 1882 and 1889 (BFSA 2007).

5
6 The SEIC records search also indicated that six previously conducted archaeological
7 investigations had been conducted within small portions of the project area. None of
8 these investigations appeared to have recorded any resources within the project APE.

9
10 For the C-2B portion of the project, according to the AZSITE records search,
11 correspondence with the Cocopah Indian Reservation, and Reclamation site records, no
12 resources were previously recorded within the project APE. However, a number of
13 historic features are located adjacent to the C-2B portion. These include the Yuma
14 Valley Levee (AZ X:6:15), the West Main Canal (AZ X:6:63), and a series of checks and
15 concrete bridges. The Yuma Valley Levee extends from the City of Yuma south to the
16 U.S.-Mexico border as does the West Main Canal. Other historic sites within the half-
17 mile buffer generally include historic foundations and structures associated with mid-
18 20th-century historic Gadsden, a small settlement located just east of the project APE
19 (BFSA 2007).

20

21 **3.10.4 Current Investigations**

22 Cultural resources surveys were conducted by BFSA throughout the 14 mile project
23 corridor in December 2007, to identify any cultural resources that would be impacted by
24 construction. The areas were traversed utilizing transects spaced no more than 66 feet
25 apart. The ground surface was examined for any evidence of cultural materials. All
26 cultural remains were recorded and evaluated for their inclusion on the NRHP. Besides
27 the border monuments described above, 11 new sites were identified and recorded in
28 C-1. These consisted of localized lithic scatters with no diagnostic artifacts. There was
29 no evidence of residential occupation of the sites and, thus, the sites are not presently
30 considered to be eligible for listing on the NRHP. There were no new sites found in the

1 C-2B segment (BFSA 2007). The cultural resources report has been submitted to the
2 Arizona and California SHPOs for concurrence.

3

4 **3.10.5 Environmental Consequences**

5 **3.10.5.1 No Action Alternative**

6 Under the No Action Alternative there would be no direct impacts to cultural resources.
7 There is a potential for indirect, negative impacts to cultural resources from continued
8 illegal traffic into the area as well as north of the border region. Without the
9 establishment of the primary pedestrian fence and road construction/improvements,
10 CBP would not be as effective in deterring illegal traffic through the area. As a result
11 there is the potential for indirect, negative impacts to cultural resources due to
12 disturbance from illegal foot and vehicle traffic through the area.

13

14 **3.10.5.2 Proposed Action Alternative**

15 It is anticipated that all infrastructure activities would occur adjacent to the existing
16 historic levee and flood control system within the C-2B segment and within the 60-foot
17 wide Roosevelt Reservation in California. Furthermore, the levee and flood control
18 system is still in use and the levee and levee roads are routinely maintained. No direct
19 impacts to the 91 previously recorded archeological sites are anticipated from
20 construction activities.

21

22 Indirectly, the reduction of illegal traffic through the area would have the potential for
23 long term beneficial impacts to cultural resources found in the region. The reduction of
24 illegal traffic would decrease the amount of foot and vehicle traffic through the area,
25 which has the potential of decreasing impacts to cultural resources.

26

27 Through the Section 106 consultation process, mitigation measures will be identified
28 and implemented, as appropriate, in order to (1) avoid sites to the extent practicable; (2)
29 recover data; and (3) monitor construction activities to ensure potential impacts are
30 minimized. During construction, orange fabric barrier fencing (or similar material) would
31 be positioned on the edges of established roads to ensure that vehicle traffic does not

1 enter into and impact undisturbed or unknown cultural sites. Further, construction
2 workers would be informed to remain on established roads and within the designated
3 construction footprint. Consequently, the Proposed Action would not be expected to
4 cause significant adverse impacts to historical or archeological resources.
5

6 **3.10.5.3 Secure Fence Act Alignment Alternative**

7 Potential effects to cultural resources would be similar to effects anticipated under the
8 Proposed Action Alternative. At a minimum, the same sites that would be affected by
9 the Proposed Action Alternative would be impacted by the Secure Fence Act Alignment
10 Alternative. There is a high probability that other sites are located north of the 60-foot
11 Roosevelt Reservation, which could also be affected. Therefore, the Secure Fence Act
12 Alignment Alternative corridor would need to be surveyed in order to accurately identify
13 and assess potential impacts to cultural resources sites. It is anticipated that the
14 mitigation measures of avoidance, data recovery and testing, and monitoring would be
15 necessary.
16

17 **3.11 AIR QUALITY**

18 **3.11.1 Affected Environment**

19 The U.S. Environmental Protection Agency (USEPA) established National Ambient Air
20 Quality Standards (NAAQS), for specific pollutants determined to be of concern with
21 respect to the health and welfare of the general public. Ambient air quality standards
22 are intended to protect public health and welfare and are classified as either "primary"
23 or "secondary" standards. The major pollutants of concern, or criteria pollutants, are
24 carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃),
25 particulate matter less than 10 microns (PM-10), particulate matter less than 2.5
26 microns (PM-2.5) and lead. NAAQS represent the maximum levels of background
27 pollution that are considered safe, with an adequate margin of safety, to protect the
28 public health and welfare. The NAAQS are included in Table 3-4.
29
30
31

1

Table 3-4. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m ³)*	P
1-hour average	35ppm (40mg/m ³)*	P
Nitrogen Dioxide (NO₂)		
Annual arithmetic mean	0.053ppm (100µm ³)*	P and S
Ozone (O₃)		
8-hour average	0.08ppm (157µg/m ³)*	P and S
1-hour average	0.12ppm (235µg/m ³)*	P and S
Lead (Pb)		
Quarterly average	1.5µg/m ³	P and S
Particulate<10 micrometers (PM-10)		
Annual arithmetic mean	50µg/m ³	P and S
24-hour average	150µg/m ³	P and S
Particulate<2.5 micrometers (PM-2.5)		
Annual arithmetic mean	15µg/m ³	P and S
24-hour average	65µg/m ³	P and S
Sulfur Dioxide (SO₂)		
Annual average mean	0.03ppm (80µg/m ³)	P
24-hour average	0.14ppm (365µg/m ³)	P
3-hour average	0.50ppm (1300µg/m ³)	S

Legend: P= Primary

Source: USEPA 2006.

S= Secondary

ppm = parts per million

mg/m³ = milligrams per cubic meter of air

µg/m³ = micrograms per cubic meter of air

* Parenthetical value is an approximate equivalent concentration

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9

10 Areas that do not meet these NAAQS standards are called non-attainment areas; areas
11 that meet both primary and secondary standards are known as attainment areas. The
12 Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or
13 requirements for conformity determinations for Federal projects. The Federal Conformity
14 Rule was first promulgated in 1993 by the USEPA, following the passage of
15 Amendments to the Clean Air Act in 1990. The rule mandates that a conformity analysis
16 must be performed when a Federal action generates air pollutants in a region that has
17 been designated a non-attainment or maintenance area for one or more NAAQS.

18

19 A conformity analysis is the process used to determine whether a Federal action meets
20 the requirements of the General Conformity Rule. It requires the responsible Federal
21 agency to evaluate the nature of a proposed action and associated air pollutant

1 emissions, calculate emissions as a result of the proposed action, and mitigate
2 emissions if *de minimis* thresholds are exceeded.

3

4 **3.11.1.1 Yuma County**

5 Yuma County is classified, under the NAAQS, as a moderate non-attainment area for
6 PM-10 (EPA 2007). Sources of PM-10 include wind blown dust, emissions from
7 combustion engines, and burning of domestic and agricultural wastes.

8

9 **3.11.1.2 Imperial County**

10 Imperial County is classified as a serious non-attainment area for PM-10 and marginal
11 non-attainment for the 8-hour O₃. Air emissions from internal combustion engines
12 produce volatile organic compounds (VOCs) and nitrogen oxides (NOx) which are
13 precursor molecules that react with oxygen in the atmosphere to create ozone. In
14 Imperial County, combustion by-products are produced by cars, trucks, and industrial
15 operations utilizing petroleum for energy needs.

16

17 **3.11.2 Environmental Consequences**

18 **3.11.2.1 No Action Alternative**

19 The No Action Alternative would not result in any impacts to air quality because there
20 would be no construction activities.

21

22 **3.11.2.2 Proposed Action Alternative**

23 Temporary and minor increases in air pollution would occur from the use of construction
24 equipment (combustible emissions) and disturbing soils (fugitive dust) while
25 constructing the primary pedestrian fence and maintenance/access roads.

26

27 Combustible emission calculations were made for standard construction equipment,
28 such as bulldozers, excavators, pole trucks, front end loaders, backhoes, cranes, and
29 dump trucks, using emission factors from USEPA approved emission model
30 NONROAD6.2. Assumptions were made regarding the type of equipment, duration of
31 the total number of days each piece of equipment would be used, and the number of

1 hours per day each type of equipment would be used. The assumptions, emission
 2 factors, and resulting calculations are presented in Appendix F.

3
 4 Construction workers will temporarily increase the combustible emissions in the air shed
 5 during their commute to and from the project area. Their emissions were calculated in
 6 the air emission analysis (Appendix F) and are included in the total emission estimates
 7 presented later. Fugitive dust calculations were made for disturbing the soils while
 8 excavating, and grading and constructing the roads and structures. Dust can arise from
 9 the mechanical disturbance of surface soils. Fugitive dust emissions were calculated
 10 using emission factors from the (Mid-Atlantic Regional Air Management Association
 11 2006). The total air quality emissions were calculated for the construction activities
 12 occurring in Yuma and Imperial Counties to determine the applicability of the General
 13 Conformity Rule. A summary of the total emissions are presented in Tables 3-5 and 3-
 14 6, respectively.

15
 16 **Table 3-5. Yuma County Total Air Emissions (tons/year) from Construction**
 17 **Activities vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year)
CO	21.32	NA
VOCs	4.04	NA
NOx	29.02	NA
PM-10	9.38	100
PM-2.5	3.76	NA
Sulfur Dioxide (SO ₂)	3.32	NA

18 Source: 40 CFR 51.853 and GSRC model projections

19
 20 **Table 3-6. Imperial County Total Air Emissions (tons/year) from Construction**
 21 **Activities vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year)
CO	45.83	NA
VOCs	10.19	100
NOx	84.57	100
PM-10	16.89	70
PM-2.5	9.01	NA
Sulfur Dioxide (SO ₂)	9.97	NA

22 Source: 40 CFR 51.853 and GSRC model projections

1 Several sources contribute to the total air impacts of the construction project. The air
2 calculations in Tables 3-5 and 3-6 included emissions from:

3
4
5
6
7
8

1. Combustible engines of construction equipment;
2. Construction workers commute to and from work;
3. Supply trucks delivering materials for construction; and
4. Fugitive dust from job site ground disturbances.

9 As can be seen from the tables above, the proposed construction activities do not
10 exceed *de minimis* thresholds and, thus, do not require a Conformity Determination. As
11 there are no violations of air quality standards and no conflicts with the state
12 implementation plans, there would be no significant impacts to air quality from the
13 implementation of the Proposed Action Alternative.

14

15 During the construction of the proposed projects, proper and routine maintenance of all
16 vehicles and other construction equipment would be implemented to ensure that
17 emissions are within the design standards of all construction equipment. Dust
18 suppression methods should be implemented to minimize fugitive dust. In particular,
19 wetting solutions would be applied to construction areas to minimize the emissions of
20 fugitive dust. By using these environmental design measures, air emissions from the
21 Proposed Action would be temporary and should not significantly impair air quality in the
22 region.

23

24 **3.11.2.3 Secure Fence Act Alignment Alternative**

25 The impacts to air quality as a result of the implementation of the Secure Fence Act
26 Alignment Alternative would be similar, but greater, to those described in the Proposed
27 Action Alternative. This alternative, however, involves installing two fences which would
28 require more time, labor, and materials to construct. The project footprint is 2.3 times
29 larger than the Proposed Action Alternative. The increase in construction effort and
30 footprint would result in greater air emissions.

31

32 Air emissions were modeled for the Secure Fence Act Alignment Alternative using
33 emission factors from USEPA approved emission model NONROAD6.2. The

1 assumptions, calculations and results were similar to that used for the Proposed Action
 2 Alternative and are presented in Appendix F. Tables 3-7 and 3-8 present a summary of
 3 the results from model projections for Yuma and Imperial counties, respectively.

4
 5 **Table 3-7. Yuma County Total Air Emissions (tons/year) from Construction**
 6 **Activities vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year)
CO	21.32	NA
VOCs	4.04	NA
NOx	29.02	NA
PM-10	9.38	100
PM-2.5	3.76	NA
Sulfur Dioxide (SO ₂)	3.32	NA

7 Source: 40 CFR 51.853 and GSRC model projections

8
 9 **Table 3-8. Imperial County Total Air Emissions (tons/year) from Construction**
 10 **Activities vs. the *de minimis* Levels**

Pollutant	Total (tons/year)	<i>De minimis</i> Thresholds (tons/year)
CO	45.83	NA
VOCs	10.19	100
NOx	84.57	100
PM-10	28.09	70
PM-2.5	11.25	NA
Sulfur Dioxide (SO ₂)	9.97	NA

11 Source: 40 CFR 51.853 and GSRC model projections

12
 13 As can be seen from the tables above, the construction activities required under the
 14 Secure Fence Act Alignment Alternative would not be expected to exceed *de minimis*
 15 thresholds and, thus, would not be expected to require a Conformity Determination. As
 16 there would be no violations of air quality standards and no conflicts with the state
 17 implementation plans, there would be no significant impacts to air quality from the
 18 implementation of the Secure Fence Act Alignment Alternative.

1 **3.12 NOISE**

2
3 **3.12.1 Affected Environment**

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

10
11 Noise levels occurring at night generally produce a greater annoyance than do the
12 same levels occurring during the day. It is generally agreed that people perceive
13 intrusive noise at night as being 10 dBA (A-weighted decibel is a measure of noise at a
14 given, maximum level or constant state level) louder than the same level of intrusive
15 noise during the day, at least in terms of its potential for causing community annoyance.
16 This perception is largely because background environmental sound levels at night in
17 most areas are also about 10 dBA lower than those during the day.

18
19 Acceptable noise levels have been established by the U.S. Department of Housing and
20 Urban Development (HUD) for construction activities in residential areas:

- 21
- 22 • Acceptable (not exceeding 65 dBA) – The noise exposure may be of some
23 concern but common building construction will make the indoor
24 environment acceptable and the outdoor environment will be reasonably
25 pleasant for recreation and play.
 - 26 • Normally Unacceptable (above 65 but not greater than 75 dBA) – The
27 noise exposure is significantly more severe; barriers may be necessary
28 between the site and prominent noise sources to make the outdoor
29 environment acceptable; special building constructions may be necessary
30 to ensure that people indoors are sufficiently protected from outdoor noise.
 - 31 • Unacceptable (greater than 75 dBA) – The noise exposure at the site is so
32 severe that the construction costs to make the indoor noise environment
33 acceptable may be prohibitive and the outdoor environment would still be
34 unacceptable.
- 35

1 As a general rule of thumb, noise generated by a stationary noise source, or “point
 2 source,” will decrease by approximately 6 dBA over hard surfaces and 9 dBA over soft
 3 surfaces for each doubling of the distance. For example, if a noise source produces a
 4 noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the
 5 noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at
 6 a distance of 200 feet, and so on. To estimate the attenuation of the noise over a given
 7 distance the following relationship is utilized (California Department of Transportation
 8 [Caltrans] 1998):

$$\text{Equation 1: } dBA_2 = dBA_1 - 20 \log (d_2/d_1)$$

9
 10
 11 Where:

12 dBA_2 = dBA at distance 2 from source (predicted)

13 dBA_1 = dBA at distance 1 from source (measured)

14 d_2 = Distance to location 2 from the source

15 d_1 = Distance to location 1 from the source
 16

17 **3.12.2 Affected Environment**

18 **3.12.2.1 Yuma County**

19 The 3-mile project corridor is located in rural areas with the exception of a 4,200 foot
 20 reach adjacent to the town of Gadsden, Arizona. Approximately 33 single family homes
 21 and Gadsden Elementary School are located within 400 feet of the proposed
 22 construction corridor. The closest noise receptor is a single family home located
 23 approximately 160 feet away. The Gadsden Elementary School is 240 feet from the
 24 project corridor.
 25

26 **3.12.2.2 Imperial County**

27 There are no sensitive noise receptors in the U.S. within 500 feet of the 10.3-mile
 28 project corridor. There are neighborhoods south of the border in Mexico near the
 29 eastern end of the project corridor.
 30

1 **3.12.3 Environmental Consequences**

2 **3.12.3.1 No Action Alternative**

3 Under the No Action Alternative, there would be no construction activities and thus, no
4 increases in ambient noise levels.

5

6 **3.12.3.2 Proposed Action Alternative**

7 The majority of the project corridor is located in rural areas with no sensitive noise
8 receptors nearby. The installation of fence is expected to require the use of an auger
9 drill rig (84 dBA) to anchor the structure. Construction equipment has the potential to
10 expose sensitive noise receptors, located in the adjacent neighborhood of Gadsden
11 (e.g., Gadsden Elementary School), to levels that are Normally Unacceptable (above 65
12 but not greater than 75 dBA).

13

14 Table 3-9 describes noise emission levels for construction equipment which range from
15 76 dBA to 84 dBA at a distance of 50 feet (Federal Highway Administration [FHWA]
16 2007). As can be seen from this table, assuming the worst case scenario of 84 dBA,
17 the noise model projected that noises levels of 84 dBA from the auger drill would have
18 to travel 500 feet before they would attenuated to acceptable levels of 65 dBA. To
19 achieve an attenuation of 84 dBA to a normally unacceptable level of 75 dBA, the
20 distance from the noise source to the receptor is 140 feet. The closest sensitive noise
21 receptor is 160 feet from the project corridor. However, it should also be noted that
22 these estimates are based on straight line distances and do not necessarily consider
23 other factors that could enhance attenuation, such as topography, climate, and
24 vegetation. Since another levee system is located between the proposed construction
25 corridor and the residential areas, some additional attenuation would be expected. Still,
26 the noise levels would be temporary and considered minor; ambient noise levels would
27 return after completion of the construction activities.

28

29

30

31

Table 3-9. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances¹

Noise Source	50 feet	100 feet	200 feet	500 feet	1000 feet
Backhoe	78	72	68	58	52
Crane	81	75	69	61	55
Dump truck	76	70	64	56	50
Excavator	81	75	69	61	55
Front end loader	79	73	67	59	53
Concrete mixer truck	79	73	67	59	53
Pneumatic tools	81	75	69	61	55
Auger drill rig	84	78	72	64	58
Bull dozer	82	76	70	62	56
Generator	81	75	69	61	55

Source: FHWA 2007 and GSRC

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

To minimize this impact, it is recommended that construction activities near the elementary school be planned to take place during summer or spring break to the extent practicable. Construction activities adjacent to residential neighborhoods would also be limited to daylight hours during the work week when most of the residents are not at home.

Temporary impacts to wildlife, caused by construction noise, were discussed previously in Section 3.8.2.2.

3.12.3.3 Secure Fence Act Alignment Alternative

Construction noise under the Secure Fence Act Alignment Alternative would be similar to that described for the Proposed Action Alternative; however, due to the larger construction footprint, additional construction equipment, and anticipated longer duration, there is a potential for greater annoyance to residents of Gadsden. Although the unacceptable noise levels would be longer in duration, these would still be temporary, and ambient noise levels would return upon cessation of the construction activities. Therefore, no significant impact relative to noise would be expected.

1 **3.13 ROADWAYS/TRAFFIC**

3 **3.13.1 Affected Environment**

4 **3.13.1.1 Yuma County**

5 The project corridor runs adjacent to U.S. Highway 95 (U.S. 95), which connects the
6 towns of Yuma, Gadsden and San Luis with direct routes and access roads to Interstate
7 8 (I-8) (see Figure 2-2). Traffic flow is usually low on these roads because most
8 vehicular movement in the region occurs on I-8. U.S. 95 interchange at I-8 experiences
9 an average annual daily traffic count (AADT) of 20,900 vehicles (Arizona Department of
10 Transportation 2006).

12 **3.13.1.2 Imperial County**

13 The main transportation route in this area is I-8 and California Highway 186 (Figure 3-
14 4). The latter is a conventional 2-lane highway, which provides access from I-8 to the
15 Andrade POE. I-8, a 4-lane conventional highway, runs parallel with the U.S.-Mexico
16 border. The AADT at the I-8/California Highway 186 interchange is 21,500 vehicles
17 (California Department of Transportation 2006).

19 **3.13.2 Environmental Consequences**

20 **3.13.2.1 Alternative 1: No Action Alternative**

21 Under the No Action Alternative, the proposed fence and access road would not be
22 installed. There would be no impacts to local vehicular traffic because no construction
23 equipment, materials or construction crews would be needed in the area.

25 **3.13.2.2 Alternative 2: Proposed Action Alternative**

26 With the implementation of the Proposed Action Alternative, primary pedestrian fence
27 and border/access roads would be constructed to assist USBP in maintaining a secure
28 border. Construction and staging for the access roads, foundations, and fencing would
29 create a minor short-term impact to roadways and traffic within the project corridor. An
30 increase in vehicular traffic would occur to supply materials and work crews for the
31 entire construction period, which is expected to be less than 1 year. An increase of

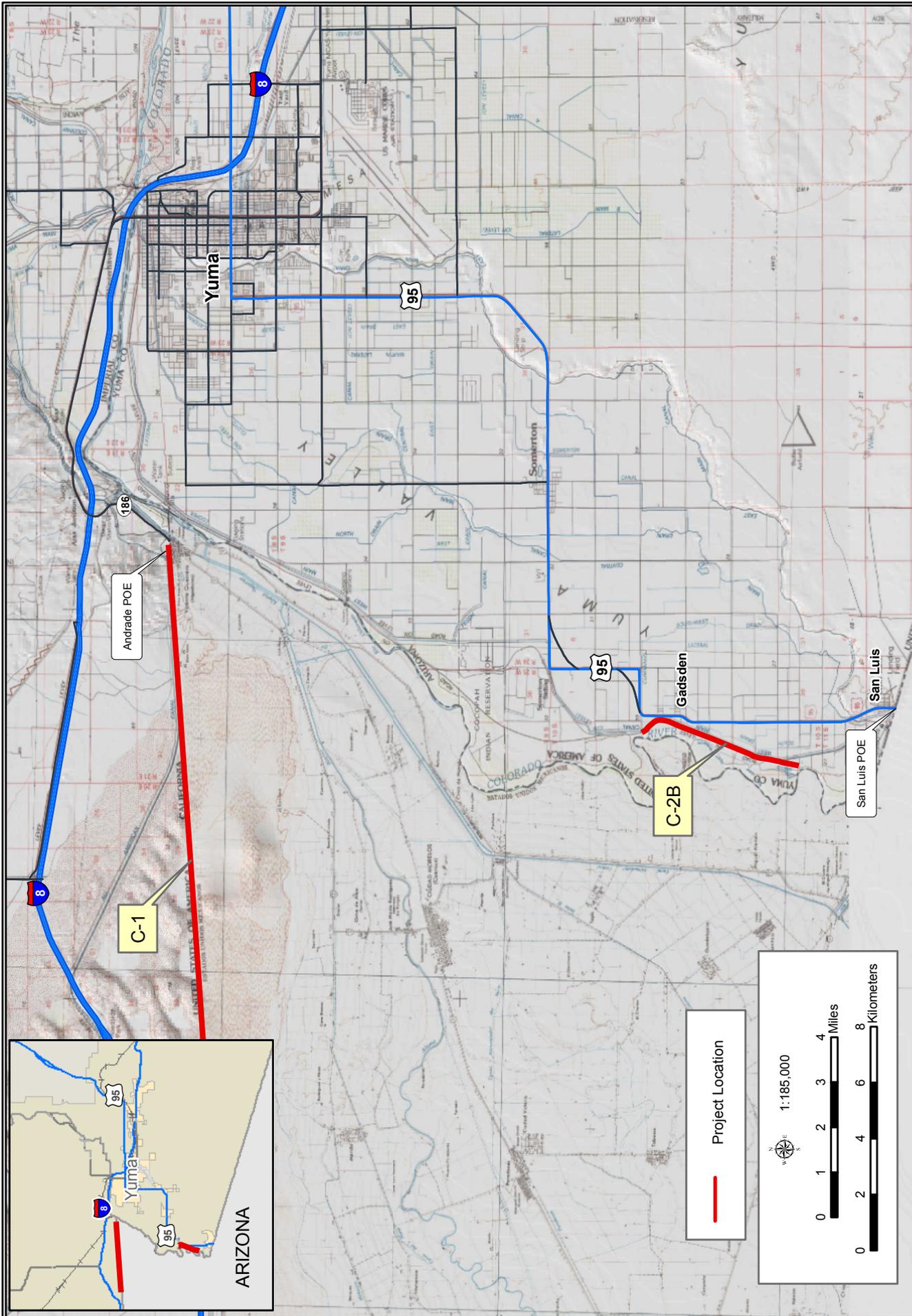


Figure 3-4: Transportation Routes Near the Project Corridors

1 approximately 10 commuter vehicles and three equipment trucks daily would only
2 increase the traffic count by 26 vehicle trips per day. Therefore, the Proposed Action
3 Alternative would have a negligible affect on the AADT at the I-8 and California Highway
4 186 and U.S. 95 interchanges. The initial construction phase would include creation of
5 a staging area for materials and equipment. Once a staging area is established, traffic
6 near the construction sites would increase from the influx of construction workers and
7 new materials. Staging areas would be set off the main roads and would not disrupt the
8 flow of traffic.

9
10 There are no anticipated long term impacts to traffic expected from the installation of the
11 towers. After construction work is completed, occasional maintenance visits to each
12 site would be required. These visits would not increase normal traffic activity locally or
13 regionally.

14 15 **3.13.2.3 Alternative 3: Secure Fence Act Alignment Alternative**

16 Implementation of the Secure Fence Act Alignment Alternative would present an
17 increase of approximately 20 commuter vehicles and six equipment trucks per day and
18 would only increase the traffic count by 42 vehicle trips per day. This increase would
19 have a negligible effect on the AADT at the of I-8 and California Highway 186 and U.S.
20 95 interchanges. The fence and roads would be completed in less than a year and,
21 thus, impacts to vehicular traffic in the region would be considered short term and
22 minor.

23 24 **3.14 AESTHETIC RESOURCES**

25 26 **3.14.1 Affected Environment**

27 Aesthetic resources consist of the natural and man-made landscape features that
28 appear indigenous to the area and give a particular environment its visual
29 characteristics. In Yuma County, Arizona, three populated areas occur within or near
30 the project region; the City of Yuma and the towns of San Luis and Gadsden. The

1 remaining sections of the project area are located within or adjacent to agricultural
2 fields.

3
4 In Imperial County, California, the nearest towns of El Centro and Calexico are more
5 than 30 miles from the project area and the Andrade POE is approximately 0.5 mile to
6 the east. The area south of the border is developed however and detracts from the
7 aesthetic qualities of the project region. The southern end of the Algodones Dunes, a
8 recreational and camping area, intersects the C-1 portion of the project area in Imperial
9 County. Besides the shifting sands of the Algodones Dunes, aesthetic values are
10 currently limited within the project area due to a disturbed landscape from agricultural
11 and urban development.

12
13 **3.14.2 Environmental Consequences**

14 **3.14.2.1 No Action Alternative**

15 Under the No Action Alternative there would be no additional impacts from construction
16 activities or additional infrastructure. Without the additional infrastructure, illegal
17 immigration and traffic through the area would continue at current levels and probably
18 increase. As a result, trash and other items left by IAs would continue to impact the
19 aesthetic value of the area.

20
21 **3.14.2.2 Proposed Action Alternative**

22 Under the Proposed Action Alternative, construction activities and equipment would
23 temporarily impact local aesthetics. New infrastructure constructed in the study area
24 would also have the potential to adversely impact the aesthetic value of the area. This
25 would be particularly true of TI within the Algodones Dunes Area near the western end
26 of the C-1 segment, where there is currently no development. A schematic
27 representation of how the fence would appear within the dune system is presented in
28 Exhibit 1-1. Infrastructure within the C-2B segment along the Salinity Canal would have
29 negligible effects to the area's aesthetics due to extensive development, including
30 agricultural operations that exist in and adjacent to the project corridor.

31

1 Indirect impacts to aesthetics on lands east and north of the project corridor could occur
2 as a result of illegal traffic attempting to avoid the primary pedestrian fence. CBP/USBP
3 cannot predict where the shift in illegal traffic may occur. However, the fence would
4 allow additional flexibility in deploying CBP agents to other areas in an effort to halt or
5 control illegal traffic in areas where there is no primary pedestrian fence.

6
7 **Exhibit 1-1. Schematic Representation of an Installed Fence within the Dune**
8 **System from approximately 0.5 mile**



37
38 An indirect benefit of the Proposed Action Alternative would be the reduction in trash
39 and other refuse left behind by IAs, especially within the Algodones Dunes, and a
40 reduction in trampled vegetation in the agricultural fields to the east of the C-2B project
41 corridor. With the improved infrastructure proposed in this alternative, CBP agents
42 would be better able to apprehend IAs closer to the border, thereby reducing the
43 amount of garbage and impacts to vegetation in the project region.

1 **3.14.2.3 Secure Fence Act Alignment Alternative**

2 Direct impacts to aesthetics would be similar to those caused by the Proposed Action,
3 but to a greater extent due to an increase in the amount of construction activity and the
4 presence of a 2-tiered fence system. The potential benefits of the Secure Fence Act
5 Alignment Alternative are similar to those resulting from the Proposed Action.

6
7 **3.15 HAZARDOUS MATERIALS**

8
9 The EPA maintains a list of hazardous waste sites, particularly waste storage/treatment
10 facilities or former industrial manufacturing sites in the U.S. The chemical contaminants
11 released into the environment (air, soil or groundwater) from hazardous waste sites may
12 include heavy metals, organic compounds, solvents and other chemicals. The potential
13 adverse human health impact of hazardous waste sites is a considerable source of
14 concern to the general public, as well as government agencies and health
15 professionals.

16
17 **3.15.1 Affected Environment**

18 **3.15.1.1 Yuma County**

19 Solid and hazardous wastes are regulated in Arizona by a combination of mandated
20 laws promulgated by the Federal, state and regional Councils of Government. A search
21 was conducted on the EPA's Comprehensive Environmental Response, Compensation,
22 and Liability Information System (CERCLIS). CERCLIS contains information on
23 hazardous waste sites, potential hazardous waste sites, and remedial activities,
24 including sites that are on the National Priorities List (NPL) or being considered for the
25 NPL. A search of the CERCLIS database showed no superfund sites near the project
26 corridor (EPA 2007a). A search of the Envirofacts Data Warehouse showed that Quest
27 Aerospace is a hazardous waste handler located approximately 8 miles from the C-2B
28 project corridor (EPA 2007b).

3.15.1.2 Imperial County

A search of the Envirofacts Data Warehouse and CERCLIS were conducted for the C-1 corridor. A search of the CERCLIS database showed no superfund sites near the project corridor (EPA 2007c). Envirofacts Data Warehouse showed one facility that reported toxic releases and handles hazardous wastes: the Sante Fe Pacific Mesquite Mineral Mine, located in Brawley, California (EPA 2007d), approximately 53 miles north of the C-1 project corridor.

Site reconnaissance was conducted according to the American Society for Testing and Materials (ASTM) guidelines (ASTM E1527-05), which defines good commercial and customary practices in the U.S. for conducting a Phase I Environmental Site Assessment (ESA) of a parcel of commercial real estate. ASTM E1527-05 pertains to a range of contaminants within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC 9601) and petroleum products. A portion of the C-1 segment is adjacent to a landfill that is operated in Mexico.

3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

The No Action Alternative would not contribute any hazardous waste or materials to the project areas, as no construction activities would occur.

3.15.2.2 Proposed Action Alternative

The Proposed Action Alternative footprint within the C-2B segment is north of the project corridors described in the December 2004 EA and March 2007 SEA (CBP 2004, 2007) and no *recognized environmental conditions* have been observed or are expected to occur within the project corridor. Additional surveys would be necessary to determine the potential presence or absence of *recognized environmental conditions* in the C-1 segment, especially at the illegal dumping site. Petroleum, oils and lubricants (POL) would be stored at the temporary staging areas in order to maintain and refuel construction equipment. However, these activities would include primary and

1 secondary containment measures. Clean-up materials (e.g., oil mops), in accordance
2 with the project's SPCCP, would also be maintained at the site to allow immediate
3 action in case an accidental spill occurs. Drip pans would be provided for the power
4 generators and other stationary equipment to capture any POL that is accidentally
5 spilled during maintenance activities or leaks from the equipment. A SPCCP would be
6 developed and implemented by the construction contractor to reduce or eliminate
7 potential for accidental spills of hazardous materials.

