



FINAL

**ENVIRONMENTAL STEWARDSHIP PLAN
FOR THE CONSTRUCTION, OPERATION, AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
U.S. Border Patrol Yuma Sector, Arizona and California**

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



May 2008

FINAL

**ENVIRONMENTAL STEWARDSHIP PLAN
FOR THE CONSTRUCTION, OPERATION, AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
U.S. BORDER PATROL YUMA SECTOR,
ARIZONA AND CALIFORNIA**

May 2008

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

Point of Contact: Loren Flossman
Program Manager
SBI Tactical Infrastructure
1300 Pennsylvania Ave, NW
Washington, DC 20229

COVER SHEET

FINAL ENVIRONMENTAL STEWARDSHIP PLAN FOR THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF TACTICAL INFRASTRUCTURE U.S. BORDER PATROL YUMA SECTOR, ARIZONA AND CALIFORNIA

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

Coordinating Agencies: Bureau of Land Management (BLM), Yuma Field Office; U.S. Bureau of Reclamation (Reclamation); U.S. Army Corps of Engineers (USACE)-Los Angeles District; U.S. Fish and Wildlife Service (USFWS); and the U.S. Section, International Boundary and Water Commission (USIBWC).

Affected Location: Reclamation's West Main Bypass Canal System in Yuma County, Arizona and U.S./Mexico international border in Imperial County, California.

Project Description: The Planned Action includes the construction, operation, and maintenance of tactical infrastructure to include primary pedestrian fence and associated patrol and access roads parallel to approximately 14 miles of the U.S./Mexico international border within the USBP Yuma Sector, Arizona and California. The Planned Project will be implemented in two discrete sections including 3.7 miles along the C-2B segment in Arizona and 10.3 miles along the C-1 segment in California.

Report Designation: Final Environmental Stewardship Plan (ESP).

Abstract: CBP plans to construct, operate, and maintain approximately 14 miles of tactical infrastructure, including two discrete sections of primary pedestrian fence, vehicle fence, and patrol and access roads along the U.S./Mexico international border in the USBP Yuma Sector, Arizona and California. The Arizona segment will be installed along the eastern levee of the Reclamation's West Main Bypass Canal, within previously disturbed lands. The California segment will be installed within 3 to 6 feet of the international border, beginning west of the Andrade port of entry and extending 10.3 miles west through the Quechan Reservation and into BLM's Algodones Dunes Recreation Area. This ESP analyzes and documents environmental consequences associated with the Planned Action.

The public may obtain additional copies of the ESP from the project Web site at www.BorderFencePlanning.com; by emailing information@BorderFencePlanning.com; or by written request to Mr. Loren Flossman, Program Manager, SBI Tactical Infrastructure, 1300 Pennsylvania Ave, NW, Washington, DC 20229, Tel: (877) 752-0420, Fax: (703) 752-7754.

EXECUTIVE SUMMARY

BACKGROUND

United States (U.S) Customs and Border Protection (CBP) and U.S. Border Patrol (USBP) will 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.

In Section 102(b) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), Congress mandated that the U.S. Department of Homeland Security (DHS) install fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwestern border. This total includes certain priority miles of fencing in areas most practical and effective in deterring illegal entry and smuggling into the United States. Congress has mandated that these priority miles be completed by December 2008. To that end, DHS plans to complete 370 miles of pedestrian fencing and 300 miles of vehicle fencing along the southwestern border by the end of 2008. As of March 21, 2008, 201 miles of primary pedestrian fence and 140 miles of vehicle fence remained to be constructed to meet the December 2008 deadline. These efforts support the CBP mission to prevent terrorists and terrorist weapons from entering the U.S., while also facilitating the flow of legitimate trade and travel.

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of IIRIRA, exercised his authority to waive certain laws that were an impediment to the expeditious construction of tactical infrastructure along the southwestern border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under these laws, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP strongly supports this objective and remains committed to being a good steward of the environment.

Although the Secretary has exercised the authority vested in him by Congress, DHS and CBP remain committed to building tactical infrastructure in an environmentally responsible manner. In support of this commitment, CBP will continue to work in a collaborative manner with local government, state and federal land managers, and the interested public to identify and minimize the impact to environmentally sensitive resources.

CBP is performing an environmental review of the fencing projects and will publish the results of this analysis in Environmental Stewardship Plans (ESPs), including mitigation and Best Management Practices (BMPs) developed to minimize adverse effects to the environment. These ESPs will be developed for each USBP Sector scheduled for

tactical infrastructure improvements and will address each segment of pedestrian and vehicle fencing covered by the waiver.

GOALS AND OBJECTIVES OF THE PLANNED ACTION

The goal of the project is to increase border security within the USBP Yuma Sector with an ultimate objective of reducing illegal cross-border activity. The project further meets the objectives of the Congressional direction in the Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295), Border Security Fencing, Infrastructure, and Technology appropriation to install fencing, infrastructure, and technology along the border.

The USBP Yuma Sector identified two distinct areas along the border that experience high levels of illegal cross-border activity. This activity occurs in areas near POEs where concentrated populations might live on either side of the border, contain thick vegetation that can provide concealment or have quick access to U.S. transportation routes. In addition, the western portion of the California segment is fairly remote and not easily accessed by USBP agents.

The Planned Action will help to deter illegal entries within the USBP Yuma Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens, drugs, and other cross border violators and contraband from entering the U.S., while providing a safer work environment for USBP agents.

PLANNED ACTION

The fence will be installed along two different sections designated as C-1 and C-2B for the California and Arizona reaches, respectively. The project corridor within Yuma County, Arizona, is located about 1.5 miles north of the U.S./Mexico border, west of San Luis, Arizona, and extends northward for 3.7 miles along the Salinity Canal. This is the C-2B segment. The Salinity Canal is located on lands managed by the U.S. Bureau of Reclamation (Reclamation). USBP will also install TI along the international border, beginning approximately 0.5 mile west of the Andrade POE in Imperial County, California, and extending 10.3 miles to the west, into the Algodones Dunes Recreation Area, which is composed of public lands managed by the U.S. Bureau of Land Management (BLM). This is the C-1 segment. The TI location is based on a USBP Yuma Sector assessment of local operational requirements and includes fence sections installed in areas of the border that are not currently fenced and where such infrastructure will assist USBP agents in reducing illegal cross-border activities.

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Table ES-1 provides an overview of potential environmental impacts by specific resource areas. Chapters 3 through 12 of this ESP address these impacts in more detail. CBP followed specially developed design criteria to reduce adverse environmental impacts and will implement mitigation measures to further reduce or

offset adverse environmental impacts. Design criteria to reduce adverse environmental impacts include selecting a route that will minimize impacts, consulting with Federal and state agencies and other stakeholders to avoid or minimize adverse environmental impacts, and developing appropriate BMPs to protect natural and cultural resources. Potential effects, including physical disturbance and construction of solid barriers on wetlands, riparian areas, streambeds, and floodplains, will be avoided or mitigated whenever possible. BMPs will include implementation of a Storm Water Pollution Prevention Plan (SWPPP), Construction Mitigation and Restoration (CM&R) Plan, Spill Prevention Control and Countermeasures Plan (SPCCP), Dust Control Plan, Fire Prevention and Suppression Plan, and Unanticipated Discovery Plan to protect natural and cultural resources. BMPs relative to wildlife populations and their habitats are described in detail in Appendix B of this document.

Table ES-1. Summary of Anticipated Environmental Impacts

Resource Area	Effects of the Project	Best Management Practices/Mitigation
Air Quality	Minor and temporary impact on air quality will occur during construction; air emissions will remain below <i>de minimis</i> levels.	Dust Control Plan. Fire Prevention and Suppression Plan. Maintain equipment according to specifications.
Noise	Minor temporary increases to ambient noise during construction activities will occur.	Equipment will be operated on an as-needed basis. A majority of the activities will occur away from population centers. The duration of construction near Gadsden will be limited to a few days.
Land Use, Recreation, and Aesthetics	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). There will be a minor permanent impact on visual resources and the character of BLM land, as the fence will be conspicuous from adjacent hilltops. Beneficial effects, such as reduced vandalism, habitat degradation, debris left by IAs, and wildfires will be expected.	No mitigation needed.
Soils	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 will be affected.	Dust Control Plan. Within C-1 segment, fence will be a floating fence design, which will minimize impacts to soils.
Hydrology and Groundwater	A temporary and one-time water usage will require 23 acre-feet of water. There will be a negligible to minor impact on the availability of water in the region. Grading and contouring will result in short-term minor adverse impacts.	SPCC and CM&R plans.

Table ES-1, continued

Resource Area	Effects of the Project	Best Management Practices/Mitigation
Surface Waters and Waters of the United States	Minor and temporary impact on surface water resources from sedimentation and erosion caused by construction. Surface runoff potential will result in short-term minor adverse impacts on wetlands. Washes, wetlands, and other waters of the U.S. will be adversely impacted by construction.	Mitigate for 0.9 acres of wetlands impacts. Mitigation measures pertaining to wetland crossings include minimizing construction time in wetland areas, requiring nonessential construction to avoid crossing wetland areas, storing and returning the top foot of soil from wetland areas to preserve root stock for regrowth.
Floodplains	Direct impact on jurisdictional floodplains along the C-2B segment. No effect for C-1 segment.	Fence will be constructed parallel to flood flows in the C-2B segment.
Vegetation Resources	Negligible to minor impact on vegetation communities, since limited native communities occur within the project corridor.	Fire Suppression and Prevention Plan. Biological monitor on site during construction to ensure all BMPs and mitigation plans are followed.
Wildlife and Aquatic Resources	Fragmentation of wildlife habitat will 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.	Surveys of nesting migratory birds will be conducted and migratory bird nests, including burrowing owl burrows, will be flagged and avoided, to the extent practicable. Use of bollard style fence within C-1 segment will minimize fragmentation effects for small animals. See general BMPs in Appendix B.
Threatened and Endangered Species	Adverse effect on Peirson's milk-vetch is expected. Flat-tailed horned lizards are known to occur in the project corridor and will likely be adversely affected.	CBP will implement BMPs for Peirson's milk-vetch and flat-tailed horned lizard. See general and species-specific BMPs in Appendix B.
Cultural Resources	No impacts will be expected.	No mitigation needed.
Hazardous Material	No impacts will be expected.	SPCCP will be implemented.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES - 1
1.0 GENERAL PROJECT DESCRIPTION.....	1-1
1.1 INTRODUCTION TO THE ENVIRONMENTAL STEWARDSHIP PLAN (ESP)	1-1
1.2 USBP BACKGROUND	1-3
1.3 GOALS AND OBJECTIVES OF THE PLANNED ACTION	1-4
1.4 STAKEHOLDER AND PUBLIC OUTREACH.....	1-4
1.5 MITIGATION	1-5
1.5.1 General Construction Activities	1-5
1.5.2 Air Quality	1-7
1.5.3 Aesthetics	1-7
1.5.4 Soils	1-7
1.5.5 Water Resources	1-7
1.5.6 Biological Resources.....	1-8
1.5.7 Cultural Resources.....	1-8
1.5.8 Hazardous Materials	1-9
2.0 DESCRIPTION OF THE PROJECT	2-1
3.0 AIR QUALITY.....	3-1
3.1 AFFECTED ENVIRONMENT	3-1
3.1.1 Yuma County	3-2
3.1.2 Imperial County	3-2
3.2 ENVIRONMENTAL CONSEQUENCES.....	3-2
4.0 NOISE	4-1
4.1 AFFECTED ENVIRONMENT	4-1
4.1.1 Yuma County	4-2
4.1.2 Imperial County	4-2
4.2 ENVIRONMENTAL CONSEQUENCES.....	4-2
5.0 LAND USE, RECREATION AND AESTHETICS	5-1
5.1 AFFECTED ENVIRONMENT	5-1
5.1.1 Land Use.....	5-1
5.1.1.1 Yuma County	5-1
5.1.1.2 Imperial County, California	5-1
5.1.2 Aesthetics	5-2
5.2 ENVIRONMENTAL CONSEQUENCES.....	5-2
5.2.1 Land Use.....	5-2
5.2.2 Aesthetics	5-2
6.0 SOILS.....	6-1
6.1 AFFECTED ENVIRONMENT	6-1
6.1.1 Yuma County, Arizona	6-1
6.1.2 Imperial County, California	6-1

6.2	ENVIRONMENTAL CONSEQUENCES.....	6-1
7.0	HYDROLOGY AND GROUNDWATER.....	7-1
7.1	AFFECTED ENVIRONMENT	7-1
7.1.1	Groundwater	7-1
7.1.1.1	Yuma County	7-1
7.1.1.2	Imperial County	7-1
7.1.2	Surface Water	7-1
7.1.2.1	Yuma County	7-1
7.1.2.2	Imperial County	7-2
7.1.3	Waters of the U.S. and Wetlands	7-2
7.1.4	Floodplains.....	7-7
7.1.4.1	Yuma County	7-7
7.1.4.2	Imperial County	7-7
7.2	ENVIRONMENTAL CONSEQUENCES.....	7-7
7.2.1	Groundwater	7-7
7.2.2	Surface Water	7-9
7.2.3	Waters of the U.S.....	7-9
7.2.4	Floodplains.....	7-10
8.0	BIOLOGICAL RESOURCES	8-1
8.1	AFFECTED ENVIRONMENT	8-1
8.1.1	Vegetation Communities	8-1
8.1.2	Wildlife Resources	8-1
8.1.3	Protected Species and Critical Habitat.....	8-2
8.1.3.1	Yuma County	8-2
8.1.3.2	Imperial County, California	8-4
8.2	ENVIRONMENTAL CONSEQUENCES.....	8-7
8.2.1	Vegetation Communities	8-7
8.2.2	Wildlife	8-7
8.2.3	Protected Species and Critical Habitat.....	8-9
9.0	CULTURAL RESOURCES	9-1
9.1	AFFECTED ENVIRONMENT	9-1
9.1.1	Cultural Overview.....	9-1
9.1.2	Previous Investigations	9-2
9.1.3	Current Investigations	9-3
9.2	ENVIRONMENTAL CONSEQUENCES.....	9-3
10.0	SOCIOECONOMICS.....	10-1
10.1	AFFECTED ENVIRONMENT	10-1
10.1.1	Population	10-1
10.1.1.1	Yuma County, Arizona	10-1
10.1.1.2	Imperial County, California	10-1
10.1.2	Employment, Poverty Levels, and Income	10-1
10.1.2.1	Yuma County, Arizona	10-1
10.1.2.2	Imperial County, California	10-2

10.1.3 Environmental Justice and Protection of Children.....	10-3
10.2 ENVIRONMENTAL CONSEQUENCES.....	10-3
10.2.1 Population and Employment	10-3
10.2.2 Environmental Justice and Protection of Children.....	10-4
11.0 UTILITIES AND INFRASTRUCTURE.....	11-1
11.1 AFFECTED ENVIRONMENT	11-1
11.1.1 Yuma County	11-1
11.1.2 Imperial County	11-1
11.2 ENVIRONMENTAL CONSEQUENCES.....	11-1
12.0 HAZARDOUS MATERIALS.....	12-1
12.1 AFFECTED ENVIRONMENT	12-1
12.1.1 Yuma County	12-1
12.1.2 Imperial County	12-1
12.2 ENVIRONMENTAL CONSEQUENCES.....	12-1
13.0 RELATED PROJECTS AND POTENTIAL EFFECTS	13-1
13.1 AIR QUALITY	13-5
13.2 NOISE.....	13-5
13.3 LAND USE AND AESTHETICS.....	13-6
13.4 SOILS	13-6
13.5 WATER RESOURCES	13-7
13.6 VEGETATION COMMUNITIES	13-7
13.7 WILDLIFE	13-7
13.8 CULTURAL RESOURCES	13-7
13.9 SOCIOECONOMICS	13-8
13.10 HAZARDOUS MATERIALS	13-8
14.0 REFERENCES.....	14-1

LIST OF FIGURES

Figure 2-1. Vicinity Map.....	2-2
Figure 2-2. C-2B Location Map	2-3
Figure 2-3. C-1 Location Map.....	2-4
Figure 2-4. Schematic of VF-4 Floating Fence Design.....	2-5
Figure 2-5. Schematic of PV-1 Fence Design	2-6
Figure 7-1. Waters near the Project Corridors.....	7-3
Figure 7-2. Wetland and WUS Overview Map.....	7-5
Figure 7-3. FEMA Floodplain Map.....	7-8
Figure 8-1. CNDDDB records within 1-mile of the Project Location	8-8
Figure 11-1. Transportation Routes Near the Project Corridors	11-2

LIST OF TABLES

Table 3-1. National Ambient Air Quality Standards	3-1
Table 3-2. Yuma County Total Air Emissions (tons/year) from Construction Activities vs. <i>de minimis</i> Levels	3-3
Table 3-3. Imperial County Total Air Emissions (tons/year) from Construction Activities vs. <i>de minimis</i> Levels	3-3
Table 4-1. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances	4-3
Table 7-1. Waters of the U.S. and Wetlands Impacted by Alternative	7-10
Table 8-1. Federally Listed Species Potentially Occurring Within Yuma County, Arizona	8-3
Table 8-2. Federally Listed Species Potentially Occurring Within Imperial County, California	8-5
Table 8-3. California Listed Species Potentially occurring within the Project Area	8-7

LIST OF PHOTOGRAPHS

Photograph 8-1. Peirson's Milk-vetch© USFWS	8-6
---	-----

LIST OF APPENDICES

Appendix A	Copy of 2008 Border Waiver
Appendix B	Biological Resources Plan
Appendix C	Air Emission Calculations
Appendix D	Hydrology Analysis from March 2007 SEA
Appendix E	Biological Field Report

EXHIBIT

Exhibit 5-1. Schematic Representation of an Installed Fence within the Dune System from approximately 0.5 mile	5-3
---	-----

SECTION 1.0
GENERAL PROJECT DESCRIPTION



1.0 GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION TO THE ENVIRONMENTAL STEWARDSHIP PLAN (ESP)

In Section 102(b) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), Congress mandated that the United States (U.S.) Department of Homeland Security (DHS) install fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwestern border. This total includes certain priority miles of fencing in areas most practical and effective in deterring illegal entry and smuggling into the U.S. Congress has mandated that these priority miles be completed by December 2008. To that end, DHS plans to complete 370 miles of pedestrian fencing and 300 miles of vehicle fencing along the southwestern border by the end of 2008. As of March 21, 2008, 201 miles of primary pedestrian fence and 140 miles of vehicle fence remained to be constructed to meet the December 2008 deadline. These efforts support the U.S. Customs and Border Protection (CBP) mission to prevent terrorists and terrorist weapons from entering the U.S., while also facilitating the flow of legitimate trade and travel.

On April 1, 2008, the Secretary of DHS, pursuant to his authority under Section 102(c) of IIRIRA, exercised his authority to waive certain laws that were an impediment to the expeditious construction of tactical infrastructure along the southwestern border. Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the Clean Water Act (CWA), Clean Air Act (CAA), or National Historic Preservation Act (NHPA), Endangered Species Act (ESA) and others, for the tactical infrastructure (TI) segments addressed in this Environmental Stewardship Plan (ESP), the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with these Federal regulations as the basis for evaluating potential environmental impacts and appropriate mitigations. A copy of the waiver is included as Appendix A.

In support of its commitment to environmental stewardship, CBP will continue to work in a collaborative manner with local government, state and Federal land managers, and the interested public to identify environmentally sensitive resources and develop appropriate best management practices (BMPs) to avoid or minimize adverse impacts resulting from the projects.

CBP is conducting an environmental review of the projects and will publish the results of this analysis in ESPs, including mitigation and BMPs developed to minimize adverse effects to the environment. These ESPs will be developed for each U.S. Border Patrol (USBP) Sector scheduled for tactical infrastructure improvements and will address each segment of pedestrian and vehicle fencing covered by the waiver.

The project area covered by this ESP has been determined to be an area of high illegal entry into the U.S., and the project area has been designated by the Secretary of DHS

as an area of critical border TI. As such, the project area is designated as an area where completion of border TI must be accomplished in an expeditious manner, and the Secretary of DHS has waived compliance with all Federal, state, or other laws, regulations and legal requirements necessary for the completion of the TI (the Planned Action). This ESP is prepared in order to evaluate impacts of the Planned Action on natural and human resources in the project corridor, and to assist CBP and USBP in protecting critical resources during construction and operation of the TI being installed for the Planned Action. This ESP is designed in a format that identifies each affected resource and evaluates all potential impacts to that resource, with the intent to minimize impacts to the extent practicable. This ESP was not prepared to comply with specific laws or regulations; rather it is a planning and guidance tool to assist CBP to accomplish construction in a manner that will minimize adverse impacts to the extent practicable.

In December 2004, CBP released the *Final Environmental Assessment (EA) for the Installation of Permanent Lighting and a Border Infrastructure System, Office of Border Patrol (OBP), Yuma Sector, Arizona* (CBP 2004). The December 2004 Final EA proposed the construction of a border infrastructure system that included the installation of permanent security lights, a secondary fence, all-weather patrol road, maintenance road, security fence and extension of the primary border fence. The border infrastructure system has been completed, creating a 150-foot-wide enforcement zone north of the U.S./Mexico border on either side of the San Luis port of entry (POE), Arizona. The construction was divided into three phases that encompassed approximately 13 miles. Phases I and II included the installation of permanent security lights, all-weather patrol road, secondary fence, maintenance road, and security fence near the San Luis POE. Phase III included the installation of permanent security lights near the town of Gadsden, Arizona.

In March 2007, CBP supplemented the December 2004 EA with the *Supplemental Environmental Assessment for the Installation of Permanent Security Lighting and a Border Infrastructure System, Office of Border Patrol, Yuma Sector, Arizona* (CBP 2007). The March 2007 Supplemental Environmental Assessment (SEA) proposed the construction of road and fence from the U.S./Mexico border west of San Luis northward for 1.5 miles, clearance of brush to create camera lanes along the Colorado River, installation of bridges over canals, realignment of the enforcement zone near Friendship Park, and installation of permanent lights. This ESP will incorporate by reference much of the data presented in these two previous documents.

Some resources within the Planned Action's region of influence (ROI) are not addressed in this ESP because they are not relevant to the analyses. The resources that are not addressed, and the reasons for eliminating them are:

- Utilities: The Planned Action will not affect any public utilities.
- Communications: The Planned Action will not affect communications systems in the area.

- Geology: The Planned Action will 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 Planned Action will not affect nor be affected by the climate.
- Wild and Scenic Rivers: The Planned Action will not 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 construction footprint, the canal is separated from the footprint by a levee and, thus, will not be affected.
- Human Health and Safety: The Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency (EPA) issue standards that specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits with respect to workplace stressors. Contractors will be required to establish and maintain safety programs at the construction site, consistent with these standards. The Planned Action will not expose members of the general public to increased safety risks.

1.2 USBP BACKGROUND

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

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

USBP has nine administrative sectors along the U.S./Mexico international border. Each sector is responsible for implementing an optimal combination of personnel, technology, and infrastructure appropriate for its operational requirements. The Yuma Sector is responsible for Yuma, La Paz, and Mojave Counties, Arizona, the eastern portions of

Imperial and Riverside Counties, California, and the southernmost counties of Nevada. The areas affected by the Planned Action include the westernmost portion of Yuma County, along the Colorado River, and the southernmost portion of Imperial County.

1.3 GOALS AND OBJECTIVES OF THE PLANNED ACTION

The goal of the project is to increase border security within the USBP Yuma Sector with an ultimate objective of reducing illegal cross-border activity. The project further meets the objectives of the Congressional direction in the Fiscal Year (FY) 2007 DHS Appropriations Act (Public Law [P.L.] 109-295), Border Security Fencing, Infrastructure, and Technology appropriation to install fencing, infrastructure, and technology along the border.

The USBP Yuma Sector identified two distinct areas along the border that experience high levels of illegal cross-border activity. This activity occurs in areas near POEs where concentrated populations might live on either side of the border, contain thick vegetation that can provide concealment or have quick access to U.S. transportation routes. In addition, the western portion of the California segment is fairly remote and not easily accessed by USBP agents.

The Planned Action will help to deter illegal entries within the USBP Yuma Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, illegal aliens, drugs, and other cross border violators and contraband from entering the U.S., while providing a safer work environment for USBP agents.

1.4 STAKEHOLDER AND PUBLIC OUTREACH

Prior to the waiver, CBP prepared a supplemental environmental assessment (SEA) and draft Finding of No Significant Impact (FONSI) to address the potential effects of the Planned Action. A Notice of Availability (NOA) for the draft SEA and FONSI were published in the *Yuma Sun* on 22 and 28 January 2008, announcing the release of documents for a 30-day public comment period. In addition, a public meeting was conducted in Yuma on 30 January 2008.

Although the Secretary of DHS issued the waiver, and thus, CBP has no responsibilities under the National Environmental Policy Act (NEPA) for this project, CBP reviewed, considered, and incorporated comments received from the public and other Federal, state, and local agencies, as appropriate, during the preparation of this ESP. CBP responses to public comments received under the NEPA process will be provided on the www.BorderFencePlanning.com Web site.

In addition to the past public involvement and outreach program, CBP has continued to coordinate with various Federal and state agencies during the development of this ESP. These agencies are described in the following paragraphs.

U.S. Section, International Boundary and Water Commission (USIBWC) - CBP has coordinated with USIBWC to ensure that any construction along the international border does not adversely affect International Boundary Monuments or substantially impede floodwater conveyance within international drainages.

U.S. Army Corps of Engineers (USACE), Los Angeles District - CBP has coordinated all activities with USACE to identify potential jurisdictional Waters of the U.S., including wetlands, and to develop measures to avoid, minimize or compensate for losses to these resources.

U.S. Fish and Wildlife Service (USFWS) - CBP has coordinated extensively with USFWS to identify listed species that have the potential to occur in the project area and have cooperated with the USFWS to prepare a Biological Resources Plan (BRP) that presents the analysis of potential effects to listed species and the BMPs proposed to reduce or off-set any adverse impacts. A copy of the BRP is contained in Appendix B.

U.S. Department of the Interior (DOI) - CBP has continued to coordinate with U.S. Bureau of Land Management (BLM) and U.S. Bureau of Reclamation (Reclamation), since portions of the fence are planned for construction within BLM's Algodones Dunes Recreation Area and along Reclamation's Salinity Canal.

1.5 MITIGATION

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, mitigation, and finally, compensation. Mitigation efforts vary and include activities such as restoration of habitat in other areas and implementation of appropriate BMPs. CBP coordinates its environmental design measures with the appropriate Federal and state resource agencies, as appropriate. Both general BMPs and species-specific BMPs have been developed during the preparation of this ESP.

This section describes those measures that may be implemented to reduce or eliminate potential adverse impacts on the human and natural environment. Many of these measures have been incorporated by CBP as standard operating procedures on past projects. Environmental design measures and BMPs are presented for each resource category that will be potentially affected. The mitigation measures will be coordinated with the appropriate agencies and land managers or administrators, as appropriate.

1.5.1 General Construction Activities

BMPs will be implemented as standard operating procedures during all construction activities, and will include proper handling, storage, and/or disposal of hazardous and/or regulated materials. To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents will be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be completed following accepted industry guidelines, and all vehicles will have drip pans during storage to contain minor spills and

drips. Although a major spill is unlikely to occur, any spill of 5 gallons or more will be contained immediately within an earthen dike, and an absorbent (e.g., granular, pillow, sock, etc.) will be applied to contain the spill. Furthermore, a spill of any regulated substance in a reportable quantity will be cleaned up and coordinated with the appropriate Federal and state agencies. Reportable quantities of regulated substances will be included as part of a project-specific Spill Prevention, Control and Countermeasures Plan (SPCCP). An SPCCP will be in place prior to the start of construction and all personnel will be briefed on the implementation and responsibilities of this plan. Additionally, all construction activities will follow DHS Management Directive 5100 for waste management.

All equipment maintenance, laydown, and dispensing of fuel, oil, or any other such activities, will occur in staging areas identified for use in the Project description. The designated staging areas will be located in such a manner as to prevent any runoff from entering waters of the United States, including wetlands. All used oil and solvents will be recycled if possible. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed in manners consistent with EPA standards.

Solid waste receptacles will be maintained at staging areas and in compliance with DHS Management Directive 5100.1. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in on-site receptacles. Waste materials and other discarded materials contained in these receptacles will be removed from the site as quickly as possible. Solid waste will be collected and disposed of properly.

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

Once activities in any given construction segment of the project corridor are completed, active measures will be implemented to rehabilitate areas outside of the 60- foot construction area and established staging areas (except for temporary impacts in disturbed areas and nonnative grassland). CBP will coordinate with the appropriate land managers to determine the most suitable and cost-effective measures for successful rehabilitation.

For successful rehabilitation, all or some of the following measures may be conducted on the part of USBP:

- Site preparation through ripping and disking to loosen compacted soils.
- Hydro mulch with native grasses and forbs in order to control soil erosion and ensure adequate re-vegetation.
- Planting of native shrubs as required.
- Temporary irrigation (i.e., truck watering) for seedlings.

- Periodic monitoring to determine if additional actions are necessary to successfully rehabilitate areas.

Additional general construction BMPs are presented in Appendix B.