8
9 Sanitary facilities would be provided during construction activities, and waste products
10 would be collected and disposed of by licensed contractors. No gray water would be
11 discharged to the ground. Disposal contractors would use only established roads to
12 transport equipment and supplies; all waste would be disposed of in strict compliance
13 with Federal, state, and local regulations, in accordance with the contractor's permits.
14 Due to the proper permits being obtained by the licensed contractor tasked to handle
15 any unregulated solid waste, and because all of the unregulated solid waste would be
16 handled in the proper manner, no significant hazard to the public is expected through
17 the transport, use, or disposal of unregulated solid waste.

18
19 **3.15.2.3 Secure Fence Act Alignment Alternative**

20 The impacts relative to hazardous and solid wastes under the Secure Fence Act
21 Alignment Alternative would be similar to the Proposed Action Alternative. However,
22 there would be a greater potential for accidental spills or leaks due to the additional
23 equipment and duration expected to be needed to construct the 2-tiered enforcement
24 zone. In addition, a greater amount of solid waste would be generated by this
25 alternative. Regardless, the SPCCP and other guidelines and regulations relative to
26 managing and disposing of hazardous and solid wastes would be strictly followed; thus,
27 no significant impact would be expected upon implementation of the Secure Fence Act
28 Alignment Alternative.

1 **3.16 SOCIOECONOMICS**

2

3 **3.16.1 Affected Environment**

4 **3.16.1.1 Population**

5 3.16.1.1.1 Yuma County, Arizona

6 The region of influence (ROI) for the proposed fence construction is defined as Yuma
7 County, Arizona, which is part of the Yuma Metropolitan Statistical Area (MSA). Yuma
8 is one of 15 counties in Arizona. Its 2005 population of 181,598 ranked 6th in the state
9 (Bureau of Economic Analysis [BEA] 2007). This is an increase of 28.4 percent over
10 the revised 1995 census population of 131,776. The racial mix of Yuma County is
11 mainly comprised of Caucasians (71.6 percent), followed by people claiming to be some
12 race other than Caucasian, African American, Native American, Asian, Native Hawaiian,
13 or other Pacific Islander (21.5 percent), and people claiming to be two or more races
14 (2.1 percent). The remaining 4.8 percent is split between African Americans, Native
15 Americans, Asians, and Native Hawaiians or other Pacific Islanders. More than half of
16 the total estimated 2006 population (55.9 percent) claim to be of Hispanic origin (U.S.
17 Census Bureau 2006).

18

19 3.16.1.1.2 Imperial County, California

20 The ROI for the proposed fence construction is defined as Imperial County, California,
21 which is part of the El Centro, California Metropolitan Statistical Area (MSA). Imperial
22 County is one of 58 counties in California. Its 2005 population of 155,862 ranked 31st in
23 the state (BEA 2007). This is an increase of 12.1 percent over the revised 1995 census
24 population of 136,986. The racial mix of Imperial County is mainly comprised of
25 Caucasians (73.9 percent), followed by people claiming to be some race other than
26 Caucasian, African American, Native American, Asian, Native Hawaiian, or other Pacific
27 Islander (17.2 percent), and people claiming to be two or more races (2.3 percent). The
28 remaining 6.6 percent is split between African Americans, Native Americans, Asians,
29 and Native Hawaiians or other Pacific Islanders. A large majority of the total estimated
30 2006 population (75.7 percent) claim to be of Hispanic origin (U.S. Census Bureau
31 2006).

1 **3.16.1.2 Employment, Poverty Levels, and Income**

2 3.16.1.2.1 Yuma County, Arizona

3 The total number of jobs in Yuma County in 2005 was 72,746, an increase of 9 percent
4 over the number of jobs in 2001 of 66,505 (BEA 2007). The largest number of people
5 employed in Yuma County in 2005 was in Government or Government Enterprises;
6 followed by Forestry, Fishing, and related activities; State and Local Government; and
7 Retail Trade (BEA 2007). The 2006 estimated average annual unemployment rate for
8 Yuma County was 9.2 percent. This is significantly larger than the estimated 2006
9 annual average unemployment rate for the State of Arizona of 4.9 percent (Arizona
10 Department of Economic Security [ADES] 2007). The 2000 average annual
11 unemployment rate for Yuma County was 5.7 percent, which is slightly lower than the
12 2006 estimated average annual unemployment rate percent for the State of Arizona
13 (ADES 2007).

14
15 In 2005, Yuma County had a Per Capita Personal Income (PCPI) of \$21,005. This PCPI
16 ranked 9th in the state and was 70 percent of the state average, \$30,019, and 61
17 percent of the National average, \$34,471. The 2005 PCPI reflected an increase of 3.7
18 percent from 2004. The 2004-2005 state change was 5.1 percent and the National
19 change was 4.2 percent. In 1995 the PCPI of Yuma County was \$17,029 and ranked 6th
20 in the state. The 1995-2005 average annual growth rate of PCPI was 2.1 percent. The
21 average annual growth rate for the state was 4.2 percent and for the Nation was 4.1
22 percent (BEA 2007).

23
24 Total Personal Income (TPI) of an area is the income that is received by, or on behalf
25 of, all the individuals who live in that area. In 1995, the TPI of Yuma County was \$2.2
26 billion and ranked 4th in the state. In 2005, Yuma County had a TPI of \$3.8 billion which
27 ranked 6th in the state and accounted for 2.1 percent of the state total. The 2005 TPI
28 reflected an increase of 7.2 percent from 2004. The 2004-2005 state change was 8.9
29 percent and the National change was 5.2 percent. The 1995-2005 average annual
30 growth rate of TPI was 5.4 percent. The average annual growth rate for the state was
31 7.3 percent and for the Nation was 5.2 percent (BEA 2007).

1 3.16.1.2.2 Imperial County, California

2 The total number of jobs in Imperial County in 2005 was 57,246, an increase of 7
3 percent over the number of jobs (53,265) in 2001 (BEA 2007). Similar to Yuma County,
4 the largest number of people employed in Imperial County in 2005 was in Government
5 Enterprises; followed by Forestry, Fishing, and related activities; State and Local
6 Government; and Retail Trade (BEA 2007). The 2006 estimated average annual
7 unemployment rate for Imperial County was 8.3 percent. This is slightly larger than the
8 estimated 2006 annual average unemployment rate for the State of California of 6.6
9 percent (BEA 2007). The 2000 average annual unemployment rate for Imperial County
10 was 6.2 percent, which is slightly higher than the 2000 estimated average annual
11 unemployment rate of 4.3 percent for the State of California (BEA 2007).

12
13 In 2005, Imperial County had a PCPI of \$21,899. This PCPI ranked 55th in the state and
14 was 59 percent of the state average (\$36,936) and 64 percent of the National average
15 (\$34,471). The 2005 PCPI reflected an increase of 2.9 percent from 2004. The 2004-
16 2005 state change was 4.4 percent and the National change was 4.2 percent. In 1995
17 the PCPI of Imperial County was \$16,313 and ranked 50th in the state. The 1995-2005
18 average annual growth rate of PCPI was 3.0 percent. The average annual growth rate
19 for the state was 4.3 percent and for the 4.1 percent for the Nation (BEA 2007).

20
21 In 2005, Imperial County had a TPI of \$3.4 billion, which ranked 34th in the state and
22 accounted for 0.3 percent of the state total. In 1995 the TPI of Imperial County was
23 \$2.2 billion and ranked 33rd in the state. The 2005 TPI reflected an increase of 5.4
24 percent from 1995. The 2004-2005 state change was 5.3 percent and the National
25 change was 5.2 percent. The 1995-2005 average annual growth rate of TPI was 4.3
26 percent. The average annual growth rate for the state was 5.7 percent and 5.2 percent
27 for the Nation (BEA 2007).

1 **3.16.2 Environmental Consequences**

2 **3.16.2.1 No Action Alternative**

3 Socioeconomics in the area would generally remain unchanged under the No Action
4 Alternative. Limited control of the border and access along the border would impede
5 USBP response, which, in turn, would not enhance apprehension capabilities. The No
6 Action Alternative would not provide additional protection from illegal foot and vehicle
7 traffic, or reduce crime. As illegal activity continues, adverse impacts to the
8 socioeconomic conditions within the ROI would be expected to continue or perhaps
9 increase.

10
11 **3.16.2.2 Proposed Action Alternative**

12 No significant effects, direct or indirect, would occur to population or employment,
13 because of implementation of the Proposed Alternative. The total cost of this project is
14 not known at this stage of the planning process, but the amount that would be spent in
15 the local area can be assumed to be between 15 and 30 percent of the total project
16 cost. These expenditures are subject to economic multiplier effects, which would have
17 overall beneficial, temporary impacts to the ROI.

18
19 The Yuma County community would benefit from effective enforcement operations
20 across the project area. Overall, implementation of this alternative would be expected
21 to reduce adverse impacts that currently exist on local law enforcement and the
22 emergency response community. The Proposed Action Alternative would provide
23 additional protection from illegal vehicle and foot traffic, lower crime, and potentially
24 improve the quality of life along the border.

25
26 As IAs move laterally along the border in an attempt to circumvent the proposed
27 infrastructure, the possibility exists that recreational areas (i.e., Algodones Dunes) could
28 be impacted. In addition, IA fatalities could also potentially occur in the remote areas
29 west of the C-1 project corridor. The magnitude of impacts associated with this possible
30 relocation is not known at this time due to the unpredictable nature of IA activity.
31 However, the proposed primary pedestrian fence would allow additional flexibility in

1 deploying USBP agents to other areas in an effort to halt/control illegal traffic in areas
2 where there is no TI. Beneficial impacts are also expected to occur to recreational
3 opportunities such as Algodones Dunes through the construction of the proposed
4 primary pedestrian fence. The presence of the proposed infrastructure at Algodones
5 Dunes would serve as a deterrent to IAs, thus, creating a safer environment for people
6 who recreate within the dune area.

7 8 **3.16.2.3 Secure Fence Act Alignment Alternative**

9 Socioeconomic impacts as a result of the implementation of this alternative would be
10 similar to those discussed for Proposed Action Alternative, but at a slightly higher
11 magnitude. The increase in magnitude would be due to the additional construction
12 materials, equipment, fuels, and duration that would be expected to be required to
13 construct the 2-tiered fence system.

14 15 **3.17 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

16 17 **3.17.1 Affected Environment**

18 EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-
19 Income Populations) was signed in February 1994. This order was intended to direct
20 Federal agencies "...to make achieving environmental justice part of its mission by
21 identifying and addressing... disproportionately high and adverse human health or
22 environmental effects of its programs, policies, and activities on minority populations
23 and low-income populations in the [U.S.]..." To comply with the E.O., minority and
24 poverty status in the vicinity of the project was examined to determine if any minority
25 and/or low-income communities would potentially be disproportionately affected by
26 implementation of the Preferred Action and other alternatives. Both low-income and
27 minority populations are prevalent within the ROI.

28
29 E.O. 13045 requires each Federal Agency "to identify and assess environmental health
30 risks and safety risks that may disproportionately affect children; and ensure that its
31 policies, programs, activities, and standards address disproportionate risks to children

1 that result from environmental health risks or safety risks.” This E.O. was prompted by
2 the recognition that children, still undergoing physiological growth and development, are
3 more sensitive to adverse environmental health and safety risks than adults.
4

5 **3.17.2 Environmental Consequences**

6 **3.17.2.1 No Action Alternative**

7 Since there would be no additional construction associated with the No Action
8 Alternative, environmental justice and protection of children issues would be non-
9 existent.
10

11 **3.17.2.2 Proposed Action Alternative**

12 The majority of the population in the ROI (about 56 percent in Yuma County and 76
13 percent in Imperial County) claim to be of Hispanic origin. The average PCPI of the
14 families within the counties along the border is below the state and National PCPI
15 averages. However, no displacement of residential or commercial structures or areas is
16 anticipated as a result of this project and no significant adverse impacts have been
17 identified, which could result from implementation of the Proposed Action Alternative.
18 The project would beneficially affect the entire ROI regardless of race and/or income
19 level, by reducing crime in areas where the infrastructure is installed. Therefore, this
20 project would not conflict with the intent of E.O. 12898.
21

22 All construction activities would be separated from residential areas by distance (i.e.,
23 200 feet from sensitive receptors in Gadsden), other physical barriers (e.g., Salinity
24 Canal) or by safety construction fences; thus, it is highly unlikely that children would be
25 present within construction zones. Therefore, the actions proposed in this SEA would
26 not result in disproportionately high or adverse environmental health or safety impacts
27 to children. To the contrary, the Proposed Action Alternative would increase the safety
28 of children by decreasing crime and IA traffic in the area.
29

1 **3.17.2.3 Secure Fence Act Alignment Alternative**

- 2 The impacts relative to EO 12898 and EO 13045 are the same for the Secure Fence
3 Act Alignment Alternative as that described for the Proposed Action Alternative.

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SECTION 4.0
CUMULATIVE EFFECTS



1 **4.0 CUMULATIVE EFFECTS**

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

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

25
26 With continued funding and implementation of the CBP/USBP’s environmental
27 conservation measures, including environmental education and training of its agents,
28 use of biological and archeological monitors, wildlife water systems, and restoration
29 activities, adverse impacts due to future and on-going projects would be avoided or
30 minimized. However, recent, on-going and reasonably foreseeable proposed projects
31 would result in cumulative impacts. In particular, the Secure Fence Act, as mentioned

1 previously, authorized the construction of approximately 700 miles of primary fence
2 along the southwestern border. Within the next 2 years, 225 miles of these 700 miles
3 are scheduled to be completed. The first 75 miles of fence construction was
4 constructed in areas that have already been developed (e.g., currently contains PVB or
5 temporary vehicle barrier), and thus, little or no additional environmental impact was
6 identified. The remaining 150 miles of the first 225 miles of fence construction would
7 generally occur in more remote areas and would inevitably result in cumulative impacts.

8
9 **Other CBP/USBP Operations**

10 **Past Actions.** Past actions are those within the project region that have occurred prior
11 to the development of this EA. The effects of these past actions are generally described
12 in Section 3.0. as part of the existing conditions.

13
14 **Present Actions.** Present actions include current or funded construction projects,
15 USBP or other agency operations in close proximity to the proposed fence locations,
16 and current resource management programs and land use activities within the
17 cumulative effects analysis areas. Ongoing actions considered in the cumulative effects
18 analysis include:

- 19
20 • **SBI Projects.** Other SBI initiatives includes enhanced staffing, enhanced
21 detention and removal, enhanced border security technology, increased
22 tactical infrastructure, and increased worksite enforcement. It is the goal
23 of SBI to have operational control of both the northern and southern
24 borders within 5 years. SBI is currently constructing a 36 miles of primary
25 pedestrian fence along the U.S.-Mexico border within the BMGR and 6
26 miles west of the BMGR (122 acres). It is anticipated this project will be
27 completed in FY 2008.
- 28 • **CBP Enforcement Zone.** CBP is currently constructing a 9-mile
29 enforcement zone near San Luis, Arizona (20 acres). The enforcement
30 zone includes primary and second fence, all-weather road, safety fence,
31 and permanent lighting. The enforcement zone should be completed in
32 FY 2008.

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

4
5 SBI Projects:

- 6
7 • SBI net Towers. SBI is planning to construct approximately 25 towers and
8 make improvements to 19 towers in Yuma and Imperial counties in FY
9 2008.

10
11 CBP Projects:

- 12
13 • USBP Facilities. CBP is also planning to construct a new USBP station in
14 Wellton, Arizona (50 acres).
- 15 • Vehicle Fence. CBP is planning to construct approximately 24 miles (43
16 acres) of vehicle fence parallel to the Colorado River in Yuma County. It is
17 anticipated that construction would begin in FY 2008.
- 18 • Primary Pedestrian Fence. CBP is planning to construct primary pedestrian
19 fence within the USBP El Centro Sector. This fence would start near the
20 western end of the C-1 segment of the current project corridor and extend
21 westward in six different segments that total 44.6 miles.
- 22 • Vegetation Clearing along the Colorado River. USBP is cooperating with
23 BLM and the Cocopah and Quechan Indian nations to remove exotic plants
24 and trees along the Colorado River. The entire area to be cleared is
25 approximately 3,000 acres and current plans are to replant the area with
26 native vegetation.
- 27 • Lighting Projects. USBP plans to install permanent lights along the
28 international border within Imperial County and other areas within Yuma
29 County where the need for additional security is identified.

30
31 **Other Agency/Organizations Projects**

32 ADOT planned improvements for Yuma County through 2009 are:

- 33
34 • State Road (SR) 8: Construction of a rest area and road rehabilitation
35 using asphaltic rubber/cement.
- 36 • SR 85: Chip Seal the surface of the highway.
- 37 • SR 95: Construction of a passing lane and road rehabilitation using
38 asphaltic rubber/cement (Arizona Department of Transportation 2004).

- Area Surface Highway. Construct 23 miles of new roadway from the proposed commercial POE near San Luis to I-8 east of Yuma (Yuma Metropolitan Planning Organization 2004);

Yuma County Department of Public Works planned improvements for Yuma County through 2009 are:

- County-wide general road maintenance
- Crack sealing at Mesa del Sol
- County-wide dust control
- Overlay projects at Quartz, Ruby, Marble, Sapphire and Emerald (Yuma)
- Chip Seal projects in the Mohawk Valley Area (Yuma County Department of Public Works 2004).

Caltrans' plans for the next 5 years include:

There are no CalTrans projects proposed near the project corridor (CalTrans 2007). In the report *SR-186 Transportation Concept Report* (Caltrans 1999) California Highway 186 was slated to be constructed into a 4-lane conventional highway. However, the 2007 Imperial County Long Range Transportation Plan Update noted that California Highway 186 is scheduled to be widened to a 4-lane conventional highway or interchange improvements will be constructed in the long term, beyond year 2022 (Imperial Valley Association of Governments 2007).

The Lower Colorado River Drop 2 Storage Reservoir is proposed by Reclamation and the IID to provide additional water supply storage. This project is approximately 30 miles east of the city of El Centro and includes a 450-acre reservoir located on a 615-acre site. Administrative and office buildings as well as mechanical equipment necessary for operations of the reservoir would be located on the 615-acre site. In addition to the reservoir, this project also includes 6.5 miles of new canal to connect the Coachella Valley Canal to the reservoir and from the reservoir to the All-American Canal. The total acreage expected to be impacted from this proposed project is 967 acres (CBP 2007).

1 **Other Foreseeable Projects**

2 The following is a list of projects other agencies or organizations are conducting or
3 planning within the ROI.

- 4
5 • The Barry M. Goldwater Range (BMGR) currently has numerous projects
6 that are in the planning stages including conservation activities, new
7 facilities and enhanced training opportunities.
- 8 • USFWS released the comprehensive conservation plan and EIS for the
9 Cabeza Prieta National Wildlife Refuge (CPNWR) in August 2006.
- 10 • A new commercial POE is being proposed by the Greater Yuma Port
11 Authority approximately 6 miles east of the current San Luis POE and
12 would be approximately 339 acres in size. This POE would be located on
13 lands owned by the GYPA and would be used by the CBP and other
14 agencies, but would be constructed by the Port Authority (Reclamation
15 2000).
- 16 • U.S. Air Force and U.S. Marine Corps (USMC) have released a Final EIS
17 for the implementation of an Integrated Natural Resource Management
18 Plan (INRMP) for the BMGR (U.S. Department of Air Force, Navy, and
19 Interior 2006). The INRMP would be produced following the completion of
20 the environmental analysis. The INRMP, if implemented, could also
21 change the areas available for certain USBP operations/activities.
- 22 • Western Area Power Administration (WAPA) is currently proposing to
23 build a 500-kilovolt transmission system within the U.S. that would total
24 approximately 25 miles; 20 miles from the international border to their Gila
25 Substation and 5 miles from the Gila Substation to a North Gila
26 Substation. The proposed project would originate in Mexico, cross the
27 international border then parallel the BMGR western boundary. If
28 implemented this proposal could impact FTHL habitat; however, at this
29 time not enough information is available to analyze potential impacts.
30 WAPA filed a Notice of Intent to prepare an EIS in 2006.
- 31 • Arizona Clean Fuel Yuma, Limited Liability Company is currently planning
32 on installing a refinery near Wellton as well as constructing a pipeline
33 across the BMGR. The location of the pipeline is not known at this time.
34 The refinery would encompass a 1,400-acre site near I-8 south of Wellton,
35 Arizona.
- 36 • The development of 100,000 acres of fallow agricultural land at Paloma
37 Ranch west of Gila Bend, Arizona is currently being planned. This
38 development would consist of residential or light and heavy industrial uses
39

1 **4.1 LAND USE**

2
3 A significant impact would occur if any action is inconsistent with adopted land use
4 plans or action that would substantially alter those resources required for, supporting or
5 benefiting the current use. The Proposed Action would only permanently affect about
6 22 acres that are under Reclamation management and 78 acres of lands within the
7 Roosevelt Reservation. Reclamation would still be capable of managing the Salinity
8 Canal and levees and the Roosevelt Reservation is set-aside for border enforcement;
9 thus, no significant direct or cumulative effect to the region's land use would occur. The
10 other projects identified above would also occur primarily within developed lands and
11 along existing ROWs. Some agricultural lands could be converted, especially for
12 private housing developments or commercial enterprises. However, given the vast
13 amount of agricultural lands in either county, this conversion would not be expected to
14 result in significant cumulative impacts to the region's land uses.

15
16 **4.2 SOILS**

17
18 A significant impact would occur if the action exacerbates or promotes long term
19 erosion, if the soils are inappropriate for the proposed construction and would create a
20 risk to life or property, or if there would be a substantial reduction in agricultural
21 production or loss of prime farmland soils. The Proposed Action Alternative and other
22 USBP actions have not substantially reduced prime farmland soils or agricultural
23 production. Although the Proposed Action Alternative would alter approximately 102
24 acres of land, these soils are within Reclamation's ROW and currently not in agricultural
25 production (except for some minor encroachments). Pre- and post-construction
26 SWPPP measures would be implemented to control erosion. No inappropriate soil
27 types are located in the project corridor that would present a safety risk. A minor impact
28 of 102 acres to regionally abundant and disturbed soils, when combined with past and
29 proposed projects in the region, would not be considered a significant cumulative
30 adverse impact.

1 **4.3 VEGETATION**

2
3 The significance threshold for biological resources would include a substantial reduction
4 in ecological processes, communities, or populations that would threaten the long term
5 viability of a species or result in the substantial loss of a sensitive community that could
6 not be off-set or otherwise compensated. Since no extensive vegetation communities
7 occur within the project corridor, there would be no significant direct or cumulative
8 adverse impact to vegetation communities if the Proposed Action Alternative were
9 implemented. Other USBP projects, including the vegetation clearing and additional
10 lighting, would result in cumulative adverse impacts.

11
12 **4.4 WILDLIFE**

13
14 Since no additional vegetation communities would be impacted under the Proposed
15 Action Alternative, insignificant cumulative impacts to wildlife populations would be
16 expected. However, cumulative impacts due to fragmentation of habitat would be
17 considered moderate to substantial since nearly all of the border within Yuma and
18 Imperial County would have physical barriers installed once all proposed and planned
19 projects are completed. Many segments of these barriers would be vehicle fence rather
20 than primary pedestrian fence. In addition, even future primary pedestrian fence that is
21 constructed within arroyos or washes would be designed and constructed to allow
22 conveyance of flood flows, which would require some small gaps in the fence panels.
23 Thus, there would still be opportunities for transboundary migration. Due to the vast
24 amount of similar habitat contained within and surrounding the project corridor, the
25 juxtaposition of the project corridor with other disturbed and developed areas, and the
26 fact that there will be gaps in the barriers, the long term viability of species and
27 communities in the project region would not be threatened. In addition, prior to
28 construction, site surveys for migratory species and appropriate mitigation measures
29 would be implemented. This loss, when combined with other ground disturbing or
30 development projects in the project region, would not result in significant cumulative
31 negative impacts on the region's biological resources.

1 **4.5 SENSITIVE, UNIQUE, AND AESTHETIC RESOURCES**

2

3 Actions that cause the permanent loss of the characteristics that make an area visually

4 unique or sensitive would be considered to cause a significant impact. No major

5 impacts to visual resources would occur from implementing the Proposed Action

6 Alternative, due in part to the surrounding development, agricultural operations, illegal

7 trails and trash, and the existing border TI. Lighting projects and vegetation

8 management projects could have substantial cumulative impacts, depending upon the

9 extent, final designs, and temporal relationship with the Proposed Action Alternative.

10 Construction and maintenance of the proposed primary pedestrian fence, however,

11 when considered with existing and proposed developments in the surrounding area,

12 would not result in a significant cumulative negative impact on the visual quality of the

13 region. Areas north of the border would experience beneficial, indirect cumulative

14 effects through the reduction of trash, soil erosion, and wildfires produced by IAs.

15

16 **4.6 AIR QUALITY**

17

18 Impacts to air quality would be considered significant if the action results in a violation of

19 air quality standards, obstructs implementation of an air quality plan, or exposes

20 sensitive receptors to substantial pollutant concentrations. The emissions generated

21 during and after the construction of the primary pedestrian fence would be short-term

22 and minor. Although maintenance of the fence and construction/access road would

23 result in cumulative impacts to the region’s airshed, these impacts would not be

24 considered significant, even when combined with the other proposed developments in

25 the border region. BMPs designed to reduce fugitive dust have been and will continue

26 to be standard operation procedure for USBP construction projects. Deterrence of and

27 improved response time to IAs created by the construction of the fence and road would

28 reduce off-road enforcement actions that are currently required by USBP agents.

1 **4.7 WATER RESOURCES**

2
3 The significance threshold for water resources includes any action that substantially
4 depletes ground water supplies or interferes with groundwater recharge, substantially
5 alters drainage patterns, or results in the loss of WUS that cannot be compensated. No
6 significant impacts to water resources would occur as a result of the construction and
7 maintenance of the proposed primary pedestrian fence. No impacts to WUS would be
8 expected as no WUS were reported within the project corridor. The required SWPPP
9 measures would reduce erosion and sedimentation during construction to negligible
10 levels, and would eliminate post-construction erosion and sedimentation from the site.
11 The same measures would be implemented for other construction projects; therefore,
12 cumulative impacts would not be significant.

13
14 **4.8 NOISE**

15
16 Actions would be considered to cause significant impacts if they permanently and
17 substantially increase ambient noise levels over 65 dBA (current ambient conditions).
18 Most of the noise generated by the Proposed Action would occur during construction
19 and, thus, would not contribute to cumulative impacts to ambient noise levels. Routine
20 maintenance of the fence would result in slight temporary increases in noise levels,
21 which would continue to sporadically occur over the long term. Potential sources of
22 noise from other projects are not enough (temporal or spatial) to increase ambient noise
23 levels above the 65 dBA range at the proposed sites. Thus, the noise generated by the
24 construction and maintenance of the primary pedestrian fence, when considered with
25 the other existing and proposed projects in the region, would not be considered as a
26 significant cumulative adverse effect.

27
28 **4.9 CULTURAL RESOURCES**

29
30 The Proposed Action Alternative would result in less than significant effects on the
31 Border Monument sites as long as they are protected and USIBWC is afforded a means

1 to maintain the monuments. The 11 new sites would be mitigated, as appropriate,
2 through the Section 106, process, and would, thus, would not add to cumulative
3 adverse effects. Therefore, this action, when combined with other existing and
4 proposed projects in the region, would not result in significant cumulative impacts to
5 historical properties.

6
7 **4.10 SOCIOECONOMICS**

8
9 Significance threshold for socioeconomic conditions includes displacement or relocation
10 of residences or commercial buildings, increases in long term demands to public
11 services in excess of existing and projected capacities, and disproportionate impacts to
12 minority and low income families. Construction of the proposed primary pedestrian
13 fence would result in temporary, minor and beneficial impacts to the region's economy.
14 No impacts to residential areas, population, or minority or low-income families would
15 occur. These effects, when combined with the other projects currently proposed or on-
16 going within the region, would not be considered as significant cumulative impacts.

17
18 **4.11 HAZARDOUS MATERIALS**

19
20 Significant impacts would occur if an action creates a public hazard; the site is
21 considered a hazardous waste site that poses health risks, or if the action would impair
22 the implementation of an adopted emergency response or evacuation plans. Only minor
23 increases in the use of hazardous substances (e.g., POL) would occur as a result of the
24 construction and maintenance of the proposed primary pedestrian fence. No health or
25 safety risks would be created by the Proposed Action. The effects of the Proposed
26 Action Alternative, when combined with other on-going and proposed projects in the
27 region, would not be considered a significant cumulative effect.

SECTION 5.0
MITIGATION MEASURES



1 **5.0 MITIGATION MEASURES**

2
3 It is CBP's policy to reduce impacts through the sequence of avoidance, minimization,
4 mitigation, and finally, compensation. Mitigation efforts vary and include activities such
5 as restoration of habitat in other areas, acquisition of lands, and implementation of
6 appropriate BMPs. CBP considers it standard operating procedures to coordinate its
7 environmental design measures with the appropriate Federal and state resource
8 agencies, as appropriate.
9

10 This chapter describes those measures that would be implemented to reduce or
11 eliminate potential adverse impacts to the human and natural environment. Many of
12 these measures have been incorporated as standard operating procedures by CBP on
13 past projects. Environmental design measures are presented for each resource
14 category that would be potentially affected. It should be emphasized that these are
15 general mitigation measures. Development of specific mitigation measures would be
16 required for certain activities implemented under the action alternatives. The proposed
17 mitigation measures would be coordinated through the appropriate agencies and land
18 managers or administrators, as required.
19

20 Implementation of the environmental design measures addressed in this section have
21 been carried forward from those addressed in the December 2004 EA (CBP 2004) and
22 subsequently will be committed to in this SEA. Design measures described in this SEA
23 address minimization of potential impacts to a less than significant level for all
24 alternatives as applicable (Proposed Action and Secure Fence Act Alignment
25 Alternative). Implementation of design measures is the responsibility of the CBP, as the
26 Project Proponent. CBP will work closely with the designated USBP Yuma Sector
27 project manager to ensure compliance with the mitigation commitments set forth in this
28 SEA can be achieved, prior to start of any work.
29

1 **5.1 GENERAL CONSTRUCTION ACTIVITIES**

2
3 BMPs will be implemented as standard operating procedures during all construction
4 activities, and would include proper handling, storage, and/or disposal of hazardous
5 and/or regulated materials. To minimize potential impacts from hazardous and
6 regulated materials, all fuels, waste oils and solvents will be collected and stored in
7 tanks or drums within a secondary containment system that consists of an impervious
8 floor and bermed sidewalls capable of containing the volume of the largest container
9 stored therein. The refueling of machinery will be completed following accepted
10 industry guidelines, and all vehicles will have drip pans during storage to contain minor
11 spills and drips. Although it will be unlikely for a major spill to occur, any spill of
12 reportable quantities will be contained immediately within an earthen dike, and the
13 application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb and
14 contain the spill. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material
15 listed in 40 CFR 302 Table 302.4 (included as part of an SPCCP) of a reportable
16 quantity must be cleaned up and reported to the appropriate Federal and state
17 agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4
18 will be included as part of the SPCCP. A SPCCP will be in place prior to the start of
19 construction and all personnel will be briefed on the implementation and responsibilities
20 of this plan.

21
22 All non-recyclable hazardous and regulated wastes will be collected, characterized,
23 labeled, stored, transported, and disposed of as regulated by the EPA and managed by
24 CBP, pursuant to compliance with the Resource Conservation and Recovery Act and
25 other applicable laws and regulations.

26
27 Solid waste receptacles will be maintained at staging areas. Non-hazardous solid
28 waste (trash and waste construction materials) will be collected and deposited in on-site
29 receptacles. Solid waste will be collected and disposed of properly in accordance with
30 the Solid Waste Disposal Act, P.L. 89-272, 79 Stat. 997, as amended by the Resource
31 Conservation and Recovery Act (RCRA), P.L. 94-580, 90 Statute 2795 (1976).

1 In order to ensure that primary pedestrian fence designs do not impede or limit access
2 to existing border monuments for maintenance, all final engineering designs will be
3 submitted to USIBWC for review prior to start of construction activities.

4
5 Once activities in any given construction segment of the project corridor are completed,
6 active measures will be required to ensure the rehabilitation of areas outside of the 60-
7 foot construction area and established staging areas. However, such actions would
8 coincide with mitigation requirements of the other TI construction addressed in the
9 December 2004 EA and March 2007 SEA (CBP 2004, 2007). USBP will coordinate
10 with the appropriate land managers to determine the most suitable and cost effective
11 measures required for successful rehabilitation. As required for successful
12 rehabilitation, USBP would implement all or some of the following measures:

- 13
- 14 • site preparation through ripping and disking to loosen compacted soils;
- 15 • hydro mulch with native grasses and forbs in order to control soil erosion
16 and ensure adequate revegetation;
- 17 • planting of native shrubs as required;
- 18 • temporary irrigation (i.e., truck watering) for seedlings; and
- 19 • periodic monitoring to determine if additional actions are required to
20 ensure that rehabilitated areas remain on a path to recovery.
- 21

22 **5.2 SOILS**

23
24 Proper site specific BMPs are designed and utilized to reduce the impacts of non-point
25 source pollution during construction activities. BMPs include such things as buffers
26 around drainages to reduce the risk of Siltation and proper placement of culverts with
27 energy dissipation. These BMPs will greatly reduce the amount of soil lost to runoff
28 during heavy rain events and ensure the integrity of the construction site. A dual benefit
29 of soil erosion BMPs is that they can also have secondary benefits of reducing impacts
30 to air quality by reducing the amount of fugitive dust.

1 Vehicular traffic associated with construction will remain on established roads to the
2 maximum extent practicable. Areas with highly erodible soils will be given special
3 consideration to ensure incorporation of various and effective compaction techniques,
4 aggregate materials, wetting compounds, and rehabilitated to reduce potential soil
5 erosion. Erosion control measures such as waterbars, gabions, straw bales, and
6 revegetation will be implemented during and after construction activities. Revegetation
7 efforts will be needed to ensure long term recovery of the area and to prevent significant
8 soil erosion problems.

10 **5.3 VEGETATION COMMUNITIES**

11
12 Construction equipment will be cleaned following BMPs described in a SWPPP prior to
13 entering and departing the project corridor to minimize the spread and establishment of
14 non-native invasive plant species.

15
16 To minimize vegetation impacts, designated construction travel corridors will be marked
17 with easily observed removable or biodegradable markers, and travel will be restricted
18 to the project corridor, staging areas and access roads.

20 **5.4 WILDLIFE RESOURCES**

21
22 Environmental design measures which will be considered, especially in areas that
23 support protected species, include coordination with local resource agencies biologists,
24 as deemed necessary and to have qualified biologists to monitor for sensitive species
25 potentially impacted by construction. To ensure that any impacts to less mobile species
26 (e.g., flat-tailed horned lizard) would remain at a less than significant level, CBP will
27 implement the conservation measures identified previously in Section 3.9.2.2.
28 Construction crews will be informed of sensitive resources and the need to avoid
29 impacts to these resources. Once fence post holes or trenches are excavated,
30 construction crews will conduct daily inspections for trapped reptiles under the guidance
31 of qualified biologists, and will continue to do so until the concrete foundations are set.

1 The Migratory Bird Treaty Act (MBTA) requires that Federal agencies coordinate with
2 the USFWS if a construction activity would result in the take of a migratory bird or bird
3 parts. Since avoidance of this season is unlikely (March through September) for this
4 project, surveys for migratory birds would be completed prior to clearing and grubbing
5 activities. Any migratory bird nests that are observed in the project corridor and are
6 active will be flagged and avoided to the extent practicable. If it is determined that
7 construction activities will result in the take of a migratory bird, then coordination with
8 the USFWS and either AGFD or CDFG, and applicable permits will be obtained prior to
9 construction or clearing activities.

10
11 In order to ensure free movement of animals access across the border, primary
12 pedestrian fences would be equipped (to the extent practicable) with reptile and small
13 mammal tunnels or gaps at the base to allow small ground dwelling animals free
14 access. This is of particular importance within the C-1 segment, where FTHLs are
15 known to occur. The bollard style fence that is planned for this segment would, by
16 design, contains 4-5 inch gaps throughout the segment.

17
18 **5.5 WATER RESOURCES**

19
20 The installation of TI would require a SWPPP as part of the NPDES permit process
21 because the area of disturbance exceeds 1 acre. Coordination with the Regulatory
22 Functions Branch of the USACE, Albuquerque District, EPA, the Luna County NRCS,
23 and other appropriate agencies will be completed prior to the initiation of the
24 construction activities to ensure their concurrence that no jurisdictional WUS occurs
25 within the project corridor.

26
27 All engineering designs and subsequent hydrology reports will be reviewed by USIBWC
28 prior to start of construction activities so that the results of construction activities do not
29 increase, concentrate, or relocate overland surface flows into either country.

1 **5.6 AIR QUALITY**

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

7
8 **5.7 AESTHETICS**

9
10 BLM will be afforded the opportunity to provide comments on the design/build and
11 performance specifications of the proposed primary pedestrian fence for consistency
12 with management goals for visual resources on BLM land.

13
14 **5.8 CULTURAL RESOURCES**

15
16 Prior to ground disturbing activities near sites determined to potentially eligible for listing
17 on the NRHP, consultation will be completed with the Arizona and California SHPOs,
18 Reclamation, BLM, and the appropriate Tribal Historic Preservation Officer (THPO).
19 The appropriate mitigation measures will be identified and implemented through the
20 resulting MOU. The preferred mitigation measured will be to (1) avoid sites to the
21 extent practicable; (2) recover data; and (3) monitor construction activities to ensure
22 potential impacts are minimized.

23
24 **5.9 HAZARDOUS MATERIALS**

25
26 To minimize potential impacts from solid and hazardous materials, all fuels, waste oils,
27 and solvents will continue to be collected and stored in tanks or drums within secondary
28 containment system that consist of an impervious floor and bermed sidewalls capable of
29 containing the volume of the largest container stored therein. Refueling of machinery
30 will be allowed only at a properly located and designated fuel truck equipped with a

1 proper spill containment kit. All vehicles will have drip pans during storage to contain
2 minor spills and drips.

3
4 All used oil and solvents will continue to be recycled if possible. All non-recyclable
5 hazardous and regulated wastes will continue to be collected, characterized, labeled,
6 stored, transported, and disposed of in accordance with all Federal, state, and local
7 regulations, including proper waste manifesting procedures. When construction
8 activities are planned adjacent to active agricultural areas, prior coordination will be
9 made with local farmers so that no construction activities are conducted during or
10 immediately after pesticide or herbicide applications.

11

12 **5.10 APPLICABLE ENVIRONMENTAL GUIDANCE, STATUTES, AND**
13 **REGULATIONS**

14
15 Table 5-1 summarizes the pertinent environmental statutes, regulations, permits, as well
16 as compliance requirements that will be adhered prior to, or in conjunction with,
17 implementation of the construction activities.

18

1 **Table 5-1. Summary of Relevant Guidance, Statutes, and Regulations Including**
 2 **Compliance Requirements**

Resource	Pertinent Statute/ Regulation	Agency	Required Permits, License, Compliance, or Review/Status
Land Use	Imperial Sand Dunes Recreation Area Management Plan	BLM	Compliance with land use plans
	Land Manager Charter	BLM	Land Withdrawal application or Land use permit
Soils	Farmland Protection Policy Act of 1981, 7 U.S. Code §4201 <i>et seq.</i> ; 7 CFR 657- 658 Prime and unique farmlands	NRCS	NRCS determination via Form AD-1006
Vegetation and Wildlife Resources	MBTA	USFWS	Compliance by lead agency and consultation to assess impacts and, if necessary, develop mitigation measures
	Arizona Native Plant Law	Arizona Department of Agriculture	Notice of Intent to clear; salvage and relocate listed plant species
	California Endangered Species Act	CDFG	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures
	Endangered Species Act	USFWS	Compliance by lead agency and/or consultation to assess impacts and, if necessary, develop mitigation measures
Cultural	National Historic Preservation Act	SHPO, THPO, BLM	Section 106 consultation/compliance
	Archaeological Resources Protection Act	SHPO, THPO, BLM	Permits to survey and excavate/ remove archeological resources on Federal lands; Native American tribes with interests in resources must be consulted prior to issue of permits
Air	Clean Air Act	EPA	Compliance with National Ambient Air Quality Standards, emission limits, and reduction measures; Conformity to <i>de minimis</i> thresholds
Water	CWA	EPA	Section 402(b) NPDES preparation of SWPPP, General Construction permit and NOI prior to construction activities Section 404/401 DA Permit
	EO 11988 Floodplain Management	Water Resources Council, FEMA, CEQ	Compliance or demonstration of no practicable alternative
	EO 11990 Protection of Wetlands	USACE and USFWS	Compliance

Table 5-1, continued

Resource	Pertinent Statute/ Regulation	Agency	Required Permits, License, Compliance, or Review/Status
	USIBWC Environmental Policy	USIBWC	Ensure compliance with USIBWC Environmental Policy through technical review
Social/ Economic	EO 13045 Protection of Children	EPA	Compliance
	EO 12898 Environmental Justice	EPA	Compliance
Noise	Noise Control Act	EPA	Compliance with surface carrier noise emissions through design measures
Health and Safety	Occupational Health and Safety Act	OSHA	General compliance with guidelines including Material Safety Data Sheets
Waste	Solid Waste Disposal Act	EPA	Compliance by lead agency
	RCRA/ CERCLA	EPA	Ensure compliance/ implementation of a SPCCP
	EO 12780 Sustainability and Greening	EPA	Compliance

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SECTION 6.0
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SECTION 7.0
LIST OF PREPARERS



7.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Supplemental Environmental Assessment.

NAME	AGENCY/ ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Charles McGregor	USACE, Ft. Worth District	Chemistry and Environmental Sciences	17 years geotechnical and environmental related studies	Environmental Manager, ECSO
Nancy Parrish, RPA	USACE, Ft. Worth District	Archeology	15 years Professional Archaeologist/Cultural Resource Manager	Cultural resources review
Roy Dahlstrom	Office of Border Patrol, El Paso Sector	Law Enforcement	11 years Law Enforcement	Technical Review
Suna Adam Knaus	Gulf South Research Corporation	Forestry/Wildlife	18 years natural resources	SEA Technical Review
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	31 years EA/EIS studies	Project Manager Technical Review
Eric Webb, Ph.D.	Gulf South Research Corporation	Ecology/Wetlands	18 years natural resources and NEPA studies	Technical Review
Howard Nass	Gulf South Research Corporation	Ecology / Forestry	16 years natural resources	Technical Review
Stephen Oivanki	Gulf South Research Corporation	Geology	20 years EA and remediation	Geology and soils
Carl Welch	Gulf South Research Corporation	Cultural Resources	7 years Archaeologist/Cultural Resource Manager	Archeology and socioeconomics
Shanna McCarty	Gulf South Research Corporation	Forestry	2 years natural resources	Floodplains, vegetation, T&E species
Steve Kolian	Gulf South Research Corporation	Environmental Science	12 years natural resources	Water resources and air quality
Sharon Newman	Gulf South Research Corporation	GIS/graphics	12 years GIS/graphics experience	GIS/graphics

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APPENDIX A
Correspondence





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

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

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Nuvamsa:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 3 miles to 10.7 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 13.7 miles of tactical infrastructure will be installed within USBP Yuma Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Benjamin H. Nuvamsa

Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,



For R. Janson

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

Enclosure



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

OCT 25 2007

Honorable Ronnie Lupe, Chairman
Attn: Mr. Mark Atalha
White Mountain Apache Tribal Council
202 East Walnut Street
Whiteriver, Arizona 85941

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Lupe:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 3 miles to 10.7 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 13.7 miles of tactical infrastructure will be installed within USBP Yuma Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Ronnie Lupe
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,



For R. Janson

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

Enclosure



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

Ms. Pauline Jose
Quechan Tribe
Fort Yuma-Quechan Tribal Museum
P.O. Box 1899
Yuma, AZ 85366

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. Jose:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Ms. Pauline Jose

Page 2

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Sincerely,



For R. Janson

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

Enclosure



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

OCT 25 2007

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

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. Carlisle:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 3 miles to 10.7 miles in length. A map presenting the proposed project sites is enclosed.

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Honorable Delia Carlisle

Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,


For R. Janson

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

Enclosure



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

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

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Rhodes:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 3 miles to 10.7 miles in length. A map presenting the proposed project sites is enclosed.

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Honorable William Rhodes
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,



For R. Janson

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

Enclosure



U.S. Customs and
Border Protection

OCT 25 2007

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

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. McCormick:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Ms. Jill McCormick
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,



For R. Janson

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

Enclosure



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

OCT 25 2007

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

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. Ramos:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Joni M. Ramos

Page 2

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Sincerely,



For R. Janson

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

Enclosure



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

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

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Norris:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Ned Norris, Jr.
Page 2

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Sincerely,



For R. Janson

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

Enclosure



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

OCT 25 2007

Mr. E. George Ray, Director Museum
Colorado River Indian Tribes Museum
Route 1, Box 23-B
Parker, AZ 85344

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Ray:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Mr. E. George Ray
Page 2

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Sincerely,



For R. Janson

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

Enclosure



U.S. Customs and
Border Protection

Mr. Milford Wayne Donaldson, FAIA
California State Historic Preservation Officer
ATTN: Michael McGuirt
Office of Historic Preservation
1416 9TH Street, Room 1442-7
Sacramento, CA 95814

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Donaldson:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate consultation with your office.

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Mr. Milford Wayne Donaldson
Page 2

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Sincerely,

Handwritten signature of Robert F. Janson in black ink, consisting of a stylized 'RJ' followed by the name 'For R. Janson'.

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

Enclosure



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

OCT 25 2007

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

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. Medley:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate consultation with your office.

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State Historic Preservation Office

Page 2

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Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson" with a stylized flourish.

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

Enclosure



U.S. Customs and
Border Protection

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

OCT 25 2007

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Mr. Nosie:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

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Honorable Wendsler Nosie

Page 2

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Sincerely,



For R. Janson

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

Enclosure



U.S. Customs and
Border Protection

OCT 25 2007

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

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector

Dear Ms. Frias:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing a Supplemental Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 13.7 miles in length within USBP Yuma Sector, Arizona and California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate its consultation process with appropriate federally-recognized tribes who historically used this region and/or continue to use the area.

To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 2 segments along the U.S./Mexico international border. Individual segments would range from approximately 3 miles to 10.7 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 13.7 miles of tactical infrastructure will be installed within USBP Yuma Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Honorable Herminia Frias
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent Javier Tarin USBP Yuma Sector at (928) 341-6500.

Sincerely,



Robert F. Janson

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

Enclosure



United States Department of the Interior



BUREAU OF RECLAMATION
Yuma Area Office
7301 Calle Agua Salada
Yuma, Arizona 85364

IN REPLY REFER TO:

YAO-7200
ENV-6.00

NOV 20 2007

Mr. Charles McGregor
Engineering Construction Support Office
Department of the Army
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, TX 76102-0300

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) Yuma Sector – Cooperating Agency Status

Dear Mr. McGregor:

The Bureau of Reclamation, Yuma Area Office (Reclamation), is pleased to participate as a cooperating agency in the preparation of an EA for CBP, USBP. This EA will address the environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling 13.7 miles in length within USBP Yuma Sector, Arizona and California.

Reclamation has jurisdiction and specific expertise in the proposed project area sufficient for cooperator status per the Council on Environmental Quality (CEQ) regulations (40 C.F.R. §§1501.6 & 1508.5) and CEQ guidance. We understand the proposed construction of a pedestrian fence, access and patrol roads in two segments along the U.S./Mexico International Border could impact Reclamation facilities and/or lands.

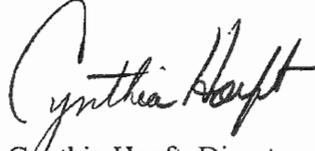
We anticipate that CBP, USBP and the U.S. Army Corps of Engineers (USACE) will continue to coordinate with Reclamation in the evaluation of the project's purpose and need, the design concept report, technical studies, and the National Environmental Policy Act (NEPA) document. We concur with your recommendation of an EA as the appropriate level of NEPA analysis. Reclamation will continue to work with you to provide the necessary right-of-use authorizations.

We look forward to assisting the USACE and USBP with this project. For information regarding right-of-use authorizations across Reclamation lands and facilities, please contact Mr. Steve Cummings of our Lands Team at 928-343-8151. The initial point of contact for NEPA is

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, YUMA AREA OFFICE, 7301 CALLE AGUA SALADA, YUMA, ARIZONA 85364

Mr. Sean Torpey, Group Manager of the Environmental Planning and Compliance Group, at 928-343-8268. We look forward to assisting you in the NEPA process. We would appreciate at least three copies of any draft documents (Draft EAs) you wish reviewed.

Sincerely,

A handwritten signature in black ink, appearing to read "Cynthia Hoeft". The signature is written in a cursive style with a large initial "C" and a horizontal line extending from the end of the name.

Cynthia Hoeft, Director
Resource Management Office

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

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

.....

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

- ▶ There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.
- The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache Tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethnohistorical study and interviews with Apache Elders. The Cultural Resource Director, *Mr. Ramon Riley* would be the contact person at (928) 338-4625 should this become necessary.
- The proposed project is located within or adjacent to a known historic property of cultural concern and/or historical importance to the White Mountain Apache Tribe and will most likely result in adverse affect to said property. Considering this, please refrain from further steps in project planning and/or implementation.
- Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the information regarding the proposed construction, maintenance, and operation of Tactical Infrastructure in segments totaling approximately 13.7 miles within the USBP Yuma Sector, Arizona and California, and we have determined the proposed project *will not have an effect* on the tribe's Traditional Cultural Properties (TCPs) and/or historic properties. The project may proceed with the understanding that all ground disturbance be monitored and in the event subsurface materials or human remains are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

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

Sincerely,

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

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request	1/2/08
Name Of Project	Construction of Fence/Road Along Salinity Canal	Federal Agency Involved	CBP, USACE
Proposed Land Use	CBP, Bureau of Reclamation	County And State	Yuma County, Arizona

PART II (To be completed by NRCS)		Date Request Received By NRCS	1/7/07
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply -- do not complete additional parts of this form).		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Acres Irrigated Average Farm Size 22.0 452 acres
Major Crop(s) Cotton, alfalfa, produce	Farmable Land In Govt. Jurisdiction Acres: 225,185 % 6.4	Amount Of Farmland As Defined in FPPA Acres: 225,185 % 6.4	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS 1/8/08	

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	22.0			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	22.0	0.0	0.0	0.0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	22.0			
B. Total Acres Statewide And Local Important Farmland	-			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	.01%			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	20			

PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	0	96	0	0	0
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PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use	15	15			
2. Perimeter In Nonurban Use	10	15			
3. Percent Of Site Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Distance From Urban Builtup Area	15	0			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	0			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	20			
10. On-Farm Investments	20	20			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	70	0	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	96	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	70	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	166	0	0	0

Site Selected: A	Date Of Selection: 1/16/08	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Reason For Selection: **Only available site meeting purpose and need of project**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. Box 1306

Albuquerque, New Mexico 87103

In Reply Refer To:

FWS/R2/NWRS-SUPV/033896

DEC 11 2007

Mr. Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection
Washington, D.C. 20229

Dear Mr. Janson:

Thank you for your letters, dated October 18, 2007, inviting the U.S. Fish and Wildlife Service (Service) to participate as a cooperating agency in development of Supplemental Environmental Assessments (SEA) for proposed construction, maintenance, and operation of tactical infrastructure related to securing various sectors of the U.S./Mexico international border. The Service is committed to continuing a cooperative relationship with U.S. Customs and Border Protection (CBP) to address issues in the vicinity of the border related to security and conservation of natural resources. Towards that goal, we will continue to cooperatively develop best management practices and standard operating procedures with CBP personnel in the various sectors in an effort to minimize environmental impacts associated with border protection.

We appreciate your invitation for the Service to serve as a cooperating agency in completion of National Environmental Policy Act documentation required to assess environmental concerns related to development and operation of border tactical infrastructure. Even though the Service is a Federal agency with land management responsibilities for natural resources that will be affected by the proposed action, we have concluded given the mission of the Service, that it would not be appropriate to assume the role of a cooperating agency in this planning process.

Sincerely,

Regional Director

**INTERAGENCY AGREEMENT BETWEEN
UNITED STATES CUSTOMS AND BORDER PROTECTION
AND
UNITED STATES SECTION, INTERNATIONAL BOUNDARY
AND WATER COMMISSION**

This Memorandum of Agreement (MOA) is made by and between the United States Section, International Boundary and Water Commission, United States and Mexico, an instrumentality of the United States federal government, hereinafter referred to as the "USIBWC," and United States Customs and Border Protection, a component of the Department of Homeland Security, hereinafter referred to as "CBP." Collectively the USIBWC and CBP are hereinafter referred to as the "PARTIES" to this MOA.

WITNESSETH

WHEREAS, the International Boundary and Water Commission (the "IBWC") is an officially recognized international organization pursuant to Executive Order 12467, and in which the United States participates pursuant to 22 U.S.C. §277 *et seq.*, and *inter alia* the 1889 International Boundary Convention (26 Stat. 1512) and 1944 Treaty between the United States and Mexico for the "Utilization of Waters of the Colorado, Tijuana and Rio Grande Rivers" (59 Stat. 1219) (the "1944 Treaty"); and

WHEREAS, the 1944 Treaty provides that the jurisdiction of the IBWC shall extend to the limitrophe parts of the Rio Grande and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary;

WHEREAS, the President is authorized pursuant to 22 U.S.C. Section §277b to construct any project or works which may be provided for in a treaty entered into with Mexico and to repair, protect, maintain or complete works now existing or now under construction or those that may be constructed under treaty provisions; to construct any project or works designed to facilitate compliance with the provisions of the treaties between the United States and Mexico; and to operate and maintain any project or works so constructed and provide rules and regulations for continuing supervision by the USIBWC; and

WHEREAS, the 1970 Treaty to "Resolve Pending Boundary Differences and Maintain the Rio Grande and Colorado Rivers as the International Boundary" between the United States and Mexico (the "1970 Boundary Treaty") provides that both governments will prohibit the construction of works in the channel of the rivers or within its territory, which, in the judgment of the IBWC, may cause deflection or obstruction of the normal flow of the Rio Grande and Colorado River or of their flood flows; and

WHEREAS, the Secretary of State, acting through the United States Commissioner of the USIBWC, is authorized by 22 U.S.C. §277(a) to conduct technical and other investigations relating to the defining, demarcation, fencing construction, or monumentation of the land and water boundary between the United States and Mexico; to

flood control, water resources, conservation, utilization of water, sanitation and prevention of pollution, channel rectification, stabilization, and other related matters upon the international boundary between the United States and Mexico; and to construct and maintain fences, monuments and other demarcations of the boundary line between the United States and Mexico; and

WHEREAS, CBP, as a component of the Department of Homeland Security, is authorized, pursuant to various provisions, including the Homeland Security Act of 2002, Pub. L. 107-296, codified at 6 U.S.C. §§ 101 *et seq.*, Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, as amended, 8 U.S.C. § 1103 and other Acts amendatory thereof and supplementary thereto, to control and guard the boundaries and borders of the United States against illegal border crossing activities, to install border infrastructure as needed to deter illegal crossings, and obtain operational control of the border; and

WHEREAS, this MOA is intended to provide for the coordination between the PARTIES in areas related to tactical infrastructure installation and utilization of land, floodways, levees and roads along the United States-Mexico border for security and law enforcement operations; and

WHEREAS, the intent of this MOA is to facilitate cooperation between the USIBWC and CBP in carrying out each party's responsibilities along the boundaries of the United States and the United Mexican States;

NOW THEREFORE, the USIBWC and CBP hereto agree as follows:

Article I. USIBWC'S RESPONSIBILITIES

The USIBWC agrees to the following:

1. USIBWC will cooperate with CBP in situations where CBP is conducting infrastructure construction or other security related activities at or near the U.S. – Mexico border that are subject to and/or implicate any provision of any law, treaty, or other legal requirement whose implementation is overseen by, under the jurisdiction of, or enforced by the USIBWC.
2. Subject to the provisions of this MOA, USIBWC will grant and/or facilitate CBP's access to property under USIBWC jurisdiction, including levee gates, areas with restricted access, and/or other areas under USIBWC control, for the purposes of securing the border, to include tracking, surveillance, interdiction, establishment of observation points, and installation of fences, roads, vehicle deterrent barriers, remote detection systems, and other related tactical infrastructure. However, nothing set forth in this MOA should be construed to restrict, limit, or otherwise affect CBP's statutory authority to access lands for the

purposes of patrolling the border and/or otherwise carry out its statutory mission to control and guard the borders and boundaries of the United States.

3. For each geographic region where CBP activities and/or projects are subject to terms and conditions of this MOA, USIBWC will provide a representative, and an alternate representative in case of emergency, authorized to act as the main point of contact regarding any provision in this MOA.
4. USIBWC will review and comment on CBP projects along the U.S.-Mexico border assuring expedited comments and revisions. USIBWC will strive to provide comments within three business days of receipt. Issues and concerns identified by the USIBWC that may delay or impede the construction of CBP infrastructure projects along the border will be elevated as necessary for resolution by leadership of the USIBWC and CBP.
5. In those instances where the USIBWC deems it appropriate to notify the Mexican Section of the IBWC (MXIBWC) of CBP projects or activities, the timing of any such notification will be coordinated between the PARTIES so that the notification takes place at a time that is mutually agreeable to both PARTIES. For construction activities on the western land boundary with no cross-boundary drainage issues, USIBWC will provide the MXIBWC courtesy notification of the proposed project. For construction activities on areas covered by the 1970 Boundary Treaty, USIBWC will endeavor to expedite its coordination with MXIBWC. It is understood that USIBWC cannot guarantee a timeline for MXIBWC response.
6. USIBWC will strive to perform a verification of the boundary in an expedited manner by coordinating with the MXIBWC with the understanding that verification must occur in a timely manner.
7. In the event of emergency flood operations, USIBWC will notify CBP at the earliest possible opportunity that it is invoking its right to remove or order removal of CBP infrastructure in order to gain access to project areas.

Article II. CBP'S RESPONSIBILITIES

CBP agrees to the following:

1. CBP will cooperate with the USIBWC in situations where CBP is conducting infrastructure construction or other security related activities at or near the U.S. – Mexico border that are subject to and/or implicate any provision of any law, treaty, or other legal requirement whose implementation is overseen by, under the jurisdiction of, or enforced by the USIBWC.
2. CBP will consult with the USIBWC as needed before construction of tactical infrastructure at or near the U.S.-Mexico border. CBP will ensure that there is a

three-foot setback from and gated access to the boundary monuments so as to not impede the ability of USIBWC to undertake periodic maintenance of its land-boundary markers or monuments. CBP will not undertake construction of works in the channel of the boundary rivers or within U.S. territory, which in the judgment of the USIBWC would cause deflection or obstruction of the normal flow of the Rio Grande and Colorado River or of their flood flows.

3. CBP will provide USIBWC all necessary information regarding construction and environmental review activities along the U.S.-Mexico border in an expedited manner. CBP will strive to provide comments within three business days of request of information. Issues and concerns identified by CBP that may delay or impede the construction of CBP infrastructure along the border will be elevated for resolution by leadership for the USIBWC and CBP.
4. CBP will endeavor to take the proper measures to protect existing USIBWC levees and hydraulic structures. In the event of any damage incurred as a direct result of CBP infrastructure changes to such levees or structures, CBP will restore the damaged levees and hydraulic structures to a condition equal to that existing before such damage in a timely manner. CBP will ensure that the U.S. Army Corps of Engineers will have documented the conditions of levees and hydraulic structures prior to any CBP construction efforts related to SBI infrastructure.
5. In the event of emergency flood operations, any repair or replacement of CBP infrastructure removed for flood control purposes would be repaired and replaced at CBP expense. USIBWC will assist where possible in the reinstallation of any CBP infrastructure damaged or removed during flood control operations.
6. CBP will consult with the USIBWC to coordinate the location, placement, design and hydraulic impact of fences, roads, vehicle deterrent barriers and, to the extent its location and placement may be disclosed and is not law enforcement sensitive information, other related tactical infrastructures that it plans to install or construct on the US-Mexico border. CBP agrees that the location and placement of such fences, roads, vehicle deterrent barriers, and other related tactical infrastructure will be subject to review and approval by the USIBWC to ensure construction is within U.S. territorial limits and does not obstruct the boundary line of sight between monuments or cause deflection or obstruction of the normal flow of transboundary creeks, arroyos, rivers or their flood flows or impede the operation of IBWC binational projects or activities. CBP will be responsible for ensuring environmental regulatory compliance for CBP infrastructure.
7. CBP will perform the required maintenance to remove accumulated debris from water crossings where CBP infrastructure crosses the path of transboundary flows.

8. CBP will be responsible for any liabilities, costs, claims, or expenses arising out of CBP employees' or contractors' activities along the U.S. – Mexico border that are subject to this MOA. USIBWC will be responsible for any liabilities, claims, costs or expenses arising out of activities undertaken by USIBWC employees or contractors that result in damage to the fences, roads, vehicle deterrent barriers, or other tactical infrastructure that is subject to this MOA. USIBWC will not be responsible for any damage to such fences, roads, vehicle deterrent barriers, or other tactical infrastructure due to flood or force majeure events.
9. CBP will coordinate and not interfere with the USIBWC, its employees, contractors or agents performing work on behalf of the USIBWC.
10. CBP will consult with USIBWC to coordinate the work needed to control the vegetation impeding DHS's ability to conduct border security operations along the U.S.-Mexico border.
11. CBP will provide a representative, and an alternate representative in case of emergency, authorized to act as the main point of contact with regard to any provision in Articles I and II of this MOA in each geographic area where work is to be performed.
12. DHS will respond appropriately to terrorist or criminal attacks and/or threats requiring emergency law enforcement action as a part of its core mission and CBP will coordinate with local law enforcement entities where necessary. When requested, and where operationally feasible, CBP will coordinate a security presence for USIBWC employees and contractors during maintenance activities.
13. CBP will be the sole owner of infrastructure constructed by CBP pursuant to U.S. law. Consequently, CBP, as the executive agent for DHS border infrastructure, will own, operate and fund all maintenance, construction and upgrades necessary to keep said CBP-owned infrastructure operational. This agreement does not effect the allocation of responsibility for the maintenance, operation, and upgrade of infrastructure owned by or under the jurisdiction of the USIBWC which has been coordinated between the PARTIES and memorialized in separate agreement(s) pursuant to Article V, Section 4 of this MOA.

Article III. DURATION AND MODIFICATION OF MOA

This MOA will take effect when signed by the PARTIES hereto and shall remain in effect unless terminated, in writing, by either PARTY after 60 days notice. This MOA may be modified at any time by written agreement of both PARTIES, and does not restrict either PARTY from enforcing any laws within its authority or jurisdiction.

Article IV. INTERAGENCY COMMUNICATIONS

To provide for consistent, recurring, and effective communication between both PARTIES, each PARTY shall immediately designate representatives to serve as the points of contact on all matters relating to this MOA. Each PARTY will advise the other PARTY, in writing, of the names and telephone numbers of the representative designated within 10 calendar days of the MOA's execution.

Article V. MISCELLANEOUS PROVISIONS

1. Nothing in this MOA may be construed to obligate the Parties or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOA obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.
2. This MOA is to be implemented consistent with the statutory and treaty provisions pursuant to which the PARTIES undertake their activities. Nothing in this MOA will be construed as affecting the authority or jurisdiction of either Party in carrying out its responsibilities under applicable statutes or treaties.
3. This document is an intra-governmental agreement among the PARTIES and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOA is not and shall not be construed as a rule or regulation.
4. This MOA will provide the basis for more detailed, project specific agreements between CBP and USIBWC for USIBWC projects along the U.S.-Mexico border. This MOA will not affect existing agreements between CBP and USIBWC for USIBWC projects along the U.S.-Mexico border.
5. In carrying out the provisions of this MOA, the PARTIES shall not release or disclose to any third party, any and all information that is pre-decisional, law enforcement sensitive, classified, or otherwise protected or sensitive information that relates to the construction, alignment, or placement of existing and/or proposed border infrastructure, including observation points, fences, roads, vehicle deterrent barriers, remote detection systems, and other related tactical infrastructure. The PARTIES shall also be prohibited from releasing or disclosing to any third party, any and all information that is pre-decisional, law enforcement sensitive, classified, or otherwise protected or sensitive information concerning existing or proposed border enforcement operations, activities, or constructs. In those instances where the USIBWC deems it appropriate to notify the Mexican Section of the IBWC (MXIBWC) of CBP projects or activities, the USIBWC will consult with CBP regarding the timing of any such notification or coordination with the MXIBWC so that contact with the MXIBWC is initiated at a time that is mutually agreeable to both PARTIES.

6. When appropriate and necessary the PARTIES will enter into specific reimbursable agreements for work performed by one Party on behalf of the other pursuant to the Economy Act, 31 U.S.C. Section 1535.

IN WITNESS WHEREOF, the PARTIES hereto execute this instrument on the date(s) set forth below:

FOR U.S. CUSTOMS AND BORDER PROTECTION

DATE: 1/18/08 W. Ralph Basham
W. Ralph Basham
Commissioner,
U. S. Customs and Border Protection,
Department of Homeland Security

**FOR UNITED STATES SECTION, INTERNATIONAL BOUNDARY AND
WATER
COMMISSION, UNITED STATES AND MEXICO**

DATE: 12/18/07 Carlos Marin
Carlos Marin,
Commissioner,
United States Section,
International Boundary and Water Commission
United States and Mexico

MEMORANDUM OF AGREEMENT
for
Environmental Coordination and Review
Between the Department of the Interior and
U.S. Customs and Border Protection for the
Secure Border Initiative

This Memorandum of Agreement (“MOA”) is entered into by the U.S. Department of the Interior (“DOI”) on behalf of the following DOI bureaus: the National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, and the Bureau of Indian Affairs, (collectively the “DOI Bureaus”), and U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (“DHS”). The DOI and CBP are collectively referred to herein as the “Parties.”