1.5.2 Air Quality

Standard construction BMPs such as routine watering of the roads will be used as a primary means of fugitive dust control during the construction phases of the Planned Action. Additionally, all construction equipment and vehicles will be maintained in good operating condition to minimize exhaust emissions.

1.5.3 Aesthetics

Fence designs will be coordinated with the BLM.

1.5.4 Soils

Proper site-specific BMPs are designed and utilized to reduce the impact of non-point source pollution during construction activities. BMPs include such things as buffers around washes to reduce the risk of siltation, installation of waterbars to slow the flow of water down hill, and placement of culverts, low-water crossings, or bridges where washes need to be traversed. These BMPs will greatly reduce the amount of soil lost to runoff during heavy rain events and ensure the integrity of the construction site. Soil erosion BMPs can also beneficially impact air quality by reducing the amount of fugitive dust.

1.5.5 Water Resources

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented to reduce potential stormwater erosion and sedimentation effects to local drainages. In addition, CBP will seek technical advice from the USACE Los Angeles District in determining mitigation measures to offset impacts to jurisdictional Waters of the U.S. (WUS) and vegetated wetlands, as appropriate.

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

Vehicular traffic associated with construction will remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration to ensure incorporation of various and effective compaction techniques, aggregate materials, wetting compounds, and rehabilitation to reduce potential soil erosion. Erosion control measures such as waterbars, gabions, straw bales, and re-vegetation will be implemented during and after construction activities. Re-vegetation efforts will be needed to ensure long-term recovery of the area and to prevent significant soil erosion problems.

1.5.6 Biological Resources

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

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

Environmental design measures that will be considered, especially in areas that support protected species, include coordination with local resource agencies' biologists, as deemed necessary, and monitoring by qualified biologists of sensitive species potentially impacted by construction. To ensure that any impact on less mobile species (e.g., flat-tailed horned lizard [FTHL]) are avoided or minimized, CBP may implement conservation measures, as discussed in more detail in Section 7.2. Construction crews will be informed of sensitive resources and the need to avoid impacts to these resources. Once fence post holes or trenches are excavated, construction crews will conduct daily inspections for trapped reptiles under the guidance of qualified biologists, and will continue to do so until the concrete foundations are set.

Since avoidance of the breeding/nesting season (March through September) is unlikely for this project, surveys for migratory birds may be completed prior to clearing and grubbing activities. Any migratory bird nests that are observed in the project corridor and are active, including burrowing owl burrows, will be flagged and avoided to the extent practicable. Construction activities determined to result in the take of a migratory bird will be reported to Arizona Game and Fish Department (AGFD) or California Department of Fish and Game (CDFG) for informational purposes.

Numerous BMPs have been identified that, if implemented, could reduce impacts to floral and faunal species. Many of these are general BMPs designed to alleviate overall effects to wildlife populations and vegetation communities. Some are species-specific BMPs designed to avoid or offset impacts to rare and protected species. These BMPs are discussed in detail in Appendix B and later in Section 9.2.3 of this ESP.

1.5.7 Cultural Resources

Cultural resources surveys of the project corridor have been completed and, except for Border Monuments, no sites were recorded that have the potential to be eligible for listing on the National Register of Historic Places. Prior to ground-disturbing activities near sites determined to be potentially eligible for listing on the NRHP, the Arizona and California State Historic Preservation Officers (SHPO), Reclamation, BLM, and the appropriate Tribal Historic Preservation Officer (THPO) will be consulted. The appropriate mitigation measures will be identified and implemented. The preferred mitigation measures will be to (1) avoid sites to the extent practicable; (2) recover data; and (3) monitor construction activities to ensure potential impacts are minimized.

1.5.8 Hazardous Materials

Refueling of machinery will be allowed only at designated staging areas using a properly located and designated fuel truck equipped with a proper spill containment kit. All vehicles will have drip pans during storage to contain minor spills and drips, in accordance with the SPCCP.

All used oil and solvents will continue to be recycled if possible. All non-recyclable hazardous and regulated wastes will continue to be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures. Construction activities planned adjacent to active agricultural areas will be coordinated as much as possible with local farmers to avoid exposure of construction personnel during pesticide or herbicide applications.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 2.0
DESCRIPTION OF THE PROJECT



2.0 DESCRIPTION OF THE PROJECT

The planned locations of TI are based on a USBP Yuma Sector assessment of local operational requirements. CBP and USBP Yuma Sector will construct, operate, and maintain 14 miles of 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 (Figure 2-1). TI is a term used by USBP to describe physical structures that facilitate enforcement activities; these items typically include, but are not limited to, roads, fences, lights, gates, boat ramps, and barriers. TI addressed in this document will consist of primary pedestrian fence, improvements to existing roads, and construction of access roads within USBP's Yuma Sector. Construction of other TI might be required in the future as mission and operational requirements are continually reassessed. To the extent that additional actions are known, they are discussed in Chapter 13, Related Projects and Potential Effects, of this ESP.

The fence and road will be located along the eastern toe of the eastern levee of the Salinity Canal near Yuma and within the 60-foot-wide Roosevelt Reservation for the California portion of the Planned Action. The Salinity Canal levees (managed by the Reclamation) and the Roosevelt Reservation (managed by the BLM) are public lands. The Planned Action would occur within the USBP Yuma Sector's area of operation (AO). A small portion of C-1 also crosses lands owned by the Quechan Tribe.

The primary pedestrian fence will be installed along two different segments designated as C-1 and C-2B for the California and Arizona reaches, respectively. The project corridor within Yuma County, Arizona is located about 1.5 miles north of the U.S./Mexico border, west of San Luis, Arizona, and extends northward for 3.7 miles along the Salinity Canal, Yuma County, Arizona (Figure 2-2). For the Arizona portion, 3.7 miles of primary pedestrian fence would be installed along the eastern toe of the eastern Salinity Canal levee for approximately 0.5 mile and then along the toe of the second levee road. A maintenance road, approximately 16 to 20 feet wide, would be constructed between the levee toe and the primary pedestrian fence for the entire length of the fence. A temporary staging area will be used to store equipment and material; this area, shown in Figure 2-2, is within a highly disturbed area.

USBP will also install TI along the international border, beginning approximately 0.5 mile west of the Andrade POE in Imperial County, California, and extending 10.3 miles to the west, into BLM's Algodones Dunes Recreation Area (Figure 2-3). A construction and maintenance access road would need to be installed in order to construct the fence. The TI construction is expected to require the entire 60-foot-wide Roosevelt Reservation. Access to this portion of the fence corridor would be from the Andrade POE or south from the All American Canal. The C-1 staging area will be located immediately south of the All American Canal and will encompass about 4 acres.

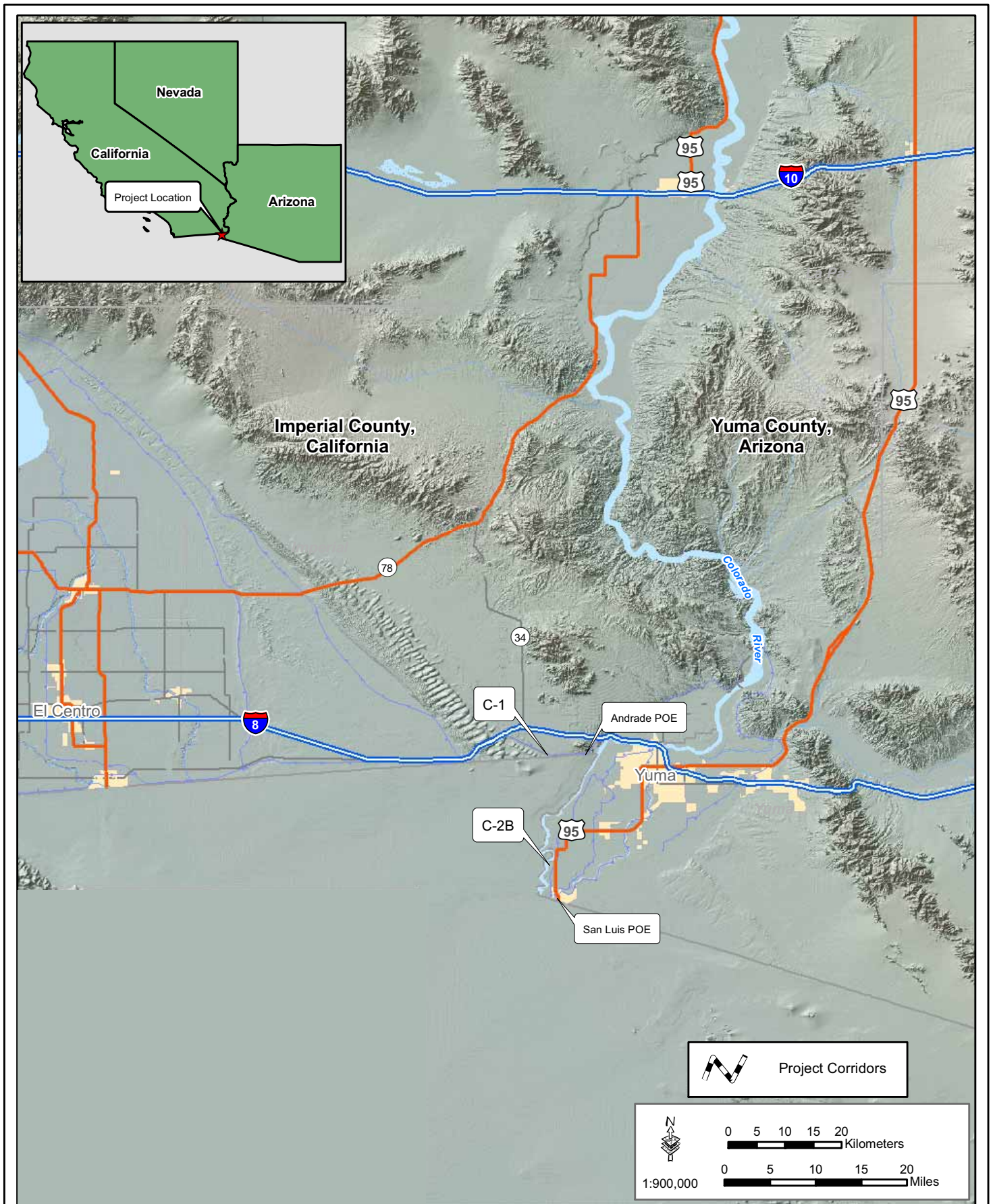


Figure 2-1: Vicinity Map

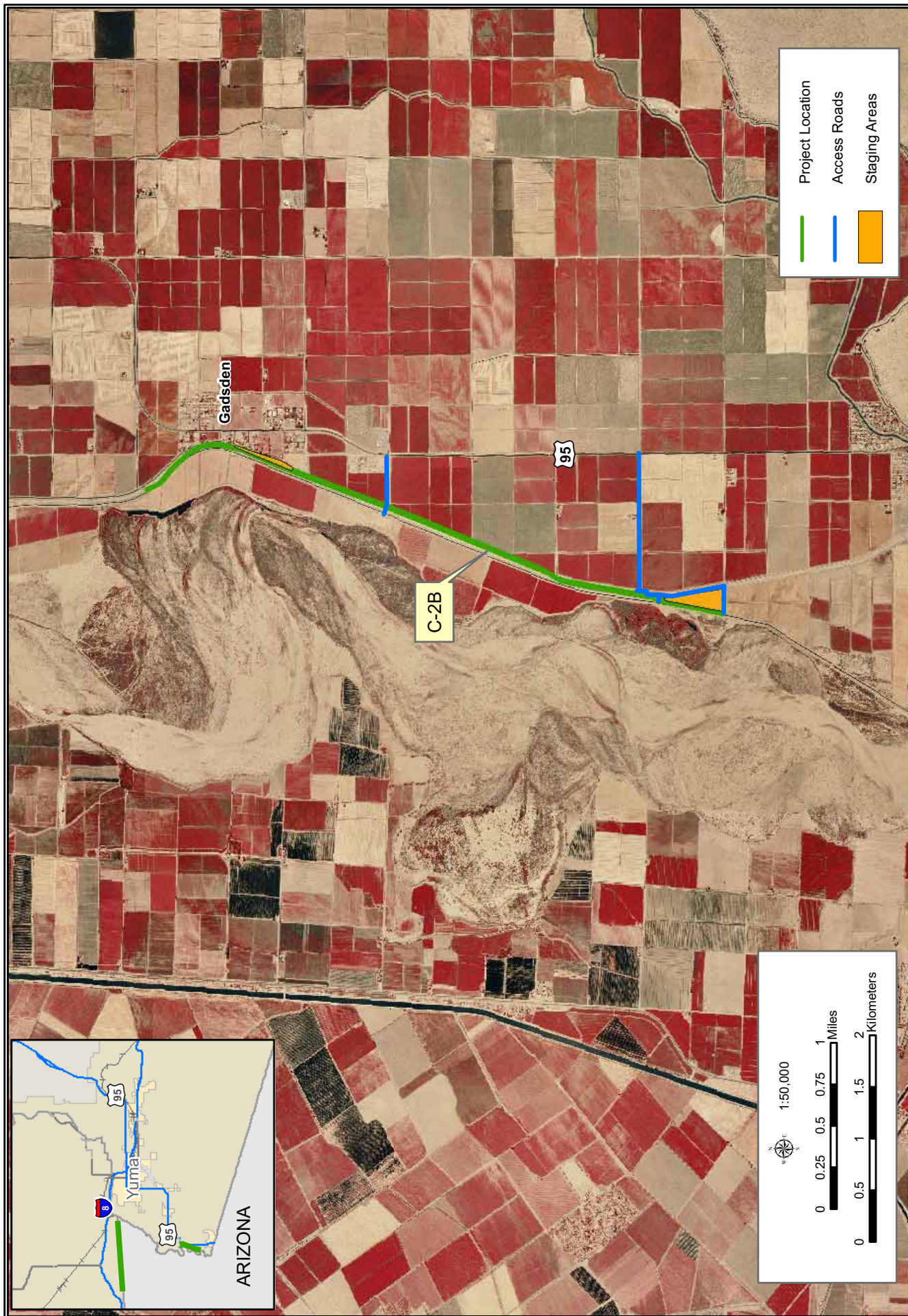


Figure 2-2. C-2B Location Map

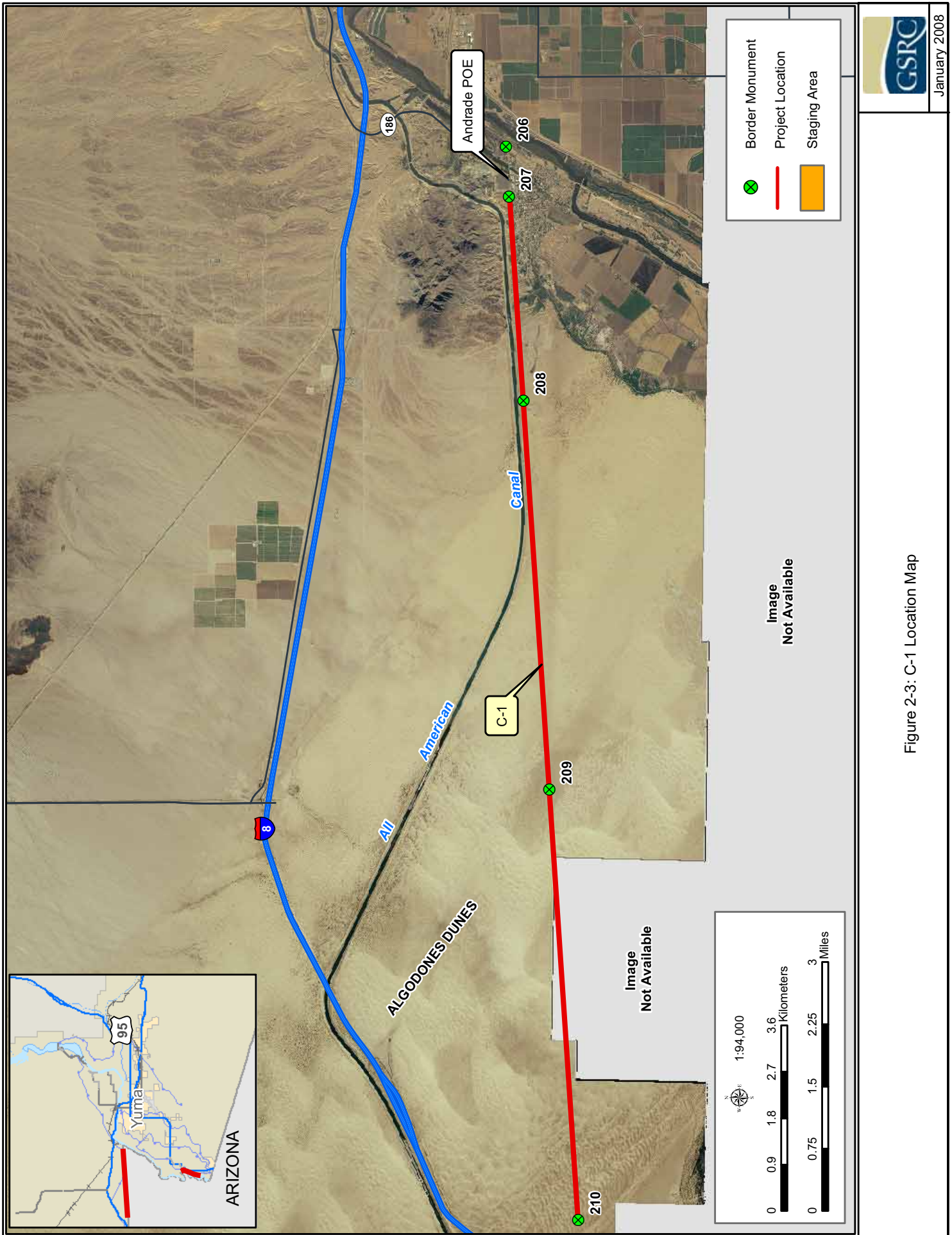


Figure 2-3: C-1 Location Map

The fence designs developed by USACE include performance standards, which dictate that the fence must:

- extend 15 to 18 feet above ground and be supported in subsurface footers at depths deemed necessary;
- be capable of withstanding an impact from a 10,000-pound gross weight vehicle traveling at 40 miles per hour (mph);
- be resistant to vandalism, cutting, or penetrating;
- be semi-transparent, as dictated by operational need;
- be designed to survive extreme climate changes of a desert environment;
- be designed to allow movement of small animals from one side to the other; and
- not impede the natural flow of water.

Within the C-2B segment, the current plan is to install a wire mesh fence (PV-2A, PV-2B, or PV-2C). Two different designs will be used for the C-1 segment: Vehicle Fence Type 4 (VF-4), and Personnel-Vehicle Fence Type 1 (PV-1).

The VF-4 fence is a floating fence designed to prevent vehicle passage in the western 6.3 miles of the C-1 segment (Figure 2-4). Sections of VF-4 fence will be transported on site by small trucks with lowboy trailers. Fence sections will be installed on site using a fork lift to set the sections on the surface of the sand. The center fence bollard will extend several feet into the sand, as appropriate, to provide stability. The VF-4 was specially designed to sit on the surface of the sand and will be lifted and repositioned using a fork lift on the sand surface as necessary due to sand accumulation along the fence. Construction will be completed using a fork lift. No pile driving or trenching will be required for construction of VF-4 fence.

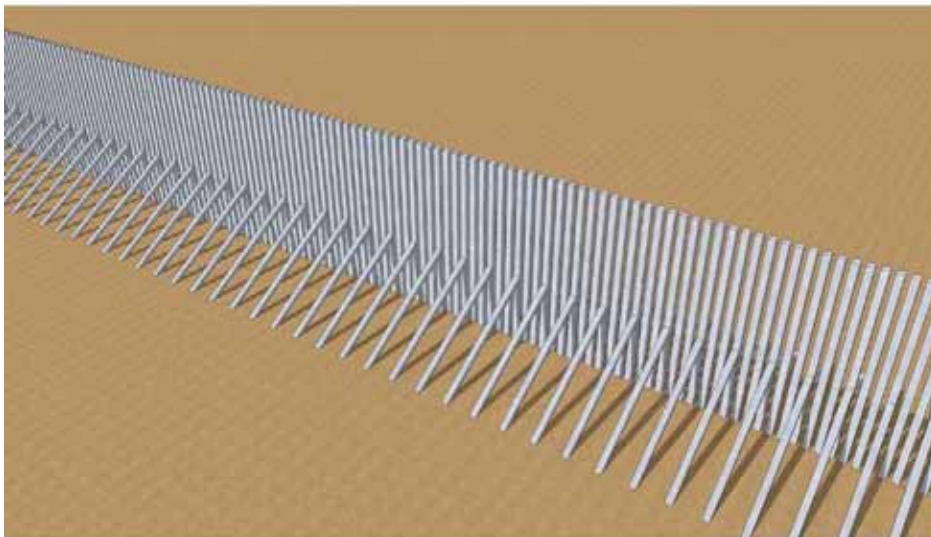


Figure 2-4. Schematic of VF-4 Floating Fence Design

The PV-1 fence is an anchored, 23-foot long grout-filled steel bollard-style fence designed to prevent passage by both people and vehicles (Figure 2-5). This type of fence will be installed along the eastern 4 miles of the C-1 segment. Panels of PV-1 fence will be welded together off site and transported on site by small trucks with lowboy trailers. Using a crane, fence panels will be set in concrete-filled trenches. Construction of new fence will be completed using a trencher, a cement mixer, and a crane. No pile driving will be required for construction of PV-1 fence.

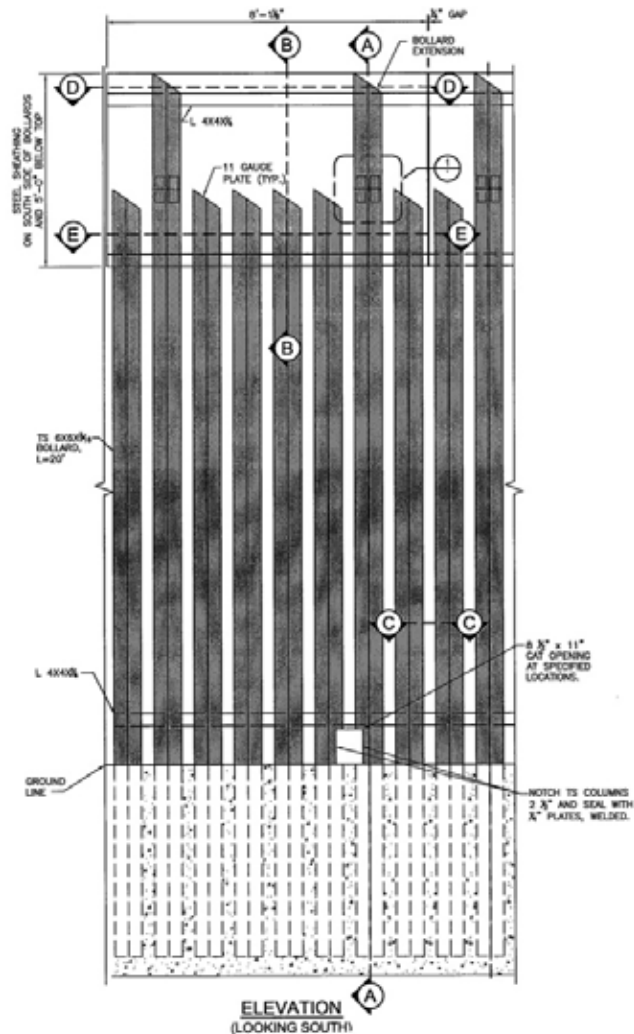


Figure 2-5. Schematic of PV-1 Fence Design

Upon completion of the TI, CPB will be responsible for repair and maintenance of the fence and road. Such activities would include replacement or repair of fence segments that are vandalized, removal of debris that becomes entrapped along the fence or within any drainage structures, and grading of the road surface. These activities will occur on an as-needed basis; however, routine road maintenance would be expected to occur at least annually.

SECTION 3.0
AIR QUALITY



3.0 AIR QUALITY

3.1 AFFECTED ENVIRONMENT

The EPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public. Ambient air quality standards are classified as either "primary" or "secondary." The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM-2.5), and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS are included in Table 3-1.

Table 3-1. 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 (100µg/m 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 S= Secondary

Source: EPA 2006.

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

Areas that do not meet these NAAQS standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. While issuance of the waiver eliminated the requirement for CBP to comply with the CAA, the NAAQS have

been used to evaluate the potential impacts to air quality associated with the fencing projects in both Arizona and California and to develop BMPs to minimize those impacts.

3.1.1 Yuma County

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

3.1.2 Imperial County

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

3.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the CAA, for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the CAA as the basis for evaluating potential environmental impacts and appropriate mitigations.

Temporary and minor increases in air pollution will occur from the use of construction equipment (combustible emissions) and the disturbance of soils (fugitive dust) during construction of the primary pedestrian fence and maintenance/access roads.

EPA's NONROAD 2005 Model was used, as recommended by EPA's *Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999* (EPA 2001), to calculate emissions from construction equipment such as bulldozers, cranes, etc. Assumptions were made regarding the type of equipment, the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Similarly, emissions from delivery trucks and commuters traveling to the job site were calculated using the EPA MOBILE6.2 Model (EPA 2001). Construction workers will temporarily increase the combustible emissions in the airshed during their commute to and from the project area. These emissions were calculated in the air emission analysis and included in the total emission estimates.

Furthermore, large amounts of dust (i.e., fugitive dust) can arise from the mechanical disturbance of surface soils, including grading, driving, and road and fence construction. Fugitive dust emissions were calculated using the emission factor of 0.11ton per acre per month, which is a more current standard than EPA's 1985 *Compilation of Air*

Pollutant Emission Factors, also known as AP-42 (EPA 2001). The total air quality emissions were calculated for the construction activities occurring in Yuma and Imperial counties to compare to the General Conformity Rule. Summaries of the total emissions for Yuma and Imperial counties are presented in Tables 3-2 and 3-3, respectively. Details of the analyses are presented in Appendix C.

Table 3-2. Yuma County Total Air Emissions (tons/year) from Construction Activities vs. *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

Source: 40 CFR 51.853 and GSRC model projections

Table 3-3. Imperial County Total Air Emissions (tons/year) from Construction Activities vs. *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

Source: 40 CFR 51.853 and GSRC model projections

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

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

As can be seen from the tables, the construction activities will not exceed *de minimis* thresholds and thus would not require a Conformity Determination, even without the DHS waiver. As there are no violations of air quality standards and no conflicts with the state implementation plans, there will be minor, temporary impacts on air quality as a result of the Planned Action.

During the construction of the TI projects, proper and routine maintenance of all vehicles and other construction equipment will ensure that emissions are within the design standards of the equipment. Dust suppression methods should be implemented to minimize fugitive dust. In particular, wetting solutions will be applied to construction areas to minimize the emissions of fugitive dust. By using these environmental design measures, air emissions from the Planned Action will be temporary and will result in minor impairments air quality in the region.

SECTION 4.0
NOISE



4.0 NOISE

4.1 AFFECTED ENVIRONMENT

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

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

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

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

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

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

Where:

dBA_2 = dBA at distance 2 from source (predicted)
 dBA_1 = dBA at distance 1 from source (measured)
 d_2 = Distance to location 2 from the source
 d_1 = Distance to location 1 from the source

4.1.1 Yuma County

The C-2B project corridor is located in rural areas with the exception of a 4,200-foot reach adjacent to the town of Gadsden, Arizona. Approximately 33 single-family homes and Gadsden Elementary School are located within 400 feet of the construction corridor. The closest noise receptor is a single-family home located approximately 160 feet away. The Gadsden Elementary School is 240 feet from the project corridor.

4.1.2 Imperial County

There are no sensitive noise receptors in the U.S. within 500 feet of the C-1 project corridor. There are neighborhoods south of the border in Mexico near the eastern end of the project corridor.

4.2 ENVIRONMENTAL CONSEQUENCES

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

Table 4-1 describes noise emission levels for construction equipment which range from 76 dBA to 84 dBA at a distance of 50 feet (Federal Highway Administration [FHWA] 2007). As can be seen from this table, assuming the worst-case scenario of 84 dBA, the noise model projected that noises levels of 84 dBA from the auger drill would have to travel 500 feet before they would attenuate to acceptable levels of 65 dBA. To reduce noise levels of 84 dBA to a normally unacceptable level of 75 dBA, the distance from the noise source to the receptor would be 140 feet. The closest sensitive noise receptor is 160 feet from the project corridor. However, it should also be noted that these estimates are based on straight-line distances and do not necessarily consider other factors that could enhance attenuation, such as topography, climate, and vegetation. Since another levee system is located between the construction corridor and the residential areas, some additional attenuation will be expected. Still, the noise levels will be temporary and considered minor; ambient noise levels will return after completion of the construction activities.

Table 4-1. 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 will also be limited to daylight hours during the work week, when most of the residents are not at home. Temporary impacts of construction noise on wildlife are discussed later in Section 8.2.2.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 5.0
LAND USE, RECREATION AND AESTHETICS



5.0 LAND USE, RECREATION AND AESTHETICS

5.1 AFFECTED ENVIRONMENT

5.1.1 Land Use

5.1.1.1 Yuma County

Yuma County, Arizona, covers 5,522 square miles of the southwest corner of Arizona (Arizona Department of Commerce [AZDC] 2007a). Land use within Yuma County is dependent upon soil characteristics and water availability. Agriculture, tourism, military, and government are the area's principal industries. BLM accounts for 14.8 percent of land ownership; Native American reservations, 0.2 percent; State of Arizona, 7.7 percent; private or corporate entities, 10.5 percent; and other public lands, 66.8 percent (AZDC 2007a). Agriculture production is the principal land use in Yuma County. Agriculture employs 35 percent of the labor force in Yuma County (AZDC 2007a).