I. Purpose

This MOA is entered into in order to further effectuate the goals, principles, and objectives of the 2006 Memorandum of Understanding between DHS, DOI, and the Department of Agriculture entitled “Cooperative National Security and Counterterrorism Efforts on Federal Lands along the United States’ Borders.” The purpose of this MOA is to formalize the commitment among the Parties to coordinate the review of projects subject to the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq., and Council on Environmental Quality (CEQ) Regulations implementing NEPA, 40 C.F.R. Parts 1500-1508. This agreement will facilitate a coordinated approach that ensures sound decisions based on concurrent and expedited agency reviews. This MOA shall be applicable to CBP projects that are undertaken for the purposes of securing the border, which may include, but are not limited to the construction, maintenance, and operation of borderland security fences, roads, towers, vehicle deterrent fences, remote detection systems, and other related tactical and technological infrastructure.

II. Background

The goal of the Secure Border Initiative is for CBP to obtain operational control of our Nation’s borders consistent with its Homeland Security mission. This will be accomplished in part through the construction, maintenance, and operation of various tactical and technological infrastructure along the United States–Mexico international border, including pedestrian and vehicle fences, roads, lighting systems, communication towers, remote detection systems, and electronic surveillance systems.

DOI has a longstanding responsibility for many cultural and natural resources in our Nation’s borderlands. The value of these interests is manifested to a significant degree in the borderlands and waters administered by DOI Bureaus and in Indian tribal lands. In particular, an array of valuable fish, wildlife, and plant communities coexist with important archaeological sites that collectively contribute to the fabric of the borderlands of the Southwest.

These important resources are being damaged or destroyed by large numbers of cross border violators entering the United States from Mexico. Likewise, Indian communities, visitors to DOI lands, and DOI employees are subject to increased danger to their well being due to the presence of criminal activity.

The need to coordinate the environmental review process for the planning, construction, and operation of borderland security projects is seen as necessary by the Parties to efficiently fulfill the mandates of NEPA.

III. Statutory and Regulatory Authority

WHEREAS, this MOA is entered into under the authority of NEPA , 42 U.S.C. §§ 4321 et seq., and the Council on Environmental Quality (CEQ) regulations implementing NEPA, 40 C.F.R. Parts 1500-1508;

WHEREAS, pursuant to NEPA, 42 U.S.C. § 4331(b), the Federal government shall use all practicable means to improve and coordinate Federal plans, functions, programs, and resources to enhance the quality of the environment;

WHEREAS, regulations implementing NEPA at 40 C.F.R. § 1501.6 emphasize interagency cooperation early in the environmental review process;

WHEREAS, if more than one Federal agency is involved in the same action, 40 C.F.R. § 1501.5 provides for the designation in writing of a lead agency that will supervise the preparation of an environmental impact statement. The other agencies are identified as cooperating agencies;

WHEREAS, pursuant to 40 C.F.R. § 1508.5, an Indian tribe may by agreement with the lead agency become a cooperating agency when the effects are on a reservation;

WHEREAS, consistent with the intent of the CEQ regulations, the Parties may designate a lead agency for all NEPA documents; and

WHEREAS, pursuant to 40 C.F.R. § 1501.6(c), a cooperating agency may, in response to a lead agency's request for assistance in preparing an environmental analysis, defer to the lead agency in preparing such analysis;

NOW, THEREFORE:

IV. Commitment of the Agencies

In the spirit of cooperation and collaboration, and with the mutual understanding that this is a flexible working agreement among the signatory agencies, the Parties hereby commit to the following responsibilities:

- A. To facilitate preparation of NEPA environmental documents, the Parties agree:

1. That CBP will serve as lead agency for all CBP border infrastructure projects (including, but not limited to Secure Border Initiative tactical and technological infrastructure) and will coordinate all NEPA document development and review;
2. That the DOI Bureaus involved in any CBP projects, by and through their respective offices and branches, and, where appropriate, Indian tribes, will serve as cooperating agencies for such projects, or in appropriate cases as joint lead; and
3. That each party will assume responsibility for its own actions.

B. As lead agency, CBP agrees:

1. To provide project information in a timely and thorough manner;
2. To invite cooperating agencies to coordination meetings and joint field reviews; and
3. To provide cooperating agencies an opportunity to comment on draft documents.

C. When serving as a cooperating agency, the DOI Bureaus agree:

1. To promptly provide comments on draft documents and otherwise fulfill the role of a cooperating agency as set forth at 40 C.F.R. Part 1501, in accordance with established Departmental procedures;
2. To provide technical assistance to CBP on tribal and non-tribal environmental and cultural resource issues; and
3. To the degree possible, seek ways to streamline and facilitate the completion of environmental and cultural compliance processes.

V. Miscellaneous Provisions

A. Nothing in this MOA may be construed to obligate the Parties or the United States to any current or future expenditure of funds in advance of availability of appropriations, nor does this MOA obligate the Parties or the United States to spend funds for any particular purpose, even if funds are available.

B. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. § 1535, when one party is to furnish materials or perform work or provide a service on behalf of another party.

C. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOA. This MOA is not intended to change in any way the individual employee status or the liability or responsibility of any party under Federal law.

D. Nothing in this MOA is intended to conflict with current law, regulation, directive, or other governing authority of any party to this MOA. If any term of this MOA is inconsistent with such authority, then that term shall not apply, but the remaining terms and conditions of the MOA shall remain in full force and effect.

E. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person or entity not a signatory hereto. This MOA is not and shall not be construed as a rule or regulation.

F. This MOA may be modified or amended in writing upon the consent of all Parties, and other affected Federal or State agencies may seek to become a party to this MOA.

G. This MOA shall be effective through December 31, 2012, and may be renewed for another five years upon mutual agreement of the Parties. Any party to this MOA may terminate its participation in this MOA upon thirty (30) days written notice to the other Party.

H. This MOA becomes effective upon the date of signature by the last signatory.

VI. Conclusion

In signing this MOA, the undersigned recognize and accept the roles and responsibilities assigned to each party. Each of the Parties agrees to pursue maximum cooperation and communication to secure our Nation's borders and to eliminate the environmental degradation of DOI-administered lands by persons illegally entering the United States.

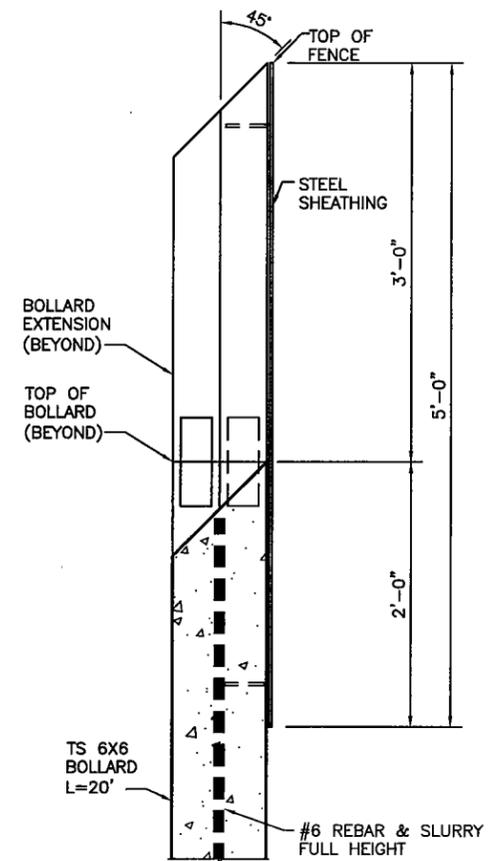
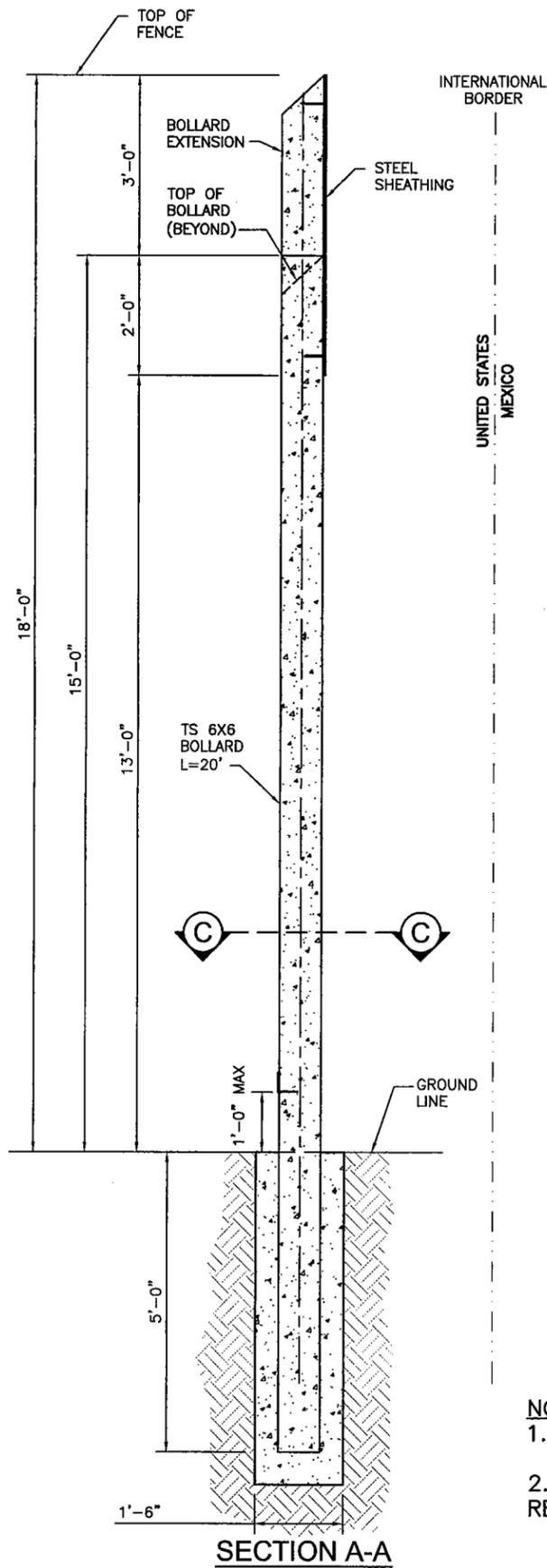
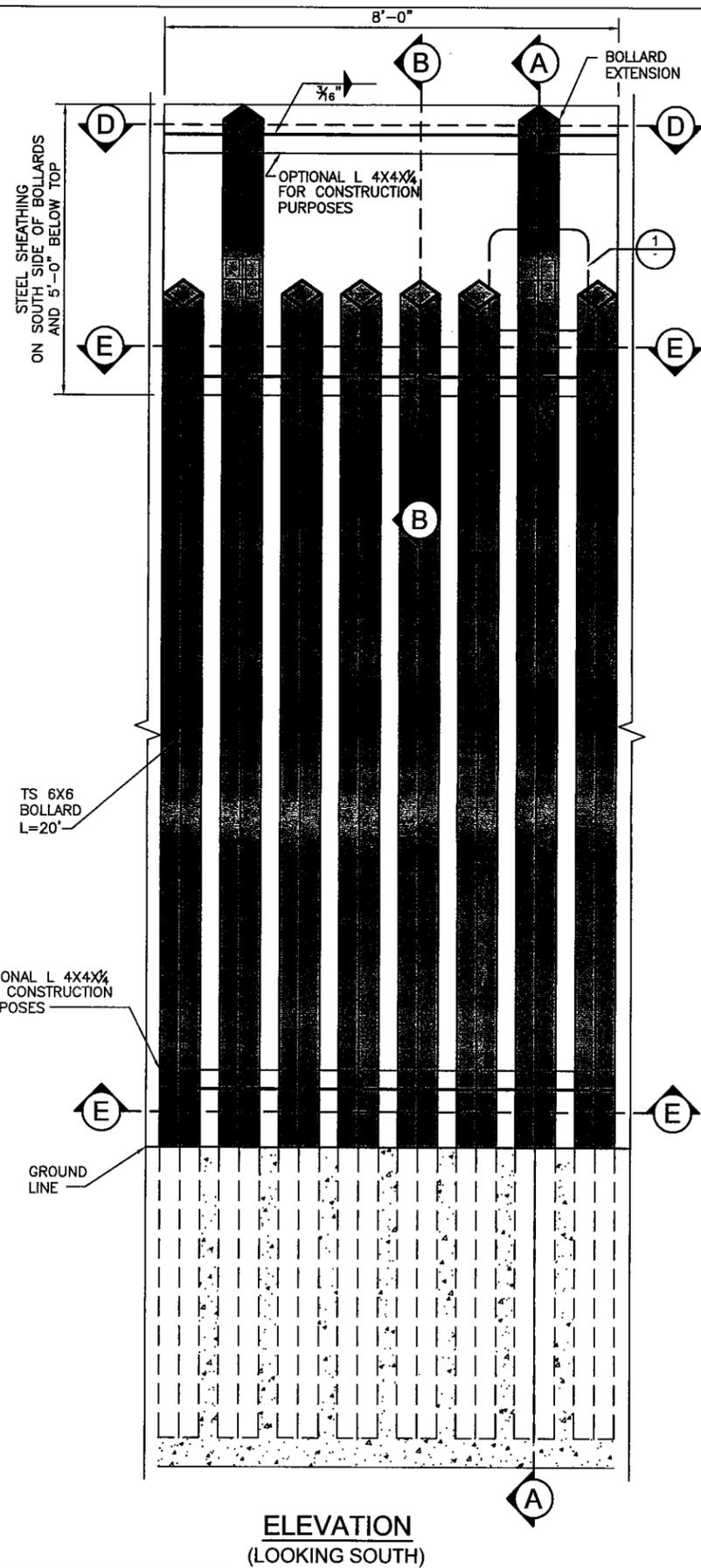
DEPARTMENT OF THE INTERIOR

By: James E. Cason Date: 1/11/08
James E. Cason, Associate Deputy Secretary

U.S. CUSTOMS AND BORDER PROTECTION

By: W. Ralph Basham Date: 1/18/08
W. Ralph Basham, Commissioner

APPENDIX B
Examples of Potential Fence Designs



NOTE:

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



Rev.	Date	By	Check	Drawn	Scale

SCHEMATIC
NOT FOR
CONSTRUCTION



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

**PF225
CONCEPTUAL
FENCE
DESIGNS**

**PERSONNEL -
VEHICLE
TYPE 1**

PV-1

NO.	DATE	DESCRIPTION	BY	APP.

SCHEMATIC
NOT FOR
CONSTRUCTION

Baker
MICHAEL BAKER JR., INC.
2525 NORTH CENTRAL AVENUE
PHOENIX, AZ 85012

Designed by: KAS
Dwn by: KAS/MC
Checked by: JWB
Reviewed by: TQ

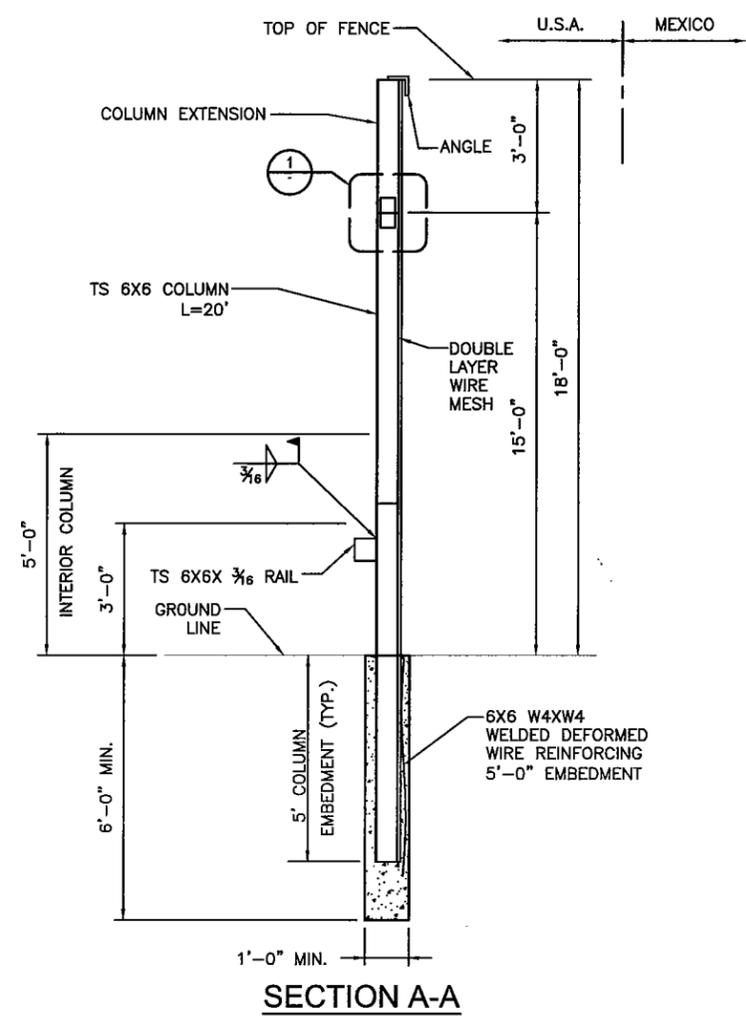
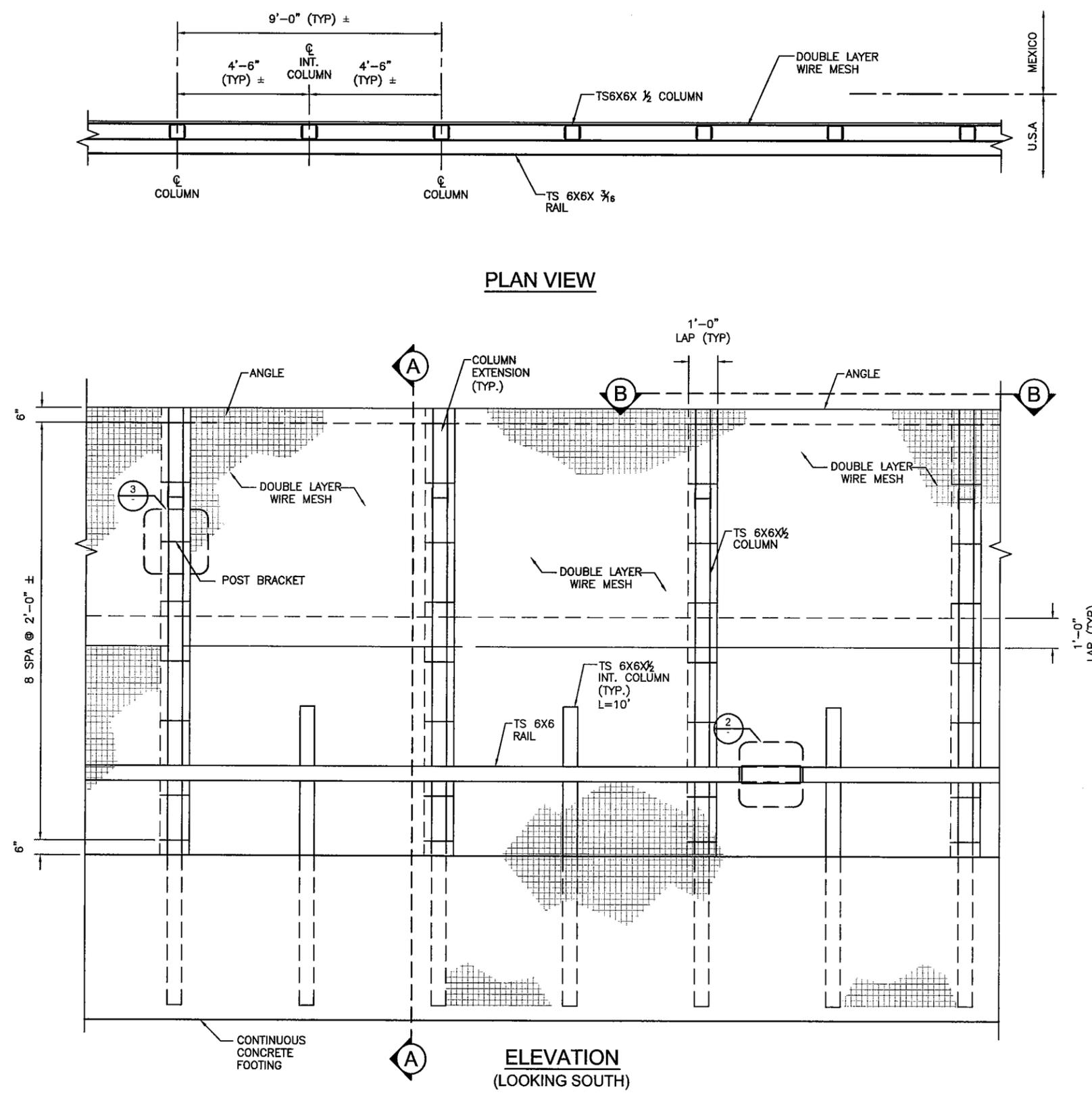
Date: Rev. Date: Rev. Date: Rev. Date: Rev.

Submitted by: Michael Baker Jr., Inc.
Plot date: Baker Project No. 11/18/07 112319

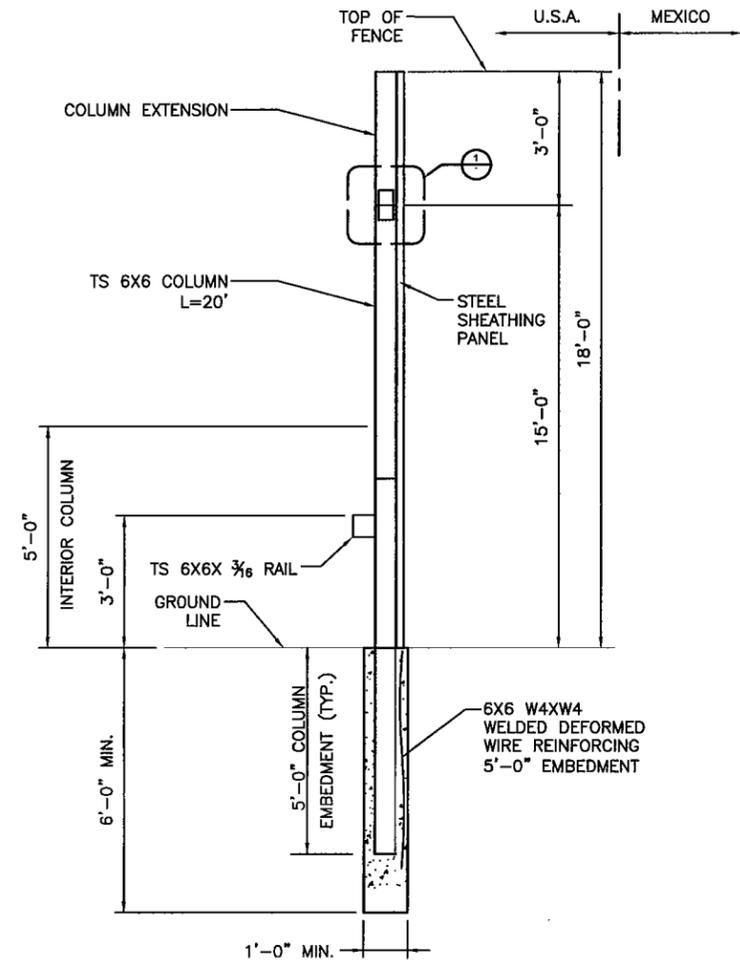
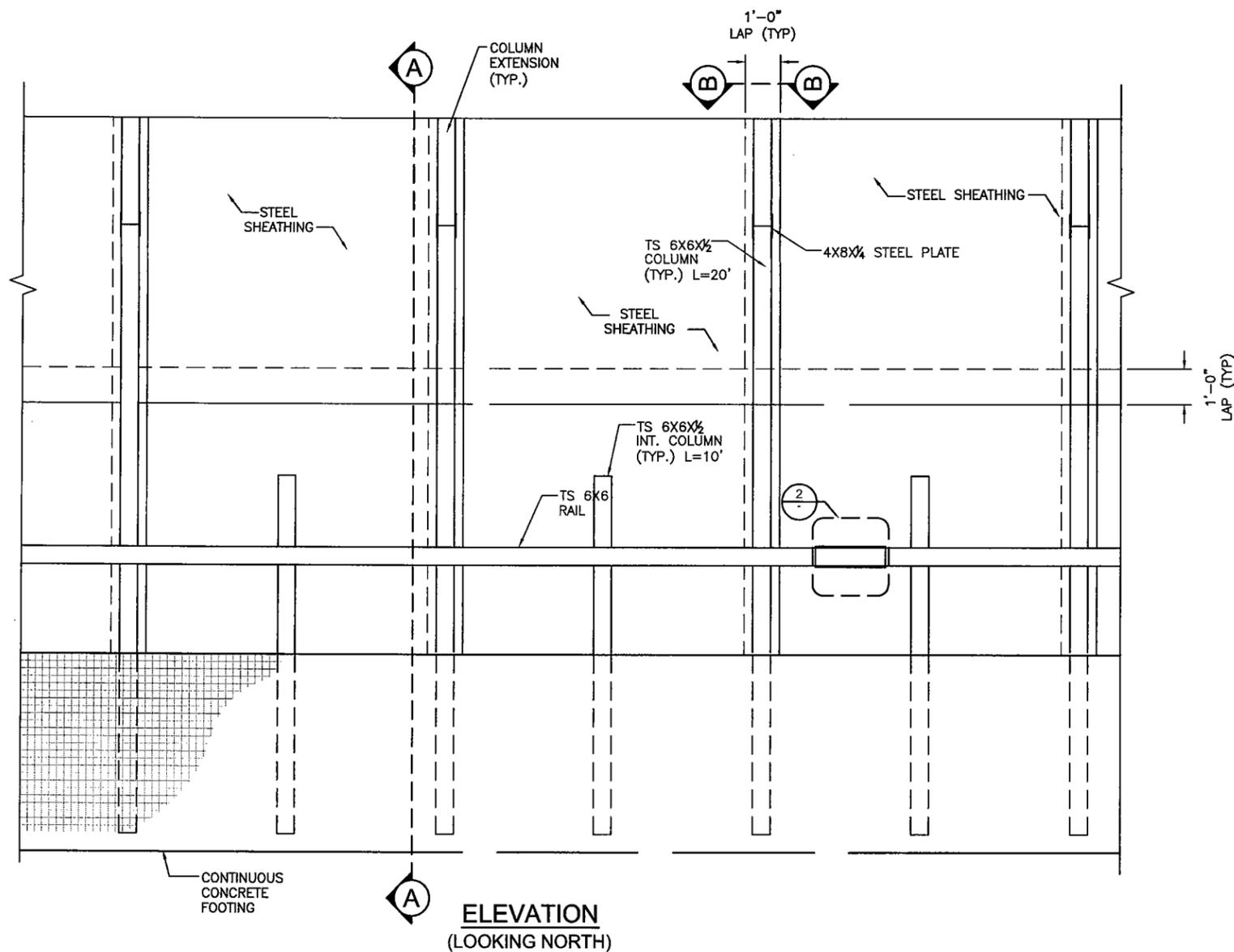
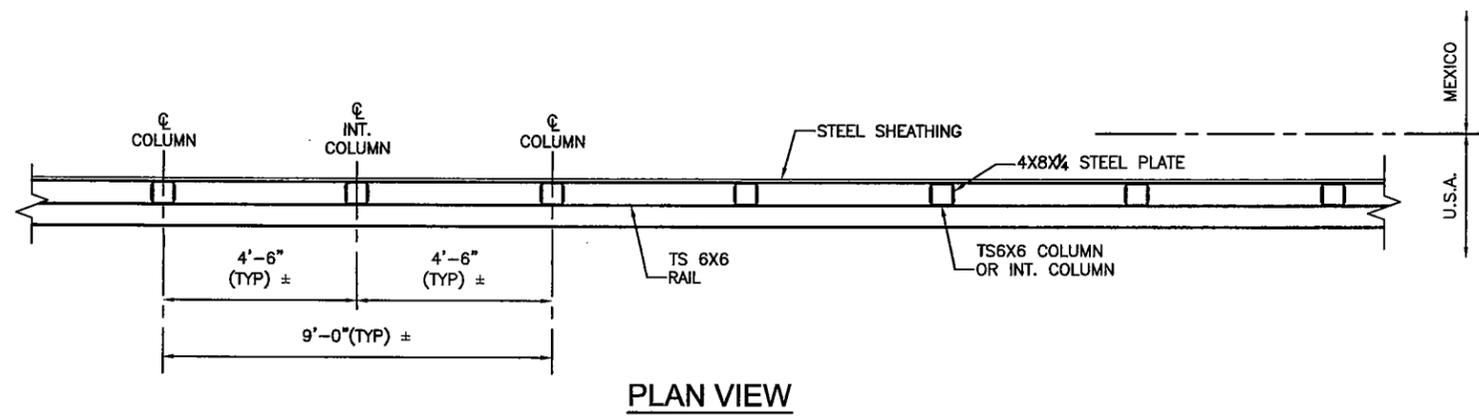
**PF225
CONCEPTUAL
FENCE
DESIGNS**

**PERSONNEL -
VEHICLE
TYPE 2A**

PV-2A



- NOTES:**
1. VALID FOR 90 MPH WIND.
 2. FOUNDATION DETAILS SHOWN REPRESENT MINIMUM DIMENSIONAL REQUIREMENTS AND SHALL BE INCREASED IF NECESSARY BASED ON FOUNDATION DESIGN.



NOTE:

- VALID FOR 90 MPH WIND
- FOUNDATION DETAIL REQUIREMENTS SHOWN REPRESENT MINIMUM DIMENSIONS. FOUNDATION DESIGN REQUIRED BASED ON SITE SPECIFIC SOIL PROPERTIES.



NO.	DESCRIPTION	DATE

SCHEMATIC NOT FOR CONSTRUCTION

Baker
 MICHAEL BAKER JR., INC.
 208 NORTH CENTRAL AVENUE
 PHOENIX, AZ 85012

Designed by:	KAS	Date:	
Checked by:	MC	Submitted by:	Michael Baker Jr., Inc.
Drawn by:	JWB	Plot date:	Baker Project No: 11/18/07 112319
Reviewed by:	TQ		

PF225 CONCEPTUAL FENCE DESIGNS

PERSONNEL - VEHICLE TYPE 2B

PV-2B

Rev.	Date	By	Check	Appr.

SCHEMATIC
NOT FOR
CONSTRUCTION

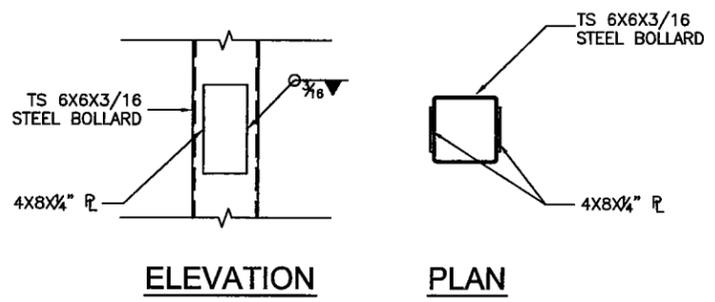
Baker
MICHAEL BAKER JR., INC.
2528 NORTH CENTRAL AVENUE
PHOENIX, AZ 85012

Designed by:	KAS	Checked by:	JWIB	Reviewed by:	TQ
Date:		Submitted by:	Michael Baker Jr., Inc.	Plot date:	11/18/07
				Project No.:	112319

**PF225
CONCEPTUAL
FENCE
DESIGNS**

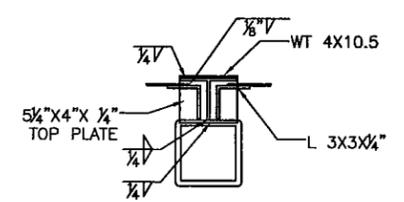
**PERSONNEL -
VEHICLE
TYPE 2B**

PV-2B

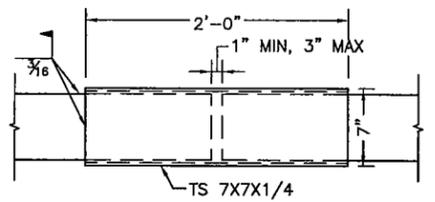


ELEVATION PLAN

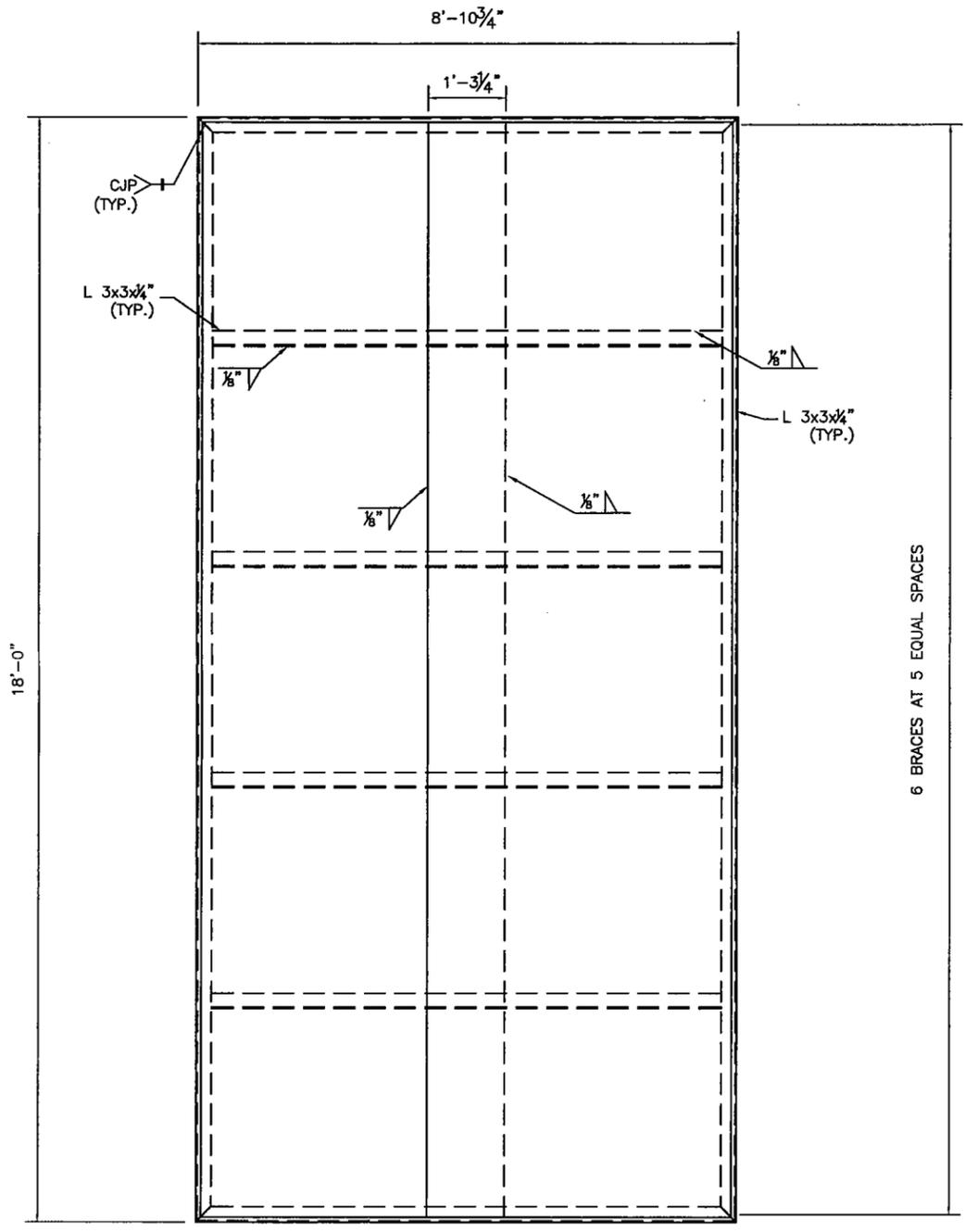
**DETAIL 1
OPTIONAL SPLICE**



SECTION B-B



**DETAIL 2
RAIL SPLICE (36' MAX SPACE)**



STANDARD STEEL SHEATHING PANEL

APPENDIX C
MOU with USDA, DOI, and DHS

**Memorandum of Understanding
Among
U. S. Department of Homeland Security
and
U. S. Department of the Interior
and
U. S. Department of Agriculture
Regarding
Cooperative National Security and Counterterrorism
Efforts on Federal Lands along the United States' Borders**

I. Purpose and Scope

A. This Memorandum of Understanding (MOU) is made and entered into by the Department of Homeland Security (DHS), including and on behalf of its constituent bureau U.S. Customs and Border Protection (CBP) and the CBP Office of Border Patrol (CBP-BP); the Department of the Interior (DOI), including and on behalf of its constituent bureaus, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR); and the Department of Agriculture (USDA), including and on behalf of its constituent agency the U.S. Forest Service (USFS). Throughout this MOU, these three Departments, including their constituent agencies, may be referred to as "the Parties." Any reference to a bureau, agency, or constituent component of a Party shall not be deemed to exclude application to any appropriate bureau or constituent component of that Party. DHS recognizes that the BIA enters into this agreement only on its own behalf and not on behalf of any Indian tribe.

B. The geographic and jurisdictional scope of this MOU is nationwide. The Parties recognize the national security and counterterrorism significance of preventing illegal entry into the United States by cross-border violators (CBVs), including but not limited to the following: drug and human smugglers and smuggling organizations, foreign nationals, and terrorists and terrorist organizations. The Parties further recognize that damage to DOI and USDA-managed lands and natural and cultural resources is often a significant consequence of such illegal entry. The Parties are committed to preventing illegal entry into the United States, protecting Federal lands and natural and cultural resources, and - where possible - preventing adverse impacts associated with illegal entry by CBVs.

C. This MOU is intended to provide consistent goals, principles, and guidance related to border security, such as law enforcement operations; tactical infrastructure installation; utilization of roads; minimization and/or prevention of significant impact on or impairment of natural and cultural resources; implementation of the Wilderness Act, Endangered Species Act, and other related environmental law, regulation, and policy across land management agencies; and provide for coordination and sharing information

on threat assessments and other risks, plans for infrastructure and technology improvements on Federal lands, and operational and law enforcement staffing changes. This MOU provides guidance in the development of individual agreements, where appropriate, between CBP and land management agencies to further the provisions contained herein.

D. This MOU is entered into pursuant to the governing statutory authorities of each of the Parties.

E. The Parties acknowledge that CBP operation and construction within the sixty-foot "Roosevelt Reservation" of May 27, 1907 (along the US-Mexico border) and the sixty-foot "Taft Reservation" of May 3, 1912 (along the US-Canada border) is consistent with the purpose of those reservations and that any CBP activity (including, but not limited to, operations and construction) within the sixty-foot reservations is outside the oversight or control of Federal land managers.

F. This MOU supersedes any conflicting provision of any prior MOU or Memorandum of Agreement between the Parties or their subordinate bureaus or components.

II. Background

A. DHS, through its constituent bureaus (including CBP and its CBP-BP), is statutorily mandated to control and guard the Nation's borders and boundaries, including the entirety of the northern and southern land and water borders of the United States.

B. DOI and USDA, through their constituent bureaus, are statutorily charged as managers of Federal lands throughout the United States, including DOI and USDA lands in the vicinity of international borders that are administered as wilderness areas, conservation areas, national forests, wildlife refuges, units/irrigation projects of the Bureau of Reclamation, and/or units of the national park system. Tribal governments have primary management roles over tribal lands; however, the United States, through the BIA, may also have a stewardship or law enforcement responsibility over these lands. Many of these Federal and tribal lands contain natural and cultural resources that are being degraded by activities related to illegal cross-border movements.

C. The volume of CBVs can and has, in certain areas, overwhelmed the law enforcement and administrative resources of Federal land managers. In order to more effectively protect national security, respond to terrorist threats, safeguard human life, and stop the degradation of the natural and cultural resources on those lands, DOI and USDA land managers will work cooperatively with CBP to benefit from the enforcement presence, terrorist and CBV interdiction, and rescue operations of CBP.

III. Common Findings and Affirmation of the Parties

A. The Parties to this MOU recognize that CBP-BP access to Federal lands can facilitate rescue of CBVs on Federal lands, protect those lands from environmental damage, have a role in protecting the wilderness and cultural values and wildlife resources of these lands, and is necessary for the security of the United States. Accordingly, the Parties understand that CBP-BP, consistent with applicable Federal laws and regulations, may access public lands and waterways, including access for purposes of tracking, surveillance, interdiction, establishment of observation points, and installation of remote detection systems.

B. The Parties recognize that DOI and USDA have responsibility for enforcing Federal laws relating to land management, resource protection, and other such functions on Federal lands under their jurisdiction.

IV. Responsibilities and Terms of Agreement

A. The Parties Agree to the Following Common Goals, Policies, and Principles:

1. The Parties enter into this MOU in a cooperative spirit with the goals of securing the borders of the United States, addressing emergencies involving human health and safety, and preventing or minimizing environmental damage arising from CBV illegal entry on public lands;
2. The Parties will strive to both resolve conflicts at and delegate resolution authority to the lowest field operational level possible while applying the principles of this MOU in such manner as will be consistent with the spirit and intent of this MOU;
3. The Parties will develop and consistently utilize an efficient communication protocol respecting the chain of command for each of the Parties that will result in the consistent application of the goals, policies, and principles articulated in this MOU, and provide a mechanism that will, if necessary, facilitate the resolution of any conflicts among the Parties. If resolution of conflict does not occur at the local level, then the issue will be elevated first to the regional/sector office; if not resolved at the regional/sector level, then the issue will be elevated to the headquarters level for resolution;
4. The Parties will cooperate with each other to complete, in an expedited manner, all compliance that is required by applicable Federal laws not otherwise waived in furtherance of this MOU. If such activities are authorized by a local agreement as described in sub-article IV.B below, then the DOI, USDA, and CBP will complete the required compliance before executing the agreement;

5. The Parties will cooperate with each other to identify methods, routes, and locations for CBP-BP operations that will minimize impacts to natural, cultural, and wilderness resources resulting from CBP-BP operations while facilitating needed CBP-BP access;
6. The Parties will, as necessary, plan and conduct joint local law enforcement operations consistent with all Parties' legal authorities;
7. The Parties will establish a framework by which threat assessments and other intelligence information may be exchanged, including intelligence training to be conducted by all parties so that the intelligence requirements of each may be identified and facilitated;
8. The Parties will establish forums and meet as needed at the local, regional, and national levels to facilitate working relationships and communication between all Parties;
9. The Parties will develop and share joint operational strategies at the local, regional, and national levels, including joint requests for infrastructure and other shared areas of responsibility;
10. The Parties will share the cost of environmental and cultural awareness training unless otherwise agreed; and
11. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. §1535 when one party is to furnish materials or perform work or provide a service on behalf of another party.

B. Responsibilities and Terms Specific to DOI and USDA. The DOI and the USDA hereby recognize that, pursuant to applicable law, CBP-BP is authorized to access the Federal lands under DOI and USDA administrative jurisdiction, including areas designated by Congress as wilderness, recommended as wilderness, and/or wilderness study areas, and will do so in accordance with the following conditions and existing authorities:

1. CBP-BP agents on foot or on horseback may patrol, or pursue, or apprehend suspected CBVs off-road at any time on any Federal lands administered by the Parties;
2. CBP-BP may operate motor vehicles on existing public and administrative roads and/or trails and in areas previously designated by the land management agency for off-road vehicle use at any time, provided that such use is consistent with presently authorized public or administrative use. At CBP-BP's request, the DOI and the USDA will provide CBP-BP with keys, combinations, or other means necessary to

access secured administrative roads/trails. CBP-BP may drag existing public and administrative roads that are unpaved for the purpose of cutting sign, subject to compliance with conditions that are mutually agreed upon by the local Federal land manager and the CBP-BP Sector Chief. For purposes of this MOU, "existing public roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows members of the general public to operate motor vehicles, and "existing administrative roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows persons specially authorized by the agency, but not members of the general public, to operate motor vehicles;

- 3 CBP-BP may request, in writing, that the land management agency grant additional access to Federal lands (for example, to areas not previously designated by the land management agency for off-road use) administered by the DOI or the USDA for such purposes as routine patrols, non-emergency operational access, and establishment of temporary camps or other operational activities. The request will describe the specific lands and/or routes that the CBP-BP wishes to access and the specific means of access desired. After receiving a written request, the local Federal land manager will meet promptly with the CBP-BP Sector Chief to begin discussing the request and negotiating the terms and conditions of an agreement with the local land management agency that authorizes access to the extent permitted by the laws applicable to the particular Federal lands. In each agreement between CBP-BP and the local land management agency, the CBP-BP should be required to use the lowest impact mode of travel and operational setup reasonable and practicable to accomplish its mission. The CBP-BP should also be required to operate all motorized vehicles and temporary operational activities in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands. However, at no time should officer safety be compromised when selecting the least impactful conveyance or operational activity. Recognizing the importance of this matter to the Nation's security, the CBP-BP Sector Chief and the local Federal land manager will devote to this endeavor the resources necessary to complete required compliance measures in order to execute the local agreement within ninety (90) days after the Federal land manager has received the written request for access. Nothing in this paragraph is intended to limit the exercise of applicable emergency authorities for access prior to the execution of the local agreement. The Secretaries of the Interior, Agriculture, and Homeland Security expect that, absent compelling justification, each local agreement will be executed within that time frame and provide the maximum amount of access requested by the CBP-BP and allowed by law;

4. Nothing in this MOU is intended to prevent CBP-BP agents from exercising existing exigent/emergency authorities to access lands, including authority to conduct motorized off-road pursuit of suspected CBVs at any time, including in areas designated or recommended as wilderness, or in wilderness study areas when, in their professional judgment based on articulated facts, there is a specific exigency/emergency involving human life, health, safety of persons within the area, or posing a threat to national security, and they conclude that such motorized off-road pursuit is reasonably expected to result in the apprehension of the suspected CBVs. Articulated facts include, but are not limited to, visual observation; information received from a remote sensor, video camera, scope, or other technological source; fresh "sign" or other physical indication; canine alert; or classified or unclassified intelligence. For each such motorized off-road pursuit, CBP-BP will use the least intrusive or damaging motorized vehicle readily available, without compromising agent or officer safety. In accordance with paragraph IV.C.4, as soon as practicable after each such motorized off-road pursuit, CBP-BP will provide the local Federal land manager with a brief report;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources, or if other significant issues warrant consultation, then the Federal land manager and the CBP-BP will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP may request, in writing, that the land management agency authorize installation or construction of tactical infrastructure for detection of CBVs (including, but not limited to, observation points, remote video surveillance systems, motion sensors, vehicle barriers, fences, roads, and detection devices) on land under the local land management agency's administrative jurisdiction. In areas not designated as wilderness, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency. In areas designated or managed as wilderness, the local Federal land manager, in consultation with CBP, will promptly conduct a "minimum requirement," "minimum tool," or other appropriate analysis. If supported by such analysis, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency;

7. The DOI and USDA will provide CBP-BP agents with appropriate environmental and cultural awareness training formatted to meet CBP-BP operational constraints. The DOI and USDA will work with CBP-BP in the development and production of maps for use or reference by CBP-BP agents including, as appropriate, site-specific and resource-specific maps that will identify specific wildlife and environmentally or culturally sensitive areas;
8. The DOI and USDA will, as applicable, provide CBP-BP with all assessments and studies done by or on behalf of DOI or USDA on the effects of CBVs on Federal lands and native species to better analyze the value of preventative enforcement actions;
9. The DOI and USDA will assist CBP-BP in search and rescue operations on lands within the respective land managers' administration when requested;
10. The CBP-BP and land management agencies may cross-deputize or cross-designate their agents as law enforcement officers under each other agency's statutory authority. Such cross-deputation or cross-designation agreements entered into by the local land management agency and the field operations manager for the CBP-BP shall be pursuant to the policies and procedures of each agency; and
11. DOI and USDA will work at the field operations level with affected local CBP-BP stations to establish protocols for notifying CBP-BP agents when DOI or USDA law enforcement personnel are conducting law enforcement operations in an area where CBP-BP and DOI/USDA operations can or will overlap.

C. Responsibilities and Terms Specific to the CBP. DHS hereby agrees as follows:

1. Consistent with the Border Patrol Strategic Plan, CBP-BP will strive to interdict CBVs as close to the United States' international borders as is operationally practical, with the long-term goal of establishing operational control along the immediate borders;
2. If the CBP-BP drag any unpaved roads for the purpose of cutting sign under provision IV.B.2 above, then CBP-BP will maintain or repair such roads to the extent that they are damaged by CBP-BP's use or activities;
3. If CBP-BP agents pursue or apprehend suspected CBVs in wilderness areas or off-road in an area not designated for such use under

paragraph IV.B.5, then the CBP-BP will use the lowest impact mode of travel practicable to accomplish its mission and operate all motorized vehicles in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands, provided officer safety is not compromised by the type of conveyance selected;

4. CBP-BP will notify the local Federal land manager of any motorized emergency pursuit, apprehension, or incursion in a wilderness area or off-road in an area not designated for such use as soon as is practicable. A verbal report is sufficient unless either CBP-BP or the land managing agency determines that significant impacts resulted, in which case a written report will be necessary;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources as determined by a land manager, or if other significant issues warrant consultation, then the CBP-BP and Federal land manager will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP will consult with land managers to coordinate the placement and maintenance of tactical infrastructure, permanent and temporary video, seismic and other remote sensing sites in order to limit resource damage while maintaining operational efficiency;
7. CBP-BP will ensure that current and incoming CBP-BP agents attend environmental and cultural awareness training to be provided by the land management agencies;
8. CBP-BP will provide land management agencies with appropriate and relevant releasable statistics of monthly CBV apprehensions, search and rescue actions, casualties, vehicles seized, drug seizures and arrests, weapons seizures and arrests, and other significant statistics regarding occurrences on the lands managed by the land manager;
9. CBP-BP will consult with land managers in the development of CBP-BP's annual Operational-Requirements Based Budgeting Program to ensure affected land managers can provide input and are, in the early stages of planning, made aware what personnel, infrastructure, and technology the CBP-BP would like to deploy along the border within their area of operation; and
10. CBP-BP will work at the field operations manager level with affected local land management agencies to establish protocols for notifying

land management agency law enforcement officers when BP is conducting special operations or non-routine activities in a particular area.

V. Miscellaneous Provisions

A. Nothing in this MOU may be construed to obligate the agencies or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOU obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.

B. Nothing in this MOU will be construed as affecting the authority of the Parties in carrying out their statutory responsibilities.

C. This MOU may be modified or amended in writing upon consent of all Parties, and other affected Federal agencies may seek to become a Party to this MOU.

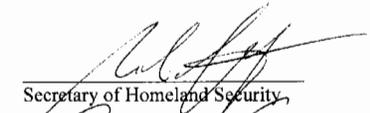
D. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOU with respect to, *inter alia*, pay, personnel benefits, injuries, accidents, losses, damages, and civil liability. This MOU is not intended to change in any way the individual employee status or the liability or responsibility of any Party under Federal law.

E. The Parties agree to participate in this MOU until its termination. Any Party wishing to terminate its participation in this MOU shall provide sixty (60) days written notice to all other Parties.

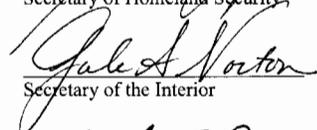
F. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOU is not and shall not be construed as a rule or regulation.

In witness whereof, the Parties hereto have caused this Memorandum of Understanding to be executed and effective as of the date of the last signature below.

Date: 3/24/06


Secretary of Homeland Security

Date: 3/31/06


Secretary of the Interior

Date: 3/29/06


Secretary of Agriculture

APPENDIX D
Hydrology Analysis from March 2007 SEA

Project Background

This project will install the much needed 1.5 miles of Secondary Fence, going north along the Salinity Canal (Bypass Drain) to County 21-½. The U.S./Mexico border at San Luis and the Colorado River is a popular crossing point for Illegal Aliens (IAs). If IAs can breach the existing primary border fence, or cross the agricultural fields adjacent to the Colorado River undetected and reach the developed areas of San Luis, they can mix into the general population of the area. Office of Border Patrol (OBP) agents has come under attack by IAs throwing rocks and, at times, gunfire. Installation of an enhanced enforcement zone would minimize this dangerous situation for the OBP agents and IAs. The purpose of this project is to assist OBP agents in the detection and deterrence of illegal traffic, thus, further facilitating the OBP's mandate to gain, maintain and extend control of the U.S.-Mexico border. The need for the project is as follows: decrease the current OBP enforcement footprint; detect, deter, and apprehend IAs as close to the international border as practicable; enhance the safety of OBP agents, U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (BOR), and other law enforcement agency personnel, as well as the general public. See **Exhibit A** for location map of project.

Inter-Agency Coordination

The discussions, meetings, and conference calls for this project were all within the Yuma Sector Project Delivery Team (PDT) and associated agency stakeholders. The prime members of Yuma Sector PDT are the Yuma Sector Border Patrol, U.S. Army Corps of Engineers (USACE) Fort Worth District – Environmental, USACE's Engineering Construction Support Office (ECSO), USACE Sacramento District – Real Estate, the Engineering Consultant, the Environmental Consultant, Joint Task Force – North, the Arizona National Guard. The member stakeholders are Bureau of Reclamation, Bureau of Land Management, U.S. Fish & Wildlife, International Boundary Water Commission (IBWC), and Yuma Marine Corps Air Station (MCAS). Through out the year, all prime members and stakeholder agencies are invited to attend the PDT meetings and conference calls in order to discuss each Tactical Infrastructure (TI) project and any impacts it may have on the stakeholder's agencies. SBI project #1037 has been discussed in the PDT meetings since Fiscal Year (FY) 2005 and all members were involved in the planning of this project, as well as the stakeholder agencies. However, local representative from the IBWC Yuma Area Office, Al Goff, never attended. The Yuma Sector Border Patrol would meet with Mr. Goff in one-on-one meetings to make sure he and his agency did not have any concerns with the current and proposed TI projects. Mr. Goff assured the TI Coordinator for the Yuma Sector Border Patrol, John Fountain, that he did not have any concerns about this project and/or any other project.

Beginning in FY 2005, a supplemental environmental assessment (SEA) was being written for this project area, which was being managed by the Yuma Sector PDT. The SEA is titled, Supplemental Environmental Assessment for the Installation of Permanent Security Lighting and Border Infrastructure System. The SEA states the purpose, need, alternatives, environmental features, consequences, design measures, and public involvement for all projects within this area.

Copies of this report have been sent to Mr. Al Goff, IBWC Yuma Area Office Manager during the preliminary stages of the SEA. The PDT did not receive any comments or concerns from Mr. Goff nor the IBWC Headquarters. This lack of action gave the PDT the notion that no conflicts with this project were a concern of IBWC. In March 2007, John Turner, the acting project manager for IBWC attended his first PDT meeting, where he was updated on all current and future projects within the Yuma Sector. A set of the final plans were sent out to John Turner on April 28, 2007.

This project has been coordinated extensively with the BLM and the BOR. The BOR – Yuma Area Office has management responsibility of the Lower Colorado River and it has ownership of the land where the project is located. The BOR has granted the OBP a special use permit, based on the construction plans dated April 2007.

Lower Colorado River Conditions

The Lower Colorado River begins to enter the Yuma area where the river decreases in gradient and is joined by the Gila River. This is where a majority of the flow is diverted to Imperial Valley, California. Below Morales Dam, the Colorado River flows minimally towards Mexico, but never enters Mexico, under normal conditions. This reach of the Colorado River corridor is currently overgrown in vegetation, both by native and non-native species. The 100-year flow, per the Colorado River Floodway and Levee Protection Act of 1986 was set to 40,000 cubic feet per second (cfs), see **Exhibit B**. Based on communication with Michael Igoe, Facilities Engineering Team Leader at the BOR, the flow of 40,000 cfs will not impact our project area, See **Exhibit C and D** for the attached note and map depicting the location of the Secondary Fence in relation to 100-year floodway and floodway fringe. This map highlights similar storm events that have happened in 1986 and 1993.

Position

In regards to the **Treaty to Resolve Pending Boundary Differences and Maintain the Rio Grande and Colorado River as the International Boundary, signed November 23, 1970**, it states in Article IV, Section B (1) the following:

“Both in the main channel of the river and on adjacent lands to a distance on either side of the international boundary recommended by the Commission and approved by the two Governments, each Contracting State shall prohibit the construction of works in its territory which, in the judgment of the Commission, may cause deflection or obstruction of the normal flow of the river or of its flood flows.”

It is in the opinion of the OBP that the 1.5 miles of the Secondary Fence, that is located east of the Bypass Drain Levee will not obstruct normal flow because the location of the fence is east of the levee and east of the normal flow and normal flow for this portion of the Colorado River is non-existent. Additionally, the flood flows established in **Minute**

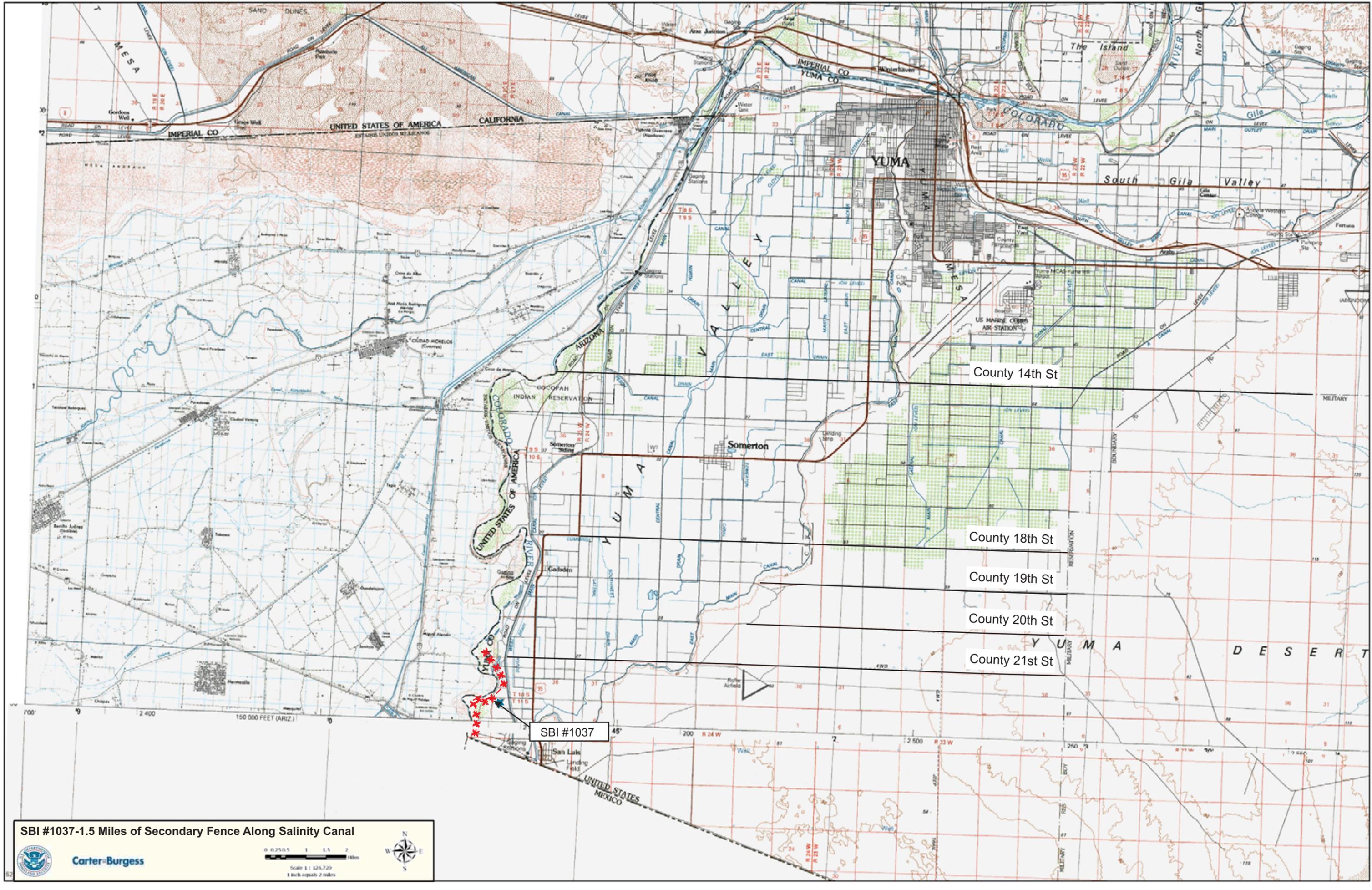
No. 195 – Works Required above the Morelos Diversion Dam to Protect Lands within the United States against damages from such floods as might result from the Construction, Operation, and Maintenance, from May 6, 1950 states that the Commission agreed that the design flood should be 310,000 second-feet. The unit of measure is not common in today’s engineering practice. A standard unit of measure to depict volume of water for flood flows is cubic feet per second (cfs) or for detention, acre-foot of water. Not knowing what the Commission is trying to communicate makes it difficult to establish a design flood that is based on IBWC recommendations; therefore the OBP has used a flood flow of 40,000 cfs based on the BOR recommendations.

Additionally, based on historical data of the 1983, 1988, and 1993 storm events, flood waters did not breach the Bypass Drain Levee. Based on conversations with the BOR (Michael Igoe, P.E., John Nickell, and Douglas Blatchford) the location of this fence is not within the proximity to the floodway fringe, see **Exhibit D**. The conversations with Douglas Blatchford revealed that there is a current joint project with the IBWC and the BOR to determine the agreed 100-year storm event. Based on this information, the correct 100-year storm event has still not yet been accurately calculated on today’s conditions. Therefore, the location of the fence should only be required to meet the requirements and/or recommendations of the BOR, by which the BOR owns the land of the stated project.

It is OBP Yuma Sector’s position that the location of the 1.5 miles of the Secondary Fence, that is located east of the Bypass Drain Levee, does not impact floodwaters. The alignment of the fence runs with the Bypass Drain.

The Yuma Sector would like to work with all stakeholder agencies to ensure that the OBP is being a proactive environmental steward to the community. However, in order to accomplish this goal, the OBP would like active and constructive participants to bring solutions to the table, so the OBP may accomplish their mission while complying with applicable Federal regulation and assisting other agencies in accomplishing their mission.

EXHIBIT A



SBI #1037

County 14th St

County 18th St

County 19th St

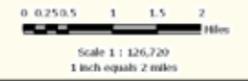
County 20th St

County 21st St

SBI #1037-1.5 Miles of Secondary Fence Along Salinity Canal



Carter-Burgess



Scale 1:126,720
1 inch equals 2 miles

EXHIBIT B

CHAPTER 32B - COLORADO RIVER FLOODWAY

-HEAD-

Sec. 1600c. Colorado River Floodway

-STATUTE-

(a) Establishment

There is established the Colorado River Floodway as identified and generally depicted on maps that are to be submitted by the Secretary.

(b) Study of tributary floodflows; determination of Floodway boundary

Within eighteen months after October 8, 1986, the Secretary, in consultation with the seven Colorado River Basin States, represented by persons designated by the Governors of those States, the Colorado River Floodway Task Force, and any other interested parties shall:

(1) complete a study of the tributary floodflows downstream of Davis Dam;

(2) define the specific boundaries of the Colorado River Floodway so that the Floodway can accommodate either a one-in-one hundred year river flow consisting of controlled releases and tributary inflow, or a flow of forty thousand cubic feet per second (cfs), whichever is greater, from below Davis Dam to the Southerly International Boundary between the United States of America and the Republic of Mexico.

(c) Review and modification of boundaries; notice and comment; written justification for decision of Secretary

(1) The Secretary shall conduct, at least once every five years, a review of the Colorado River Floodway and make, after notice to and in consultation with appropriate chief executive officers of States, counties, municipalities, water districts, Indian tribes, or equivalent jurisdictions in which the Floodway is located, and others, such minor and technical modifications to the boundaries of the Floodway as are necessary solely to reflect changes that have occurred in the size or location of any portion of the floodplain as a result of natural forces, and as necessary pursuant to subsection (c) of section 1600e of this title.

(2) If, in the case of any minor and technical modification to the boundaries of the Floodway made under the authority of this subsection, an appropriate chief executive officer of a State, county, municipality, water district, Indian tribe, or equivalent jurisdiction, to which notice was given in accordance with this subsection files comments disagreeing with all or part of the modification and the Secretary makes a modification which is in conflict with such comments, the Secretary shall submit to the chief executive officer a written justification for his failure to make modifications consistent with such comments or proposals.

-SOURCE-

(Pub. L. 99-450, Sec. 5, Oct. 8, 1986, 100 Stat. 1131; Pub. L. 105-362, title IX, Sec. 901(d), Nov. 10, 1998, 112 Stat. 3289.)

-MISC1-

AMENDMENTS

1998 - Subsec. (b). Pub. L. 105-362, Sec. 901(d)(1), struck out par. (1) designation, redesignated cls. (i) and (ii) of former par. (1) as pars. (1) and (2), respectively, and struck out former pars. (2) and (3) which related to preparation and filing of maps with congressional committees, Federal, State, and local government agencies, and federally insured financial institutions.