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

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

5.1.1.2 Imperial County, California

Imperial County, California, has an approximate area of 4,482 square miles (City-Data 2007). It is a predominantly rural area with roughly 85 percent of lands being undeveloped lake, dune, desert, or mountains, and 20 percent of lands being used for irrigation agriculture or livestock production. Approximately 50 percent of the land in Imperial County is undeveloped and under Federal ownership and jurisdiction. About 20 percent of the nearly 3 million acres of the county is irrigated for agricultural purposes. Incorporated cities, unincorporated communities, and support facilities account for less than 1 percent of land use (Imperial County 1994). The project area is considered eolian desert and dune lands by the county and, except for the Algodones Dunes Recreation Area, is considered to be of little to no economic value to the area. The eastern end of segment C-1 lies within BLM's Buttercup Recreation Management Area, designated Multiple-use Class I "Intensive," and is used for camping, off-highway vehicle (OHV) riding, sightseeing, commercial vending, education, filming, and highway and utility rights of way (ROWs) (BLM 2003a). The eastern 0.25-mile portion of the C-1 project corridor is situated within the Fort Yuma-Quechan Reservation.

The California Standards for Rangeland Health and Guidelines for Grazing Administration apply to all lands managed by BLM. A majority of the lands managed by

BLM within the project area are previously disturbed and committed to other activities. The lands in this area are in compliance with the California Standards for Rangeland Health.

5.1.2 Aesthetics

Aesthetic and visual resources consist of the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. In Yuma County, three populated areas occur within or near the project region: the City of Yuma and the towns of San Luis and Gadsden. The remaining sections of the project area are located within or adjacent to agricultural fields.

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

5.2 ENVIRONMENTAL CONSEQUENCES

5.2.1 Land Use

Approximately 23 acres of land managed by Reclamation, some of which is used for agricultural purposes, and 79 acres of land within the Roosevelt Reservation will be permanently converted for USBP enforcement purposes. This direct impact will be localized and minor due to the vast amount of similar lands surrounding the project corridor and the fact that portions of the project corridor are currently degraded by past and ongoing activities. Reclamation will still be capable of managing the Salinity Canal and levee system and, in fact, the TI will provide additional protection to this system.

CBP operations and tactical infrastructure construction within the 60-foot Roosevelt Reservation is consistent with the purpose of the Roosevelt Reservation. In addition, CBP activities within this reservation are outside the oversight or control of Federal land managers. Therefore, the Planned Action will have no impact on land use. An agreement with the Quechan Tribe will be reached to construct the eastern end of the fence and road so that the TI will not conflict with the Tribe's current and planned use of the project corridor.

Construction and operation of TI will increase border security in the project corridors and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and therefore are considered unpredictable and beyond the scope of this ESP.

5.2.2 Aesthetics

Under the Planned Action, construction activities and equipment will temporarily impact local visual characteristics. New infrastructure constructed in the study area will also

have the potential to adversely impact the aesthetic value of the area. This will be particularly true of TI within the Algodones Dunes area near the western end of the C-1 segment, where there is currently no development. A schematic representation of how the fence will appear within the dune system is presented in Exhibit 5-1. Infrastructure within the C-2B segment along the Salinity Canal will have negligible effects on the area's aesthetic value due to extensive development, including agricultural operations in and adjacent to the project corridor.

Exhibit 5-1. Schematic Representation of an Installed Fence within the Dune System from approximately 0.5 Mile



Construction and operation of TI will increase border security in the project corridors and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and therefore are considered unpredictable and beyond the scope of this ESP.

An indirect benefit of the Planned Action will be the reduction in trash and other refuse left behind by IAs, especially within the Algodones Dunes, and a reduction in trampled vegetation in the agricultural fields to the east of the C-2B project corridor. With the improved infrastructure, CBP agents will be better able to apprehend IAs closer to the border, thereby reducing the amount of garbage and impacts on vegetation in the project region.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 6.0
SOILS



6.0 SOILS

6.1 AFFECTED ENVIRONMENT

6.1.1 Yuma County, Arizona

According to soil surveys and general soil maps for Yuma County, prepared by the Natural Resources Conservation Service (NRCS, 2007), there are two soil associations composed of several corresponding soil types within the C-2B segment. The extent of both associations in the project corridor is approximately equal. These associations are Holtville-Gadsden-Kofa and Indio-Ripley-Lagunita.

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

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

6.1.2 Imperial County, California

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

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

6.2 ENVIRONMENTAL CONSEQUENCES

The Planned Action will permanently remove 102 acres of soils from biological production. Additionally, 21 acres of soils located within temporary staging areas will likely be scraped and bladed to accommodate material staging. The staging areas are primarily located in previously disturbed sites. Still, upon completion of construction activities, the soils in the staging areas will be stabilized and allowed to re-vegetate, resulting in only minor and temporary impacts. These soil associations comprise a small percentage of soils existing within Yuma and Imperial counties. However, soils within the two soil associations in Yuma County are considered prime farmland soils; thus, there will be a minor adverse impact to these resources. CBP submitted the appropriate NRCS 1006-AD form relative to prime farmland soils and received a completed form from NRCS.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 7.0
HYDROLOGY AND GROUNDWATER



7.0 HYDROLOGY AND GROUNDWATER

7.1 AFFECTED ENVIRONMENT

7.1.1 Groundwater

7.1.1.1 Yuma County

The groundwater in the Yuma area occurs in basin fill deposits, which are divided into two major subdivisions based on water-bearing characteristics. The first subdivision forms the upper, principal water-producing part of the aquifer and consists of recent Colorado and Gila River alluvial deposits. The second subdivision includes the lower part of the basin, which is composed of the Bouse Formation, marine sedimentary rocks, volcanic rocks, and non-marine sedimentary rocks. Water quality in the Yuma Basin is marginal for domestic and irrigation uses due to high salinities, but generally supports drinking water uses following desalinization. Impairments are typically elevated levels of total dissolved solids, chloride, sulfate, and sodium. Records of groundwater levels for the period 1962 through 2002 indicate that the water levels have remained largely unchanged within the project region (California Department of Water Resources 2004 and 2005). The recharge rate for the basin is approximately 210,000 acre-feet per year (U.S. Geological Survey [USGS] 2005). Consequently, the Yuma Basin has an excess supply of water due to the large annual recharge rate attributed to agricultural run-off.

7.1.1.2 Imperial County

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

7.1.2 Surface Water

7.1.2.1 Yuma County

The project corridor is located in the Lower Colorado Basin. The Lower Colorado watershed (Arizona Department of Environmental Quality [ADEQ] # 15030107-001) is on the Arizona 2006 Section 303(d) list for non-compliance with dissolved oxygen (DO) and selenium water quality standards. The ADEQ has given the Lower Colorado watershed (# 15030107-001) a Category 5 overall assessment, which means that it is impaired for one or more public uses such as aquatic and wildlife warmwater fishery. Suspected causes of impairment for low DO are agricultural and urban runoff. It is not

known if the selenium sources are natural or man-made; however, man-made sources of selenium in Arizona may include: irrigated agriculture return flows and drainage, combustion of fossil fuels, coal mining, sulfide ore mining (copper, lead, zinc mines), and animal feed supplements (ADEQ 2006). USGS topographic maps show no natural drainages near the project corridor other than the Colorado River (Figure 7-1). Man-made canals are common near the Colorado River, as water is diverted from the river for use in agricultural irrigation.

7.1.2.2 Imperial County

The California project corridor is located in two California Planning Areas: East Colorado River and Imperial Valley. California further subdivides its watersheds into sub-basins to manage lakes and streams. The project corridor is located in three sub-basins. The Colorado River Planning Area sub-basin is called the 727.00 Yuma Hydrologic Unit (HU) and is not listed on the California 2002 Section 303(d) List of Water Quality Limited Segments.

The project corridor is also located in two Imperial Valley Planning Area sub-basins, called 726.00 Amos-Ogilby HU and 723.10 Brawley HU. The 726.00 sub-basin is not listed on the California 2002 Section 303(d) List of Water Quality Limited Segments for impaired waters; however, the 723.10 is listed for several constituents: pathogens, silt, pesticides, trash, several species of organic molecules, and selenium. Suspected causes of impairment to waters in the 723.10 sub-basin include agriculture runoff, wastewater treatment plants, and sources originating in Mexico. The Colorado River water, imported via the All American Canal, is the predominant water supply and is used for irrigation, industrial, and domestic purposes (California Regional Water Quality Control Board [RWQCB] 2006).

7.1.3 Waters of the U.S. and Wetlands

Activities that result in the dredging or filling of Waters of the U.S. (WUS), including wetlands, are typically regulated under Section 404 of the CWA. Although the Secretary of DHS has issued the waiver, described previously, CBP has continued to coordinate with the USACE to identify potential impacts to WUS and identify possible mitigation measures for unavoidable losses to these resources.

Recent field surveys indicated five small wetland areas and two unvegetated WUS occur along the C-1 segment (Figure 7-2). The wetland areas were created by the border road in Mexico, which is constructed approximately 3 to 4 feet higher than these wetland areas, creating an isolated depression. In addition, seepage from the All American Canal provides a source of water during the majority of the year. Since the All American Canal is considered a jurisdictional WUS, these wetland areas would be considered to be reasonably proximal or have a hydrologic connection to the All American Canal. Thus, these areas would be considered jurisdictional as well. The unvegetated WUS are located at the extreme eastern end of the project corridor. Although there is no visual evidence of a hydrologic connection to drainages or the south side of the border, these drainages likely did have an historic transboundary connection and, thus, are considered jurisdictional as well under the CWA guidance.

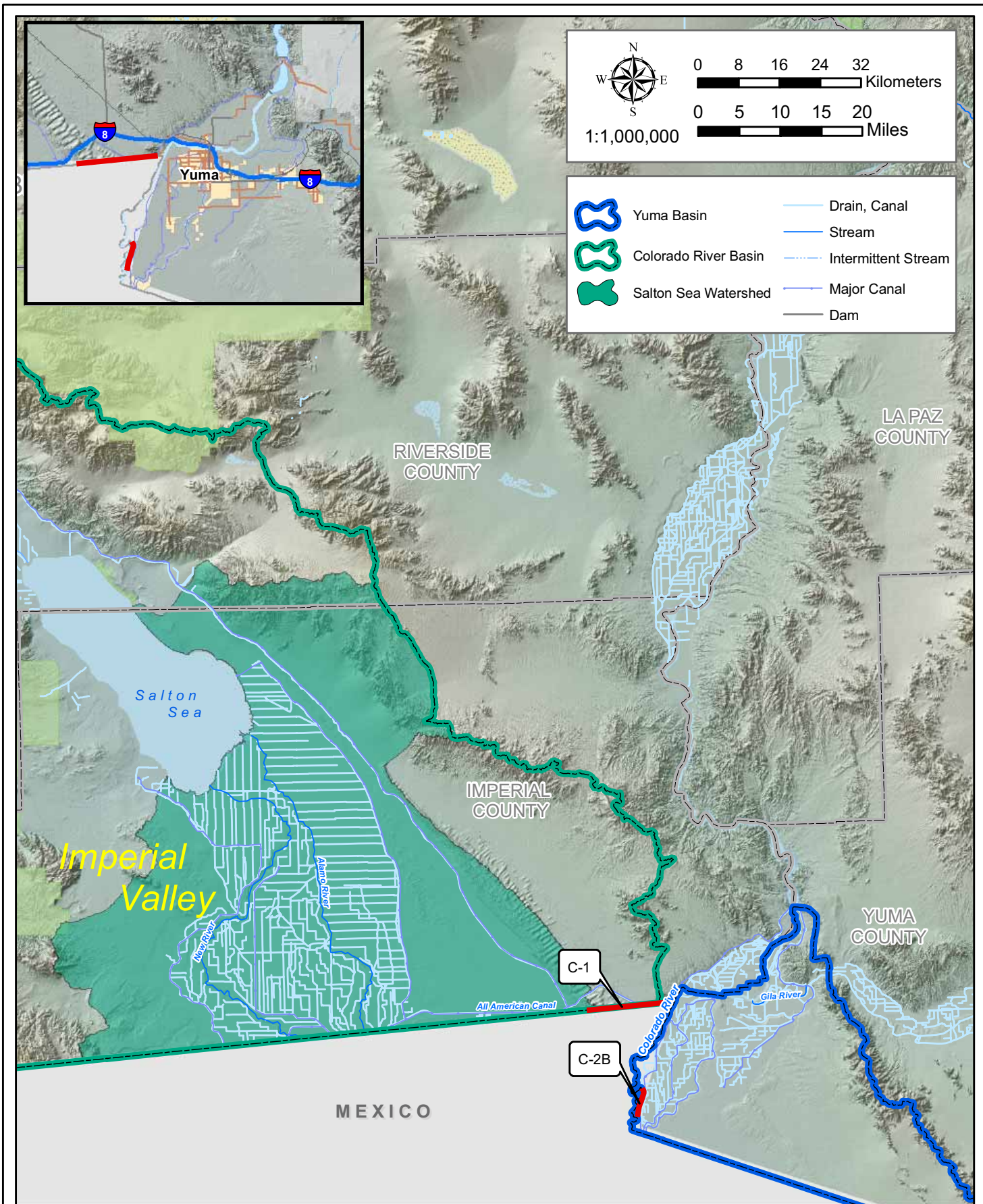


Figure 7-1. Waters Near the Project Corridors

THIS PAGE LEFT INTENTIONALLY BLANK



Figure 7-2. Wetland and WUS Overview Map

THIS PAGE LEFT INTENTIONALLY BLANK

7.1.4 Floodplains

Construction activities that occur within the 100-year floodplain are typically regulated by the National Flood Insurance Act of 1968, as amended (42 USC 4001 et seq.), and the Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975) and EO 11988. These regulations are designed to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and preserve the beneficial values which floodplains serve. While issuance of the waiver eliminated the requirement for CBP to comply with these regulations, these standards have been used to evaluate the potential impacts to floodplains associated with the fencing projects in both Arizona and California and to develop BMPs, if necessary, to minimize those impacts.

7.1.4.1 Yuma County

According to panel 0400990975C of the FEMA floodplain maps (FEMA 1985), the 100-year flood zone encompasses the southernmost 0.5 mile of the C-2B project corridor. All construction activities within or near the floodplain will be coordinated with the Floodplain Manager for the area FEMA office to attempt to avoid any conflicts or adverse effects. The remainder of this segment will be on the eastern toe of the flood protection levee and, thus, will be outside of the 100-year floodplain. A general map of the 100-year floodplain within the region is presented as Figure 7-3.

7.1.4.2 Imperial County

According to panel 0600650900B of the FEMA floodplain maps (FEMA 1985), the 100-year flood zone border does not encompass the C-1 project corridor.

7.2 ENVIRONMENTAL CONSEQUENCES

7.2.1 Groundwater

Water will be required for pouring concrete during installation of the new fence and for watering construction and access road surfaces to compact road bed and minimize fugitive dust during construction activities. The volume of water used for construction of new fencing and new access roads is estimated to be 1.7 acre-feet per mile (554,000 gallons per mile) (Miranda 2006). Therefore, approximately 18 acre-feet of water will be required for the project in Imperial County and 5 acre-feet for the project in Yuma County. These will be temporary withdrawals and will occur over the entire construction period of about 1 year. This is also far less than the current recharge rates of the affected aquifers. Consequently, only minor impacts are expected.

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

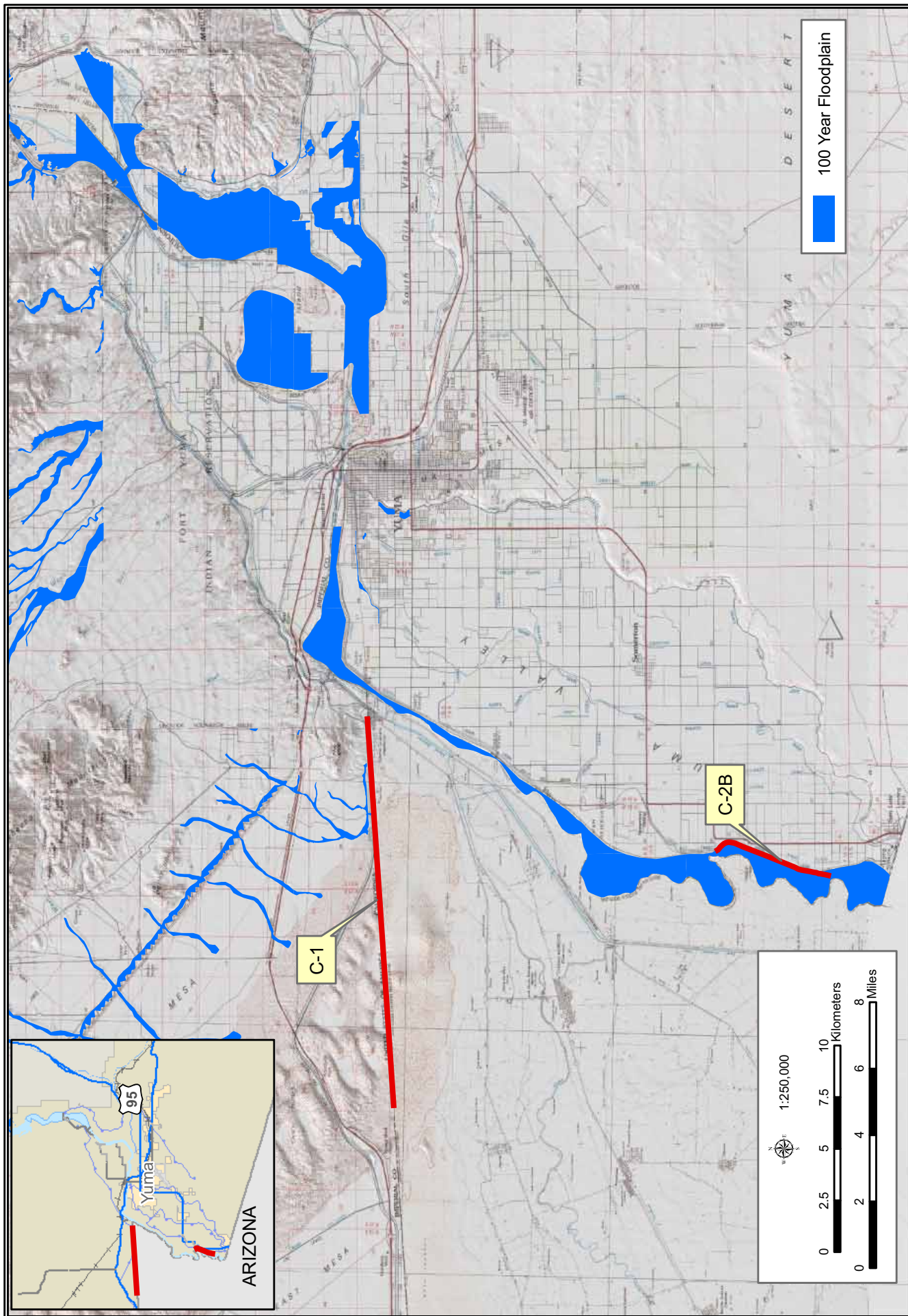


Figure 7-3. FEMA Floodplain Map

7.2.2 Surface Water

The Planned Action will have minimal impact on surface water quality. Some temporary water quality impairments may occur if there is a major rain event during the construction efforts. Construction activities can disturb soils, increasing the probability of sediment migration.

A SWPPP will be prepared and implemented prior to the start of construction activities. The SWPPP will identify the storm water drainage system for each discharge point, actual and potential pollutant contact, and surface water locations. The SWPPP will also incorporate storm water management controls and other BMPs. Implementation of the SWPPP and BMPs will minimize potential impact on surface water quantity and quality.

Construction equipment and operations may create miscellaneous operational pollution, such as oil leaks, mud spatters, and discards from human activities. The construction crew will make sure that an adequate number of latrines and covered trash cans are available at the job site, and that any leaks or spills from construction equipment are cleaned up. BMPs for construction site soil erosion will be implemented to prevent the migration of soils, oil and grease, and construction debris into the local stream networks. Consequently, negligible adverse impact on surface water is expected.

7.2.3 Waters of the U.S.

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the CWA, for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the CWA, as the basis for evaluating potential environmental impacts and appropriate mitigations.

No impacts to WUS will occur within the C-2B segment, as no WUS are present. Table 7-1 identifies the acreage of WUS and vegetated wetlands that will be impacted within the C-1 corridor. As can be seen, most impacts resulting from the construction of the fence and road will fall within the 0.5-acre threshold that is typically authorized under a NWP14. Mitigation measures for the loss of 0.9 acre of wetlands, including in lieu compensation, will be identified and implemented, as appropriate, and in coordination with the USACE Los Angeles District.

Table 7-1. Waters of the U.S. and Wetlands Impacted by Alternative

Wetland/WUS*	Acres Impacted
	Planned Action
Wetland 1	0.14
Wetland 2	0.47
Wetland 3	0.11
Wetland 4	0.13
Wetland 5	0.05
WUS 1	0.012
WUS 2	0.014

*Areas numbered from west to east

7.2.4 Floodplains

As indicated previously, the southernmost 0.5 mile of the C-2B project corridor is within the 100-year floodplain. The fence is positioned on the east side of the Salinity Canal and parallel to the flow of the floodplain. However, CBP has determined that there is no other practicable alternative to constructing this section of the fence within the floodplain that meets USBP's mission and operational needs. The location and position of the fence will minimize its interference with flow during major rain events. CBP (2007) conducted a hydrology and hydraulics analysis to determine the potential effects on flood flows from the primary pedestrian fence for the March 2007 SEA and presented a report to USIBWC. The results of the investigation indicated that the 100-year floodplain will not be adversely affected by a fence constructed along the Salinity Canal. A copy of that report is contained in Appendix D. CBP will also be responsible for cleaning debris from the fence and inspecting its structural integrity after major rain events. Despite the waiver, CBP will continue to coordinate with USIBWC and Yuma County regarding floodplain issues associated with construction of the fence and access roads. The C-1 project corridor is outside the 100-year floodplain and installation of the fence will not have any impact on floodplains.

SECTION 8.0
BIOLOGICAL RESOURCES



8.0 BIOLOGICAL RESOURCES

8.1 AFFECTED ENVIRONMENT

8.1.1 Vegetation Communities

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

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

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

8.1.2 Wildlife Resources

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 sections of primary pedestrian and vehicle fences. 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 area 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 will 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 rattlesnake (*Crotalus* spp.). Although less common, desert tortoise (*Gopherus agassizii*) is also found in the ROI.

8.1.3 Protected Species and Critical Habitat

USFWS is the primary agency responsible for implementing the Endangered Species Act (ESA) and is responsible for birds and other terrestrial and freshwater species. USFWS has identified species that are listed as threatened or endangered, as well as candidates for listing as a result of identified threats to their continued existence. Although not protected by the ESA, candidate species may be protected under other Federal or state laws. Some species can be identified as a conservation agreement species, for which USFWS cooperates with other Federal agencies to implement conservation measures to prevent official listing of species.

8.1.3.1 Yuma County

Seven Federally endangered species and one candidate species for Federal protection inhabit Yuma County, Arizona (Table 8-1) (USFWS 2007a). In addition, one conservation agreement species, the FTHL, is known to occur in central and eastern Yuma County. None of these species has the potential to occur within the C-2B project corridor; however, southwestern willow flycatcher has the potential to occur within the Colorado River riparian area, adjacent to the C-2B project corridor.

Table 8-1. Federally Listed Species Potentially Occurring Within Yuma County, 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 coastal 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.
Table 8-1, continued 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 floodplain. 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

Source: USFWS 2007a.

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

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

The Arizona Department of Agriculture (ADA) maintains a list of protected plant species within Arizona. The 1999 Arizona Native Plant Law defined five categories of protection within the state. These include: Highly Safeguarded (HS), no collection allowed; Salvage Restricted (SR), collection only with permit; Export Restricted, transport out of state prohibited; Salvage Assessed, permit required to remove live trees; and Harvest Restricted, permit required to remove plant by-products (ADA 2007). Of the nine HS or SR status species, only two have the potential to occur in habitats near the project corridor, straw-top cholla (*Opuntia echinocarpa*) and sand food (*Pholisma sonora*); however, neither species occurs within the project corridor due to the extensive past development and disturbance.

8.1.3.2 Imperial County, California

Eleven Federally endangered species, three Federally threatened species, and one candidate species for Federal protection inhabit Imperial County, California (USFWS 2007b, see Table 8-2). Of these, one species is likely to occur within the project area, Peirson's milk-vetch (*Astragalus magdalenae* var. *piersonii*). The remaining 10 species will not be affected and are not discussed further. The FTHL, however, is known to occur within and adjacent to the C-1 project corridor.

Table 8-2. Federally Listed Species Potentially Occurring Within Imperial County, 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 eximius</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.
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 floodplain. Limited to the mainstream of the Colorado River.	No – No suitable habitat.

Table 8-2, continued

Common/Scientific Name	Federal Status	Habitat	Potential to occur within Project Area
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.

Source: USFWS 2007b.

Peirson's milk-vetch (Photograph 8-1) was listed as Federally threatened on October 6, 1998, without determination of critical habitat (1998 FR 63 (193):53596 – 53615). In 2005 and recent years, exploration trips to the Yuma, Pinta Sands, and Mohawk dune systems, including the area near the collection site in the Yuma Dunes, have been made by USFWS, individual botanists, and off-road vehicle enthusiasts in an effort to relocate additional colonies; however, the species has yet to be confirmed outside of the Borrego Valley and Algodones Dunes (Pearce 2005, U.S. Department of Air Force *et al.* 2003). Peirson's milk-vetch has the largest seeds of any milk-vetch, and following germination, the plant is able to emerge from greater depths within the shifting substrate of dune systems. Pedestrian surveys were conducted along the entire California portion of the project corridor during December 2007 (see Appendix E). Although suitable habitat (i.e., shifting dunes) occurs within the western half of the C-1 segment, Peirson's milk-vetch was not observed during those surveys. No Federally designated or proposed critical habitat for any endangered or threatened species occurs within or near the California segment of the project corridor.



Photograph 8-1: Peirson's milk-vetch

© USFWS

The California Department of Fish and Game (CDFG), Habitat Conservation Planning Branch, maintains the California Natural Diversity Database (CNDDDB), which is a list of state protected species. These species are not necessarily the same as those protected under the ESA. A search of the CNDDDB was conducted for Imperial County within a 1-mile radius and four non-Federal species were identified that could occur

within or near the C-1 project corridor (Figure 8-1): sand food, burrowing owl (*Athene cunicularia hypugea*), Yuma clapper rail (*Rallus longirostris yumanensis*), and FTHL could (Table 8-3). Of these, the FTHL was the only species that was observed within the project corridor during the December 2007 surveys. Five bird species listed by California utilize habitats associated with the lower Colorado River, but these habitats occur outside of the project corridor. There is a potential for the isolated wetlands to provide habitat for the California black rail, which is listed as threatened by the state. However, these areas are small and adjacent to urban areas of Andrade, Mexico, and thus are considered to provide low suitability for the black rail.

Table 8-3. California Listed Species Potentially occurring within the 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.

Key: R = rare; E = endangered; T = threatened; SSC = species of special concern

Source: CDFG 2007

8.2 ENVIRONMENTAL CONSEQUENCES

8.2.1 Vegetation Communities

Although the Planned Action will disturb up to 102 acres, there will be minimal loss of native vegetation communities, since the project corridor is either disturbed by past activities (e.g., Salinity Canal, agriculture) or is devoid of vegetation. Of the total 102 acres, only 1.5 acres within the C-1 segment contain native vegetation communities. Thus, negligible impacts to vegetation communities will occur.

8.2.2 Wildlife

Because vegetation communities are sparse and considered to be low quality, direct impacts to wildlife as a result of habitat losses will be negligible. Some individuals of less mobile species could be lost during construction, but these losses, if they occur, will result in negligible adverse impacts on wildlife populations.

Although the primary pedestrian fence will preclude transboundary migration of larger mammals, and thus fragment habitat within the project corridor, these impacts are considered minor. Habitat fragmentation typically affects species with small population sizes or that are dependent upon migration to obtain spatially or temporally limited resources.