Subsec. (c)(1). Pub. L. 105-362, Sec. 901(d)(2), substituted "appropriate chief executive officers of States, counties, municipalities, water districts, Indian tribes, or equivalent jurisdictions in which the Floodway is located," for "the

EXHIBIT C

Chris,

This is a floodway map showing inundation at 40,000 cfs. This is pretty much considered a 100 year event by our water systems group. As you can see, the floodway seepage comes to where near the salinity canal or proposed fence location.

Also, we have no survey data on elevations on the water surface for either the '33 or '93 events according to our surveys.

One last thing, I was told IBWC contracted with COE

to do a study for a pilot channel in river below Morelos dam. The study was done in 2002 or thereabouts. You might want to request a copy to see what it shows.

Hope this helps.

Mike

RECLAMATION

Managing Water in the West

MICHAEL W. IGOE, P.E.

Facilities Engineering Team Leader
Yuma Area Office
Lower Colorado Region

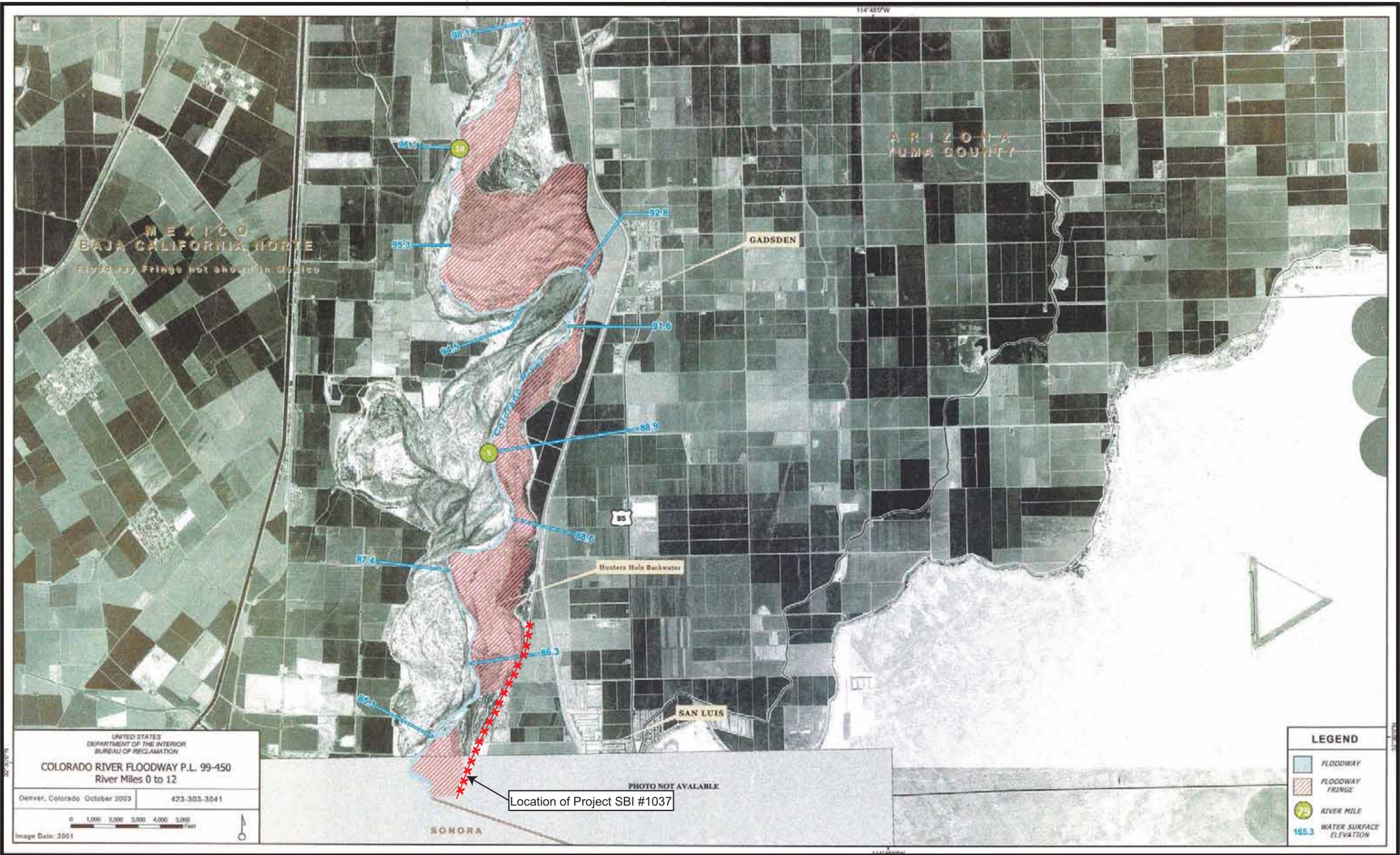
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EXHIBIT D



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLORADO RIVER FLOODWAY P.L. 99-450
River Miles 0 to 12

Denver, Colorado October 2003 423-303-3041
Image Date: 2001



LEGEND	
	FLOODWAY
	FLOODWAY FRINGE
	RIVER MILE
	WATER SURFACE ELEVATION

Location of Project SBI #1037

PHOTO NOT AVAILABLE

SONORA

ARIZONA
YUMA COUNTY

GADSDEN

SAN LUIS

95

Hunters Hole Backwater

MEXICO
BAJA CALIFORNIA NORTE
Floodway Fringe not shown in Mexico

COLORADO RIVER

114°48'0"W

114°48'0"W

APPENDIX E
Biological Report





**BIOLOGICAL ASSESSMENT REPORT
YUMA SECTOR TACTICAL INFRASTRUCTURE
PORT OF ENTRY, ANDRADE, IMPERIAL COUNTY, CALIFORNIA TO
GRAY'S WELL, IMPERIAL COUNTY, CALIFORNIA**

Prepared for:

**Gulf South Research Corporation
8081 GSRI Avenue
Baton Rouge, Louisiana 70820**

Prepared by:

**Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, California 92064**

December 31, 2007

**Laurence N. Dean
Senior Biologist**



REPORT SUMMARY

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Report Date: December 31, 2007

Report Title: Biological Assessment Report, Yuma Sector Tactical Infrastructure, Port of Entry, Andrade, Imperial County, California to Gray's Well, Imperial County, California.

Prepared for: Gulf South Research Corporation
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Submitted by: Brian F. Smith and Associates
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USGS Quadrangle: *Yuma West and Gray's Well (7.5 minute)*

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1.0 SUMMARY

The U.S. Border Patrol proposes to construct a fence and road along the international boundary with Mexico between the Port-of-Entry at Andrade near the Arizona-California border and a location near Grays Well, approximately 10.7 miles to the west. Twelve listed species or species of special concern were identified as potentially occurring in the vicinity of the proposed project. Six of these species are state or federally listed. The remaining six species are considered species of special concern. Although species of special concern have not been listed, their status is so tenuous that they should be treated as listed species. After field assessments were performed it was determined that suitable habitat is present for eight of these species, five of which are listed as rare threatened, or endangered.

Direct and indirect impacts to these species may be avoided or minimized through the implementation of avoidance and minimization actions described in this report. If these actions are implemented mitigation or compensation should not be required. The proposed action would be in compliance with the federal Endangered Species Act and the California Endangered Species Act.

2.0 INTRODUCTION

The U.S. Border Patrol proposes to construct a fence and road along the international boundary with Mexico. The proposed California reach of the project is located along the international boundary with Mexico between the Port-of-Entry at Andrade near the Arizona-California border and a location near Grays Well, approximately 10.7 miles to the west (Figures 1 and 2). The project area surveyed for biological resources began at the international boundary and extended 18.3 meters (60 feet) north of the boundary.

3.0 METHODS AND SURVEY LIMITATIONS

Prior to the site visit, BFSAs biologists reviewed the National Wetland Inventory (USFWS 2007) maps for the site to determine if wetlands may be present. Appropriate United States Geological Survey maps (7½ minute) were reviewed to determine if drainage features, including “blue-line streams” may be present. The National List of Hydric Soils (NCRS 2007) and the Soils Survey for Imperial County were consulted to establish soils associated with the proposed site. The California Natural Diversity Data Base was reviewed to determine the occurrence of sensitive species in the vicinity of the proposed action. The Bureau of Land Management El Centro Field Office was consulted to determine if that agency may have

particular concerns about the project route and sensitive species potentially affected by the proposed project.

Site visits were made December 6th and 13th, 2007. The western portion of the site was surveyed from an all terrain vehicle with frequent stops to assess terrain features and habitats and to search for wildlife sign and sensitive plants. The eastern portion of the site is deeply gullied with washes containing some wet areas. This portion of the proposed route was examined on foot by slowly walking over the site in a series of random transects to provide visual coverage of the entire site. Vegetation and wildlife species observed were recorded as field observations were made. Wildlife sign (scat, bones, feathers, tracks, dens, and burrows) were also recorded as encountered. Frequent pauses were made during the survey to watch and listen for wildlife.

4.0 BIOLOGICAL RESOURCES ASSOCIATED WITH THE AREA OF POTENTIAL EFFECT

Botanical Resources

Plant communities along the route consist of Mojave Creosote Scrub (34220) (Holland 1986) on Active Desert Dunes (22100) (Holland 1986) with interspersed areas of Mojave Wash Scrub (34250) (Holland 1986). The plant community towards the eastern end of the project tends to become more stabilized and could be considered Stabilized and Partially Stabilized Desert Dune (22200) (Holland 1986). On the eastern end of the proposed route, small areas of riverine vegetation were observed. With the exception of the riverine habitat, the proposed project route follows existing roads and trails. Plant communities have been extensively disturbed by off-road vehicles and pedestrian traffic. Plant species observed are listed in Table 1, below.

Plant species observed in the active and stabilized dune areas included Mormon tea, creosote bush, and spiny sena. Vegetation in the washes included the plant species observed in the dunes as well as species such as four-wing saltbush, white bursage, desert needlegrass, smoke tree, palo verde, salt cedar, athel, and cacti. In the wetter portions of some washes, arrow-weed, cottonwood, and cattail were also observed. Riverine vegetation is present on the east end of the propose project route. Vegetation in these areas is predominantly giant or common reed with a few black willows and arrow-weed.

Table 1 Plant Species Observed	
Common Name	Scientific name
Smoke Tree	<i>Dalea spinosa</i>
Athel	<i>Tamarix aphylla</i>
Salt Cedar	<i>Tamarix ramosissima</i>
Palo Verde	<i>Cercidium sp.</i>
Four-Wing Salt Bush	<i>Atriplex canescens</i>
Arrow-Weed	<i>Pluchea sericea</i>
Spiny Sena	<i>Cassia armata</i>
Beavertail Cactus	<i>Opuntia basilarus</i>
Cholla	<i>Opuntia ramosissima</i>
White Bursage	<i>Ambrosia dumosa</i>
Giant Reed	<i>Arundo donax</i>
Cattail	<i>Typha latifolia</i>
Black Willow	<i>Salix goodingii</i>
Cottonwood	<i>Populus fremontii</i>
Desert Needlegrass	<i>Achnatherum speciosum</i>
Mormon Tea	<i>Ephedera nevadensis</i>
Creosote Bush	<i>Larrea tridentata</i>

Six sensitive plant species were identified as potentially occurring on or near the proposed project site (CNDDDB 2007). These are listed in Table 2, below.

Table 2 Sensitive Plant Species Potentially Present			
Common Name	Scientific Name	Federal Status	State Status
Peirson’s Milk-Vetch	<i>Astragalus magdalenae var. peirsonii</i>	T	E
Wiggin’s Croton	<i>Croton wigginsii</i>	None	R
Giant Spanish Needle	<i>Palafoxia arida var. gigantea</i>	SC	SC
Sand Food	<i>Pholisma sonorae</i>	SC	SC
Algodones Dunes Sunflower	<i>Helianthus niveus ssp. tephrodes</i>	None	E
Mud Nama	<i>Nama stenocarpum</i>	SC	SC

E – Endangered T – Threatened SC – Species of Concern R - Rare

Peirson’s Milk-Vetch (*Astragalus magdalenae var. peirsonii*)

Peirson’s milk-vetch is found in San Diego County, Imperial County, Arizona, Baja California and Sonora, Mexico. Peirson’s milk-vetch is a short-lived perennial associated with well developed desert dunes. A population of this species is known to occur in the Algodones

Dunes in Imperial County (Reiser 1994). The California Natural Diversity Data Base (CNDDDB) identifies the population in the Algodones Dunes as occurring immediately north of the All American Canal about 1,000 meters north of the proposed project site (Figure 4).

Site visits were conducted during the flowering season (December to April) for Peirson's milk-vetch. This species was not observed but suitable habitat is present.

Wiggin's Croton (*Croton wigginsii*)

Wiggin's croton is a perennial shrub in the spurge family (Euphorbiaceae). This species occurs on the Algodones Dunes in southeast Imperial County along the west side of the Algodones Dunes system. The CNDDDB identifies a population of this species occurring approximately 3,000 meters north of the APE for the proposed project (Figure 5).

Wiggin's croton was not observed during the site visits; however, the flowering season for this species is March through May and specimens may not have been readily identifiable.

Giant Spanish Needle (*Palafoxia arida* var. *gigantea*)

The California Native Plant Society lists Giant Spanish needles as rare, threatened, or endangered in California and elsewhere (CNPS 2007).

Giant Spanish needle is a native drought-tolerant annual found at several locations in the Algodones Dunes, north of the proposed project site. The CNDDDB identifies one of these sites as approximately 4,000 meters north of the proposed project (Figure 6).

Giant Spanish needle was not observed during the site visits; however, the flowering season for this species is February through May and specimens may not have been readily identifiable.

Sand Food (*Pholisma sonora*)

The California Native Plant Society lists sand food as rare, threatened, or endangered in California and elsewhere (CNPS 2007).

Sand food is a perennial herb found in sand dunes. It is a root parasite and lacks chlorophyll. Its stems are fleshy and mostly buried in the sand. Host plant species include fan-leaf crinkle mat (*Tiquilia plicata*), indigo bush (*Psoralea emoryi*), white bursage (*Ambrosia dumosa*), and arrow-weed (*Pluchea sericea*) (CPC 2007). The CNDDDB identifies sand food as occurring at the west end of the proposed project site and north of the All American Canal, approximately 1,000 meters north of the proposed site (Figure 7).

Sand food was not observed during the site visits; however, it may be most readily observed between April and June (CNPS 2007), and specimens may not have been readily identified.

Algodones Dunes Sunflower (*Helianthus niveus ssp. tephrodes*)

The California Native Plant Society lists the Algodones Dunes sunflower as rare, threatened, or endangered in California and elsewhere (CNPS 2007).

Algodones Dunes sunflower is a perennial of the sunflower family occurring in the Algodones Dunes, Imperial County, California. The CNDDDB identifies this species as occurring in the dunes approximately 3,000 meters north of the proposed project site (Figure 8).

Site visits were conducted during the September through May flowering season for this species. Algodones Dunes sunflower was not observed but may occur within the proposed project area.

Mud Nama (*Nama stenocarpum*)

The California Native Plant Society lists mud nama as fairly endangered in California, but more common elsewhere (CNPS 2007).

Mud nama is an annual of the Waterleaf Family (Hydrophyllaceae) found along muddy embankments of marshes, swamps, and lakes. The CNDDDB records mud nama occurring approximately 8,600 meters (5.3 miles) east of the eastern end of the proposed project site (Figure 9). Suitable habitat for this species is found around the small ponds identified on the eastern ends of the proposed project site; however, mud nama is an annual that blooms between January and July. The species could not be readily identified at the time of the field assessment.

Faunal Resources

Six sensitive animal species were identified as potentially occurring on or near the proposed project site (CNDDDB 2007). These species are listed in Table 3, below.

Table 3			
Sensitive Animal Species Potentially Present (CNDDDB 2007)			
Common Name	Scientific Name	Federal Status	State Status
Flat-Tailed Horned Lizard	<i>Phrynosoma mcallii</i>	SC	SC
Western Yellow-Billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	C	E
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	None	T
Yuma Clapper Rail	<i>Rallus longirostris yumanensis</i>	E	T
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	SC	SC
Colorado Valley Woodrat	<i>Neotoma albigula venusta</i>	SC	SC

E – Endangered T – Threatened, SC – Species of Concern

Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)

The flat-tailed horned lizard is a state and federal species of concern. Typical habitat for the flat-tailed horned lizard is sandy desert hardpan or gravel flats with scattered sparse vegetation. The species is generally found in areas with a high density of harvester ants and fine windblown sand, but rarely occurs on dunes.

Flat-tailed horned lizards were not observed during site visits. Cool weather may have kept individuals inactive. Suitable habitat for this species exists all along the proposed project site, particularly in the desert hardpan near the east end (Figure 10). Possible flat-tailed lizard tracks were observed on the western end of the proposed project site; however, the tracks were too degraded for positive identification. Very few harvester ants, the principal food source for the species, were observed in the proposed project site. This may have been the result of recent rains and cooler weather. The presence or absence of flat-tailed horned lizards in the proposed project area could not be determined with certainty.

Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)

The Yellow-billed Cuckoo is listed as a California Endangered Species and a U.S. Forest Service Sensitive Species. The western subspecies of yellow-billed cuckoo was considered for federal listing but was not listed because of discrepancies in genetic data. The California Yellow-billed Cuckoo breeds in scattered locations where suitable habitat is available throughout California, Idaho, Utah, Arizona, New Mexico, extreme western Texas, and possibly Nevada and western Colorado (Laymon 1998). There are two recorded sightings of this species

approximately 3,500 meters northeast of the eastern end of the proposed project site (Figure 11). Another record exists approximately 5,700 meters east of the project site in the vicinity of Laguna Dam (CNDDDB 2007).

Western yellow-billed cuckoos are generally found in dense riparian cover often adjacent to agricultural areas. With the exception of a small area along the Colorado River, suitable habitat for this species was not observed in the proposed project area. The riparian habitat along the Colorado lacks the trees and adjacent agricultural development this species seems to prefer. The western yellow-billed cuckoo is not likely to occur within the proposed project site.

California Black Rail (*Laterallus jamaicensis coturniculus*)

The California black rail is listed as threatened by the State of California but is not currently listed by the U.S. Fish and Wildlife Service. The California Black Rail is believed to be a resident of marshes in the San Francisco Bay area and along the lower reaches of the Colorado River in California and Arizona. The CNDDDB contains one record for this species near Winterhaven, approximately 7,600 meters east of the eastern terminus of the proposed project site.

There are scattered pockets of potentially suitable habitat for this species in small areas of hydrophytic vegetation (washes 2, 5, and 6; Figure 3) and along the Colorado River at the eastern end of the project site (Figure 12). Black rails were not seen or heard during site visits but focused surveys were not conducted. Given the nature of the habitat included in the proposed project site, it is highly unlikely black rails are present but the possibility does exist.

Yuma Clapper Rail (*Rallus longirostris yumanensis*)

The Yuma clapper rail is listed and endangered by the U.S. Fish and Wildlife Service and threatened by the California Department of Fish and Game.

The Yuma Clapper Rail is generally a resident of shallow, freshwater marshes containing dense stands of cattails and bulrushes along the lower Colorado River in California and Arizona and at the Salton Sea in Imperial County, California.

There is scattered habitat for the Yuma clapper rail along the proposed project site, particularly in the dense cattail stands at the eastern end of the site. The CNDDDB contains several records for this species in that area. Yuma clapper rails were not seen or heard during site visits; however a focused survey was not conducted. There is potential for this species to be present in small areas supporting hydrophytic vegetation (washes 2, 5, and 6; Figure 3) along the route of the proposed project and in the riverine vegetation on the eastern end of the proposed site (Figure 13).

Western Burrowing Owl (*Athene cunicularia hypugea*)

The Burrowing Owl is a small, long-legged owl found in grasslands, rangelands, agricultural areas, deserts, or any other dry, open area with low vegetation. They nest and roost in burrows excavated by burrowing mammals such as ground squirrels. Burrowing owls may also make use of structures such as culverts and irrigation stand-pipes as nests and roosts. Burrowing owls tend to be active during the day, although most hunting is still done at dawn, dusk, or at night.

The CNDDDB contains one record of western burrowing owls approximately 1,000 meters north of the proposed project site and north of the All American Canal (Figure 14). Low open vegetation preferred by the western burrowing owl occurs all along the proposed project route, however, suitable burrows or structures were not observed during site visits. It is unlikely this species occurs within the proposed project site.

Colorado Valley Woodrat (*Neotoma albigula venusta*)

The Colorado Valley woodrat is found in desert habitats in southeastern San Bernardino County, central and eastern Riverside County, eastern San Diego County, and throughout Imperial County. Distribution may be affected by the availability of nest-building materials. In rocky areas, plant material such as cholla, prickly pear, or mesquite may be piled around a crevice with the nest at the crevice. Nests may also be constructed under shrubs or cactus. Nests are often large and are generally very noticeable.

The CNDDDB has records of this species along the Colorado River immediately to the north of the proposed project route (Figure 15). There is generally a lack of nest building materials along the proposed project route. Nest structures were not observed. It is unlikely the Colorado Valley woodrat is present along the route of the proposed project.

Wetlands and other Jurisdictional Waters

Wetlands are defined by the presence or absence of three wetland criteria: wetland hydrology, wetland soils, and hydrophytic vegetation. All three criteria must be met before a site is considered wetland (USCOE 1987).

Three washes along the proposed project route contain areas of standing water. Hydrophytic vegetation such as cottonwoods, arrow-weed, cattail, and salt cedar occur in these wet areas. Water appears to have accumulated in these areas as a result of human intervention. Low berms and scrapes have been constructed along the border. These tend to intercept and pond surface runoff. The scrapes appear to be deep enough to also intercept water subbing from the unlined All American Canal north of the project site. The proposed concrete lining of the

canal will undoubtedly result in these small wet areas drying up. Soils associated with the proposed project route have not been mapped. They tend to be sands, sandy gravels, and sandy loam in some locations. These soils appear to have a Munsell Color Value of 10YR with a hue of 4 to 6 and a chroma ranging from 4 to 8 when wet. Generally, a soil must have matrix chroma of less than 2 to be considered hydric.

Hydrophytic vegetation and wetland hydrology are present in some areas along the proposed route. Soils associated with these areas lack hydric characteristics. Since one of the three required criteria, hydric soils, has not been met, the areas discussed above are not considered wetlands. Although not identified as wetlands, these areas retain important wildlife values and may provide suitable habitat for sensitive species such as Yuma clapper rail.

5.0 DISCUSSION

Twelve listed species or species of special concern were identified as potentially occurring in the vicinity of the proposed project. Six of these species are state or federally listed. The remaining six species are considered species of special concern. Although species of special concern have not been listed their status is so tenuous that they should be treated as listed species. After field assessments were performed it was determined that suitable habitat is present for eight of these species within the project area.

Table 4			
Summary of Sensitive Species Potentially Present			
Common Name	Scientific Name	Federal Status	State Status
Peirson’s Milk-Vetch	<i>Astragalus magdalenae peirsonii</i>	T	E
Wiggin’s Croton	<i>Croton wigginsii</i>	None	R
Sand Food	<i>Pholisma sonorae</i>	SC	SC
Giant Spanish Needle	<i>Palafoxia arida var. gigantean</i>	SC	SC
Algodones Dunes Sunflower	<i>Helianthus niveus ssp. tephrodes</i>	None	E
Mud Nama	<i>Nama stenocarpum</i>	SC	SC
Flat-Tailed Horned Lizard	<i>Phrynosoma mcallii</i>	SC	SC
California Black rail	<i>Laterallus jamaicensis coturniculus</i>	None	T
Yuma Clapper Rail	<i>Rallus longirostris yumanensis</i>	E	T

E – Endangered T – Threatened SC – Species of Concern R – Rare

The area potentially affected by the proposed action includes known occurrences of sand food. The site is immediately adjacent to populations of Peirson’s milk-vetch. Algodones Dune sunflower, mud nama, Wiggin’s croton and giant Spanish needle may also occur within the

proposed project site; however, the timing of the site visits did not permit positive identification of these species. There is potential for the proposed action to directly affect these species.

Suitable habitat for the flat-tailed horned lizard occurs within the area surveyed, and this species occurs within 1,000 meters of the site. The greatest potential for the occurrence of this species is likely to be on the eastern end of the proposed site.

Suitable habitat for the Yuma clapper rail occurs at several locations on the east end of the proposed site. These areas are focused on small ponds immediately adjacent to the project site. Although hydrophytic vegetation and wetland hydrology are present, these areas lack hydric soils and do not constitute wetlands. Where canals and the Colorado River are involved, larger expanses of rail habitat are present, and Yuma clapper rails have been recorded along the river at the eastern end of the project site. The proposed action is not likely to intrude on rail habitat but there is potential for noise generated by construction to interfere with clapper rails during the breeding season. Generally noise levels with a time-weighted average of 60 dB(A) per hour or greater are considered detrimental to breeding birds.

The California black rail may occur in those areas providing suitable habitat for the Yuma clapper rail. If present, the black rail like the Yuma clapper rail is not likely to be directly impacted by the proposed action but may experience indirect impacts as a result of construction related noise.

Recommended Avoidance or Minimization Measures

Potential impacts to sensitive biological resources would be avoided or minimized by assigning a biological monitor to the proposed project. The monitor would work ahead of construction crews searching for the species identified in Table 4. If any of these species are encountered, the on-site project supervisor and the Bureau of Land Management (BLM) would be advised immediately.

When the species encountered are special interest species, the BLM would be consulted regarding relocation of the individuals encountered to appropriate areas. If the species encountered are state or federally listed, the appropriate agency would be consulted and buffers would be established around each occurrence. Construction would not be permitted within these buffer areas.

If project construction is scheduled to take place during the breeding season for the Yuma clapper rail and the California black rail, the project biologist would identify potentially suitable habitat and conduct protocol surveys in advance of any construction activity. If either species is

detected, construction will not be permitted during the breeding season for the species present. Alternatively, noise impacts may be attenuated through the use of sound barriers that would reduce noise levels to less than 60 dB(A) per hour or by budgeting noise to ensure the 60 dB(A) per hour level is not exceeded. Monitoring of noise levels would be conducted daily throughout the breeding season whenever construction is in close proximity to suitable habitat for either species.

All excavations that cannot be backfilled at the end of the workday will be covered. The biological monitor will inspect all excavations at the beginning of the workday and will remove any vertebrates that may have fallen into the excavations.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

DATE: _____ SIGNED: _____

Senior Biologist

1) Fieldwork performed and report prepared by:

Signature

Laurence N. Dean

Name

Senior Biologist

Title

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8.0 **LIST OF PREPARERS**

Laurence Dean	Senior Biologist, Field Investigator
Adrian Moreno	Graphics and Geographic Information System
Nora Thornbury	Editor

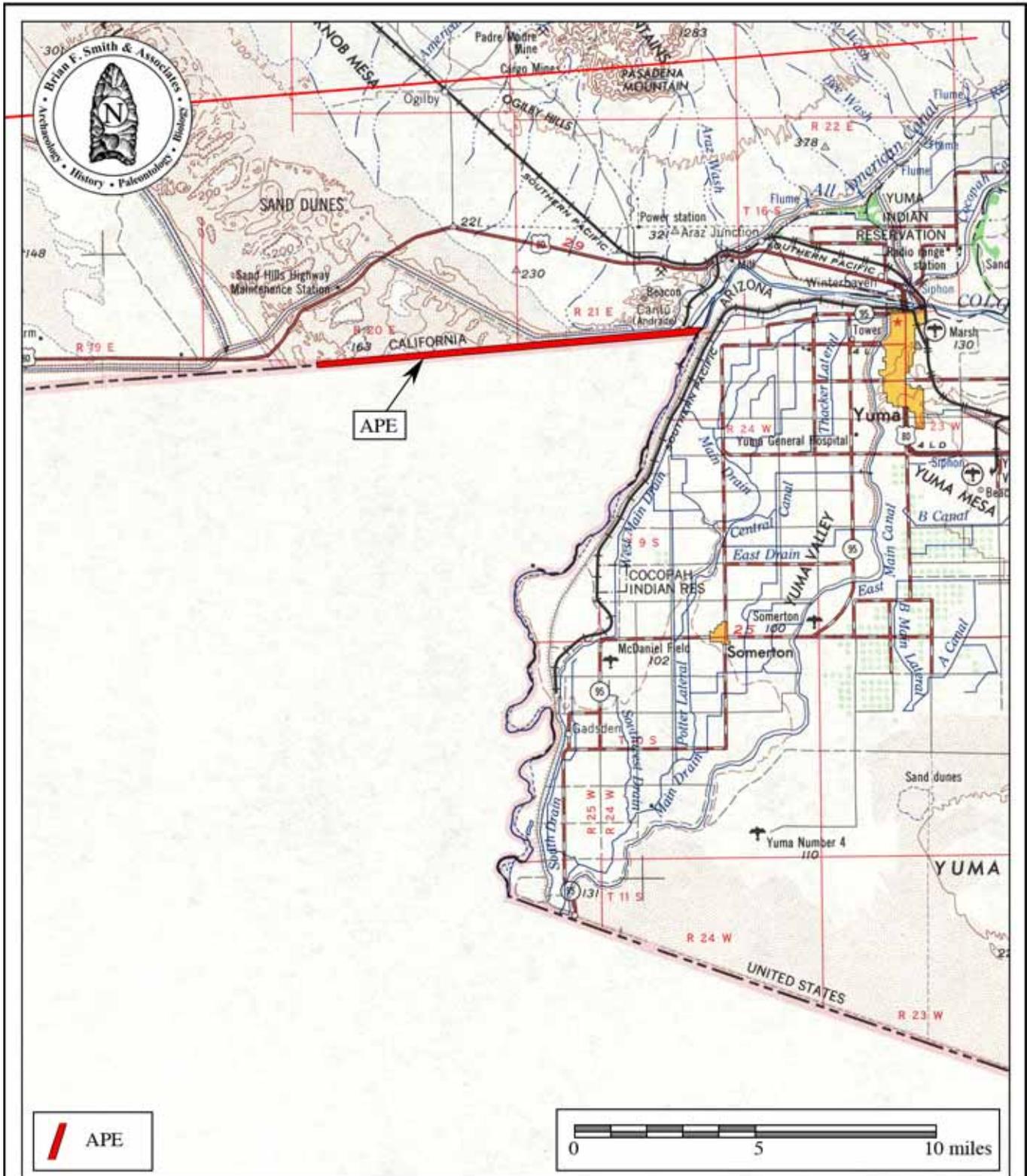


Figure 1
General Vicinity Map
 The Yuma Sector Project
 USGS *El Centro* (1:250,000 series)

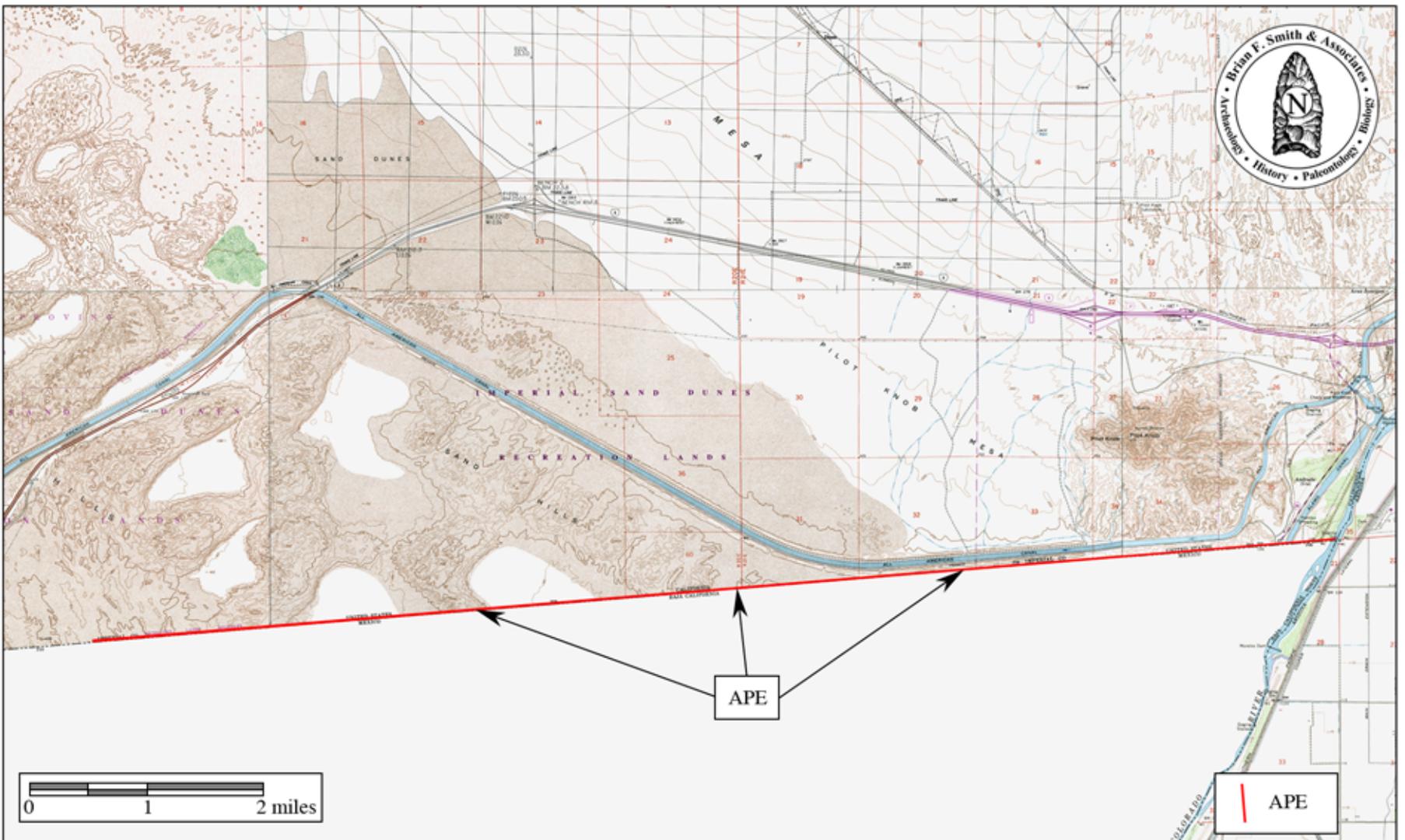


Figure 2
Project Location Map

The Yuma Sector Project

USGS Araz, Grays Well, Grays Well NE, Ogilby, Cactus, and Yuma West Quadrangles (7.5 minute series)