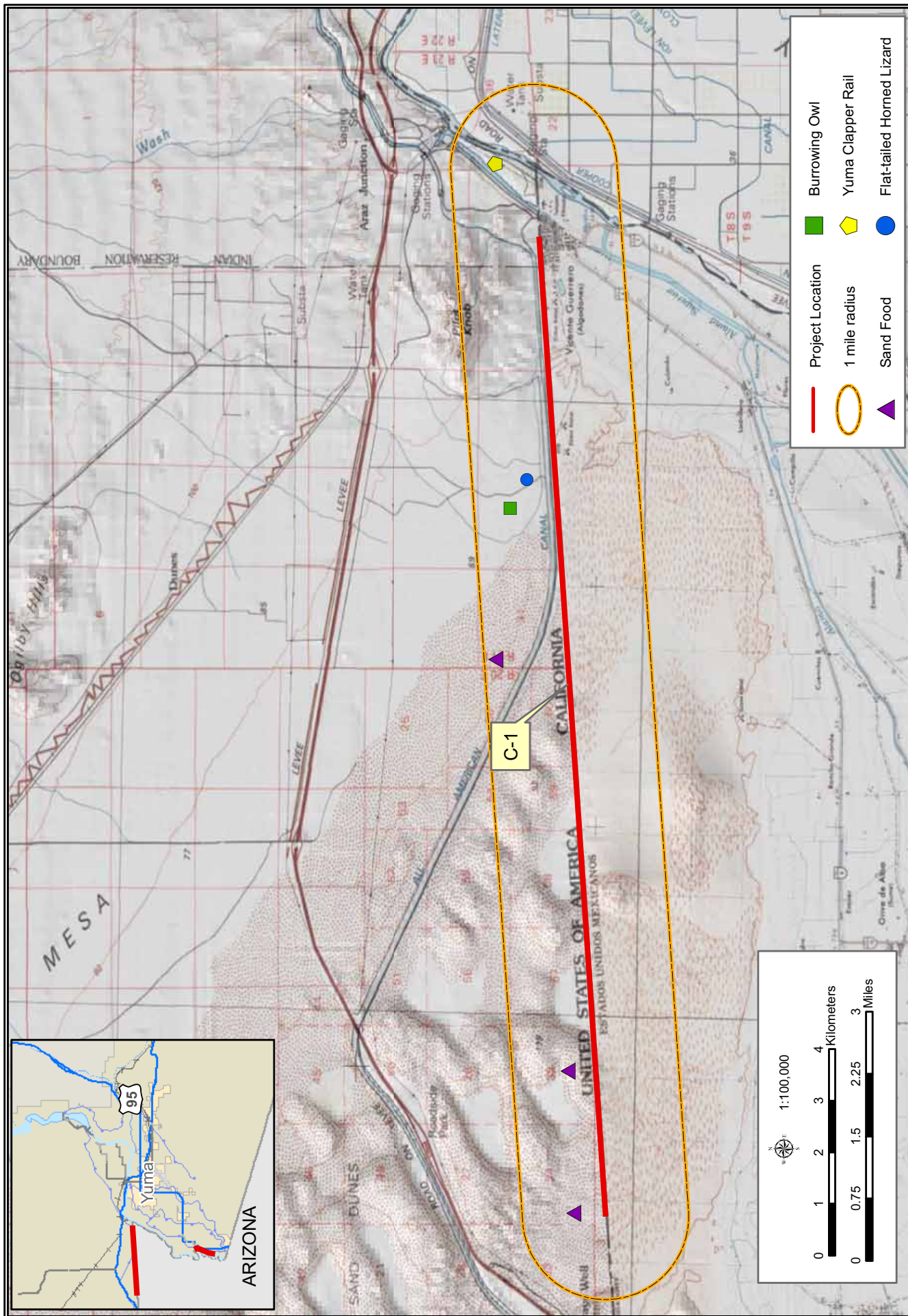


Figure 8-1. CNDBB Records Within 1-mile of the Project Location

Minor adverse impacts are anticipated, as the majority of the project corridor on either side of the international border is highly developed or disturbed and is not expected to be an important migratory route for large mammalian species. In addition, any such species that do occur in the project region are common in both the U.S. and Mexico. Further, use of the bollard and floating fence designs within the C-1 segment will provide numerous gaps for smaller animals, including the FTHL. Other BMPs that could be implemented to further reduce impacts to wildlife species and their habitat are described in the Biological Resources Planning document, which is presented in Appendix B.

Increased noise during construction activities will have temporary impacts on wildlife species. Physiological responses from noise range from minor responses, such as an increase in heart rate, to more damaging effects on metabolism and hormone balance. Long-term exposure to noise can cause excessive stimulation to the nervous system and chronic stress that is harmful to the health of wildlife species and their reproductive fitness (Fletcher 1990). Behavioral responses vary among species of animals and even among individuals of a particular species. Variations in response may be due to temperament, sex, age, or prior experience. Minor responses include head-raising and body-shifting, and usually, more disturbed mammals will travel short distances. Panic and escape behavior results from more severe disturbances causing the animal to leave the area (Busnel and Fletcher 1978).

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

Construction and operation of TI will increase border security in the project corridors and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and therefore are considered unpredictable and beyond the scope of this ESP.

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

8.2.3 Protected Species and Critical Habitat

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under the ESA, for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the

appropriate standards and guidelines associated with the ESA as the basis for evaluating potential environmental impacts and appropriate mitigations.

Only one Federally protected species, Peirson's milk-vetch, has the potential to be affected. Although recent surveys reported no specimens of Peirson's milk-vetch within the project corridor, CBP has determined that the construction of the fence is likely to adversely affect on this species due to the potential loss of seed bank or damage to individual plants that might not have emerged at the time of the surveys. Therefore, CBP has agreed to implement the following BMPs relative to Peirson's milk-vetch (see Appendix B).

1. Using funds contributed to the mitigation fund by CBP, USFWS may offset direct and indirect impacts on approximately 46 acres of Peirson's milk-vetch habitat (6.3 miles of new fence x 60-foot project corridor) based upon a standard 3:1 mitigation ratio. USFWS may assign the equivalent funds needed to adaptively manage and monitor 138 acres of Peirson's milk-vetch habitat to the BLM. BLM may use these monies to fund conservation actions benefitting Peirson's milk-vetch in the Buttercup Management Area.
2. Prior to disturbance in all areas known to be occupied by Peirson's milk-vetch within the 60-foot project corridor, the Peirson's milk-vetch seed bank will be harvested. At least the top 4 inches of sand will be removed and placed atop an adjacent dune outside of the impact area.
3. Soil used for filling dune bowls will consist of only dune sand from the immediate area. Material other than dune sand will not be used for filling.
4. The risk of spreading invasive plant species will be reduced by cleaning heavy equipment prior to use in the dunes and removing invasive species from the work areas prior to disturbance to avoid incorporating seeds of these species into the seed bank.
5. In the area where spoils should be stored temporarily, any oil, hazardous material, or other material that could negatively impact long-term dune vegetation, will be placed and used in a designated area and protective measures will be in place to ensure no material is spilled.
6. No aggregate road material will be applied outside of the 60-foot project corridor.

The remaining Federally protected species occurring in Imperial and Yuma Counties occupy habitats not affected by the Planned Action or do not occur in the project vicinity and, thus, will not be affected.

A total of eight state protected species utilize habitats similar to those affected by the Planned Action. Due to the general habitat requirements of state protected animal species and the vast amounts of similar habitat found in the region, the minimal loss and degradation resulting from the Planned Action will have a negligible impact on these species and their habitat, with the possible exception of the FTHL.

The following conservation measures have been identified through coordination with USFWS and will be implemented to the fullest extent applicable and practicable:

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

Implementation of these BMPs will allow the construction of the TI to proceed with only minor impacts to FTHL.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 9.0
CULTURAL RESOURCES



9.0 CULTURAL RESOURCES

9.1 AFFECTED ENVIRONMENT

The NHPA establishes the Federal government's policy to provide leadership in the preservation of historic properties and to administer Federally owned or controlled historic properties in a spirit of stewardship. Section 106 of the NHPA discusses the identification and assessment of actions on cultural resources. CBP has consulted with appropriate state and local officials, Native American Tribes, and members of the public and considered their views and concerns about historic preservation issues when making final project decisions.

9.1.1 Cultural Overview

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

Paleoindian	10,000 to 7500 B.C.
Archaic	7500 to 400 B.C.
Ceramic	A.D. 150 to 1500
Historic	A.D. 1500 to Present

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

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

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

The end of the Archaic period has traditionally been associated with the first appearance of ceramic pottery (A.D. 150 to 1500). Sometimes referred to as the Formative Stage, the Ceramic period is a brief episode between the Archaic and the Historic periods in the southwest that gives way to complex, socially stratified societies.

The use of the term Formative may not be appropriate in the project area because, by definition, the stage requires a secure resource base and the social mechanism that is needed to sustain settled communities.

The final unit, Historic, covers the time for which there are written records, in addition to archaeological evidence, beginning at the time of the Spanish penetration of the American southwest in the 16th century (DHS 2004).

9.1.2 Previous Investigations

A records search was conducted to identify all previously completed cultural resource projects and previously recorded archaeological sites and historic properties that occur within 1 mile of the project corridor. As stated earlier, the Yuma Sector project area of potential effect (APE) includes one portion in Imperial County, California (C-1), and the other in Yuma County, Arizona (C-2B). Therefore, records searches had to be obtained from multiple locations. The Southeast Information Center (SEIC) at the Imperial Valley College Desert Museum (IVCDM), Arizona State Museum (ASM) AZSITE database, Arizona and California State Historic Preservation Offices (SHPOs), BLM, Reclamation, and Brian F. Smith & Associates (BFSA) archival materials were consulted during the records search.

For the C-1 portion of the project, the SEIC records search indicated that approximately 91 cultural resources have been identified within 0.5 mile of the project APE. Some of these resources have been subsumed under the numerical designation of other site numbers. For example, 11 previously recorded sites are now referred to as IMP-1475 (BFSA 2007).

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

Area are labeled as “Moving Picture Desert Studio,” where silent and modern movies have been filmed.

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

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

For the C-2B portion of the project, according to the AZSITE records search, correspondence with the Cocopah Indian Reservation, and Reclamation site records, no cultural resources were previously recorded within the project APE. However, a number of historic features are located adjacent to the C-2B portion. These include the Yuma Valley Levee (AZ X:6:15), the West Main Canal (AZ X:6:63), and a series of checks and concrete bridges. The Yuma Valley Levee extends from the City of Yuma south to the U.S./Mexico border, as does the West Main Canal. Other historic sites within the 0.5-mile buffer generally include historic foundations and structures associated with mid-20th-century historic Gadsden, a small settlement located just east of the project APE (BFSA 2007).

9.1.3 Current Investigations

Cultural resources surveys were conducted by BFSA throughout the 14-mile project corridor in December 2007, to identify any cultural resources that would be impacted by construction. The areas were traversed utilizing transects spaced no more than 66 feet apart. The ground surface was examined for any evidence of cultural materials. All cultural remains were recorded and evaluated for their inclusion on the NRHP. Besides the border monuments described above, 11 new sites were identified and recorded in C-1. These consisted of localized lithic scatters with no diagnostic artifacts. There was no evidence of residential occupation of the sites; thus, the sites are not presently considered to be eligible for listing on the NRHP. There were no new sites found in the C-2B segment (BFSA 2007). The cultural resources report has been submitted to the Arizona and California SHPOs for review and information.

9.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary’s waiver means that CBP no longer has any specific legal obligations under the NHPA for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with the NHPA as the basis for evaluating potential environmental impacts and appropriate mitigations.

It is anticipated that all infrastructure activities under the Planned Action will occur adjacent to the existing historic levee and flood control system within the C-2B segment and within the 60-foot-wide Roosevelt Reservation in California. Furthermore, the levee and flood control system is still in use, and the levee and levee roads are routinely maintained. No direct impacts on the 91 previously recorded archaeological sites are anticipated from construction activities. Rather, the reduction of illegal traffic through the area will potentially have indirect, long-term beneficial impacts on cultural resources found in the region.

Through consultation with affected Native American Tribes and the respective SHPOs, mitigation measures have been identified and implemented, as appropriate, in order to (1) avoid sites to the extent practicable; (2) recover data; and (3) monitor construction activities to ensure potential impacts are minimized. During construction, orange fabric barrier fencing (or similar material) will be positioned on the edges of established roads to ensure that vehicle traffic does not enter into and impact undisturbed or unknown cultural sites. Further, construction workers will be informed to remain on established roads and within the designated construction footprint. Consequently, the Planned Action will not adversely impact historical or archaeological resources.

SECTION 10.0
SOCIOECONOMICS



10.0 SOCIOECONOMICS

10.1 AFFECTED ENVIRONMENT

10.1.1 Population

10.1.1.1 Yuma County, Arizona

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

10.1.1.2 Imperial County, California

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

10.1.2 Employment, Poverty Levels, and Income

10.1.2.1 Yuma County, Arizona

The total number of jobs in Yuma County in 2005 was 72,746, an increase of 9 percent over the number of jobs in 2001, which was 66,505 (BEA 2007). The largest number of people employed in Yuma County in 2005 worked in government or government enterprises, followed by forestry, fishing, and related activities, state and local government, and retail trade (BEA 2007). The 2006 estimated average annual unemployment rate for Yuma County was 9.2 percent. This is significantly larger than the estimated 2006 annual average unemployment rate for the State of Arizona, which was 4.9 percent (Arizona Department of Economic Security [ADES] 2007). The 2000 average annual unemployment rate for Yuma County was 5.7 percent, which is slightly lower than the 2006 estimated average annual unemployment rate for the State of Arizona (ADES 2007).

In 2005, Yuma County had a per capita personal income (PCPI) of \$21,005. This PCPI ranked 9th in the state and was 70 percent of the state average, \$30,019, and 61 percent of the national average, \$34,471. The 2005 PCPI reflected an increase of 3.7 percent from 2004. The 2004–2005 state change was 5.1 percent and the national change was 4.2 percent. In 1995 the PCPI of Yuma County was \$17,029 and ranked 6th in the state. The 1995–2005 average annual growth rate of PCPI was 2.1 percent. The average annual growth rate for the state was 4.2 percent and for the nation was 4.1 percent (BEA 2007).

Total personal income (TPI) of an area is the income that is received by, or on behalf of, all the individuals who live in that area. In 1995, the TPI of Yuma County was \$2.2 billion and ranked 4th in the state. In 2005, Yuma County had a TPI of \$3.8 billion, which ranked 6th in the state and accounted for 2.1 percent of the state total. The 2005 TPI reflected an increase of 7.2 percent from 2004. The 2004–2005 state change was 8.9 percent and the national change was 5.2 percent. The 1995–2005 average annual growth rate of TPI was 5.4 percent. The average annual growth rate for the state was 7.3 percent and for the nation was 5.2 percent (BEA 2007).

10.1.2.2 Imperial County, California

The total number of jobs in Imperial County in 2005 was 57,246, an increase of 7 percent over the number of jobs (53,265) in 2001 (BEA 2007). Similar to Yuma County, the largest number of people employed in Imperial County in 2005 worked in government enterprises, followed by forestry, fishing, and related activities, state and local government, and retail trade (BEA 2007). The 2006 estimated average annual unemployment rate for Imperial County was 8.3 percent. This is slightly larger than the estimated 2006 annual average unemployment rate for the State of California of 6.6 percent (BEA 2007). The 2000 average annual unemployment rate for Imperial County was 6.2 percent, which is slightly higher than the 2000 estimated average annual unemployment rate of 4.3 percent for the State of California (BEA 2007).

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

In 2005, Imperial County had a TPI of \$3.4 billion, which ranked 34th in the state and accounted for 0.3 percent of the state total. In 1995 the TPI of Imperial County was \$2.2 billion and ranked 33rd in the state. The 2005 TPI reflected an increase of 5.4 percent from 1995. The 2004–2005 state change was 5.3 percent and the national change was 5.2 percent. The 1995–2005 average annual growth rate of TPI was 4.3 percent. The average annual growth rate for the state was 5.7 percent and for the nation was 5.2 percent (BEA 2007).

10.1.3 Environmental Justice and Protection of Children

EO 12898–Federal Actions to Address Environmental Justice in Minority and Low-Income Populations was signed in February 1994. This order was intended to direct Federal agencies “to make achieving environmental justice part of its mission by identifying and addressing ... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]...” The status of the minority and poverty populations in the vicinity of the project area was examined to determine if any minority and/or low-income communities will potentially be disproportionately affected by implementation of the Planned Action. Both low-income and minority populations are prevalent within the ROI.

EO 13045 requires each Federal Agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children; and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults.

10.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary’s waiver means that CBP no longer has any specific legal obligations under EO 12898 or EO 13045 for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the appropriate standards and guidelines associated with these EOs, as the basis for evaluating potential environmental impacts and appropriate mitigations.

10.2.1 Population and Employment

The Planned Action will have no impacts, direct or indirect, on long-term population or employment. The total cost of this project is not known at this stage of the planning process, but the amount that will be spent in the local area can be assumed to be between 15 and 30 percent of the total project cost. These expenditures are subject to economic multiplier effects, which will have overall beneficial, short-term impacts on the economy within the ROI.

The Yuma County community will benefit from effective enforcement operations across the project area. Overall, implementation of this alternative will be expected to reduce adverse impacts currently experienced by local law enforcement and the emergency response community. The Planned Action will provide additional protection from illegal vehicle and foot traffic, lower crime, and potentially improve the quality of life along the border.

Construction and operation of TI will increase border security in the project corridors and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to USBP operations and

therefore are considered unpredictable and beyond the scope of this ESP. The construction of the fences is also expected to have beneficial impacts on recreational opportunities such as those provided by the Algodones Dunes. The presence of the TI within the Algodones Dunes will serve as a deterrent to IAs, creating a safer environment for people who recreate within the dune area.

10.2.2 Environmental Justice and Protection of Children

The majority of the population in the ROI (about 56 percent in Yuma County and 76 percent in Imperial County) claim to be of Hispanic origin. The average PCPI of the families within the counties along the border is below the state and national PCPI averages. However, no displacement of residential or commercial structures or areas is anticipated as a result of this project, and no major adverse impacts have been identified that could result from implementation of the Planned Action. The project will beneficially affect the entire ROI regardless of race and/or income level, by reducing crime in areas where the infrastructure is installed. Therefore, this project will not conflict with the intent of EO 12898.

All construction activities will be separated from residential areas by distance (i.e., 200 feet from sensitive receptors in Gadsden), other physical barriers (e.g., Salinity Canal), or safety construction fences; thus, it is highly unlikely that children will be present within construction zones. Therefore, the actions described in this ESP will not result in disproportionately high or adverse environmental health or safety impacts on children. To the contrary, the Planned Action is expected to increase the safety of children by decreasing crime and IA traffic in the area.

SECTION 11.0
UTILITIES AND INFRASTRUCTURE



11.0 UTILITIES AND INFRASTRUCTURE

11.1 AFFECTED ENVIRONMENT

There will be no effect to the local or regional electrical grid, communication system, or wastewater treatment facilities. Consequently, these issues are not discussed further and the discussion within this section of the ESP will focus on roadways and traffic issues.

11.1.1 Yuma County

The project corridor runs adjacent to U.S. Highway 95 (U.S. 95), which connects the towns of Yuma, Gadsden, and San Luis with direct routes and access roads to Interstate 8 (I-8) (see Figure 1-2). Traffic flow is usually low on these roads, because most vehicular movement in the region occurs on I-8. The U.S. 95 interchange at I-8 experiences an average annual daily traffic count (AADT) of 20,900 vehicles (Arizona Department of Transportation [ADOT] 2006).

11.1.2 Imperial County

The main transportation route in this area is I-8 and California Highway 186 (Figure 11-1). The latter is a conventional two-lane highway, which provides access from I-8 to the Andrade POE. I-8, a four-lane conventional highway, runs parallel to the U.S./Mexico border. The AADT at the I-8/California Highway 186 interchange is 21,500 vehicles (California Department of Transportation 2006).

11.2 ENVIRONMENTAL CONSEQUENCES

Construction and staging for the access roads, foundations, and fencing will create a minor short-term impact on roadways and traffic within the project corridor. An increase in vehicular traffic will result from the transport of supply materials and work crews for the entire construction period, which is expected to be less than 1 year. An increase of approximately 10 commuter vehicles and three equipment trucks daily will only increase the traffic count by 26 vehicle trips per day. Therefore, the Planned Action will have a negligible effect on the AADT at the I-8 and California Highway 186 and U.S. 95 interchanges. The initial construction phase will include creation of a staging area for materials and equipment. Once a staging area is established, traffic near the construction sites will increase from the influx of construction workers and new materials. Staging areas will be set off the main roads and will not disrupt the flow of traffic.

No anticipated long-term impacts on traffic are expected from the installation of the TI. After construction work is completed, occasional maintenance visits to each site will be required. These visits will not increase normal traffic activity locally or regionally.

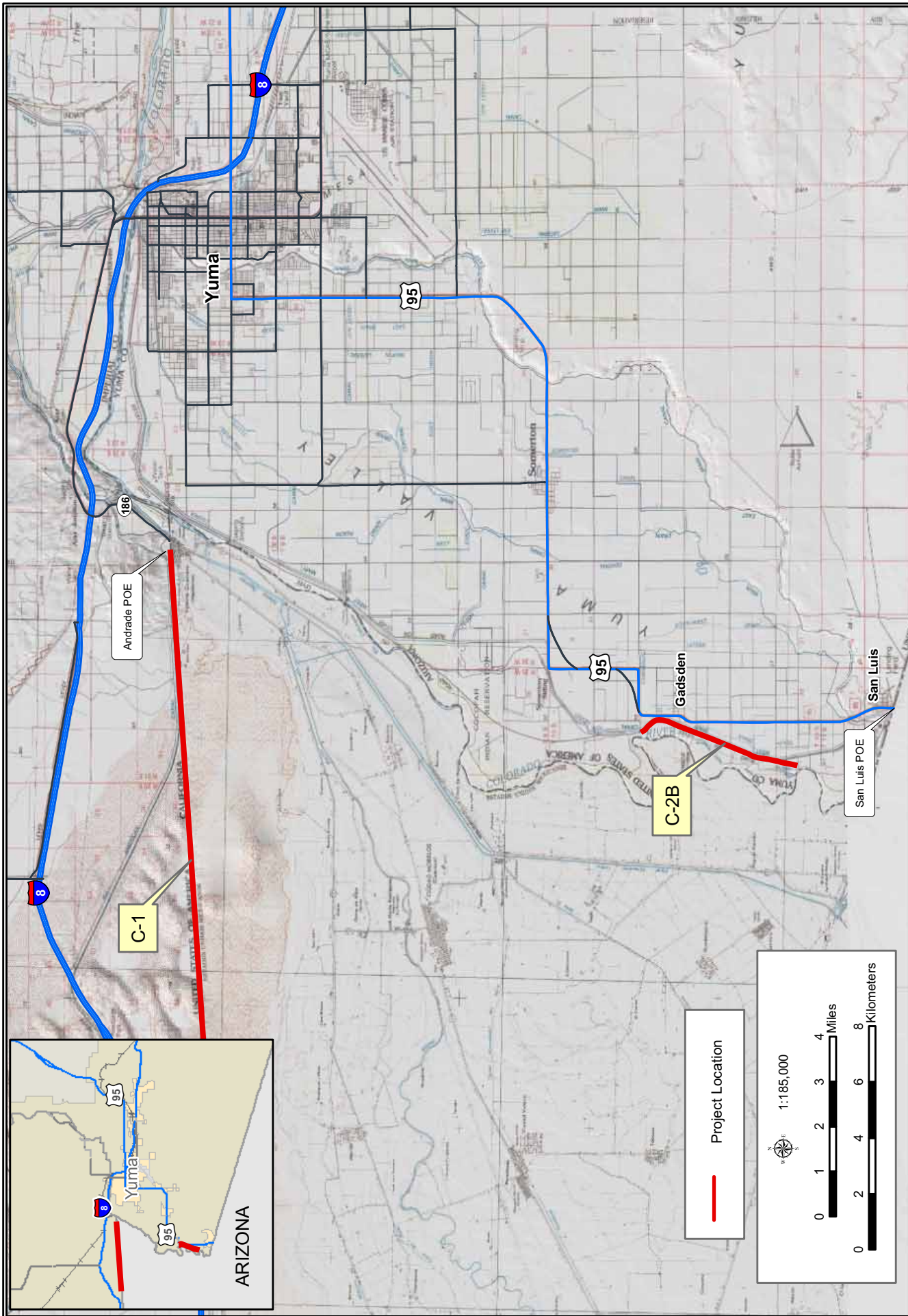


Figure 11-1. Transportation Routes Near the Project Corridors

SECTION 12.0
HAZARDOUS MATERIALS



12.0 HAZARDOUS MATERIALS

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

12.1 AFFECTED ENVIRONMENT

12.1.1 Yuma County

Solid and hazardous wastes are regulated in Arizona by a combination of mandated laws promulgated by the Federal, state, and regional Councils of Government. A search of the EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) showed no superfund sites near the project corridor (EPA 2007a). A search of the Envirofacts Data Warehouse showed that Quest Aerospace is a hazardous waste handler located approximately 8 miles from the C-2B project corridor (EPA 2007b).

12.1.2 Imperial County

Searches 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 Santa 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.

12.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP no longer has any specific legal obligations under CERCLA for the TI segments addressed in this ESP, the Secretary committed the Department to responsible environmental stewardship of our valuable natural and cultural resources. CBP supports this objective and has applied the

appropriate standards and guidelines associated with the CERCLA, as the basis for evaluating potential environmental impacts and appropriate mitigations.

The Planned Action 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 landfill site.

Care will be taken to avoid impacting the project area with hazardous substances (i.e., anti-freeze, fuels, oils, lubricants) used during construction. Petroleum, oils, and lubricants (POL) will likely be stored at the temporary staging areas in order to maintain and refuel construction equipment. However, these activities will include primary and secondary containment measures and a SPCCP will be in place prior to the start of construction, and all personnel will be briefed on the implementation and responsibilities of this plan.

Clean-up materials (e.g., oil mops), in accordance with the project's SPCCP, will also be maintained at the site to allow immediate action in case an accidental spill occurs. Drip pans will be provided for the power generators and other stationary equipment to capture any POL accidentally spilled during maintenance activities or leaks from the equipment.

Sanitation facilities will be provided during construction activities, and waste products will be collected and disposed of by licensed contractors. No gray water will be discharged to the ground. Disposal contractors will use only established roads to transport equipment and supplies; all waste will be disposed of in strict compliance with Federal, state, and local regulations, in accordance with the contractor's permits. Due to the proper permits being obtained by the licensed contractor tasked to handle any unregulated solid waste, and because all of the unregulated solid waste will be handled in the proper manner, no hazards to the public are expected through the transport, use, or disposal of unregulated solid waste.

SECTION 13.0
RELATED PROJECTS AND POTENTIAL EFFECTS



13.0 RELATED PROJECTS AND POTENTIAL EFFECTS

This section of the ESP addresses the potential cumulative impacts associated with the implementation of the Planned Action and other projects/programs that are planned for the region. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

This cumulative impacts analysis summarizes expected environmental effects from the combined impacts of past, current, and reasonably foreseeable future projects. The geographic scope of the analysis varies by resource area. For example, the geographic scope of cumulative impacts on resources such as noise, visual resources, soils, and vegetation is very narrow and focused on the location of the resource. The geographic scope of air quality, wildlife and sensitive species, and socioeconomics is much broader and considers more county- or region-wide activities. Projects that were considered for this analysis were identified by reviewing USBP documents, news releases, and published media reports, and through consultation with planning and engineering departments of local governments, and state and Federal agencies. Projects that do not occur in close proximity (i.e., within several miles) to the Planned Action will not contribute to a cumulative impact and are generally not evaluated further.

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

With continued funding and implementation of CBP/USBP's environmental conservation measures, including environmental education and training of its agents, use of biological and archaeological monitors, and restoration activities, adverse impacts of future and ongoing projects will be prevented or minimized. However, recent, ongoing, and reasonably foreseeable proposed projects would result in cumulative impacts. General descriptions of these types of activities are discussed in the following paragraphs.

Cumulative Fencing along Southwestern Border. There are currently 62 miles of landing mat fence at various locations along the U.S./Mexico international border (CRS 2006); 14 miles of single, double, and triple fence in San Diego, California; 70 miles of new primary pedestrian fence approved and currently under construction at various locations along the U.S./Mexico international border; and fences at POE facilities throughout the southern border. In addition, 225 miles of fence (including the 14 miles planned in the USBP Yuma Sector) are currently being planned for Texas, New Mexico, Arizona, and California.

Past Actions. Past actions are those within the cumulative effects analysis areas that have occurred prior to the development of this ESP. The effects of these past actions are generally described throughout the previous sections. For example, extensive farming use in the areas surrounding the C-2B segment has contributed to the existing environmental conditions of the area.

Present Actions. Present actions include current or funded construction projects, USBP or other agency actions in close proximity to the planned fence locations, and current resource management programs and land use activities within the cumulative effects analysis areas. Ongoing actions considered in the cumulative effects analysis include the following:

- Secure Border Initiative (SBI_{net}) Projects – SBI_{net} is a comprehensive program focused on transforming border control through technology and infrastructure. The goal of the program is to field the ideal combination of technology, infrastructure, and staffing, and integrate them into a single comprehensive border security suite for DHS. It is the goal of SBI_{net} to have operational control of both the northern and southern borders within 5 years. SBI_{net} is currently constructing 36 miles of primary pedestrian fence along the U.S./Mexico border within the Barry M. Goldwater Range (BMGR) and 6 miles west of the BMGR (122 acres). It is anticipated this project will be completed in FY 2008.
- CBP Enforcement Zone – CBP is currently constructing a 9-mile enforcement zone near San Luis, Arizona (20 acres). The enforcement zone includes primary and second fence, all-weather road, safety fence, and permanent lighting. The enforcement zone should be completed in FY 2008.