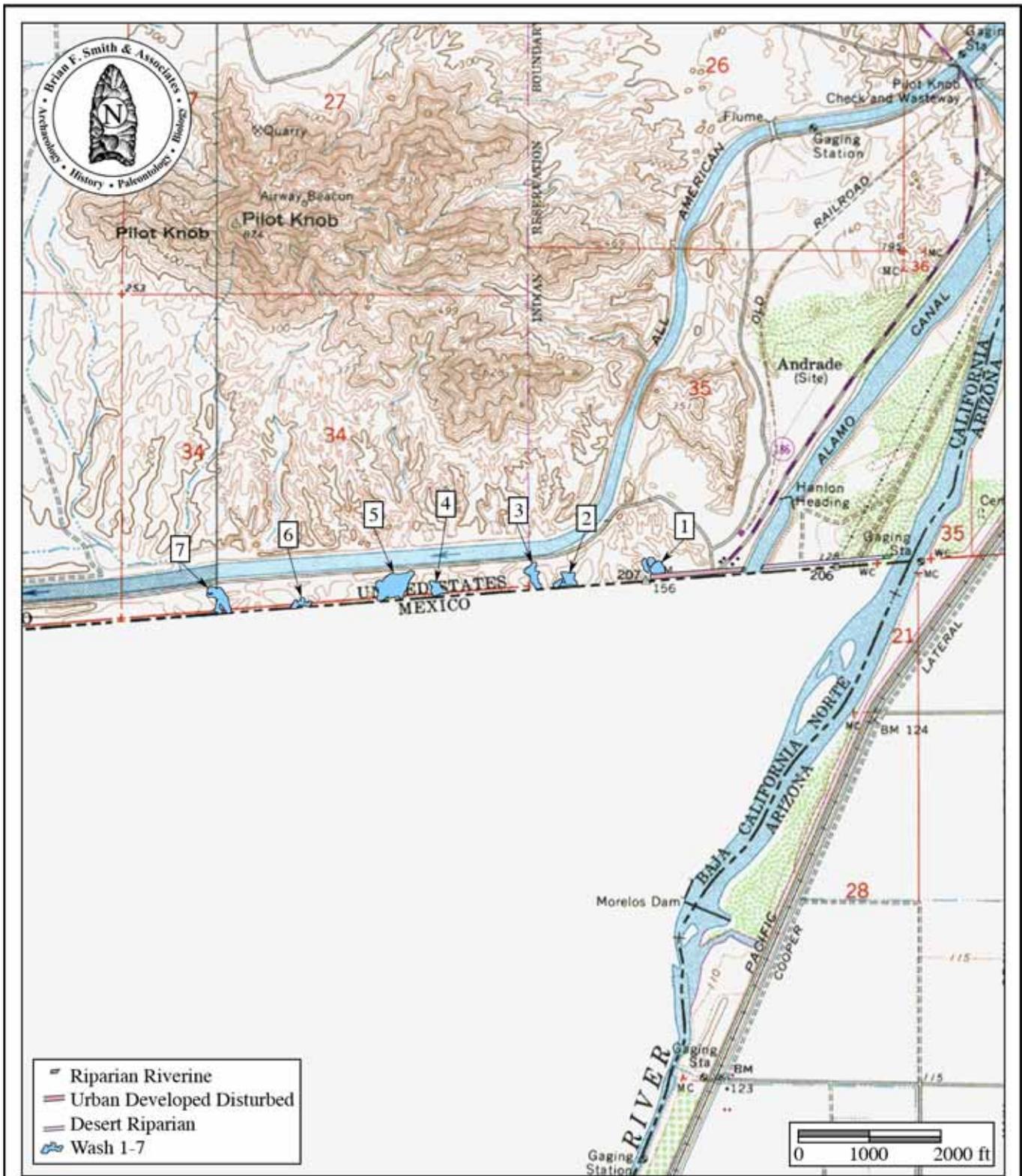


Figure 3
East End Yuma Tactical Infrastructure Survey Area
 Vegetation Map

USGS Grays Well NE, and Yuma West Quadrangles (7.5 minute series)

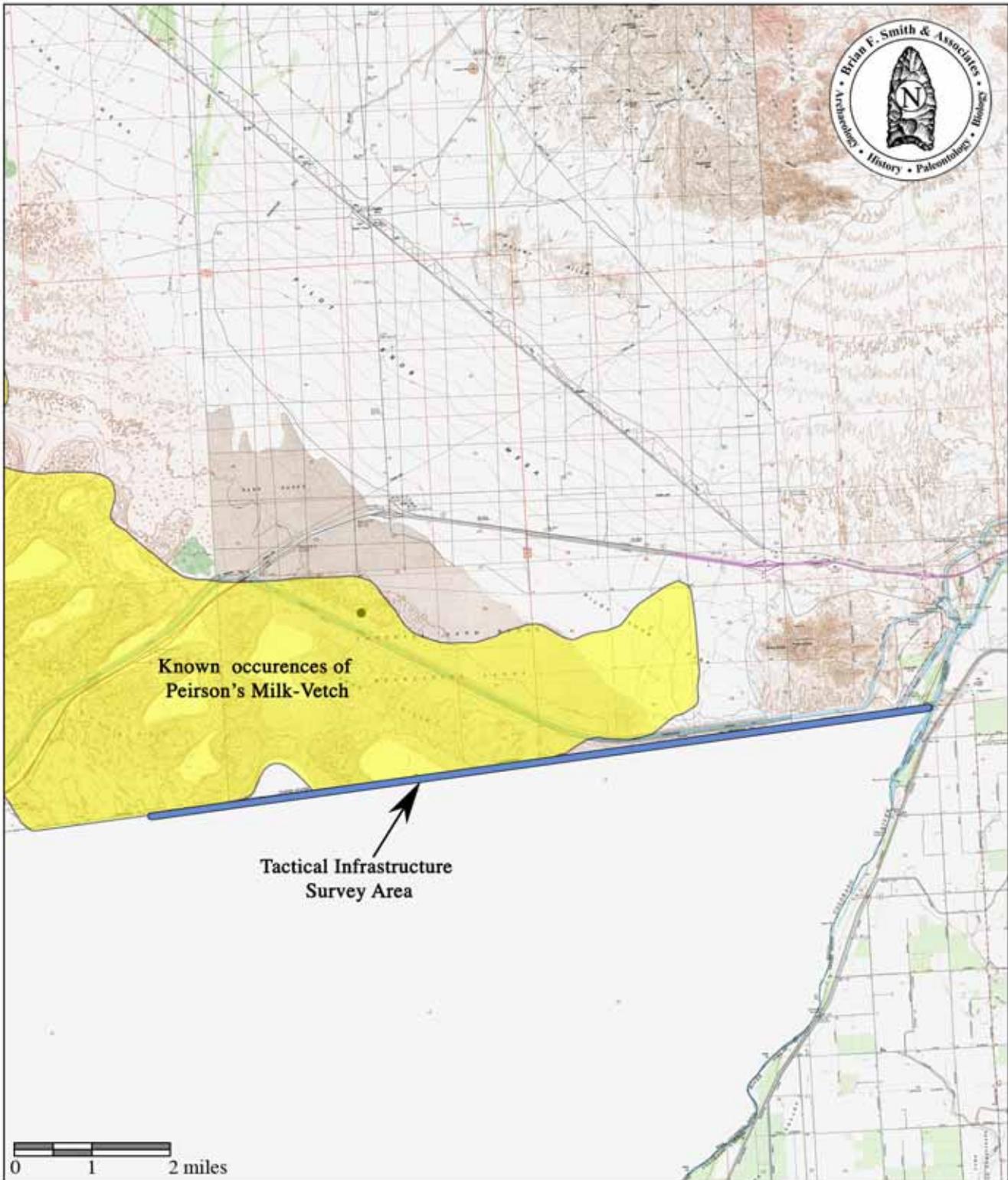


Figure 4
Generalized Distribution Map:
Peirson's Milk-Vetch (*Astragalus magdalenae* var. *peirsonii*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

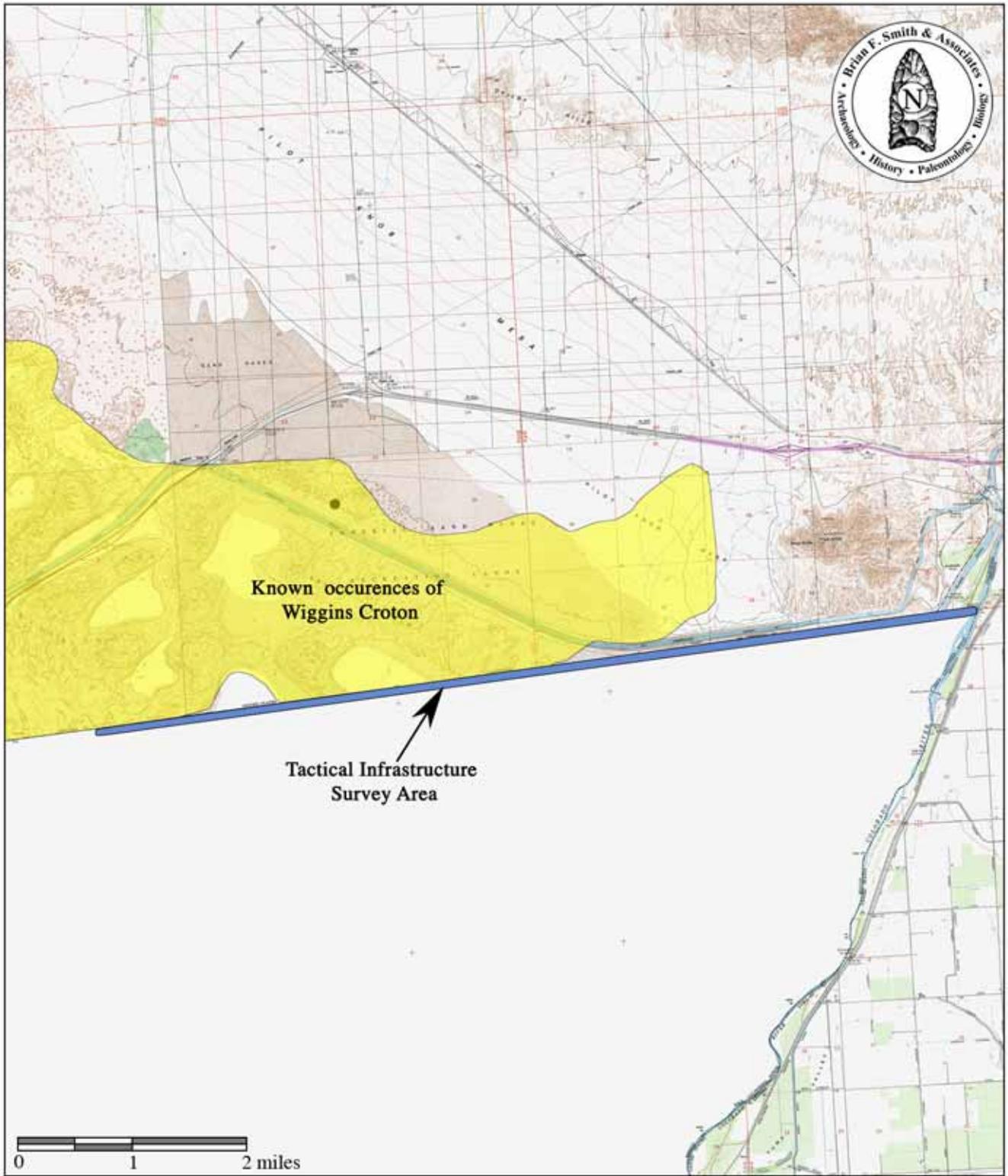


Figure 5
Generalized Distribution Map:
Wiggin's Croton (*Croton wigginsii*)
In Vicinity of Proposed Action

(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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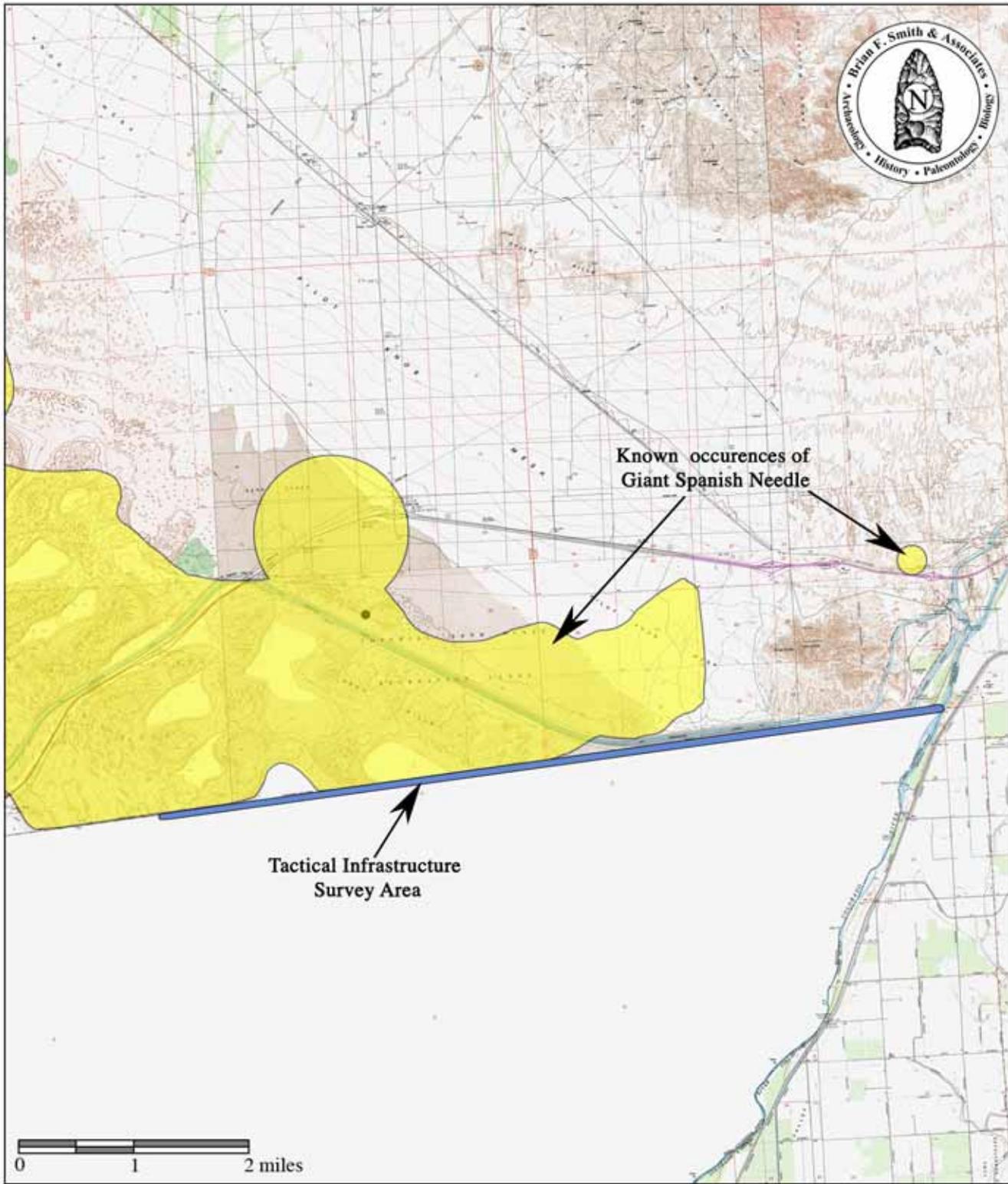
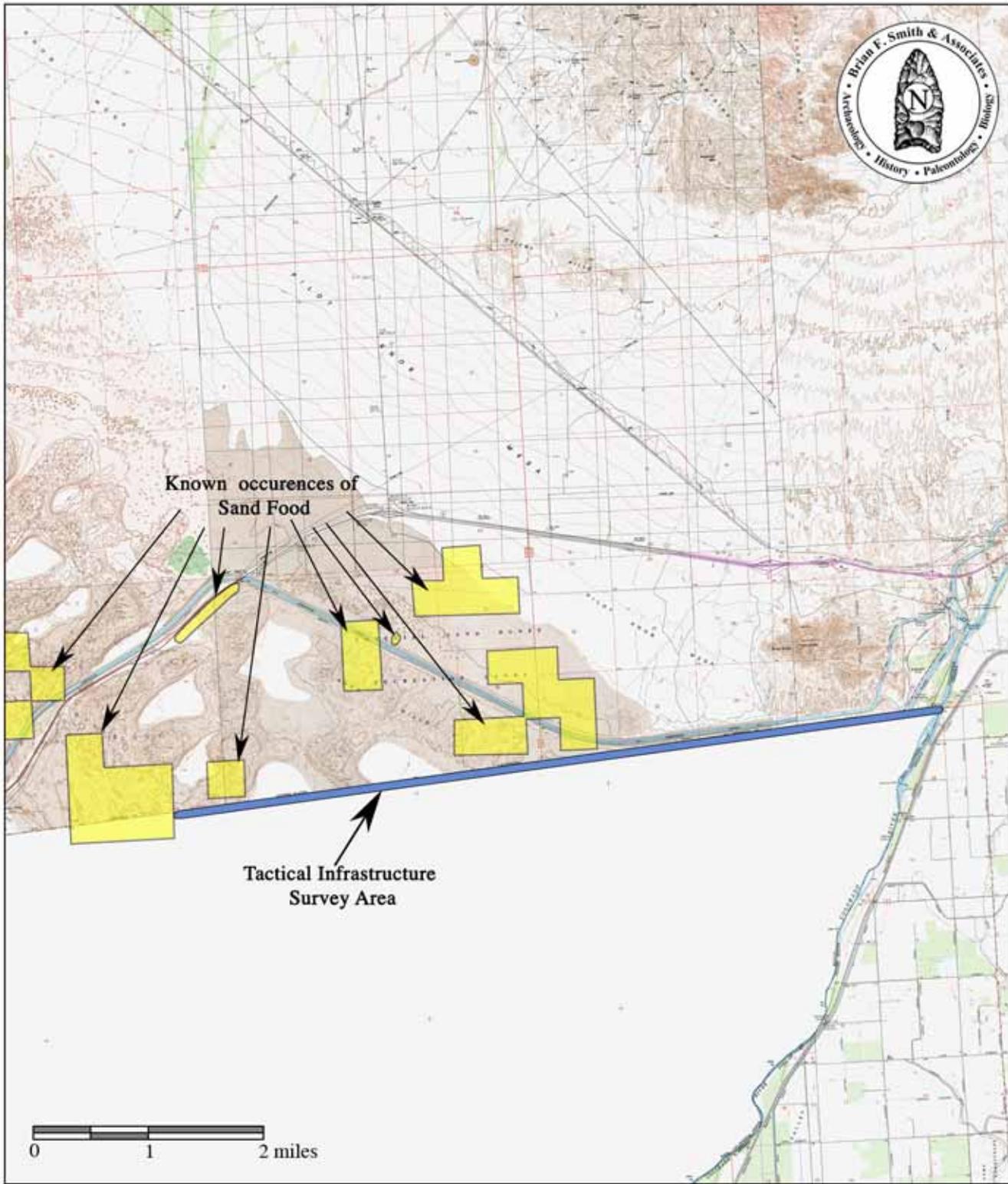


Figure 6
Generalized Distribution Map:
Giant Spanish Needle (*Palafoxia arida* var. *gigantea*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

/Users/editing/1_Projects/Yuma Tactical Infrastructure/Finished/Giant Spanish Needle



Known occurrences of
Sand Food

Tactical Infrastructure
Survey Area

0 1 2 miles

Figure 7
Generalized Distribution Map:
Sand Food (*Pholisma sonoreae*)
In Vicinity of Proposed Action

(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

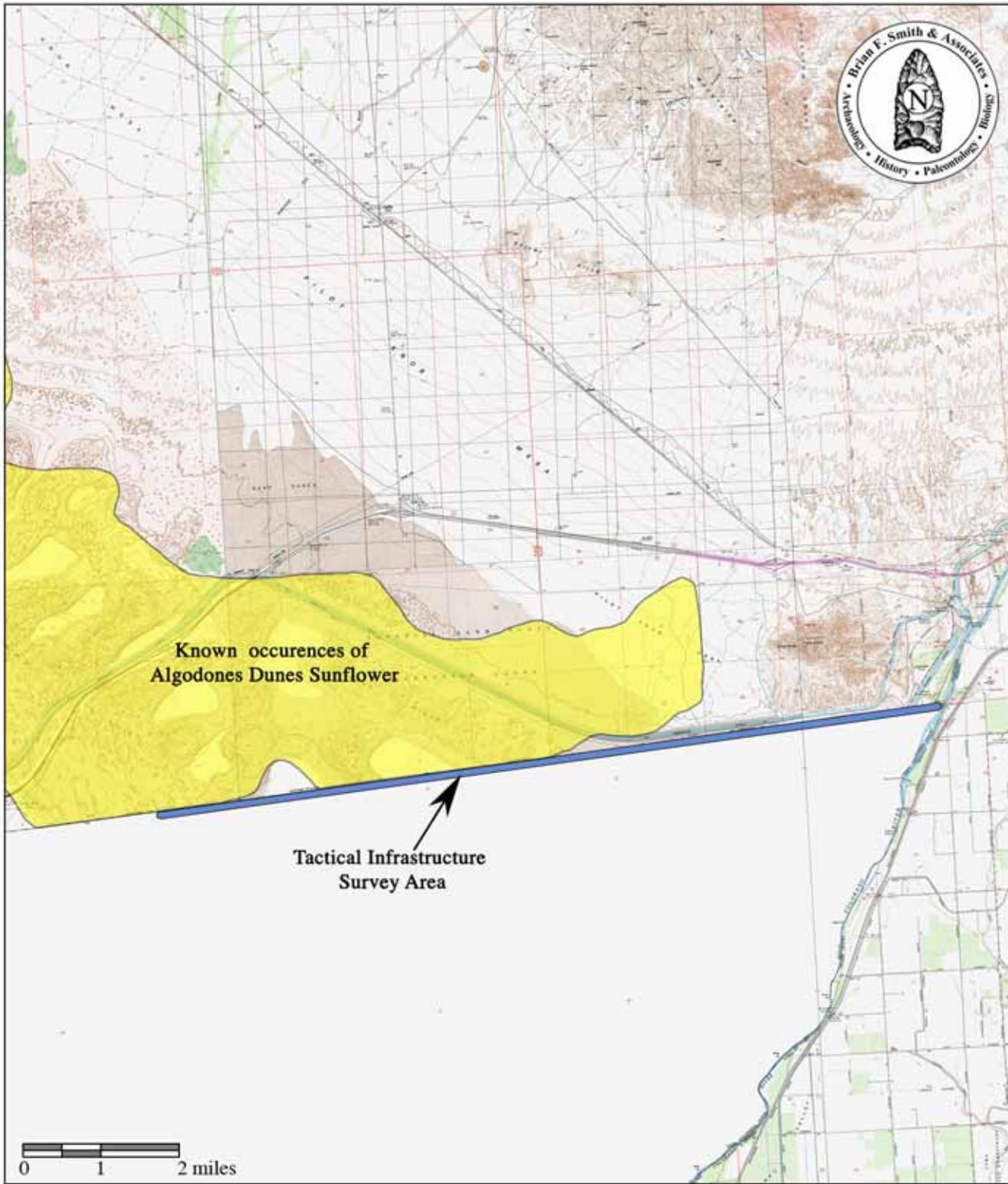
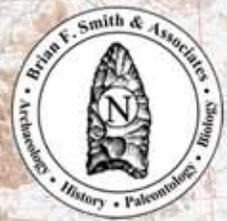


Figure 8
Generalized Distribution Map:
Algodones Dunes Sunflower (*Helianthus niveus* ssp. *tephrodes*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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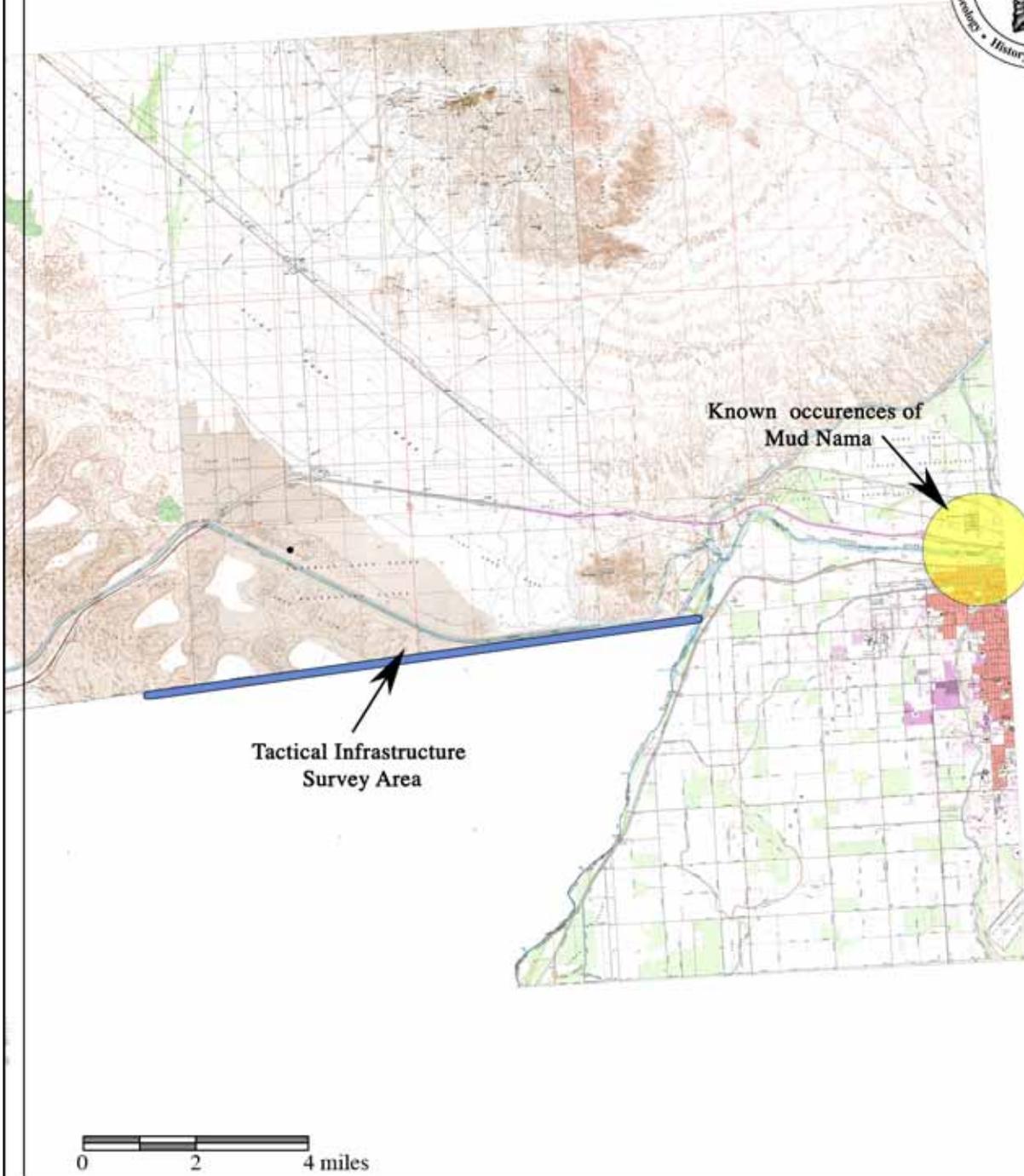


Figure 9
Generalized Distribution Map:
Mud Nama (*Nama stenocarpum*)
In Vicinity of Proposed Action