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

- SBI_{net} Projects - Potential future SBI_{net} projects include deployment of sensor technology, communications equipment, command and control equipment, fencing, barriers capable of stopping a vehicle, and any required road or components such as lighting and all-weather access roads. SBI_{net} is planning to construct approximately 25 towers and make improvements to 19 towers in Yuma and Imperial counties in FY 2008.

Other CBP Projects:

- USBP Facilities – CBP is also planning to construct a new USBP station in Wellton, Arizona (43 acres).
- Vehicle Fence – CBP is planning to construct approximately 13.5 miles (43 acres) of vehicle fence parallel to the Colorado River in Yuma County. It is anticipated that construction would begin in FY 2008.
- Primary Pedestrian Fence – CBP is planning to construct primary pedestrian fence within the USBP El Centro Sector. This fence will start at the western end of the C-1 segment of the current project corridor and extend westward in six different segments that total 44.6 miles.
- Vegetation Clearing along the Colorado River – USBP is cooperating with BLM and the Cocopah and Quechan Indian Nations to remove exotic plants and trees along the Colorado River. The entire area to be cleared is approximately 3,000 acres and current plans are to replant the area with native vegetation.
- Lighting Projects – USBP plans to install permanent lights along the international border within Imperial County and other areas within Yuma County where the need for additional security is identified.
- Construction of Primary Fence. The FY 2007 DHS Appropriations Act provided \$1.2 billion for the installation of fencing, infrastructure, and technology along the border (CRS 2006). CBP is proposing to construct up to 225 miles of primary fence in the Rio Grande Valley, Marfa, Del Rio, and El Paso, Texas; Tucson and Yuma, Arizona; El Centro and San Diego, California, sectors. In addition, up to 200 miles of vehicle barriers are also currently being planned in the El Centro, Yuma, Tucson, El Paso and Marfa sectors.

In addition, USBP might be required to implement other activities and operations that are currently not foreseen or mentioned in this document. These actions could be in response to national emergencies or security events like the terrorist attacks on September 11, 2001, or to changes in the mode of operations of the cross border violators.

ADOT planned improvements for Yuma County through 2009 are (ADOT 2004):

- State Road (SR) 8 – Construction of a rest area and road rehabilitation using asphaltic rubber/cement.
- SR 85 – Chip seal the surface of the highway.
- SR 95 – Construction of a passing lane and road rehabilitation using asphaltic rubber/cement.
- Area Service Highway – Construction of 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 (2004) 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.

There are no Caltrans projects proposed near the project corridor (Caltrans 2007). However, the 2007 Imperial County Long Range Transportation Plan Update noted that California Highway 186 is scheduled to be widened to a four-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 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).

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

- The Barry M. Goldwater Range currently has numerous projects that are in the planning stages, including conservation activities, new facilities, and enhanced training opportunities.
- USFWS released the comprehensive conservation plan and EIS for the Cabeza Prieta National Wildlife Refuge (CPNWR) in August 2006.
- A new commercial POE is being proposed by the Greater Yuma Port Authority (GYPA) approximately 6 miles east of the current San Luis POE and would be approximately 339 acres in size. This POE would be located on lands owned by the GYPA and would be used by CBP and other agencies, but would be constructed by the Port Authority (Reclamation 2000).
- The U.S. Air Force and U.S. Marine Corps (USMC) have released a Final EIS for the implementation of an Integrated Natural Resource Management Plan (INRMP) for the BMGR (U.S. Department of Air Force, Navy, and Interior 2006). The INRMP would be produced following the completion of the environmental analysis. The INRMP, if implemented,

could also change the areas available for certain USBP operations/activities.

- Western Area Power Administration (WAPA) is currently proposing to build a 500-kilovolt transmission system within the U.S. that would total approximately 25 miles—20 miles from the international border to their Gila Substation and 5 miles from the Gila Substation to a North Gila Substation. The proposed project would originate in Mexico, cross the international border, and then parallel the BMGR western boundary. If implemented, this proposal could impact FTHL habitat; however, at this time not enough information is available to analyze potential impacts. WAPA filed a Notice of Intent to prepare an EIS in 2006.
- Arizona Clean Fuel Yuma, Limited Liability Company is currently planning on installing a refinery near Wellton as well as constructing a pipeline across the BMGR. The location of the pipeline is not known at this time. The refinery would encompass a 1,400-acre site near I-8 south of Wellton, Arizona.
- The development of 100,000 acres of fallow agricultural land at Paloma Ranch west of Gila Bend, Arizona, is currently being planned. This development would consist of residential or light and heavy industrial uses.
- Reclamation and IID is currently conducting a project to line the All American Canal with concrete along a 23-mile reach, beginning at the Pilot Knob and extending to the Drop 3 weir. The project is designed to reduce seepage from the canal and is anticipated to conserve over 67,000 acre-feet of water each year after completion.

A summary of the anticipated cumulative impacts of the Planned Action is presented in the following sections. Discussions are presented for each of the resources described previously.

13.1 AIR QUALITY

The emissions generated during and after the construction of the primary pedestrian fence will be short-term and minor. Although maintenance of the fence and construction/access road will result in cumulative impacts on the region's airshed, these impacts will be minimal, even when combined with the other proposed developments in the border region. BMPs designed to reduce fugitive dust have been and will continue to be standard operating procedure for USBP construction projects. Deterrence of and improved response time to cross border violators due to the construction of the fence and road has reduced the need for off-road enforcement actions by USBP agents.

13.2 NOISE

Most of the noise generated by the Planned Action will occur during construction and thus will not contribute to cumulative impacts on ambient noise levels. Routine

maintenance of the fence will result in slight temporary increases in noise levels, which will continue to sporadically occur over the long-term. Potential sources of noise from other projects are not enough (temporally or spatially) to increase ambient noise levels above the 65 dBA range at the fence construction sites. Thus, the noise generated by the construction and maintenance of the primary pedestrian and vehicle fences, when considered with the other existing and proposed projects in the region, will result in a minor cumulative adverse impact.

13.3 LAND USE AND AESTHETICS

The Planned Action will only permanently affect about 22 acres that are under Reclamation management and 78 acres of lands within the Roosevelt Reservation. Reclamation will still be capable of managing the Salinity Canal and levees and the Roosevelt Reservation is set aside for border enforcement; thus, only minor direct or cumulative impacts on the region's land use will occur. The other projects identified previously will also occur primarily within developed lands and along existing ROWs. Some agricultural lands could be converted, especially for private housing developments or commercial enterprises. However, given the vast amount of agricultural lands in both counties, this conversion will result in negligible cumulative impacts on the region's land uses.

The Planned Action will have no major impact on visual resources, due in part to the surrounding development, agricultural operations, illegal trails and trash, and existing border TI. Lighting projects and vegetation management projects could have substantial cumulative impacts, depending upon the extent, final designs, and temporal relationship with the Planned Action. Construction and maintenance of the primary pedestrian fence, however, when considered with existing and proposed developments in the surrounding area, will have a minor cumulative negative impact on the visual quality of the region. Areas north of the border will experience beneficial, indirect cumulative impacts through the reduction of trash, soil erosion, and wildfires produced by IAs.

13.4 SOILS

The Planned Action and other USBP actions have not substantially reduced prime farmland soils or agricultural production. Although the Planned Action will alter approximately 102 acres of land, these soils are within BLM and Reclamation's ROW and currently not in agricultural production (except for some minor encroachments). Pre- and post-construction SWPPP measures will be implemented to control erosion. No inappropriate soil types are located in the project corridor that will present a safety risk. A minor impact on 102 acres of regionally abundant and disturbed soils, when combined with past and proposed projects in the region, will not be considered to substantially contribute to the cumulative adverse impacts.

13.5 WATER RESOURCES

Minor impacts on WUS will be expected, and will be offset through mitigation measures negotiated with the USACE Los Angeles District, as appropriate. The required SWPPP measures will reduce erosion and sedimentation during construction to negligible levels and will eliminate post-construction erosion and sedimentation from the site. The same measures will be implemented for other construction projects; therefore, cumulative impacts for water resources will be minor.

13.6 VEGETATION COMMUNITIES

Since no extensive native vegetation communities occur within the project corridor, there will be negligible direct or cumulative adverse impact on native vegetation communities if the Planned Action were implemented. Other USBP projects, including the vegetation clearing and additional lighting, will result in minor to moderate cumulative adverse impacts.

13.7 WILDLIFE

Since less than 2 acres of native vegetation communities will be affected by the Planned Action, negligible cumulative impacts on wildlife populations will be expected. However, cumulative impacts due to fragmentation of habitat will be considered moderate to major, since nearly the entire border within Yuma and Imperial counties will have physical barriers installed once all proposed and planned projects are completed. Many segments of these barriers will be vehicle fence rather than primary pedestrian fence. In addition, even future primary pedestrian fence that is constructed within arroyos or washes will be designed and constructed to allow conveyance of flood flows, which will require some small gaps in the fence panels. Thus, there will still be opportunities for transboundary migration. Due to the vast amount of similar habitat contained within and surrounding the project corridor, the juxtaposition of the project corridor with other disturbed and developed areas, and the fact that there will be gaps in the barriers, the long-term viability of species and communities in the project region will not be threatened. In addition, prior to construction, site surveys for migratory species will be considered and appropriate mitigation measures will be implemented. The loss, when combined with other ground-disturbing or development projects in the project region, will result in moderate to major cumulative negative impacts on the region's biological resources.

13.8 CULTURAL RESOURCES

The Planned Action will result in no impacts on the Border Monument sites, as long as they are protected and USBWC is afforded a means to maintain the monuments. The 11 new sites have been determined to be ineligible; however, CBP has committed to assist the Quechan Tribe in collecting and recordation of the artifacts within these sites; thus, impacts to these sites will not contribute to cumulative adverse impacts to the region's cultural resources. Therefore, this action, when combined with other existing

and proposed projects in the region, will result in negligible cumulative impacts on cultural resources.

13.9 SOCIOECONOMICS

Proposed primary pedestrian and vehicle fences will result in temporary, minor, and beneficial impacts on the region's economy. There will be no impacts on residential areas, population, or minority or low-income families. Therefore, this action, when combined with the other projects currently proposed or ongoing within the region, will not have even minor cumulative impacts on socioeconomic conditions.

13.10 HAZARDOUS MATERIALS

Only minor increases in the use of hazardous substances (e.g., POL) will occur as a result of the construction and maintenance of the primary pedestrian and vehicle fences. No health or safety risks will be created by the Planned Action. When combined with other ongoing and proposed projects in the region, the Planned Action will be considered to have a negligible cumulative impact.

SECTION 14.0
REFERENCES



14.0 REFERENCES

- Anonymous. 2007. Cultural history of the San Dieguito Complex of California. Internet URL: <http://home.earthlink.net/~researchissues/chron.sandieguito.htm>.
- Arizona Department of Agriculture. 2007. Protected Native Plants. <http://www.azda.gov/ESD/protplantlst.htm>
- Arizona Department of Commerce (AZDC). 2007a. Profile of Yuma County, Arizona. Internet URL: <http://www.azcommerce.com>.
- AZDC. 2007b. Community Profile of San Luis, Arizona. Internet URL: <http://www.azcommerce.com>.
- Arizona Department of Environmental Quality (ADEQ) 2006. Status Of Ambient Surface Water Quality In Arizona Arizona's Integrated 305(b) Assessment and 303(d) Listing Report DRAFT February 2007 Publication #: EQR 07-02.
- Arizona Department of Economic Security (ADES). 2007. Economic Analysis. Internet URL: <http://www.de.state.az.us/links/economic/webpage/page4.html>. Last accessed: December 12, 2007.
- Arizona Department of Transportation. 2006. Average Annual Daily Traffic Counts. Internet URL: <http://tpd.azdot.gov/data/documents/SHSAADT0707.xls>. Last accessed: December 19, 2007.
- Arizona Game and Fish Department. 2007. Species List. Internet URL: http://www.azgfd.gov/w_c/edits/hdms_species_lists.shtml.
- Brian F. Smith and Associates. 2007. Survey on C-1 and C-2B Corridors for Yuma Tactical Infrastructure Project, Seth Rosenberg, December 2007.
- Brown, E.D. 1994. Chihuahuan Desertscrub. In: David E. Brown, ed. Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City, Utah.
- Bureau of Land Management (BLM). 2003a. *Imperial Sand Dunes Recreation Area Management Plan (RAMP)*. U.S. Department of the Interior, BLM, El Centro Field Office. El Centro, CA.
- BLM. 2003b. *Flat-Tailed Horned Lizard Rangelwide Management Strategy, Revision 1*. U.S. Department of the Interior, BLM, El Centro Field Office.
- Bureau of Economic Analysis (BEA). 2007. Internet URL: <http://www.bea.gov>. Last accessed: December 12, 2007.

- Bureau of Land Management (BLM) 1998 Visual Resource Management (VRM) Policy Restatement. Information Bulletin No. 98135. May 22, 1998.
- California Department of Fish and Game. 2007. Sensitive Species. Internet URL: <http://www.dfg.ca.gov/wildlife/species/>.
- California Department of Transportation. 2006. 2006 Annual Average Daily Traffic Counts for California State Highways. Internet URL: <http://traffic-counts.dot.ca.gov/2006all/r092-98i.htm>. Last accessed: November 27, 2007.
- California Department of Water Resources. 2004. Yuma Valley Groundwater Basin. California's Groundwater Bulletin 118. Accessed at URL address: http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/7-36.pdf. Last updated on 27 February 2004 and accessed on 2 May 2008.
- California Department of Water Resources. 2005. California Water Plan. Update 2005. Bulletin 160-05. December 2005.
- California Regional Water Quality Control Board (CRWQCR) (2006). State Water Resources Control Board Water Quality Control Plan, Colorado River Basin-Region 7, Includes Amendments Adopted By The Regional Board Through October 2005.
- Caltrans 1998. Source: Technical Noise Supplement" October 1998 California Department of Transportation Environmental Program Environmental Engineering-Noise, Air Quality, and Hazardous Waste Management Office. Page 24-28 .
- Caltrans. 1999. SR-186 Transportation Concept Report, District 11 System Planning, May 1999.
- Caltrans. 2007. Welcome to Caltrans District 11-Serving San Diego and Imperial Counties. Internet URL: <http://www.dot.ca.gov/dist11>.
- City-Data. 2007. General information regarding Imperial County, California. Internet URL: http://www.city-data.com/county/Imperial_County-CA.html.
- Congressional Research Service (CRS). 2006. *Border Security: Barriers Along the U.S. International Border*. Report For Congress prepared by Blas Nunez-Neto and Stephen Vina. Updated December 12, 2006.
- Cordell, Linda. 1997. *Archaeology of the Southwest, Second Edition*. Academic Press. San Diego, California.

- CBP 2007 CBP. 2007. *Final Supplemental Environmental Assessment for the Proposed Installation of 2.62 Miles of Primary Fence near Calexico, California*. August 2007.
- Environmental Protection Agency (EPA) 2001. Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999. EPA Office of Air Quality, Planning and Standards. EPA-454/R-01-006, March 2001.
- EPA 2006 Welcome to the Green Book Nonattainment Areas for Criteria Pollutants. Internet URL: <http://www.epa.gov/oar/oaqps/greenbk>.
- EPA. 2007a. Superfund Site Information near Zipcode 85349 (San Luis Port of Entry). Internet URL: <http://www.epa.gov/superfund/sites/cursites/>.
- EPA. 2007b. List of EPA-Regulated Facilities in Envirofacts near Zipcode 85349 (San Luis Port of Entry). Internet URL: http://iaspub.epa.gov/wme/i3_ef_link.query_links?db_type=ENVIROFACTS&ul_lr=-114.802253,32.505632,-114.762253,32.475632.
- EPA. 2007c. Superfund Site Information near Zipcode 92283 (Andrade Port of Entry). Internet URL: <http://www.epa.gov/superfund/sites/cursites/>.
- EPA. 2007d. List of EPA-Regulated Facilities in Envirofacts near Zipcode 92283 (Andrade Port of Entry). Internet URL: http://iaspub.epa.gov/wme/i3_ef_link.query_links?db_type=ENVIROFACTS&ul_lr=-115.1703065,33.1298895,-114.9703065,32.9798895. Last accessed: January 2, 2008.
- Fahnestock, P. 2007. Personal Communication via telephone conversation between Ms. Sara Viernum of GSRC and Mr. Peter Fahnestock of NRCS California office, dated Dec. 11, 2007, regarding soil surveys of Imperial County, CA.
- Federal Emergency Management Agency (FEMA). 1990. Flood Insurance Rate Map – Luna County Unincorporated and Incorporated Areas, Arizona - Panels #35029C0775b, #35029C0800b, #35029C0825b, and #35029C0850b.
- Federal Emergency Management Agency (FEMA). 1985. Flood Insurance Rate Map – Yuma County, Arizona - Panel #0400990975c.
- Federal Highway Administration (FHWA) 2007. Special Report: Highway construction Noise: Measurement, Prediction, and Mitigation, Appendix A Construction Equipment Noise Levels and Ranges.
- Franklin, A. B., Noon, B. R., and George, T. L. 2002. What is Habitat Fragmentation? *Studies in Avian Biology*. No. 25:20-29.

- Hart, David R. 2004. Cultural Resources Survey. Archaeological Survey for the Yuma Lighting and Fence Project. U.S. Border Patrol, Yuma Sector, Yuma County, Arizona. March 2004.
- Imperial County. 1994. County of Imperial. General Plan. Internet URL: <http://www.ceres.ca.gov/planning/genplan/> and http://library.ceres.ca.gov/cgi-bin/display_page?page=29&elib_id=850&format=gif.
- Imperial Valley Association of Governments. 2007. Imperial County Long Range Transportation Plan Update, Master Project List, April 6, 2007. Internet URL: <http://www.imperialcounty.net/ivag/ProjectBriefs/2007-20ImperialCountyTransPlan/Potential%20Project%20List.pdf>.
- Lister, Ray. 2006. Personal communication via email between Mr. Ray Lister (BLM-Las Cruces District Office) via Mr. Charles Webster (BLM-Las Cruces District office) and Ms. Maria Reid (Gulf South Research Corporation) on March 14, 2006
- Mid-Atlantic Regional Air Management Association (MARAMA) 2006. Fugitive Dust-Construction Calculation Sheet. Internet URL: http://www.marama.org/visibility/Calculation_Sheets/.
- Miranda, Chris. 2006. Personal Communication via electronic mail from Mr. Chris Miranda of Carter Burgess to Mr. Josh McEnany of GSRC. October 11, 2006.
- National Park Service. 2003a. Environmental Assessment for Vehicle Barriers on the Organ Pipe Cactus National Monument and Coronado National Memorial. U.S. Department of the Interior, National Park Service. April 2003.
- Natural Resources Conservation Service. 2007. Soil Surveys of Yuma County, Arizona and Imperial County, California. Internet URL: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- Pearce, R. 2005. Personal Communication via electronic mail between Mr. James Henderson of GSRC and Mr. Ron Pearce of the USMC Yuma Air Station, dated April 1, 2005, regarding the status of Peirson's milk-vetch on the BMGR.
- Rappole, John H. 2000. Birds of the Southwest: Arizona, New Mexico, Southern California, and southern Nevada. Texas A&M University Press, College Station, Texas.
- Stebbins, R. C. 2003. Petersons Field Guides, Western Reptiles and Amphibians. Houghton Mifflin, Boston. 533 pp.

- U.S. Army Corps of Engineers (USACE). 2000. *Environmental Assessment for the Proposed JTF-6 Levee Road Maintenance and Repair Project, Brownsville, Texas*. USACE Fort Worth District. April 2000.
- U.S. Departments of Air Force, Navy, and Interior. 2003. Environmental Impact Statement for the Barry M Goldwater Range, Integrated Natural Resources Management Plan.
- U.S. Department of Homeland Security (DHS). 2004. Final Environmental Assessment for the Expansion of Operation Desert Grip. Office of Border Patrol, Yuma Sector, Arizona. Prepared by Gulf South Research Corporation. Baton Rouge, Louisiana. March 2004.
- U.S. Fish and Wildlife Service (USFWS). 2007a. Arizona Ecological Field Services Field Office website – Threatened and Endangered Species List – Yuma County. Internet URL: <http://www.fws.gov/southwest/es/arizona/>.
- USFWS. 2007b. Carlsbad Fish & Wildlife Office Endangered and Threatened Species List. U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. Internet URL: http://www.fws.gov/carlsbad/CFWO_Species_List.htm.
- USFWS. 2007c. Critical Habitat Portal. Internet URL : <http://criticalhabitat.fws.gov/>.
- U.S. Geological Service (USGS) 2005. Estimated Use of Water in the United States County-Level Data for 2000. Internet URL: <http://water.usgs.gov/watuse/data/2000/index.html>. Last accessed: December 7, 2007.
- U.S. Census Bureau. 2006. Internet URL: <http://www.census.gov/>. Last accessed: December 17, 2007.
- U.S. Census Bureau. 2000. Internet URL: <http://www.census.gov/>.
- U.S. Customs and Border Protection (CBP). 2004. Final Environmental Assessment for the Installation of Permanent Lighting and a Border Infrastructure System Office of Border Patrol, Yuma Sector, Arizona. Prepared by Gulf South Research Corporation. Baton Rouge, Louisiana. December 2004.
- Yuma County Department of Development Services (YCDDS). 2003. Yuma County Zoning Ordinance. Internet URL: <http://www.co.yuma.az.us/dds/ord/zo112103.htm>.

THIS PAGE LEFT INTENTIONALLY BLANK

APPENDIX A
Copy of 2008 Border Waiver



FOR FURTHER INFORMATION CONTACT: Ken Hunt, Executive Director, 245 Murray Lane, Mail Stop 0550, Washington, DC 20528, 703-235-0780 and 703-235-0442, privacycommittee@dhs.gov.

Purpose and Objective: Under the authority of 6 U.S.C. section 451, this charter establishes the Data Privacy and Integrity Advisory Committee, which shall operate in accordance with the provisions of the Federal Advisory Committee Act (FACA) (5 U.S.C. App).

The Committee will provide advice at the request of the Secretary of DHS and the Chief Privacy Officer of DHS on programmatic, policy, operational, administrative, and technological issues within the DHS that relate to personally identifiable information (PII), as well as data integrity and other privacy-related matters.

Duration: The committee's charter is effective March 25, 2008, and expires March 25, 2010.

Responsible DHS Officials: Hugo Teufel III, Chief Privacy Officer and Ken Hunt, Executive Director, 245 Murray Drive, Mail Stop 0550, Washington, DC 20528, privacycommittee@dhs.gov, 703-235-0780.

Dated: April 1, 2008.

Hugo Teufel III,

Chief Privacy Officer.

[FR Doc. E8-7277 Filed 4-7-08; 8:45 am]

BILLING CODE 4410-10-P

DEPARTMENT OF HOMELAND SECURITY

Office of the Secretary

Determination Pursuant to Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as Amended

AGENCY: Office of the Secretary, Department of Homeland Security.

ACTION: Notice of determination; correction.

SUMMARY: The Secretary of Homeland Security has determined, pursuant to law, that it is necessary to waive certain laws, regulations and other legal requirements in order to ensure the expeditious construction of barriers and roads in the vicinity of the international land border of the United States. The notice of determination was published in the **Federal Register** on April 3, 2008. Due to a publication error, the Project Area description was inadvertently omitted from the April 3 publication. For clarification purposes, this document is a republication of the April 3 document including the omitted Project Area description.

DATES: This Notice is effective on April 8, 2008.

Determination and Waiver

The Department of Homeland Security has a mandate to achieve and maintain operational control of the borders of the United States. Public Law 109-367, 2, 120 Stat. 2638, 8 U.S.C. 1701 note. Congress has provided the Secretary of Homeland Security with a number of authorities necessary to accomplish this mandate. One of these authorities is found at section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 ("IIRIRA"). Public Law 104-208, Div. C, 110 Stat. 3009-546, 3009-554 (Sept. 30, 1996) (8 U.S.C 1103 note), as amended by the REAL ID Act of 2005, Public Law 109-13, Div. B, 119 Stat. 231, 302, 306 (May 11, 2005) (8 U.S.C. 1103 note), as amended by the Secure Fence Act of 2006, Public Law 109-367, 3, 120 Stat. 2638 (Oct. 26, 2006) (8 U.S.C. 1103 note), as amended by the Department of Homeland Security Appropriations Act, 2008, Public Law 110-161, Div. E, Title V, 564, 121 Stat. 2090 (Dec. 26, 2007). In Section 102(a) of the IIRIRA, Congress provided that the Secretary of Homeland Security shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into the United States. In Section 102(b) of the IIRIRA, Congress has called for the installation of fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwest border, including priority miles of fencing that must be completed by December of 2008. Finally, in section 102(c) of the IIRIRA, Congress granted to me the authority to waive all legal requirements that I, in my sole discretion, determine necessary to ensure the expeditious construction of barriers and roads authorized by section 102 of the IIRIRA.

I determine that the following area of Hidalgo County, Texas, in the vicinity of the United States border, hereinafter the Project Area, is an area of high illegal entry:

- Starting approximately at the intersection of Military Road and an unnamed road (i.e. beginning at the western end of the International Boundary Waters Commission (IBWC) levee in Hidalgo County) and runs east in proximity to the IBWC levee for approximately 4.5 miles.
- Starting approximately at the intersection of Levee Road and 5494 Wing Road and runs east in proximity

to the IBWC levee for approximately 1.8 miles.

- Starting approximately 0.2 mile north from the intersection of S. Depot Road and 23rd Street and runs south in proximity to the IBWC levee to the Hidalgo POE and then east in proximity to the new proposed IBWC levee and the existing IBWC levee to approximately South 15th Street for a total length of approximately 4.0 miles.

- Starting adjacent to Levee Road and approximately 0.1 miles east of the intersection of Levee Road and Valley View Road and runs east in proximity to the IBWC levee for approximately 1.0 mile then crosses the Irrigation District Hidalgo County #1 Canal and will tie into the future New Donna POE fence.

- Starting approximately 0.1 mile east of the intersection of County Road 556 and County Road 1554 and runs east in proximity to the IBWC levee for approximately 3.4 miles.

- Starting approximately 0.1 mile east of the Bensten Groves road and runs east in proximity to the IBWC levee to the Progreso POE for approximately 3.4 miles.

- Starting approximately at the Progreso POE and runs east in proximity to the IBWC levee for approximately 2.5 miles.

In order to deter illegal crossings in the Project Area, there is presently a need to construct fixed and mobile barriers and roads in conjunction with improvements to an existing levee system in the vicinity of the border of the United States as a joint effort with Hidalgo County, Texas. In order to ensure the expeditious construction of the barriers and roads that Congress prescribed in the IIRIRA in the Project Area, which is an area of high illegal entry into the United States, I have determined that it is necessary that I exercise the authority that is vested in me by section 102(c) of the IIRIRA as amended. Accordingly, I hereby waive in their entirety, with respect to the construction of roads and fixed and mobile barriers (including, but not limited to, accessing the project area, creating and using staging areas, the conduct of earthwork, excavation, fill, and site preparation, and installation and upkeep of fences, roads, supporting elements, drainage, erosion controls, safety features, surveillance, communication, and detection equipment of all types, radar and radio towers, and lighting) in the Project Area, all federal, state, or other laws, regulations and legal requirements of, deriving from, or related to the subject of, the following laws, as amended: The National Environmental Policy Act (Pub. L. 91-190, 83 Stat. 852 (Jan. 1,

1970) (42 U.S.C. 4321 *et seq.*), the Endangered Species Act (Pub. L. 93–205, 87 Stat. 884) (Dec. 28, 1973) (16 U.S.C. 1531 *et seq.*), the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) (33 U.S.C. 1251 *et seq.*), the National Historic Preservation Act (Pub. L. 89–665, 80 Stat. 915 (Oct. 15, 1966) (16 U.S.C. 470 *et seq.*), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Archeological Resources Protection Act (Pub. L. 96–95, 16 U.S.C. 470aa *et seq.*), the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*), the Noise Control Act (42 U.S.C. 4901 *et seq.*), the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.*), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 *et seq.*), the Archaeological and Historic Preservation Act (Pub. L. 86–523, 16 U.S.C. 469 *et seq.*), the Antiquities Act (16 U.S.C. 431 *et seq.*), the Historic Sites, Buildings, and Antiquities Act (16 U.S.C. 461 *et seq.*), the Farmland Protection Policy Act (7 U.S.C. 4201 *et seq.*), the Coastal Zone Management Act (Pub. L. 92–583, 16 U.S.C. 1451 *et seq.*), the Federal Land Policy and Management Act (Pub. L. 94–579, 43 U.S.C. 1701 *et seq.*), the National Wildlife Refuge System Administration Act (Pub. L. 89–669, 16 U.S.C. 668dd–668ee), the Fish and Wildlife Act of 1956 (Pub. L. 84–1024, 16 U.S.C. 742a, *et seq.*), the Fish and Wildlife Coordination Act (Pub. L. 73–121, 16 U.S.C. 661 *et seq.*), the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), the Rivers and Harbors Act of 1899 (33 U.S.C. 403), the Eagle Protection Act (16 U.S.C. 668 *et seq.*), the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq.*), the American Indian Religious Freedom Act (42 U.S.C. 1996), the Religious Freedom Restoration Act (42 U.S.C. 2000bb), and the Federal Grant and Cooperative Agreement Act of 1977 (31 U.S.C. 6303–05).

I reserve the authority to make further waivers from time to time as I may determine to be necessary to accomplish the provisions of section 102 of the IIRIRA, as amended.

Michael Chertoff,

Secretary.

[FR Doc. E8–7450 Filed 4–7–08; 8:45 am]

BILLING CODE 4410–10–P

DEPARTMENT OF HOMELAND SECURITY

Office of the Secretary

Determination Pursuant to Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as Amended

AGENCY: Office of the Secretary, Department of Homeland Security.

ACTION: Notice of determination; correction.

SUMMARY: The Secretary of Homeland Security has determined, pursuant to law, that it is necessary to waive certain laws, regulations and other legal requirements in order to ensure the expeditious construction of barriers and roads in the vicinity of the international land border of the United States. The notice of determination was published in the **Federal Register** on April 3, 2008. Due to a publication error, the description of the Project Areas was inadvertently omitted from the April 3 publication. For clarification purposes, this document is a republication of the April 3 document including the omitted description of the Project Areas.

DATES: This Notice is effective on April 8, 2008.

Determination and Waiver

I have a mandate to achieve and maintain operational control of the borders of the United States. Public Law 109–367, 2, 120 Stat. 2638, 8 U.S.C. 1701 note. Congress has provided me with a number of authorities necessary to accomplish this mandate. One of these authorities is found at section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (“IIRIRA”). Public Law 104–208, Div. C, 110 Stat. 3009–546, 3009–554 (Sept. 30, 1996) (8 U.S.C. 1103 note), as amended by the REAL ID Act of 2005, Public Law 109–13, Div. B, 119 Stat. 231, 302, 306 (May 11, 2005) (8 U.S.C. 1103 note), as amended by the Secure Fence Act of 2006, Public Law 109–367, 3, 120 Stat. 2638 (Oct. 26, 2006) (8 U.S.C. 1103 note), as amended by the Department of Homeland Security Appropriations Act, 2008, Public Law 110–161, Div. E, Title V, 564, 121 Stat. 2090 (Dec. 26, 2007). In Section 102(a) of IIRIRA, Congress provided that the Secretary of Homeland Security shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into the United

States. In Section 102(b) of IIRIRA, Congress has called for the installation of fencing, barriers, roads, lighting, cameras, and sensors on not less than 700 miles of the southwest border, including priority miles of fencing that must be completed by December 2008. Finally, in section 102(c) of the IIRIRA, Congress granted to me the authority to waive all legal requirements that I, in my sole discretion, determine necessary to ensure the expeditious construction of barriers and roads authorized by section 102 of IIRIRA.

I determine that the following areas in the vicinity of the United States border, located in the States of California, Arizona, New Mexico, and Texas are areas of high illegal entry (collectively “Project Areas”):

California

- Starting approximately 1.5 mile east of Border Monument (BM) 251 and ends approximately at BM 250.
- Starting approximately 1.1 miles west of BM 245 and runs east for approximately 0.8 mile.
- Starting approximately 0.2 mile west of BM 243 and runs east along the border for approximately 0.5 mile.
- Starting approximately 0.7 mile east of BM 243 and runs east along the border for approximately 0.9 mile.
- Starting approximately 1.0 mile east of BM 243 and runs east along the border for approximately 0.9 mile.
- Starting approximately 0.7 mile west of BM 242 and stops approximately 0.4 mile west of BM 242.
- Starting approximately 0.8 mile east of BM 242 and runs east along the border for approximately 1.1 miles.
- Starting approximately 0.4 mile east of BM 239 and runs east for approximately 0.4 mile along the border.
- Starting approximately 1.2 miles east of BM 239 and runs east for approximately 0.2 mile along the border.
- Starting approximately 0.5 mile west of BM 235 and runs east along the border for approximately 1.1 miles.
- Starting approximately 0.8 mile east of BM 235 and runs east along the border for approximately 0.1 mile.
- Starting approximately 0.6 mile east of BM 234 and runs east for approximately 1.7 miles along the border.
- Starting approximately 0.4 mile east of BM 233 and runs east for approximately 2.1 miles along the border.
- Starting approximately 0.05 mile west of BM 232 and runs east for approximately 0.1 mile along the border.

- Starting approximately 0.2 mile east of BM 232 and runs east for approximately 1.5 miles along the border.
- Starting 0.6 mile east of Border Monument 229 heading east along the border for approximately 11.3 miles to BM 225.
- Starting approximately 0.1 mile east of BM 224 and runs east along the border for approximately 2.5 miles.
- Starting approximately 2.3 miles east of BM 220 and runs east along the border to BM 207.

Arizona

- Starting approximately 1.0 mile south of BM 206 and runs south along the Colorado River for approximately 13.3 miles.
- Starting approximately 0.1 mile north of County 18th Street running south along the border for approximately 3.8 miles.
- Starting at the Eastern edge of BMGR and runs east along the border to approximately 1.3 miles west of BM 174.
- Starting approximately 0.5 mile west of BM 168 and runs east along the border for approximately 5.3 miles.
- Starting approximately 1 mile east of BM 160 and runs east for approximately 1.6 miles.
- Starting approximately 1.3 miles east of BM 159 and runs east along the border to approximately 0.3 mile east of BM 140.
- Starting approximately 2.2 miles west of BM 138 and runs east along the border for approximately 2.5 miles.
- Starting approximately 0.2 miles east of BM 136 and runs east along the border to approximately 0.2 mile west of BM 102.
- Starting approximately 3 miles west of BM 99 and runs east along the border approximately 6.5 miles.
- Starting approximately at BM 97 and runs east along the border approximately 6.9 miles.
- Starting approximately at BM 91 and runs east along the border to approximately 0.7 miles east of BM 89.
- Starting approximately 1.7 miles west of BM 86 and runs east along the border to approximately 0.7 mile west of BM 86.
- Starting approximately 0.2 mile west of BM 83 and runs east along the border to approximately 0.2 mile east of BM 73.

New Mexico

- Starting approximately 0.8 mile west of BM 69 and runs east along the border to approximately 1.5 miles west of BM 65.

- Starting approximately 2.3 miles east of BM 65 and runs east along the border for approximately 6.0 miles.
- Starting approximately 0.5 mile east of BM 61 and runs east along the border until approximately 1.0 mile west of BM 59.
- Starting approximately 0.1 miles east of BM 39 and runs east along the border to approximately 0.3 mile east of BM 33.
- Starting approximately 0.25 mile east of BM 31 and runs east along the border for approximately 14.2 miles.
- Starting approximately at BM 22 and runs east along the border to approximately 1.0 mile west BM 16.
- Starting at approximately 1.0 mile west of BM 16 and runs east along the border to approximately BM 3.

Texas

- Starting approximately 0.4 miles southeast of BM 1 and runs southeast along the border for approximately 3.0 miles.
- Starting approximately 1 Mi E of the intersection of Interstate 54 and Border Highway and runs southeast approximately 57 miles in proximity to the IBWC levee to 3.7 miles east of the Ft Hancock POE.
- Starting approximately 1.6 miles west of the intersection of Esperanza and Quitman Pass Roads and runs along the IBWC levee east for approximately 4.6 miles.
- Starting at the Presidio POE and runs west along the border to approximately 3.2 miles west of the POE.
- Starting at the Presidio POE and runs east along the border to approximately 3.4 miles east of the POE.
- Starting approximately 1.8 miles west of Del Rio POE and runs east along the border for approximately 2.5 miles.
- Starting approximately 1.3 Mi north of the Eagle Pass POE and runs south approximately 0.8 miles south of the POE.
- Starting approximately 2.1 miles west of Roma POE and runs east approximately 1.8 miles east of the Roma POE.
- Starting approximately 3.5 miles west of Rio Grande City POE and runs east in proximity to the Rio Grande river for approximately 9 miles.
- Starting approximately 0.9 miles west of County Road 41 and runs east approximately 1.2 miles and then north for approximately 0.8 miles.
- Starting approximately 0.5 mile west of the end of River Dr and runs east in proximity to the IBWC levee for approximately 2.5 miles.
- Starting approximately 0.6 miles east of the intersection of Benson Rd

and Cannon Rd and runs east in proximity to the IBWC levee for approximately 1 mile.

- Starting at the Los Indios POE and runs west in proximity to the IBWC levee for approximately 1.7 miles.
 - Starting at the Los Indios POE and runs east in proximity to the IBWC levee for approximately 3.6 miles.
 - Starting approximately 0.5 mile west of Main St and J Padilla St intersection and runs east in proximity to the IBWC levee for approximately 2.0 miles.
 - Starting approximately 1.2 miles west of the Intersection of U.S. HWY 281 and Los Ranchitos Rd and runs east in proximity to the IBWC levee for approximately 2.4 miles.
 - Starting approx 0.5 miles southwest of the intersection of U.S. 281 and San Pedro Rd and runs east in proximity to the IBWC levee for approximately 1.8 miles.
 - Starting approximately 0.1 miles southwest of the Intersection of Villanueva St and Torres Rd and runs east in proximity to the IBWC levee for approximately 3.6 miles.
 - Starting approximately south of Palm Blvd and runs east in proximity to the City of Brownsville's levee to approximately the Gateway-Brownsville POE where it continues south and then east in proximity to the IBWC levee for a total length of approximately 3.5 miles.
 - Starting at the North Eastern Edge of Ft Brown Golf Course and runs east in proximity to the IBWC levee for approximately 1 mile.
 - Starting approximately 0.3 miles east of Los Tomates-Brownsville POE and runs east and then north in proximity to the IBWC levee for approximately 13 miles.
- In order to deter illegal crossings in the Project Areas, there is presently a need to construct fixed and mobile barriers (such as fencing, vehicle barriers, towers, sensors, cameras, and other surveillance, communication, and detection equipment) and roads in the vicinity of the border of the United States. In order to ensure the expeditious construction of the barriers and roads that Congress prescribed in the IIRIRA in the Project Areas, which are areas of high illegal entry into the United States, I have determined that it is necessary that I exercise the authority that is vested in me by section 102(c) of the IIRIRA as amended.
- Accordingly, I hereby waive in their entirety, with respect to the construction of roads and fixed and mobile barriers (including, but not limited to, accessing the project area, creating and using staging areas, the

conduct of earthwork, excavation, fill, and site preparation, and installation and upkeep of fences, roads, supporting elements, drainage, erosion controls, safety features, surveillance, communication, and detection equipment of all types, radar and radio towers, and lighting) in the Project Areas, all federal, state, or other laws, regulations and legal requirements of, deriving from, or related to the subject of, the following laws, as amended: The National Environmental Policy Act (Pub. L. 91-190, 83 Stat. 852 (Jan. 1, 1970) (42 U.S.C. 4321 *et seq.*)), the Endangered Species Act (Pub. L. 93-205, 87 Stat. 884 (Dec. 28, 1973) (16 U.S.C. 1531 *et seq.*)), the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) (33 U.S.C. 1251 *et seq.*)), the National Historic Preservation Act (Pub. L. 89-665, 80 Stat. 915 (Oct. 15, 1966) (16 U.S.C. 470 *et seq.*)), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Clean Air Act (42 U.S.C. 7401 *et seq.*), the Archeological Resources Protection Act (Pub. L. 96-95, 16 U.S.C. 470aa *et seq.*), the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*), the Noise Control Act (42 U.S.C. 4901 *et seq.*), the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 *et seq.*), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 *et seq.*), the Archeological and Historic Preservation Act (Pub. L. 86-523, 16 U.S.C. 469 *et seq.*), the Antiquities Act (16 U.S.C. 431 *et seq.*), the Historic Sites, Buildings, and Antiquities Act (16 U.S.C. 461 *et seq.*), the Wild and Scenic Rivers Act (Pub. L. 90-542, 16 U.S.C. 1281 *et seq.*), the Farmland Protection Policy Act (7 U.S.C. 4201 *et seq.*), the Coastal Zone Management Act (Pub. L. 92-583, 16 U.S.C. 1451 *et seq.*), the Wilderness Act (Pub. L. 88-577, 16 U.S.C. 1131 *et seq.*), the Federal Land Policy and Management Act (Pub. L. 94-579, 43 U.S.C. 1701 *et seq.*), the National Wildlife Refuge System Administration Act (Pub. L. 89-669, 16 U.S.C. 668dd-668ee), the Fish and Wildlife Act of 1956 (Pub. L. 84-1024, 16 U.S.C. 742a, *et seq.*), the Fish and Wildlife Coordination Act (Pub. L. 73-121, 16 U.S.C. 661 *et seq.*), the Administrative Procedure Act (5 U.S.C. 551 *et seq.*), the Otay Mountain Wilderness Act of 1999 (Pub. L. 106-145), Sections 102(29) and 103 of Title I of the California Desert Protection Act (Pub. L. 103-433), 50 Stat. 1827, the National Park Service Organic Act (Pub. L. 64-235, 16 U.S.C. 1, 2-4), the National Park Service General

Authorities Act (Pub. L. 91-383, 16 U.S.C. 1a-1 *et seq.*), Sections 401(7), 403, and 404 of the National Parks and Recreation Act of 1978 (Pub. L. 95-625), Sections 301(a)-(f) of the Arizona Desert Wilderness Act (Pub. L. 101-628), the Rivers and Harbors Act of 1899 (33 U.S.C. 403), the Eagle Protection Act (16 U.S.C. 668 *et seq.*), the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 *et seq.*), the American Indian Religious Freedom Act (42 U.S.C. 1996), the Religious Freedom Restoration Act (42 U.S.C. 2000bb), the National Forest Management Act of 1976 (16 U.S.C. 1600 *et seq.*), and the Multiple Use and Sustained Yield Act of 1960 (16 U.S.C. 528-531).

This waiver does not supersede, supplement, or in any way modify the previous waivers published in the **Federal Register** on September 22, 2005 (70 FR 55622), January 19, 2007 (72 FR 2535), and October 26, 2007 (72 FR 60870).

I reserve the authority to make further waivers from time to time as I may determine to be necessary to accomplish the provisions of section 102 of the IIRIRA, as amended.

Michael Chertoff,

Secretary.

[FR Doc. E8-7451 Filed 4-7-08; 8:45 am]

BILLING CODE 4410-10-P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

[USCG-2008-0202]

Information Collection Request to Office of Management and Budget; OMB Control Numbers: 1625-0044, 1625-0045, and 1625-0060

AGENCY: Coast Guard, DHS.

ACTION: Sixty-day notice requesting comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the U.S. Coast Guard intends to submit Information Collection Requests (ICRs) and Analyses to the Office of Management and Budget (OMB) requesting an extension of their approval for the following collections of information: (1) 1625-0044, Outer Continental Shelf Activities—Title 33 CFR Subchapter N; (2) 1625-0045, Adequacy Certification for Reception Facilities and Advance Notice—33 CFR part 158; and (3) 1625-0060, Vapor Control Systems for Facilities and Tank Vessels. Before submitting these ICRs to OMB, the Coast Guard is inviting comments as described below.

DATES: Comments must reach the Coast Guard on or before June 9, 2008.

ADDRESSES: To avoid duplicate submissions to the docket [USCG-2008-0202], please submit them by only one of the following means:

(1) *Online:* <http://www.regulations.gov>.

(2) *Mail:* Docket Management Facility (DMF) (M-30), U.S. Department of Transportation, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590-0001.

(3) *Hand delivery:* DMF between the hours of 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202-366-9329.

(4) *Fax:* 202-493-2251.

The DMF maintains the public docket for this notice. Comments and material received from the public, as well as documents mentioned in this notice as being available in the docket, will become part of this docket and will be available for inspection or copying at room W12-140 on the West Building Ground Floor, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket on the Internet at <http://www.regulations.gov>.

A copy of the complete ICR is available through this docket on the Internet at <http://www.regulations.gov>. Additionally, copies are available from Commandant (CG-611), U.S. Coast Guard Headquarters (Attn: Mr. Arthur Requina), 2100 2nd Street, SW., Washington, DC 20593-0001. The telephone number is 202-475-3523.

FOR FURTHER INFORMATION CONTACT: Mr. Arthur Requina, Office of Information Management, telephone 202-475-3523, or fax 202-475-3929, for questions on these documents. Contact Ms. Renee V. Wright, Program Manager, Docket Operations, 202-366-9826, for questions on the docket.

SUPPLEMENTARY INFORMATION:

Public Participation and Request for Comments

The Coast Guard invites comments on whether this information collection request should be granted based on it being necessary for the proper performance of Departmental functions. In particular, the Coast Guard would appreciate comments addressing: (1) The practical utility of the collections; (2) the accuracy of the estimated burden of the collections; (3) ways to enhance the quality, utility, and clarity of information subject to the collections; and (4) ways to minimize the burden of

APPENDIX B
Biological Resources Plan



BIOLOGICAL RESOURCES PLAN
FOR
CONSTRUCTION, OPERATION, AND MAINTENANCE
OF TACTICAL INFRASTRUCTURE
FOR
EL CENTRO SECTOR, CALIFORNIA
YUMA SECTOR, ARIZONA



U.S. DEPARTMENT OF HOMELAND SECURITY
U.S. CUSTOMS AND BORDER PROTECTION
U.S. BORDER PATROL EL CENTRO SECTOR
U.S. BORDER PATROL YUMA SECTOR

Prepared by



MAY 2008

ABBREVIATIONS AND ACRONYMS

°F	Degrees Fahrenheit
BMP	Best Management Practice
CBP	U.S. Customs and Border Protection
CFR	Code of Federal Regulations
CITES	Convention of International Trade in Endangered Species
DHS	U.S. Department of Homeland Security
FEMA	Federal Emergency Management Agency
INS	Immigration and Naturalization Service
PEIS	Programmatic Environmental Impact Statement
PUPS	Pesticide Use Proposals
RVSS	Remote Visual Surveillance System
T&E	Threatened and Endangered
USBP	U.S. Border Patrol
USIBWC	U.S. Section, International Boundary and Water Commission
USFWS	U.S. Fish and Wildlife Service

EXECUTIVE SUMMARY

The U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP), U.S. Border Patrol (USBP) plans to construct, operate, and maintain tactical infrastructure consisting of primary pedestrian and vehicle fencing, supporting patrol roads, lights, and other infrastructure in seven sections along the U.S./Mexico international border in Imperial County, California, and Yuma County, Arizona.

Table ES-1 outlines federally listed species and federally designated critical habitats known to occur or to potentially occur within or adjacent to the Project area and the determination of effects resulting from the Project.

Of the species listed in **Table ES-1**, the Project could affect, but is not likely to adversely affect Peninsular bighorn sheep (*Ovis canadensis*) and its designated critical habitat in Imperial County, California, in Section B-1. The Project is likely to adversely affect Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*) in Yuma County, Arizona, in Section C-1. The remaining species, desert tortoise (*Gopherus agassizii*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and Yuma clapper rail (*Rallus longirostris yumanensis*) will not be affected by the Project, and therefore will not be discussed in detail in this Biological Resources Plan (BRP).

Since the construction, operation, and maintenance of pedestrian and vehicle barrier fence in Sections B-2, B-4, B-5A, B-5B, and C-2B and the construction, operation, and maintenance of permanent lighting in Section B-3 were determined to have no effect on federally listed species and federally designated critical habitats, these project sections are not addressed in detail in this BRP. This BRP analyzes the effects on Peninsular bighorn sheep and its designated critical habitat and the Peirson's milk-vetch associated with the construction, operation, and maintenance of new tactical infrastructure in Sections B-1 and C-1, respectively.

Table ES-1. Determination of Effects on Federally Listed Species and Critical Habitats within Sections B-1, B-4, B-5A, C-1, and C-2B

Species	Project Section	Listing Status	Year Listed, Proposed or Designated	Determination
Peninsular bighorn sheep, <i>Ovis canadensis</i>	B-1	Endangered (63 FR 13134-13150)	1998	Not likely to adversely affect
Peninsular bighorn sheep, <i>Ovis canadensis</i> , Critical Habitat	B-1	Designated (66 FR 8649-8677)	2001	Not likely to adversely affect
	B-1	Revised proposed designation (72 FR 57740-57780)*	2007*	No effect
Desert tortoise, <i>Gopherus agassizii</i>	None	Threatened (55 FR 12178-12191)	1990	No effect
Southwestern willow flycatcher, <i>Empidonax traillii extimus</i>	C-2B	Endangered (60 FR 10693-10715)	1995	No effect
Least Bell's vireo, <i>Vireo bellii pusillus</i>	None	Endangered (51 FR 16474-16482)	1986	No effect
Yuma clapper rail, <i>Rallus longirostris yumanensis</i>	B-4, B-5A, C-1, C-2B	Endangered (32 FR 4001)	1967	No effect
Peirson's milk-vetch, <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	C-1	Threatened (63 FR 53596-53615)	1998	Likely to adversely affect
Peirson's milk-vetch, <i>Astragalus magdalenae</i> var. <i>peirsonii</i> , Critical Habitat	C-1	Designated (73 FR 8748-8785)	2008	No effect

Note: * The U.S. Fish and Wildlife Service anticipates the revised final critical habitat designation for Peninsular bighorn sheep will be published in the Federal Register in October 2008.

**BIOLOGICAL RESOURCES PLAN
USBP EL CENTRO AND YUMA SECTORS**

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS	INSIDE FRONT COVER
EXECUTIVE SUMMARY	ES-1
1. PROJECT DESCRIPTION	1-1
1.1 LOCATION.....	1-1
1.2 CONSTRUCTION, OPERATION, AND MAINTENANCE.....	1-1
1.2.1 Road Improvements.....	1-8
1.2.2 Staging Areas	1-9
1.2.3 Fence Maintenance Operations	1-10
1.3 BEST MANAGEMENT PRACTICES.....	1-10
1.3.1 Project Pre-Construction	1-10
1.3.2 Construction, Operation, and Maintenance.....	1-11
2. DESCRIPTION OF THE SPECIES AND THEIR HABITAT	2-1
2.1 PENINSULAR BIGHORN SHEEP	2-1
2.1.1 Distribution	2-1
2.1.2 Habitat Requirements	2-1
2.1.3 Threats.....	2-1
2.2 PEIRSON'S MILK-VETCH	2-2
2.2.1 Distribution	2-2
2.2.2 Habitat Requirements	2-2
2.2.3 Threats.....	2-2
3. ACTION AREA.....	3-1
4. EFFECTS OF THE ACTION	4-1
4.1 PENINSULAR BIGHORN SHEEP	4-1
4.2 PEIRSON'S MILK-VETCH	4-2
5. DETERMINATION OF EFFECT.....	5-1
6. REFERENCES	6-1

FIGURES

1-1.	Map of Project Area (Sections B-1, B-2, B-3, B-4, B-5A, and B-5B) in Imperial County, California.....	1-2
1-2.	Map of Project Area (Sections C-1 and C-2B) in Imperial County, California, and Yuma County, Arizona	1-3
1-3.	Personnel-Vehicle Fence Type 1 (PV-1)	1-4
1-4.	Schematic and Photograph of Vehicle Fence Type-2 (VF-2)	1-4
1-5.	Vehicle Fence Type 4 (PV-4) Design	1-5
1-6.	Schematic of the Permanent Impact Area within the 60-foot Project Corridor	1-7
3-1.	Section B-1 Project Area	3-2
3-2.	Section C-1 Project Area.....	3-3

TABLES

ES-1.	Determination of Effects on Federally Listed Species and Critical Habitats within Sections B-1, B-4, B-5A, C-1, and C-2B.....	ES-2
1-1.	Approximate Acres of Vegetation or Land Use Type Within the 60-foot Project Corridors and Staging Areas	1-8
5-1.	Determination of Effects on Federally Listed Species and Critical Habitats within Sections B-1, B-4, B-5A, C-1, and C-2B.....	5-2

1. PROJECT DESCRIPTION

The U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) plans to construct, operate, and maintain 225 miles of pedestrian and vehicle fence (PF 225 Project) along the U.S./Mexico international border with construction expected to be completed by December 31, 2008.

1.1 LOCATION

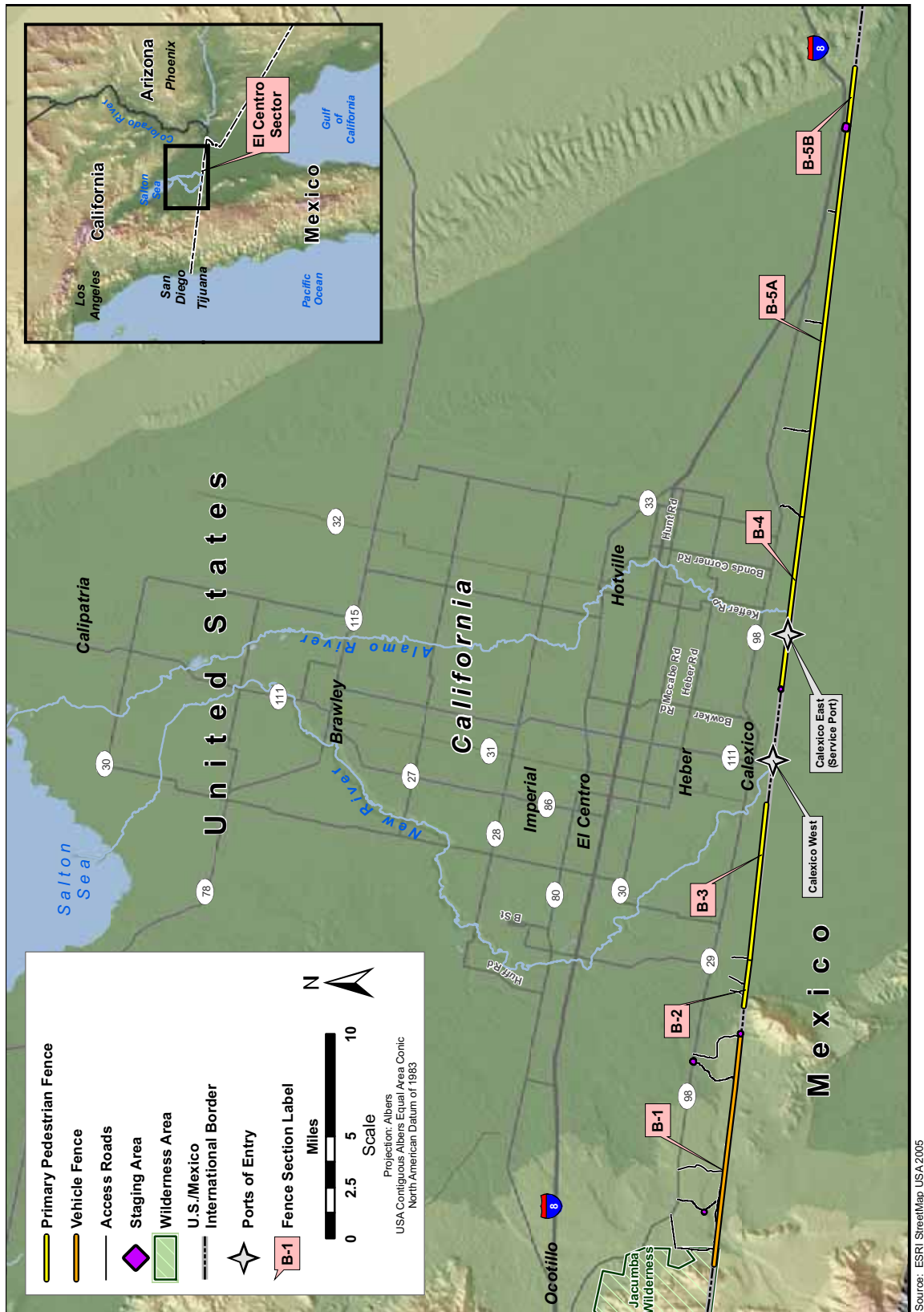
CBP plans to construct, operate, and maintain tactical infrastructure consisting of primary pedestrian and vehicle fence and road improvements in five discrete sections (Sections B-1, B-2, B-4, B-5A, and B-5B) and one section of new lighting (Section B-3) in the El Centro Sector in Imperial County, California (see **Figure 1-1**). CBP also plans to construct, operate, and maintain tactical infrastructure consisting of primary pedestrian and vehicle fence in two discrete sections within the Yuma Sector: one section in Imperial County, California (Section C-1), and one section in Yuma County, Arizona (C-2B) (see **Figure 1-2**). The Project includes the construction, operation, and maintenance of tactical infrastructure along approximately 52 miles of the U.S.-Mexico international border in Imperial County, California (see **Figures 1-1** and **1-2**); and approximately 14 miles in Yuma County, Arizona.