(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

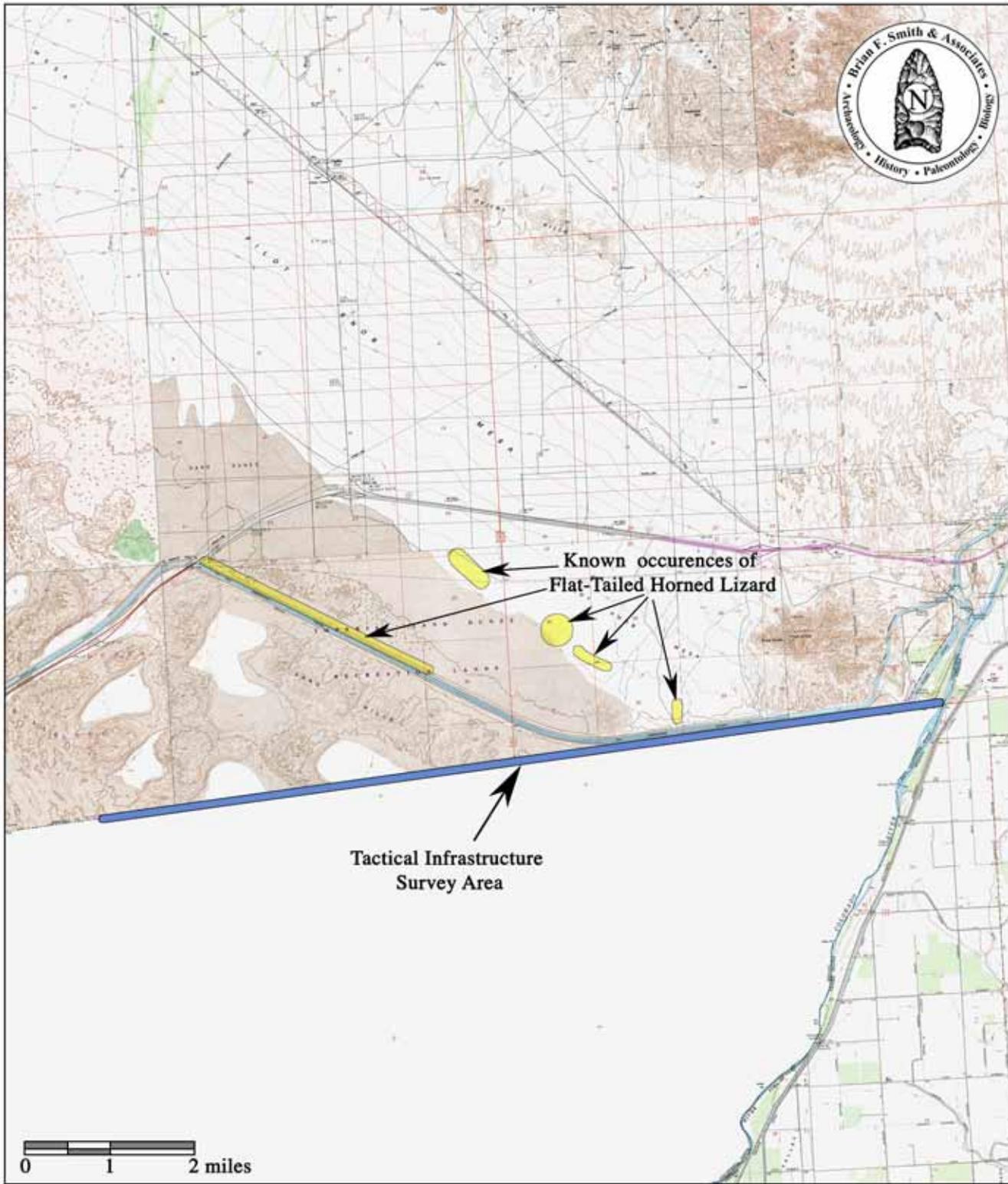


Figure 10
Generalized Distribution Map:
Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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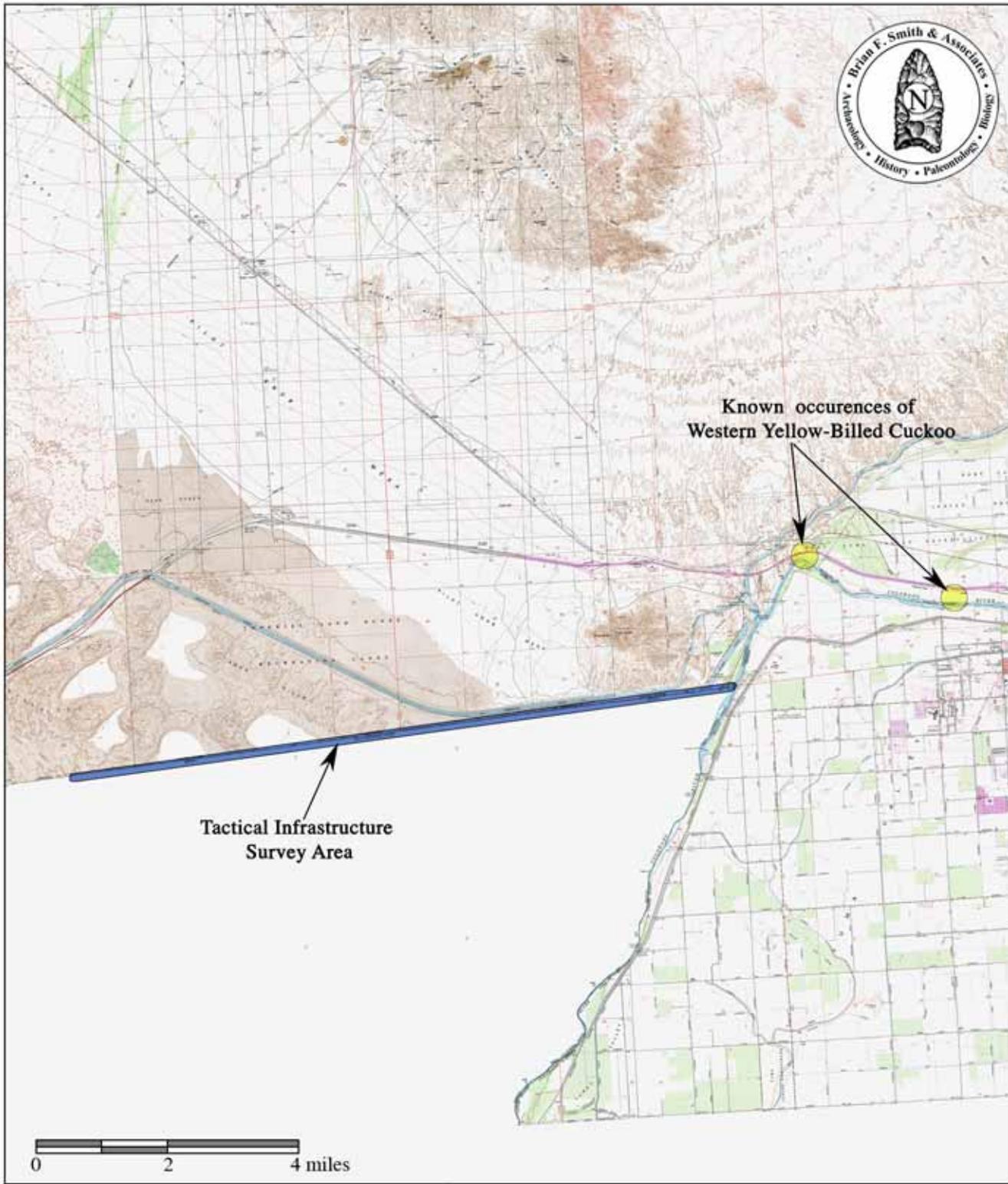


Figure 11
Generalized Distribution Map:
Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

/Users/editing/1_Projects/Yuma Tactical Infrastructure/Western Yellow-Billed Cuckoo

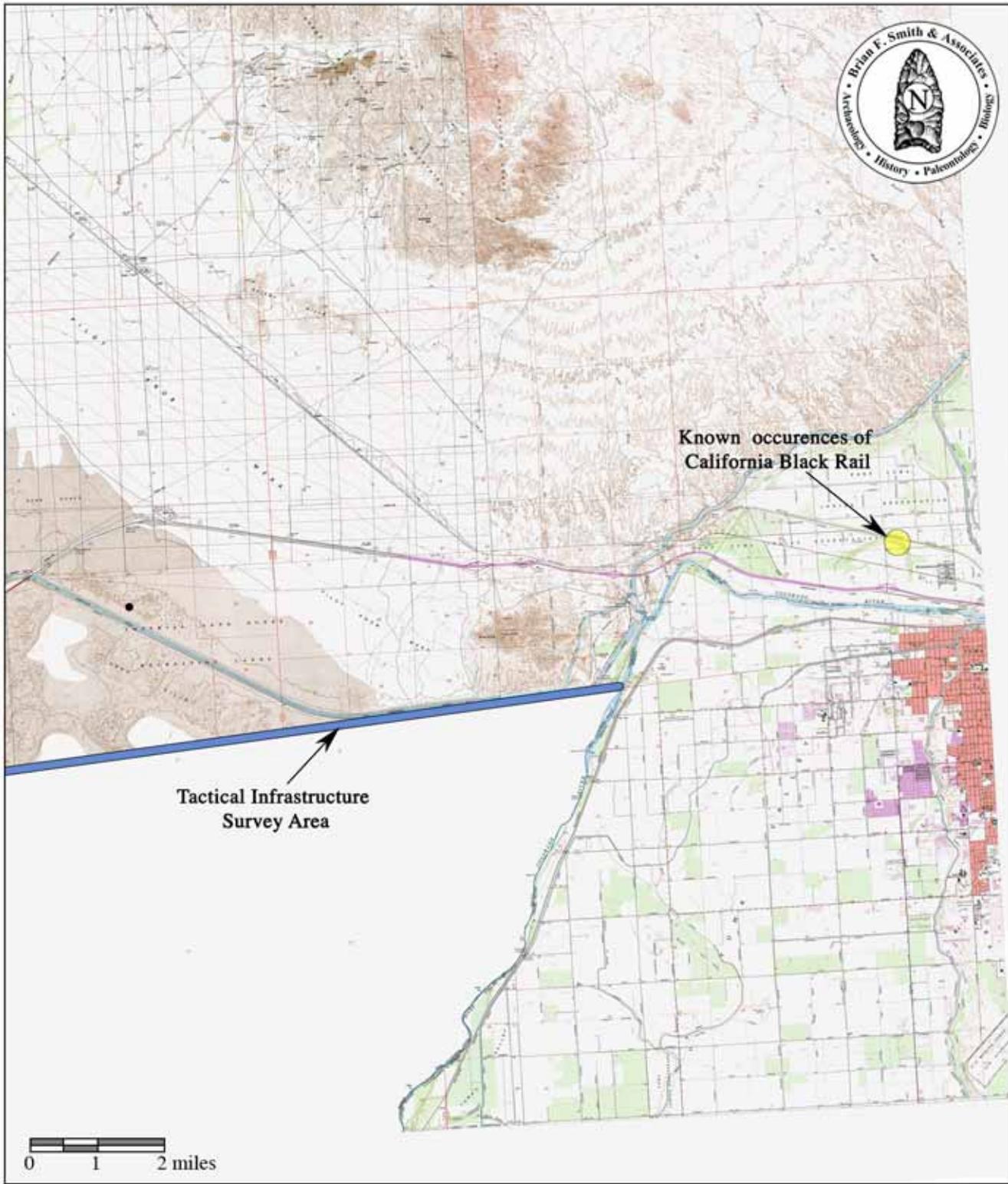


Figure 12
Generalized Distribution Map:
California Black Rail (*Laterallus jamaicensis coturniculus*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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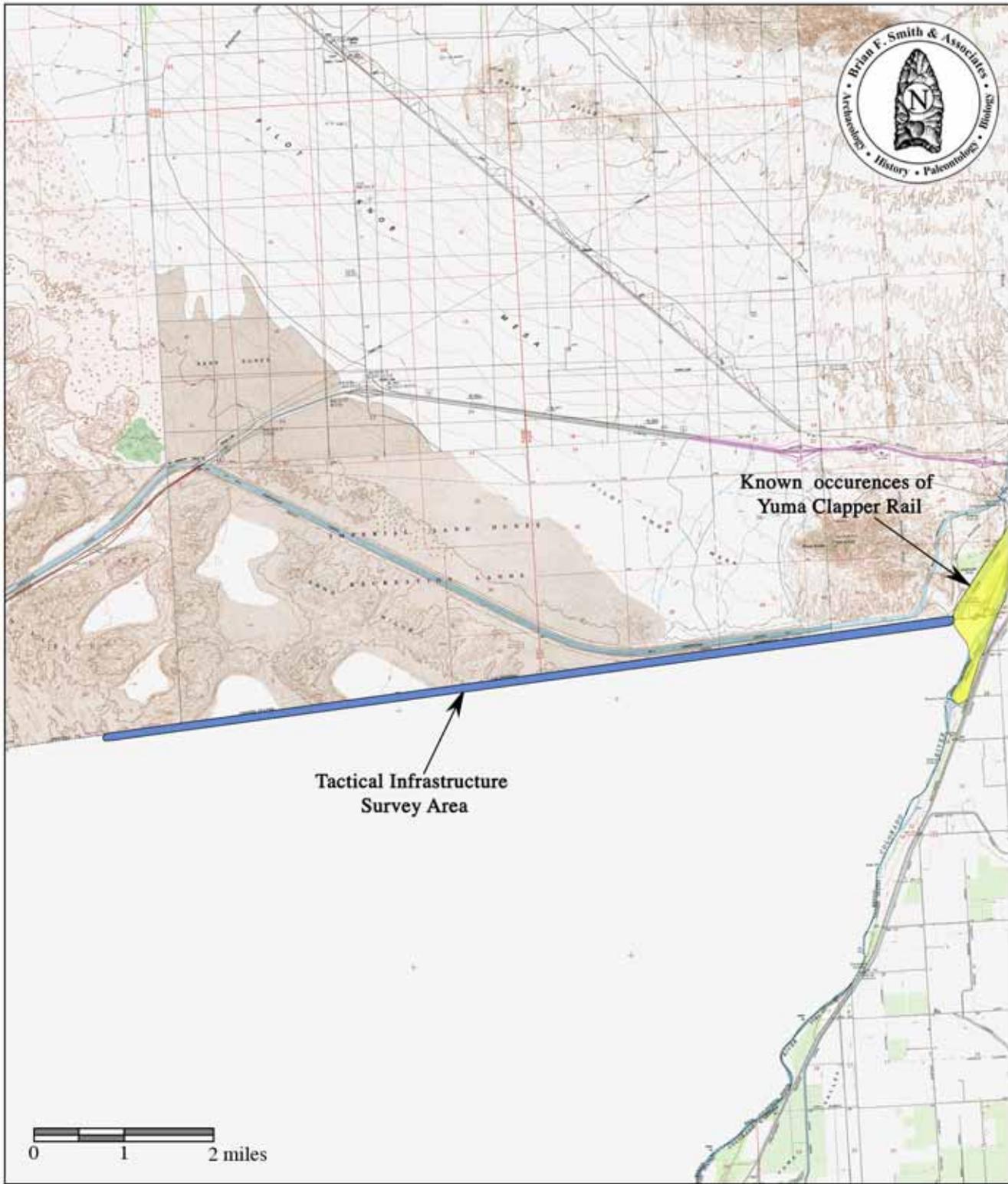


Figure 13
Generalized Distribution Map:
Yuma Clapper Rail (*Rallus longirostris yumanensis*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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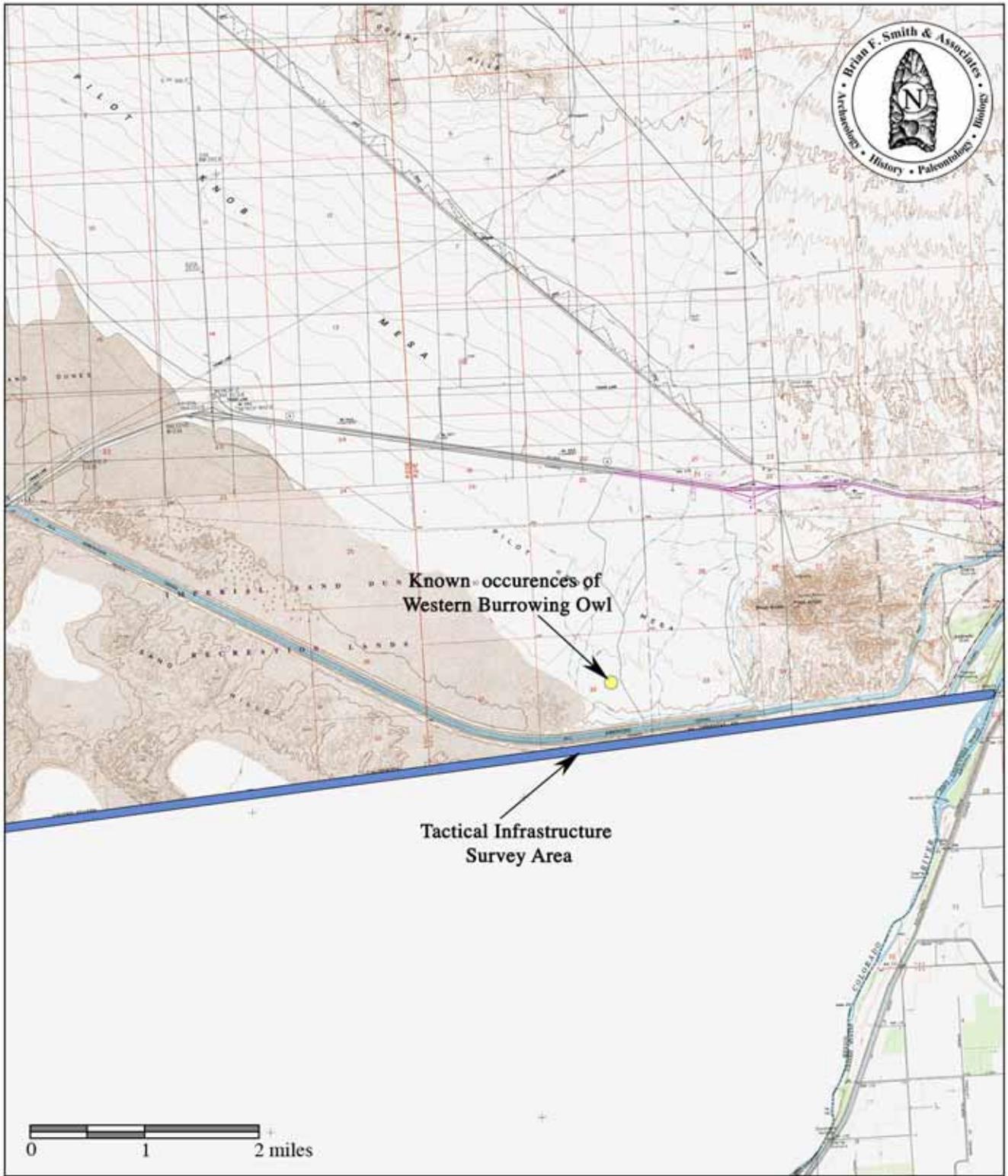


Figure 14
Generalized Distribution Map:
Western Burrowing Owl (*Athene cunicularia*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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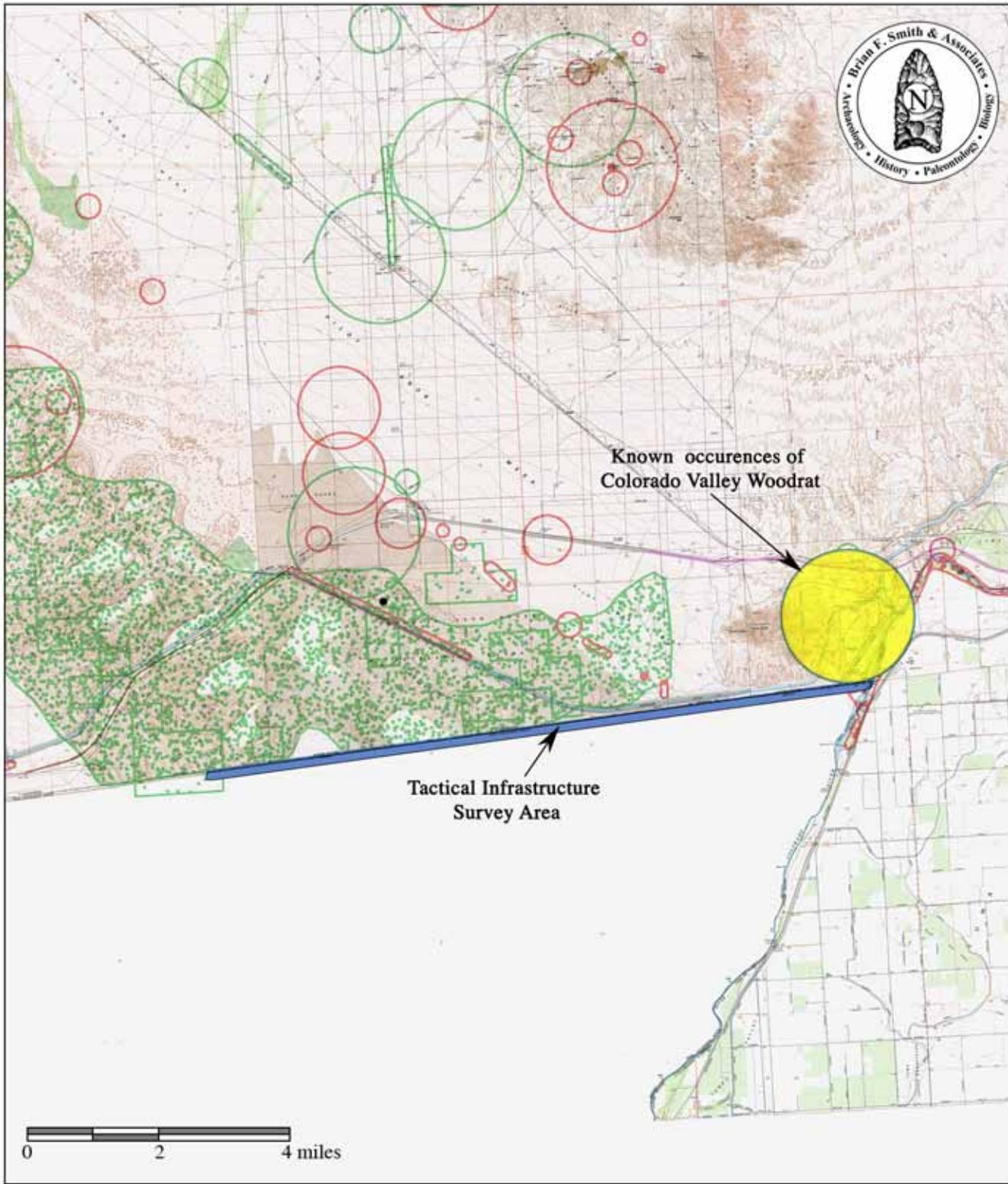


Figure 15
Generalized Distribution Map:
Colorado Valley Woodrat (*Neotoma albigula venusta*)
In Vicinity of Proposed Action
(Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

/Users/editing/1_Projects/Yuma Tactical Infrastructure/Colorado Valley Woodrat

APPENDIX 1

Project Photographs



Plate 1. Mojave Creosote Scrub community at Boundary Monument 209.



Plate 2. Existing fence and Urban/Disturbed/Exotic vegetation along border near the Port of Entry at Algodones/Andrade. Baja California is on the right of the photograph.



Plate 3. Dunes and Mojave Creosote Scrub.
Landform in the left background is Pilot Knob near Winterhaven, Arizona.



Plate 4. Area of hydrophytic vegetation and standing water identified as “Wetland 1” on the Vegetation Map (Figure 3). Algodones, Baja California, Mexico is in the background. Potential fence construction would parallel the road seen near the houses and is not likely to intrude into this wet area. The site does provide marginal suitable habitat for the Yuma clapper rail. If construction occurs in this area during the rail breeding season, a focused survey would be conducted to determine if rails are present. If rails are present, noise attenuation measures would be required.



Plate 5. Area of hydrophytic vegetation and standing water identified as “Wetland 2” on the Vegetation Map (Figure 3). Construction of the proposed fence would be limited to the berm on the right (south) side of the photograph. Potentially suitable habitat for the Yuma clapper rail and California black rail may occur in the area on the left side of the photograph. If construction is planned for this area during the rail breeding season, a survey would be required to determine if rails are present. If rails are present, noise attenuation measures would be required.



Plate 6. Second area of hydrophytic vegetation identified as Wetland 2 on the Vegetation Map (Figure 3).



Plate 7. Third area of hydrophytic vegetation encountered and identified as Wetland 3 on the Vegetation Map. Construction of the proposed fence would be limited to the berm on the right (south) side of the photograph. Potentially suitable habitat for the Yuma clapper rail and California black rail may occur in the area on the left side of the photograph. If construction is planned for this area during the rail breeding season, a survey would be required to determine if rails are present. If rails are present, noise attenuation measures would be required.



Plate 8. Typical wash along the survey route. Generally vegetation in these areas consists of salt cedar, palo verde, creosote bush, and scattered smoke tree.

APPENDIX F
Air Emission Calculations

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	12	240	1728000
Diesel Road Compactors	0	100	12	240	0
Diesel Dump Truck	1	300	12	240	864000
Diesel Excavator	0	300	12	240	0
Diesel Hole Cleaners/Trenchers	3	175	12	240	1512000
Diesel Bore/Drill Rigs	2	300	12	240	1728000
Diesel Cement & Mortar Mixers	2	300	12	240	1728000
Diesel Cranes	3	175	12	240	1512000
Diesel Graders	0	300	12	240	0
Diesel Tractors/Loaders/Backhoes	1	100	12	240	288000
Diesel Bull Dozers	0	300	12	240	0
Diesel Front End Loaders	1	300	12	240	864000
Diesel Fork Lifts	4	100	12	240	1152000
Diesel Generator Set	4	40	12	240	460800

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

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

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.838	3.942	10.454	0.781	0.762	1.409	1020.681
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.419	1.971	5.227	0.390	0.381	0.705	510.341
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.850	4.066	9.681	0.766	0.733	1.233	892.763
Diesel Bore/Drill Rigs	1.143	4.361	13.615	0.952	0.933	1.390	1008.684
Diesel Cement & Mortar Mixers	1.162	4.418	13.863	0.914	0.895	1.390	1008.684
Diesel Cranes	0.733	2.166	9.531	0.567	0.550	1.216	883.432
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.587	2.606	2.291	0.435	0.422	0.302	219.339
Diesel Bull Dozers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Front End Loaders	0.362	1.476	4.761	0.333	0.324	0.705	510.531
Diesel Aerial Lifts	2.514	9.851	10.867	1.765	1.714	1.206	876.973
Diesel Generator Set	0.614	1.909	3.032	0.371	0.361	0.411	298.232
Total Emissions	9.221	36.765	83.322	7.274	7.074	9.967	7229.660

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustible Emissions	9.22	36.77	83.32	7.27	7.07	9.97
Construction Site-fugitive PM-10	NA	NA	NA	20.80	4.16	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
Total emissions	10.19	45.83	84.57	28.09	11.25	9.97
De minimis threshold	100.00	NA	100.00	70.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	20	20	0.43	0.51	0.94
CO	12.4	15.7	60	240	20	20	3.94	4.98	8.92
NOx	0.95	1.22	60	240	20	20	0.30	0.39	0.69
PM-10	0.0052	0.0065	60	240	20	20	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	240	20	20	0.00	0.00	0.00

-

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

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

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

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

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3 IMPERIAL COUNTY

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Construction Site Total Area/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	15.76	12	20.80	4.16

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

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

Costruction Site Area	Foot Print Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
Fence Installation	5,280	130	1	15.76
Total				15.76

Conversion Factors	Feet to Miles	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Miles/month
Length of Fence	1

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 YUMA COUNTY

Assumptions for Combustible Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	12	80	576000
Diesel Road Compactors	0	100	12	80	0
Diesel Dump Truck	1	300	12	80	288000
Diesel Excavator	0	300	12	80	0
Diesel Hole Cleaners/Trenchers	3	175	12	80	504000
Diesel Bore/Drill Rigs	2	300	12	80	576000
Diesel Cement & Mortar Mixers	2	300	12	80	576000
Diesel Cranes	3	175	12	80	504000
Diesel Graders	0	300	12	80	0
Diesel Tractors/Loaders/Backhoes	1	100	12	80	96000
Diesel Bull Dozers	0	300	12	80	0
Diesel Front End Loaders	1	300	12	80	288000
Diesel Fork Lifts	4	100	12	80	384000
Diesel Generator Set	4	40	12	80	153600

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 YUMA COUNTY

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

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.279	1.314	3.485	0.260	0.254	0.470	340.227
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.140	0.657	1.742	0.130	0.127	0.235	170.114
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.283	1.355	3.227	0.255	0.244	0.411	297.588
Diesel Bore/Drill Rigs	0.381	1.454	4.538	0.317	0.311	0.463	336.228
Diesel Cement & Mortar Mixers	0.387	1.473	4.621	0.305	0.298	0.463	336.228
Diesel Cranes	0.244	0.722	3.177	0.189	0.183	0.405	294.477
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.196	0.869	0.764	0.145	0.141	0.101	73.113
Diesel Bull Dozers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Front End Loaders	0.121	0.492	1.587	0.111	0.108	0.235	170.177
Diesel Aerial Lifts	0.838	3.284	3.622	0.588	0.571	0.402	292.324
Diesel Generator Set	0.205	0.636	1.011	0.124	0.120	0.137	99.411
Total Emissions	3.074	12.255	27.774	2.425	2.358	3.322	2409.887

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 3 YUMA COUNTY

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	3.07	12.26	27.77	2.42	2.36	3.32
Construction Site-fugitive PM-10	NA	NA	NA	6.93	1.39	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
Total emissions	4.04	21.32	29.02	9.38	3.76	3.32
De minimis threshold	NA	NA	NA	100.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3 YUMA COUNTY

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	20	20	0.43	0.51	0.94
CO	12.4	15.7	60	240	20	20	3.94	4.98	8.92
NOx	0.95	1.22	60	240	20	20	0.30	0.39	0.69
PM-10	0.0052	0.0065	60	240	20	20	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	240	20	20	0.00	0.00	0.00

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

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

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

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

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3 YUMA COUNTY

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Construction Site Total Area/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	15.76	4	6.93	1.39

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

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

Costruction Site Area	Foot Print Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
Fence Installation	5,280	130	1	15.76
Total				15.76

Conversion Factors	Feet to Miles	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Miles/month
Length of Fence	1

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	12	240	1728000
Diesel Road Compactors	0	100	12	240	0
Diesel Dump Truck	1	300	12	240	864000
Diesel Excavator	0	300	12	240	0
Diesel Hole Cleaners/Trenchers	3	175	12	240	1512000
Diesel Bore/Drill Rigs	2	300	12	240	1728000
Diesel Cement & Mortar Mixers	2	300	12	240	1728000
Diesel Cranes	3	175	12	240	1512000
Diesel Graders	0	300	12	240	0
Diesel Tractors/Loaders/Backhoes	1	100	12	240	288000
Diesel Bull Dozers	0	300	12	240	0
Diesel Front End Loaders	1	300	12	240	864000
Diesel Fork Lifts	4	100	12	240	1152000
Diesel Generator Set	4	40	12	240	460800

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

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

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.838	3.942	10.454	0.781	0.762	1.409	1020.681
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.419	1.971	5.227	0.390	0.381	0.705	510.341
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.850	4.066	9.681	0.766	0.733	1.233	892.763
Diesel Bore/Drill Rigs	1.143	4.361	13.615	0.952	0.933	1.390	1008.684
Diesel Cement & Mortar Mixers	1.162	4.418	13.863	0.914	0.895	1.390	1008.684
Diesel Cranes	0.733	2.166	9.531	0.567	0.550	1.216	883.432
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.587	2.606	2.291	0.435	0.422	0.302	219.339
Diesel Bull Dozers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Front End Loaders	0.362	1.476	4.761	0.333	0.324	0.705	510.531
Diesel Aerial Lifts	2.514	9.851	10.867	1.765	1.714	1.206	876.973
Diesel Generator Set	0.614	1.909	3.032	0.371	0.361	0.411	298.232
Total Emissions	9.221	36.765	83.322	7.274	7.074	9.967	7229.660

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	9.22	36.77	83.32	7.27	7.07	9.97
Construction Site-fugitive PM-10	NA	NA	NA	9.60	1.92	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
Total emissions	10.19	45.83	84.57	16.89	9.01	9.97
De minimis threshold	100.00	NA	100.00	70.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	20	20	0.43	0.51	0.94
CO	12.4	15.7	60	240	20	20	3.94	4.98	8.92
NOx	0.95	1.22	60	240	20	20	0.30	0.39	0.69
PM-10	0.0052	0.0065	60	240	20	20	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	240	20	20	0.00	0.00	0.00

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

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

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

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

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3 IMPERIAL COUNTY

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

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

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

Costruction Site Area	Foot Print Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
Fence Installation	5,280	60	1	7.27
Total				7.27

Conversion Factors	Feet to Miles	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Miles/month
Length of Fence	1

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION YUMA COUNTY

Assumptions for Cumbustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	12	80	576000
Diesel Road Compactors	0	100	12	80	0
Diesel Dump Truck	1	300	12	80	288000
Diesel Excavator	0	300	12	80	0
Diesel Hole Cleaners/Trenchers	3	175	12	80	504000
Diesel Bore/Drill Rigs	2	300	12	80	576000
Diesel Cement & Mortar Mixers	2	300	12	80	576000
Diesel Cranes	3	175	12	80	504000
Diesel Graders	0	300	12	80	0
Diesel Tractors/Loaders/Backhoes	1	100	12	80	96000
Diesel Bull Dozers	0	300	12	80	0
Diesel Front End Loaders	1	300	12	80	288000
Diesel Fork Lifts	4	100	12	80	384000
Diesel Generator Set	4	40	12	80	153600

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

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION YUMA COUNTY

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

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.279	1.314	3.485	0.260	0.254	0.470	340.227
Diesel Road Paver	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Dump Truck	0.140	0.657	1.742	0.130	0.127	0.235	170.114
Diesel Excavator	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Hole Cleaners\Trenchers	0.283	1.355	3.227	0.255	0.244	0.411	297.588
Diesel Bore/Drill Rigs	0.381	1.454	4.538	0.317	0.311	0.463	336.228
Diesel Cement & Mortar Mixers	0.387	1.473	4.621	0.305	0.298	0.463	336.228
Diesel Cranes	0.244	0.722	3.177	0.189	0.183	0.405	294.477
Diesel Graders	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Tractors/Loaders/Backhoes	0.196	0.869	0.764	0.145	0.141	0.101	73.113
Diesel Bull Dozers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Front End Loaders	0.121	0.492	1.587	0.111	0.108	0.235	170.177
Diesel Aerial Lifts	0.838	3.284	3.622	0.588	0.571	0.402	292.324
Diesel Generator Set	0.205	0.636	1.011	0.124	0.120	0.137	99.411
Total Emissions	3.074	12.255	27.774	2.425	2.358	3.322	2409.887

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-SUMMARY OF EMISSIONS-PROPOSED ACTION YUMA COUNTY

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	3.07	12.26	27.77	2.42	2.36	3.32
Construction Site-fugitive PM-10	NA	NA	NA	6.93	1.39	NA
Construction Workers Commuter & Trucking	0.97	9.06	1.25	0.02	0.02	NA
Total emissions	4.04	21.32	29.02	9.38	3.76	3.32
De minimis threshold	NA	NA	NA	100.00	NA	NA

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION YUMA COUNTY

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
Pollutants	Emission Factors		Assumptions				Results by Pollutant		
	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	20	20	0.43	0.51	0.94
CO	12.4	15.7	60	240	20	20	3.94	4.98	8.92
NOx	0.95	1.22	60	240	20	20	0.30	0.39	0.69
PM-10	0.0052	0.0065	60	240	20	20	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	240	20	20	0.00	0.00	0.00

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

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

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

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

CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION YUMA COUNTY

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Construction Site Total Area/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	15.76	4	6.93	1.39

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

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

Costruction Site Area	Foot Print Demension (ft)			
Proposed Prioject	Length	Width	Units	Total Acres
Fence Installation	5,280	130	1	15.76
Total				15.76

Conversion Factors	Feet to Miles	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Miles/month
Length of Fence	1