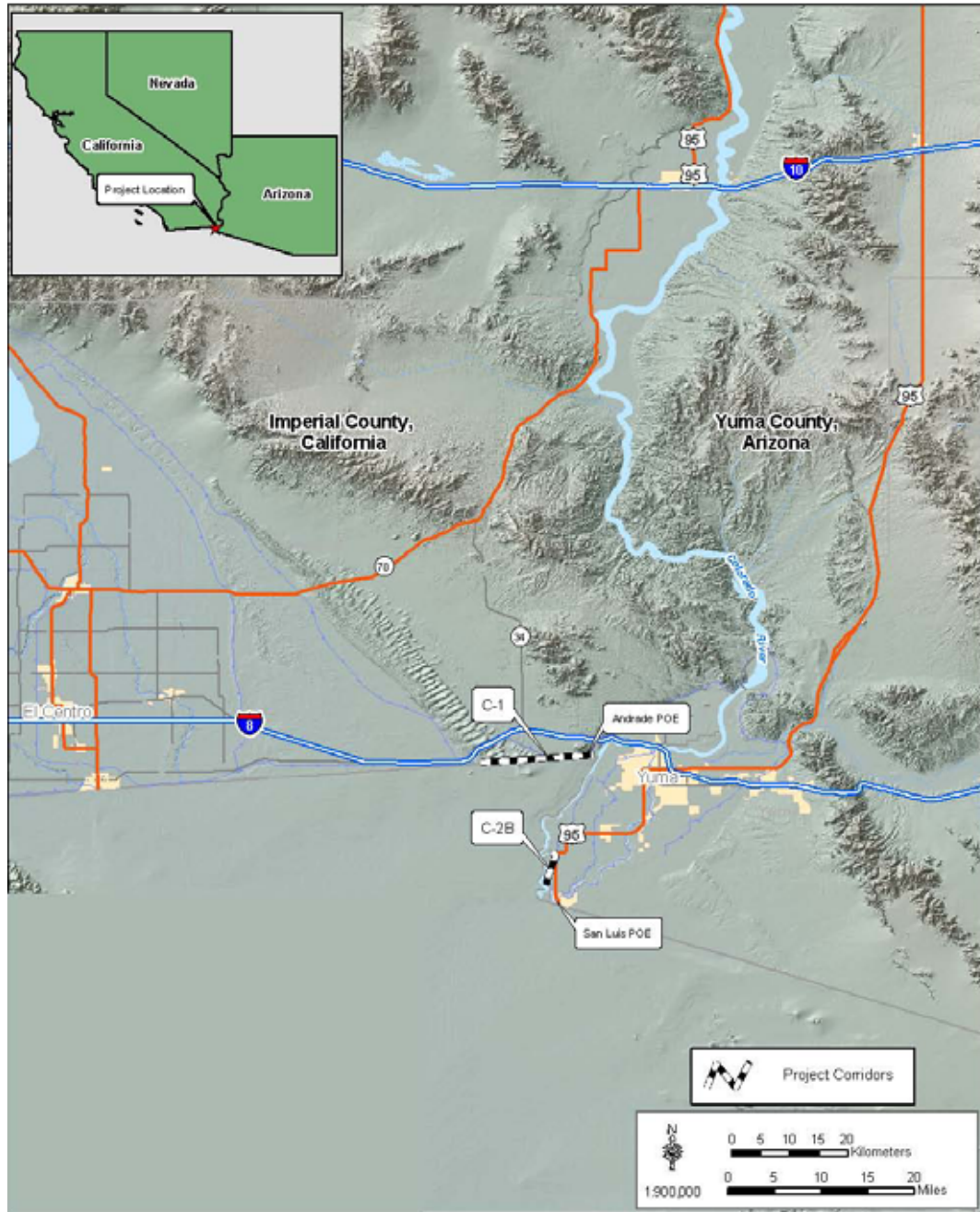
The majority of the land in and adjacent to Sections B-2 and B-3 have been previously impacted by urban or agricultural development and no longer provide habitat for federally listed species. While undisturbed habitat remains in Sections B-4, B-5A, and B-5B, no federally listed species are known to occur or to potentially occur in or adjacent to these sections.

Since the construction, operation, maintenance of pedestrian and vehicle barrier fence in Sections B-2, B-4, B-5A, B-5B, and C-2B and the construction, operation, and maintenance of permanent lighting in Section B-3 were determined to have no effect on federally listed species and federally designated critical habitats, these Project sections are not addressed further in this Biological Resources Plan (BRP). This BRP analyzes the potential effects on Peninsular bighorn sheep and its designated critical habitat and the Peirson's milk-vetch associated with the construction, operation, and maintenance of new tactical infrastructure in Sections B-1 and C-1.

1.2 CONSTRUCTION, OPERATION, AND MAINTENANCE

The Project construction consists of the following Project components: (1) the construction, operation, and maintenance of primary pedestrian and vehicle barrier fence along the U.S./Mexico international border, (2) road improvements to existing roads to improve access for construction, operation, and maintenance, and (3) the development of temporary construction staging areas.





Source: GSRC 2008

Figure 1-2. Map of Project Area (Sections C-1 and C-2B) in Imperial County, California, and Yuma County, Arizona

Tactical Infrastructure in Sections B-1 and C-1 include the construction of a total of approximately 21.6 miles of new primary pedestrian and vehicle barrier fence. Three fence types are planned: Vehicle Fence Type 2 (VF-2), Vehicle Fence Type 4 (VF-4), and Personnel-Vehicle Fence Type 1 (PV-1). See **Figures 1-3, 1-4, and 1-5** for visual representations of the three fence types.



Figure 1-3. Personnel-Vehicle Fence Type 1 (PV-1)



Figure 1-4. Schematic and Photograph of Vehicle Fence Type-2 (VF-2)

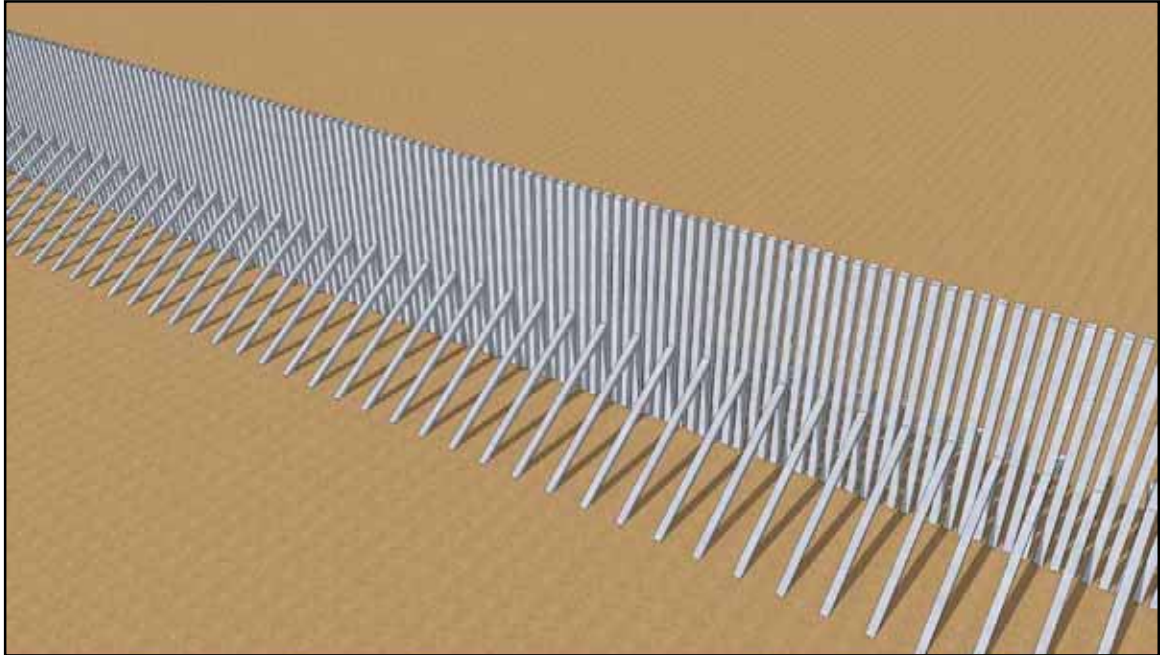


Figure 1-5. Vehicle Fence Type 4 (PV-4) Design

The VF-2 fence is Normandy-barrier fence designed to prevent vehicle passage in Section B-1. Sections of VF-2 fence will be transported to the site by small trucks with lowboy trailers. Depending on the soil type encountered, fence sections will be permanently installed using a small truck with an auger or a hydraulic driver. No pile driving will be required for construction of VF-2 fence.

The PV-4 fence is a floating fence designed to prevent vehicle passage in the western 6.3 miles of Section C-1. Sections of PV-4 fence will be transported to the site by small trucks with lowboy trailers. Fence sections will be installed on site using a fork lift to set the sections on the surface of the sand. The PV-4 was specially designed to sit on the surface of the sand and will be lifted and repositioned using a fork lift on the sand surface as necessary due to sand accumulation along the fence. Construction will be completed using a fork lift. No pile driving will be required for construction of PV-4 fence.

The PV-1 fence is an anchored, 18-foot (above ground) grout-filled steel bollard-style fence designed to prevent passage by both people and vehicles in the eastern 4 miles of Section C-1. Panels of PV-1 fence will be welded together off site and transported to the site by small trucks with lowboy trailers. Using a crane, fence panels will be anchored in concrete. Construction of new fence will be completed using equipment such as a trencher, a cement mixer, and a crane. No pile driving will be required for construction of PV-1 fence.

New fence construction will occur approximately 3 feet north of the international border within the 60-foot-wide Roosevelt Reservation, owned by the Bureau of Land Management (BLM). This 60-foot-wide area constitutes the project corridor

in which all construction, operation, and maintenance activities will be conducted. See **Figure 1-6** for a schematic of the 60-foot project corridor. Routine maintenance will occur, as needed, to preserve the integrity of the new and existing barrier fence. The barrier fence will be repaired, as needed, using welders and all vegetation and debris within the 60-foot project corridor will be removed, as needed, to maintain visibility and mobility. This 60-foot project corridor also serves as an access/patrol road along the international border.

There will be no change in overall USBP Sector operations. The fences will be made from non-reflective steel. No painting will be required. Fence maintenance will include removing any accumulated debris on the fence after a rain event to avoid potential future flooding. Sand that builds up against the fence and brush will also be removed as needed. Periodically, if sand drifts build up against the PV-4 fence section in the Algodones Dunes and the USBP makes an operational determination that the sand build up poses a risk, the fence segments will be physically lifted and then reset on the sand again. Brush removal could include mowing, removal of small trees and application of herbicide if needed. During normal patrols, Sector personnel will observe the condition of the fence. Any destruction or breaches of the fence will be repaired, as needed, by a contractor.

Section B-1 (West of Pinto Wash to Monument 225, El Centro Station).

Section B-1 will be approximately 11.3 miles in length and will extend from approximately 1.5 miles west of Pinto Wash, at the easternmost boundary of the Jacumba Mountains, east to international border Monument marker 225. Normandy vehicle fence is currently deployed sporadically across Section B-1. New vehicle fence (VF-2) in this section will be installed within the 60-foot project corridor and will fill in the gaps between the existing vehicle barrier fence. The existing vehicle barrier fence in this section will not be replaced as part of the Project. Existing roads will provide access from Interstate Highway 98 to the 60-foot project corridor during construction of new barrier fence and provide access for future maintenance of barrier fence. From Highway 98, Coyote 2 Road will be used to access an unpaved road (herein referred to as Access Road #1) that extends to the western end of the project corridor in this section. A second unpaved road off of Highway 98 (herein referred to as Access Road #2), approximately 3.75 miles east of Coyote 2 Road, will serve as a second access point to the project corridor along this section. These roads will not be widened as part of the Project but will be compacted by spraying water on the road to provide safe driving conditions during construction, operation, and maintenance activities. No new access roads or temporary staging areas are planned for this section. Also, no new, permanent lighting fixtures will be installed in this section as part of the Project.

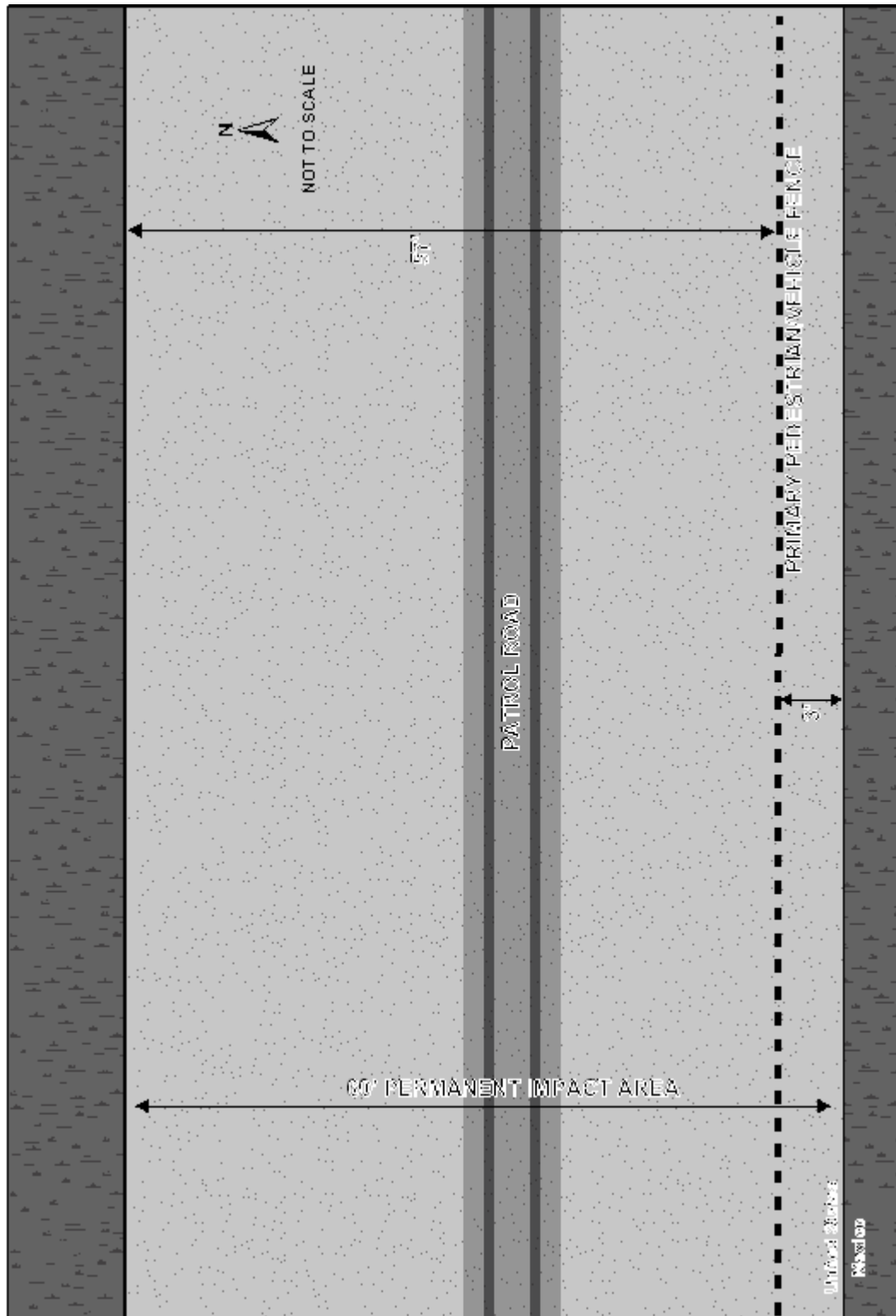


Figure 1-6. Schematic of the Permanent Impact Area within the 60-foot Project Corridor

Section C-1 (Algodones Dunes to Andrade Point-of-Entry, Yuma Station).

Section C-1 will be approximately 10.3 miles in length and will extend from the Algodones Dunes area (east of Grays Well Road) to approximately 0.5 miles west of the Andrade Port-of-Entry (POE) near the Arizona-California border. There is no existing fence along the international border in Section C-1. The new 10.3-mile fence will consist of 6.3 miles of vehicle fence (VF-4) across the Algodones Dunes and 4 miles of personnel-vehicle fence (PV-1) extending to the Andrade POE and will be constructed within the 60-foot project corridor. The existing sand road crossing the Algodones Dunes along the international border will be permanently improved by topping it with 12 inches of aggregate road material to provide safe driving conditions during fence construction, operation, and maintenance activities. A second existing road in the eastern half of this section will provide access from the All American Canal access road to the project corridor. This existing access road will not be widened as part of the Project but will be compacted by spraying water on the road to provide safe driving conditions during construction, operation, maintenance activities. A temporary staging area will be established in a previously disturbed area between the All American Canal and the international border within the eastern 3.5 miles of Section C-1. No new, permanent lighting fixtures will be installed in this section.

The construction, operation, and maintenance of a total of 21.6 miles of barrier fence in Sections B-1 and C-1 will impact 153 acres of vegetation within the 60-foot project corridor. Additionally, approximately 4 acres of vegetation will be impacted by the establishment of one staging area in Section C-1 (see **Table 1-1**).

1.2.1 Roads

Multiple unpaved roads currently exist along the international border. These roads are used by CBP for patrol roads and access roads. Patrol roads are needed to provide a safe driving surface along the border and generally parallel the international border. Construction access roads allow construction equipment to access the Project site. New access roads, no wider than 30 feet, will provide access to the international border in Section B-1. Vegetation will be cleared and grading and placement of aggregate will occur where needed.

The Project includes improvements to existing patrol roads and access roads in Section B-1 and the construction of a new patrol road in Section C-1 for use during fence construction, operation, and maintenance activities. In Section B-1, some vegetation within the 60-foot project corridor has been previously cleared for operation and maintenance of the patrol road that parallels the majority of the international border, or to support other facilities such as the All-American Canal. However, improvement of existing patrol roads will include the clearing of all remaining vegetation within the 60-foot project corridor to provide access for fence construction, operation, and maintenance. There are no roads in the area of Section C-1; therefore, a new patrol road will be constructed within the 60-foot

project corridor, which will also serve for construction access. While the entire 60-foot corridor will be utilized, little or no vegetation occurs on the ridges/hills of Section C-1, but vegetation will be removed in some of the washes. Access roads and patrol roads, including the one within the project corridor, will also be improved and regularly maintained to provide safe driving conditions during construction, operation, and maintenance activities.

Table 1-1. Approximate Acres of Vegetation or Land Use Type Within the 60-foot Project Corridors and Staging Areas

Vegetation Community/Land Use	Acres in 60-Foot Project Corridor	Acres in 60-Foot Project Corridor	Acres in Staging Areas
Section	B-1*	C-1	
Bermuda Grass - Heliotrope - Alkali Mallow Nonnative Herbaceous Vegetation	0	6	0
Creosotebush / Sparse Understory Shrubland	12	0	4
Creosotebush - White Bursage - Mixed Shrubs Shrubland	58	0	0
Creosotebush - Honey Mesquite - Ironwood - Desert Wash Shrub	9	0	0
Creosotebush - Longleaf Jointfir - Stabilized Dunes Shrub	0	1	0
Active Desert Dunes and Sand Fields	0	65	0
Tamarisk (<i>Tamarix chinensis</i> , <i>T. aphylla</i>) / Arrow Weed Shrubland	0	2	0
Roads, trails, canal banks, or berms	3	0	0
Other bare ground	0	0	0
Total Project Acreage	82	74	4

Note: * No staging areas are planned for Section B-1.

1.2.2 Staging Areas

The Project includes the establishment of one 4-acre staging area in Section C-1 to accommodate construction equipment and stockpile materials. No staging areas are planned for Section B-1. The staging area in Section C-1 will be

established in a previously disturbed area adjacent to the All American Canal along the eastern 3.5 miles of Section C-1.

1.2.3 Fence Maintenance Operations

There will be no change in overall USBP Sector operations resulting from the Project. The pedestrian and vehicle fences will be made from nonreflective steel and will not require any painting. Fence maintenance will include removing any accumulated debris on the fence after a rain event to avoid potential future flooding. Sand that builds up against the fence and brush will also be removed as needed. Brush removal could include mowing, removal of small trees, and application of herbicide, if needed. During normal patrols, Sector personnel will observe the condition of the fence. Any destruction or breaches of the fence will be repaired, as needed.

1.3 BEST MANAGEMENT PRACTICES

1.3.1 Project Pre-Construction

Cultural, geotechnical, and biological surveys were necessary prior to new fence construction and have been reviewed by U.S. Fish and Wildlife Service (USFWS). Numerous measures were provided to CBP and their consultants to minimize and avoid adverse effects on federally listed species during geotechnical surveys. The following subset of those measures applicable to the habitats and species found in the Project area are project objectives and will be implemented to the extent possible or may be mitigated:

Vegetation

1. Survey activities will avoid wetlands as practicable or will be mitigated.
2. Survey activities will avoid all federally threatened plant species as much as possible or will be mitigated.

General

1. To the extent practicable, conduct geotechnical surveys outside of the bird breeding season (February 15 to August 31) and Peninsular bighorn sheep (*Ovis canadensis*) lambing season (January 1 to May 31) when working within habitat occupied by these species or within 100 meters of habitat occupied by these species.
2. Survey activities will avoid destroying native trees and shrubs. If native vegetation must be impacted, the vegetation should be crushed versus cut.
3. Areas outside the 60 foot construction corridor or designated access roads or staging areas where native vegetation was crushed by drill rigs or other machinery will be recorded with GPS and included in the project report.

4. Areas impacted by drill rigs or other machinery during geotechnical activities that are outside of the PF 225 construction footprint will be assessed by the Project proponent. Adverse effects identified will be off set (e.g., access trail restoration, barricades).
5. All pits and trenches related to geotechnical activities will be covered when idle and refilled with parent material when geotechnical activities are completed.
6. Construction of or improvement to access roads was not planned and therefore is not part of this discussion.

1.3.2 Construction, Operation, and Maintenance

General BMPs

The following best management practices (BMPs) should be implemented to avoid or minimize impacts associated with the Project. These represent project objectives for implementation to the extent possible and will be incorporated into construction and monitoring contracts.

1. The perimeter of all areas to be disturbed during construction or maintenance activities in Sections B-1, B-2, B-5A, B-5B, C-1, and C-2B shall be clearly demarcated using flagging or temporary construction fence, and no disturbance outside that perimeter should be authorized.
2. CBP will develop (in coordination with USFWS) a training plan regarding Trust Resources for USBP and construction and maintenance personnel. At a minimum, the program will include the following topics: occurrence of the federally listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, protection afforded these species, and Project features designed to reduce the impacts on these species and promote continued successful occupation of the Project area environs. Included in this program will be color photos of the federally listed species, which should be shown to the employees. Following the education program, the photos will be posted in the contractor and resident engineer office, where they should remain through the duration of Project construction. CBP, the construction contractor, and the designated biological monitor will be responsible for ensuring that employees are aware of the known and potential presence of federally listed species in the Project area.
3. CBP will designate a qualified biologist who will serve as the designated biological monitor (biological monitor) responsible for overseeing compliance with protective measures for federally listed species during construction activities within Sections B-1, B-2, B-5A, B-5B, C-1, and C-2B. The biological monitor will immediately notify CBP's designated representative to halt all associated Project activities in accordance with the ESP. In such an event, CBP will halt those construction activities until

the violation is rectified. All such actions will be documented and included in the Project Report. If an individual of a federally listed species is found in the designated Project area, work will cease in the area of the species until either a qualified biological monitor can safely remove the individual, or it moves away on its own. The biological monitor shall have the authority to temporarily suspend the specific construction activities if necessary to ensure compliance with the BMPs. This authority must be provided to the biological monitor by the USACE construction manager in the worker orientation training.

4. To the extent practicable and as the schedule permits, the biological monitor will monitor construction activities within Sections B-1, B-2, B-4, B-5A, B-5B, C-1, and C-2B during critical times such as breeding seasons and vegetation removal to ensure BMPs, perimeter fencing, and all avoidance and minimization measures are properly constructed and followed.
5. Construction speed limits in Sections B-1, B-2, B-4, B-5A, B-5B, C-1, and C-2B and associated access roads will not exceed 35 mph on major unpaved roads (graded with ditches on both sides) and 25 mph on all other unpaved roads.
6. Transmission of disease vectors and invasive nonnative aquatic species can occur if vehicles cross infected or infested streams or other waters and water or mud remains on the vehicle. If these vehicles subsequently cross or enter uninfected or infested waters, the disease or invasive species could be introduced to the new area. The biological monitor will determine if any streams or other waters that will be crossed during construction are potentially infected or infested. If infected/infested waters are found, the crossing of streams or marsh areas with flowing or standing water will be avoided if possible. If avoidance is not possible, then the vehicle will be sprayed with a 10% bleach solution or allowed to dry completely to kill any organisms.
7. For construction purposes, infrastructure sites shall only be accessed using existing roads identified for use in the Project description. This will limit the development of multiple trails to such sites and reduce the effects on federally listed species habitats in the vicinity.
8. All equipment maintenance, laydown, and dispensing of fuel, oil, or any other such construction activities, will occur in staging areas identified for use in the Project description, to the maximum extent possible. The designated staging areas will be located in such a manner as to prevent any runoff from entering waters of the United States, including wetlands.
9. Typical erosion-control measures, BMPs, throughout the Project area will be employed in accordance with the Project Storm Water Pollution Prevention Plan (SWPPP).

10. No off-road vehicle activity by construction workers or Project contractors will occur outside of Project perimeter or existing access roads identified for use in the Project description.
11. No pets owned or under the care of CBP personnel or any and all construction workers or Project contractors will be permitted inside the project corridor in any Project section, adjacent native habitats, or other associated work areas. Use of CBP working dogs during CBP operations are excluded from this BMP.
12. Light poles and other pole-like structures used in Sections B-1, B-2, B-3, B-4, B-5A, B-5B, C-1, and C-2B will be designed to discourage roosting by birds, particularly ravens or other raptors that might use the poles for hunting perches, by installing bird control products (e.g., those manufactured by Bird-B-Gone).
13. To prevent entrapment of wildlife species during the construction of the Project in Sections B-1, B-2, B-3, B-4, B-5A, B-5B, C-1, and C-2B, all excavated, steep-walled holes or trenches will be covered at the close of each working day by plywood. Each morning before the start of construction and before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. Any animals so discovered will be allowed to escape voluntarily (by temporary structures), without harassment, before construction activities resume, or removed from the trench or hole by the biological monitor or other qualified biologist and allowed to escape unimpeded.
14. Potential for erosion off the designated roadbed into federally listed species habitat will be avoided or minimized.
15. Potential for entrapment of surface flows within the roadbed due to incisement or edging berms created by grading will be avoided or minimized.
16. Widening of existing or created roadbed beyond the design parameters due to improper maintenance and use will be avoided or minimized.
17. Water for construction use shall be from wells or irrigation water sources at the discretion of the landowner. If local groundwater pumping is an adverse effect on aquatic, marsh, or riparian federally listed species, treated water from outside the immediate area will be utilized.
18. All construction will follow CBP management directive 5100 for waste management.
19. A CBP-approved spill protection plan will be developed and implemented at construction and maintenance sites to ensure that any toxic substances are properly handled and escape into the environment prevented. Agency standard protocols will be used. Drip pans underneath equipment, containment zones used when refueling vehicles or equipment, and other measures will be included as appropriate.

20. Waste materials and other discarded materials will be removed from the site as quickly as possible.
21. Waste water (water used for Project purposes that is contaminated with construction materials, was used for cleaning equipment and thus carries oils or other toxic materials or other contaminants in accordance with state regulations) will be stored in closed containers on site until removed for disposal. Concrete wash water will not be dumped on the ground, but will be collected and moved offsite for disposal.
22. During construction and maintenance activities, the minimum amount of personnel and equipment will be used to reduce the amount of activity. This can be adjusted if additional personnel and equipment would complete the work faster and thus reduce the time the disturbance is in effect.
23. To prevent entrapment of wildlife species during placement of vertical posts/bollards along the project corridor, all vertical fence posts/bollards that are hollow (i.e., those that will be filled with a reinforcing material such as concrete), shall be covered. As much as possible, covers will be deployed from the time the posts or hollow bollards are erected to the time they are filled with reinforcing material.

BMPs for Temporary Impacts

The following apply as off-setting conservation measures for temporary impacts.

1. All generally native areas, as opposed to generally developed areas, temporarily impacted by construction activities (e.g., staging areas, temporary access roads) will be revegetated with native plant species using a standardized restoration plan provided to USFWS prior to planting if possible. The restoration plan will describe revegetating all temporarily disturbed areas within the scope of the Project. All native seed and plant stock should be from seed and propagules collected within a 5-mile radius of the work area to the extent practicable. All seeding should occur during the first winter or fall following completion of the work.
2. No invasive exotic plant species should be seeded or planted adjacent to or near sensitive vegetation communities or waters of the United States. Impacted areas will be reseeded with plant species native to local habitat types, and will avoid the use of species listed as High or Moderate in the California Invasive Plant Council's Invasive Plant Inventory (Revision 2005) to the extent practicable. Areas hydroseeded for temporary erosion-control measures should use native plant species.
3. Temporary impact areas will be restored in-kind, except temporary impacts on disturbed habitat and nonnative grassland in generally native areas should be revegetated with the most appropriate native plant palette following completion of the work.

Species-Specific BMPs

In addition to the General Conservation Measures outlined above, the following measures will be implemented to the maximum extent possible, to avoid, minimize, or offset impacts associated with the Project on the federally listed Peninsular bighorn sheep and Peirson's milk-vetch.

Peninsular bighorn sheep. During any construction activities in Section B-1 and along associated access roads identified for use in the Project description, if a sheep is seen within 1 mile of the activity, any work that could disturb the sheep will cease. For vehicle operations, this will entail stopping the vehicle until the sheep moves away. Vehicles can continue on at reduced speeds (10–15 miles per hour) once the sheep has moved away. For construction, the biological monitor will request that work be suspended until the sheep moves out of the area. As the schedule permits, construction crews will wait up to 3 hours from the initial sighting for the sheep to move beyond 1 mile away from the Project activity or vehicle. After that, if the construction schedule permits, project personnel may retreat from the area in the direction from which they came.

Peirson's milk-vetch.

1. Using funds contributed to the mitigation fund by CBP, USFWS may offset direct and indirect impacts on approximately 46 acres of Peirson's milk-vetch habitat (6.3 miles of new fence x 60-foot Project area) in Section C-1 based upon a standard 3:1 mitigation ratio. USFWS may assign the equivalent funds needed to adaptively manage and monitor 138 acres of Peirson's milk-vetch habitat to the BLM. BLM may use these monies to fund conservation actions benefitting Peirson's milk-vetch in the Buttercup Management Area.
2. Prior to disturbance in all areas known to be occupied by Peirson's milk-vetch within the 60-foot project corridor in Section C-1, the Peirson's milk-vetch seed bank will be harvested. At least the top 10 centimeters of sand will be removed from the dune bowls and placed atop an adjacent dune outside of the impact area.
3. Soil used for filling dune bowls will consist of only dune sand from the immediate area. Material other than dune sand will not be used for filling.
4. The risk of spreading invasive plant species will be reduced by cleaning heavy equipment prior to use in the dunes and removing invasive species from the work areas prior to disturbance to avoid incorporating seeds of these species into the seed bank.
5. In the area where soils will be stored temporarily, any oil, hazardous material, or other material that could negatively impact long-term dune vegetation, will be placed and used in a designated area and protective measures will be in place to ensure no material is spilled.

6. No aggregate road material will be applied outside of the 60-foot project corridor in Section C-1.

2. DESCRIPTION OF THE SPECIES AND THEIR HABITAT

2.1 PENINSULAR BIGHORN SHEEP

The population of bighorn sheep in the United States Peninsular Ranges was listed as endangered on March 18, 1998.

2.1.1 Distribution

The current population is approximately 334 animals, distributed in 8 known ewe groups (subpopulations) in Riverside, Imperial, and San Diego counties from the San Jacinto Mountains south to the Mexican border (USFWS 2000).

2.1.2 Habitat Requirements

The Peninsular bighorn sheep is restricted to the east-facing, lower elevation slopes [typically below 1,400 meters (4,600 feet)] of the Peninsular Ranges along the northwestern edge of the Sonoran Desert. Bighorn sheep are wide-ranging animals that require a variety of habitat characteristics related to topography, visibility, water availability, and forage quality and quantity. Steep topography is required for lambing and rearing habitat and for escaping from predators. Open terrain with good visibility is critical because bighorn sheep primarily rely on their sense of sight to detect predators. In their hot, arid habitat, water availability in some form is critical, especially during the summer. A wide range of forage resources and vegetation associations is needed to meet annual and drought-related variations in forage quality and availability (USFWS 2000).

2.1.3 Threats

Limiting factors apparently vary with each ewe group and are not well understood in all cases. The range of factors appears to include predation, urban-related sources of mortality, low rates of lamb recruitment, disease, habitat loss, and human-related disturbance (USFWS 2000).

Human disturbance has the potential to disrupt normal bighorn sheep social behaviors and use of essential resources, and cause bighorn sheep to abandon traditional habitat. Human disturbance in the form of construction activities has been found to cause bighorn sheep to abandon traditional habitat. While they eventually returned to the area following cessation of construction activities, ewes have been observed abandoning lambing habitat while construction activities were ongoing within their home range (Etchberger and Krausman 1999).

Human disturbance in other essential habitats, including foraging habitat, could also cause bighorn sheep to abandon habitat. The Peninsular bighorn sheep use alluvial fans and washes in spring and summer (March through August) or

during any period of limited forage availability, such as times of drought, since wash vegetation remains green longer than vegetation in other areas (Andrew 1994). Alluvial fans and wash areas are also important during the reproductive season (March through August), because nursing ewes often concentrate their foraging efforts in areas with higher forage quality. Alluvial fans contain more productive soils and support greater herbaceous growth than steeper, rockier soils, during this nutritionally demanding period. In the Peninsular Ranges, bighorn sheep have been frequently observed within 0.5 miles from mountainous habitat feeding in or moving across washes and alluvial fans (DeForge and Scott 1982).

2.2 PEIRSON'S MILK-VETCH

Peirson's milk-vetch was listed as threatened species on October 6, 1998.

2.2.1 Distribution

Peirson's milk-vetch is only known to occur in the Algodones Sand Dunes (also called the Imperial Sand Dunes) of Imperial County, California. Within the Algodones Dunes, Peirson's milk-vetch generally occurs in the interior portions of the dunes (USFWS 2007a).

2.2.2 Habitat Requirements

Peirson's milk-vetch is a perennial herb, which blooms from December to April, requires dune areas, at elevations of 55–250 meters above sea level and is known only from the Algodones Sand Dunes in California.

2.2.3 Threats

The primary threat to the only known existing population of Peirson's milk-vetch is the destruction of existing plants and habitat by off-road vehicle (ORV) usage in the Algodones Dunes (USFWS 2005). Recreational ORV activity and associated recreational development impact the species by crushing standing plants, decreasing seedling establishment, and reducing reproductive output; potentially disrupting dune formation, movement, and structure; causing the collapse of dune faces and ridges; disturbing surface sand, thereby decreasing soil moisture needed for individual and population growth; and degrading the psammophytic scrub plant community that provides habitat for pollinators required for reproduction.

Vehicles can crush individual plants and reduce the reproductive output of those that survive. Several recent studies have attempted to assess ORV damage to Peirson's milk-vetch: Phillips et al. (2001), Phillips and Kennedy (2003 and 2005), McGrann et al. (2005), and Willoughby (2005). However, the results of these studies were inconclusive since they were conducted late in the

season when there were fewer standing plants due to high temperatures or conducted well after peak holidays with high dune visitation.

Due to the transient nature of the surface structure of dunes, most quantitative measures of ORV impacts are given in terms of numbers of plants impacted. However, using numbers of plants might not accurately quantify impacts. Phillips et al. (2001) anecdotally observed that nearly all plants that were run over were resilient and “popped back up” with no damage to the stems or flowers and that “as soon as the wind obliterated the tracks, there was no sign of any effect.” Wind will also likely obliterate any evidence of damage to plants by blowing away broken branches and burying broken stems in sand. Therefore, studies making one-time observations that assume that the only direct evidence of any “effect” is a tire track in the sand that can be directly associated with a damaged plant, could under estimate damage. These observations of impact and resilience were made without determining the persistence or the productivity of the plants damaged. Additionally, no follow-up visits were noted, and no measures of impact on the habitat, description of type of damage, or effects on plant reproductive capacity were provided.

Phillips et al. (2001) further suggested that the number of damaged plants was minimal because ORV drivers avoid vegetated basins, where Peirson’s milk-vetch often grows in proximity to shrubs, to prevent potential tire damage. However, they provided no information on plants observed outside of bowls with woody stems, nor did they discuss the potential damage to plants from four-wheel quads or motorcycles that can traverse woody basins without damaging equipment.

Groom et al. (2007) is the first study to date to monitor individual plant fates through a growing season. Peirson’s milk-vetch Global Positioning System (GPS) coordinates were acquired on randomly selected plants marked in an experiment conducted from February until June 2005. Some plants (i.e., “treatment plants”) in an area closed to ORV activity were purposefully struck with an ORV and their reproductive capacity and fate were tracked with repeated monthly visits. Results indicate that small plants less than 18 inches had a 33 percent lower survival rate than plants in the control group that were not struck (Groom et al. 2007). Service biologists continued to track survivorship in a follow-up study conducted from December 2005 until June 2006. No germination occurred during the 2006 growing season, indicating that all live plants encountered were greater than 1 year old. In this study, GPS coordinates were acquired for Peirson’s milk-vetch plants in two 618-acre study areas, one in an ORV-open area and one in an ORV-closed area. Every plant was revisited monthly to monitor health, reproductive state, biometrics, and seed pod production. As a follow-up to Groom et al. (2007) study, USFWS biologists conducted a study comparing survival of Peirson’s milk-vetch over the growing season in areas open to ORVs with survival in areas closed to ORVs. Plants in the ORV-open area were 20 percent less likely to survive the entire study period than plants in the ORV-closed area (USFWS 2007b).

Most of the studies, and in particular Groom et al. (2007) and the follow-up Service study (USFWS 2007b); indicate that Peirson's milk-vetch plants can be damaged by ORV activity. In fact, the observation by Phillips et al. (2001) that "the occurrence of dune plants and heavy use areas for vehicles is, to a large extent, mutually exclusive," describes similar findings by WESTEC (1977), Lukenbach and Bury (1983), ECOS (1990, and McGrann et al. (2005), and Willoughby (2006). While little or no documentation exists of the graded effects of medium- and low-use areas for vehicles, by the time the vehicle use level can be described as "heavy," the area is generally devoid of plants. The exact process is not understood, but could include repeated depletion of pre-flowering seedlings depleting the seed bank, eliminating standing seed-producing plants that diminish and eventually extinguish input to the seed bank, or untimely or excessive scarification of the seeds by the grinding actions of sand moved by ORVs causes the seeds to desiccate.

3. ACTION AREA

The action areas associated with the Project are different for Peninsular bighorn sheep and Peirson's milk-vetch because their ranges do not overlap and the Project affects them in different ways. For Peninsular bighorn sheep, the action area includes Section B-1, encompassing the area between Interstate Highway 8 and the international border extending from the east-facing slopes of the Jacumba Mountains (adjacent to Section B-1), eastward approximately 0.6 miles (1 kilometer) from the toe of the slope. This area corresponds with those lands most likely to be used by Peninsular bighorn sheep in the area directly and indirectly affected by the Project. For Peirson's milk-vetch, the action area includes Section C-1, encompassing the area between Interstate Highway 8 and the international border extending from the west end of Section C-1 eastward approximately 5.75 miles (ending at the C-1 staging area). This area corresponds with those lands known to be occupied and potentially occupied by Peirson's milk-vetch in the area directly and indirectly affected by the Project. Maps depicting the location of vehicle fence, access roads, staging areas relative to federally listed species or designated critical habitat in Sections B-1 and C-1 are provided in **Figures 3-1** and **3-2** below.



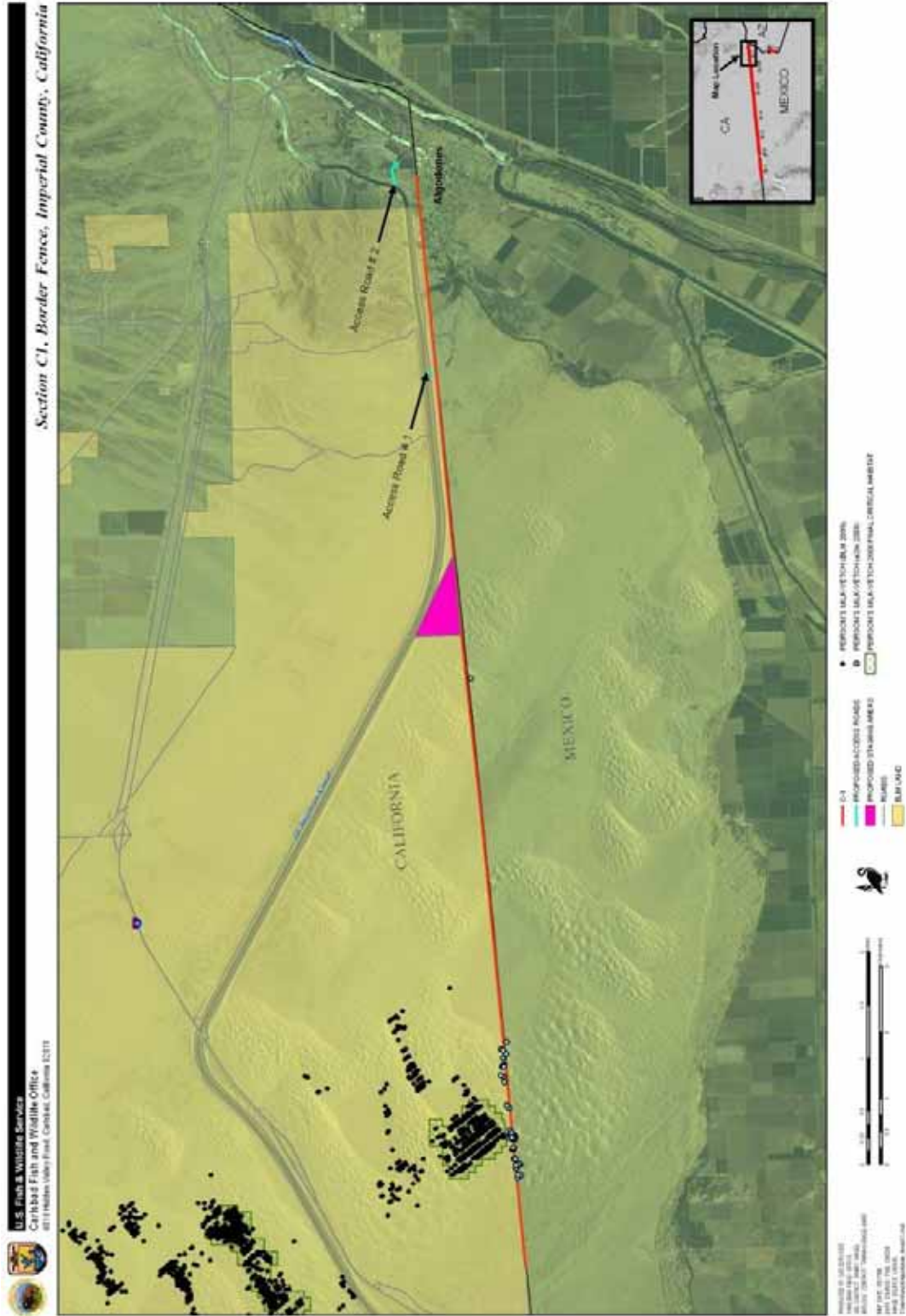


Figure 3-2 Section C-1 Project Area

THIS PAGE INTENTIONALLY LEFT BLANK

4. EFFECTS OF THE PROJECT

The following analysis of the effects of the Project on Peninsular bighorn sheep and Peirson's milk-vetch and designated critical habitat is based on literature and information contained in Carlsbad Fish and Wildlife Service files.

4.1 PENINSULAR BIGHORN SHEEP

Coyote 2 Road to Access Road #1 is one of two routes that will be used to access Section B-1. Access Road #1 is roughly parallel to the Jacumba Mountains and is approximately 0.5 to 0.75 miles from the base of the mountains. The western end of Coyote 2 Road and the northern end of Access Road #1 are also within designated critical habitat. Both Coyote 2 Road and Access Road #1 cross portions of Pinto Wash. Since increased traffic on roads apparently make bighorn sheep, especially ewes, hesitant to cross these roads (Rubin et al. 1998, Epps et al. 2005), use of these access roads, particularly Access Road #1, associated with construction, operation, and maintenance activities could deter Peninsular bighorn sheep from using flatter terrain more distant from escape cover, and thereby decrease the extent of Pinto Wash available for foraging.

Increased human disturbance might also result in physiological effects, such as elevated heart rate or the additional energy expended in moving away from perceived danger. Also, Project timing coincides with the reproductive period, which could result in increased impacts on ewes with lambs, which are typically more sensitive to disturbance (Light and Weaver 1973, Wehausen 1980). While bighorn sheep have evolved to deal with occasional disruptions of their usual behavioral patterns, such as the presence of a predator, it appears that beyond a certain level of human activity, bighorns can simply be overwhelmed, and subsequently alter their behavior.

Since fence construction in Section B-1 is anticipated to be completed by December 2008, the majority of the impacts associated with the use of Coyote 2 Road and Access Road #1 for construction access to Section B-1 are anticipated to be temporary, occurring within the 9-month construction period (April to December 2008). However, continued and frequent human use of an area can cause Peninsular bighorn sheep to eventually avoid the area, interfering with use of resources.

Therefore, given the importance of alluvial fans and washes for foraging habitat and the proximity of Access Road #1 to occupied mountainous habitat, the use of Coyote 2 Road and Access Road #1 for daily access by work crews and equipment/supply deliveries would be anticipated to prevent use of habitat within 0.25 miles of Access Road #1 by Peninsular bighorn sheep in Pinto Wash and along the toe of the slope between Highway 8 and the international border, during the construction period. Maintenance activities, depending on their

frequency and magnitude, could extend habitat avoidance into the long term. Avoidance of preferred foraging habitat would have adverse nutritional consequences.

Impacts on Peninsular bighorn sheep habitat due to construction-related disturbance and avoidance of foraging habitat within 0.25 miles west of Access Road #1 will be minimized through use of the conservation measures (see **Species-Specific Conservation Measures** in **Section 1.3.2**). The conservation measures requiring that any work that could disturb the bighorn sheep cease as soon as individuals are observed within a mile of any construction activities or along associated access roads will minimize the extent to which individuals avoid use of the Project area for foraging.

Construction and operation of tactical infrastructure will increase border security in Section B-1 and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to Border Patrol Operations and therefore are considered unpredictable and beyond the scope of this BRP. Attempts to illegally cross this section of the international border are usually in vehicles, as opposed to on foot. Therefore, the Project could benefit Peninsular bighorn sheep by decreasing the number of illegal vehicle crossings in Section B-1, and subsequently decreasing the extent of human disturbance in Pinto Wash.

4.2 PEIRSON'S MILK-VETCH

Potential impacts on Peirson's milk-vetch associated with the construction, operation, and maintenance of 6.3 miles of vehicle fence (VF-4) and 4.0 miles of personnel-vehicle fence (PV-1) within a 60-foot project corridor across the Algodones Dunes in Section C-1 are similar to those associated with recreational ORV use and include crushing of standing plants and decreasing seedling establishment; disturbing surface sand, thereby decreasing soil moisture; and degrading the psammophytic scrub plant community that provides habitat for pollinators required for reproduction.

Since all construction, operation, and maintenance activities will occur linearly along a previously established "sand highway" within the 60-foot project corridor, the Project will not result in the collapse of dune faces or ridges. Also, since the vertical fence bollards of the VF-4-type fence will be spaced apart, dispersal of fruits and seeds across the fence is not likely to be significantly altered as a result of the Project. The fence structure could cause shifts in the localized wind patterns, resulting in a subsequent shift in sand movement. However, the significance of these shifts in wind and sand patterns on the Peirson's milk-vetch on either side of the fence is unknown. The addition of a 12-inch layer of aggregate road material on top of the existing "sand highway" across the active dunes during fence construction can also cause shifts in the localized wind patterns, resulting in subsequent shifts in sand or seed movement. Also, seeds blown toward the road could be trapped in the

aggregate layer and unable to establish. However, given the extent of sand movement occurring within these active dunes, the impact on sand movement associated with the permanent addition of 12 inches of aggregate road material is anticipated to be temporary as sand is likely to accumulate and cover this aggregate layer in a relatively short period of time.

The timing of the fence construction would likely coincide with the spring period of seed germination, growth, and flowering of Peirson's milk-vetch, potentially reducing reproductive success of plants in the project corridor because plants or branches are damaged or destroyed prior to seed-set. Aside from the direct crushing of the delicate seedlings, ORV use in close proximity to the seedlings could indirectly affect germinating seedlings by accelerating soil desiccation that can result in root desiccation (Lathrop and Rowlands 1983). The roots of Peirson's milk-vetch seedlings are especially sensitive to drying out if the plants or sand surface are disturbed. Seedling death could result from both types of impacts. Seedlings damaged but not killed might produce fewer flowers and seeds than undamaged seedlings, leading to a gradual diminishment of the seed bank (Pavlik 1979).

However, seedlings germinating in response to late winter rains (e.g., in January or February), as the seedlings in the project corridor did in 2008, are less likely to flower and set seeds before the onset of desiccating summer heat and often die during summer drought in significant numbers, probably because such plants lack a sufficiently developed root system to tap water at lower horizons. While some portion, maybe even a significant portion, of seedlings in the project corridor might not survive even in the absence of the Project, construction, operation, and maintenance activities are likely to destroy all seedlings in the project corridor, thereby eliminating any potential contribution of seedlings to the seed bank. While smaller first season specimens, if flowering, produce relatively few flowers and contribute little to the seed bank of Peirson's milk-vetch compared with larger, older individuals that have more flowers (Romspert and Burk 1979, Phillips and Kennedy 2005), given the greater number of younger plants following wet years, both older and younger plants that flower and set seed likely are needed to maintain the population. Therefore, the Project would likely result in a decrease in the seed bank for Peirson's milk-vetch within the affected area.

Along with impacts associated with crushing of plants and decreased seedling establishment, the Project could impact the associated co-adapted psammophytic scrub plant community within 46 acres of the project corridor. This plant community is important for population growth of Peirson's milk-vetch, because it provides habitat for insect pollinators required by the species for fruit production (Porter et al. 2005). A decrease in available psammophytic scrub decreases available habitat for the white-faced digger bee, the only effective pollinator of Peirson's milk-vetch. The amount of habitat needed to sustain the white-faced digger bee is currently unknown. Therefore, it is not

possible at this time to analyze the impacts on Peirson's milk-vetch of decreasing white-faced digger bee habitat in the project corridor.

Impacts on Peirson's milk-vetch plants within the project corridor will be offset or minimized through use of the conservation measures (see **Species-Specific Conservation Measures** in **Section 1.3.2**). Specifically, the measures to harvest the seed bank within the 60-foot corridor in the western 6.3 miles of Section C-1 and to provide the equivalent funds to the BLM needed to adaptively manage and monitor 138 acres of Peirson's milk-vetch habitat will offset direct and indirect impacts on Peirson's milk-vetch plants and seedlings.

Construction and operation of tactical infrastructure will increase border security in Section C-1 and may result in a change to illegal traffic patterns. However, changes to illegal alien traffic patterns result from a myriad of factors in addition to Border Patrol Operations and therefore are considered unpredictable and beyond the scope of this BRP. Attempts to illegally cross this section of the international border are usually conducted in vehicles, as opposed to on foot. Therefore, the Project might benefit Peirson's milk-vetch by decreasing the number of illegal vehicle crossings occurring within occupied habitat, thereby decreasing the number of plants damaged by vehicles and the amount of habitat impacted in lesser-used areas of the BLM Buttercup Management Area. And, since personnel-vehicle fence is being installed westward from Section C-1 and the eastern terminus of this section ends at the Andrade POE, additional illegal vehicle crossings are not likely to increase at the ends of Section C-1.

5. DETERMINATION OF EFFECT

Six federally listed species are known to occur or potentially occur within the El Centro and Yuma tactical infrastructure sections. Of these six species, the Project could affect but is not likely to adversely affect Peninsular bighorn sheep (*Ovis canadensis*) and its designated critical habitat and is likely to adversely affect Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*). The remaining four species, desert tortoise (*Gopherus agassizii*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and Yuma clapper rail (*Rallus longirostris yumanensis*) will not be affected by the Project. **Table 5-1** outlines federally listed species and federally designated critical habitats known to occur or to potentially occur within or adjacent to the Project area and the determination of effects resulting from the Project.

No federally listed species are known to occur or to potentially occur within Project Sections B-2, B-3, B-4, B-5A, or B-5B. The determination of no effect for impacts on the desert tortoise, least Bell's vireo, and southwestern willow flycatcher was based on the absence of known occurrences or suitable habitat in any sections of the Project. The determination of no effect for impacts on the Yuma clapper rail was based on sufficient distance of potential habitat and occurrences from project activities to avoid impacts to the species.

The determination of no effect for impacts on Peninsular bighorn sheep 2007 revised critical habitat and Peirson's milk-vetch designated critical habitat is based on the fact that construction or maintenance activities will not occur within these critical habitat areas. At its closest points, revised critical habitat Unit 3 for the Peninsular bighorn sheep is more than 12 miles east and north from the western end of Section B-1. The Project in Section C-1 is approximately 324 feet south of the southern boundary of critical habitat Unit 4 for Peirson's milk-vetch. However, all construction or maintenance activities are planned to occur within the 60-foot project corridor and not within designated Peirson's milk-vetch critical habitat. Also, the VF-4 fence planned in this section is a floating fence that is not anticipated to significantly alter sand movement between dune bowls on opposite sides of the fence.

Table 5-1. Determination of Effects on Federally Listed Species and Critical Habitats within Sections B-1, B-4, B-5A, C-1, and C-2B

Species	Project Section	Listing Status	Year Listed, Proposed or Designated	Determination
Peninsular bighorn sheep, <i>Ovis canadensis</i>	B-1	Endangered (63 FR 13134-13150)	1998	Might affect but not likely to adversely affect
Peninsular bighorn sheep, <i>Ovis canadensis</i> , Critical Habitat	B-1	Designated (66 FR 8649-8677)	2001	Might affect but not likely to adversely affect
	B-1	Revised proposed designation (72 FR 57740-57780)*	2007*	No effect
Desert tortoise, <i>Gopherus agassizii</i>	None	Threatened (55 FR 12178-12191)	1990	No effect
Southwestern willow flycatcher, <i>Empidonax traillii eximius</i>	C-2B	Endangered (60 FR 10693-10715)	1995	No effect
Least Bell's vireo, <i>Vireo bellii pusillus</i>	None	Endangered (51 FR 16474-16482)	1986	No effect
Yuma clapper rail, <i>Rallus longirostris yumanensis</i>	B-4, B-5A, C-1, C-2B	Endangered (32 FR 4001)	1967	No effect
Peirson's milk-vetch, <i>Astragalus magdalenae</i> var. <i>peirsonii</i>	C-1	Threatened (63 FR 53596-53615)	1998	Likely to adversely affect
Peirson's milk-vetch, <i>Astragalus magdalenae</i> var. <i>peirsonii</i> , Critical Habitat	C-1	Designated (73 FR 8748-8785)	2008	No effect

* The U.S. Fish and Wildlife Service anticipates the revised final critical habitat designation for Peninsular bighorn sheep will be published in the Federal Register in October 2008.

6. REFERENCES

- Andrew 1994 Andrew, N. G. 1994. Demography and habitat use of desert-dwelling mountain sheep in the east Chocolate Mountains, Imperial County, California. M.S. Thesis, University of Rhode Island. 135 pp.
- DeForge and Scott 1982 DeForge, J. R., and J. Scott. 1982. Ecological investigations into high lamb mortality. Desert Bighorn Counc. Trans. 26:65-76.
- ECOS 1990 ECOS, Inc. 1990. Habitat Characterization and Sensitive Species Monitoring Plan for Vegetation in the Algodones Dunes, Imperial County, California. Unpublished report submitted to Bureau of Land Management, El Centro, California.
- Epps et al. 2005 Epps, C. W., P. J. Palsboll, J. D. Wehausen, G. K. Roderick, R. R. Ramey II, and D. R. McCullouch. 2005. Highways block gene flow and cause a rapid decline in genetic diversity of desert bighorn sheep. Ecology Letters 8:1029-1038.
- Etchberger and Krausman 1999 Etchberger, R. C. and P. R. Krausman. 1999. Frequency of birth and lambing sites of a small population of mountain sheep. The Southwestern Naturalist 44(3):354-360.
- Groom et al. 2007 Groom, J.D., L.B. McKinney, L.C. Ball, C.S. Winchell. 2007. Quantifying off-highway vehicle impacts on density and survival of a threatened dune-endemic plant. Biological Conservation 135:119–134
- Lathrop and Rowlands 1983 Lathrop, E.W., and P.G. Rowlands. 1983. Plant Ecology in Deserts: An Overview. In R.H. Webb and H.G. Wilshire, eds. Environmental Effects of Off-Road Vehicles. Springer Verlag, New York.
- Light and Weaver 1973 Light, J. T. and R. Weaver. 1973. Report on bighorn sheep habitat study in the areas for which an application was made to expand the Mt. Baldy winter sports facility. U .S. For. Serv. Cajon Ranger Dist., San Bernardino Nat. For. 39 pp.
- Lukenbach and Bury 1983 Lukenbach, R.A., and R.B. Bury. 1983. Effects of off-road vehicles on the biota of the Algodones Dunes, Imperial County, California. J. Applied Ecology 20:265-286.

- McGrann et al. 2005 McGrann, A.M., M.C. McGrann, and R. Dial. 2005. Off-highway vehicle impact on *Astragalus magdalenae* var. *peirsonii*, and other critical plant species of the Algodones Dunes, California. California Fish and Game 91(2):61-82.
- Pavlik 1979 Pavlik, B.M. 1979. The biology of endemic psammophytes, Eureka Valley, California, and its relation to off-road vehicle impacts. California Desert Plan, BLM Contract No. CA-060-CT8-000049.
- Phillips and Kennedy 2003 Phillips, A.M., III and D.J. Kennedy. 2003. The ecology of *Astragalus magdalenae* var. *peirsonii*: Germination and survival. Unpublished report prepared for the American Sand Association.
- Phillips and Kennedy 2005 Phillips, A.M., III and D.J. Kennedy. 2005. The life history of Peirson's milkvetch (*Astragalus magdalenae* var. *peirsonii*) in the Algodones Dunes, California 2004-05. Unpublished report prepared for the American Sand Association.
- Phillips et al. 2001 Phillips, A.M., D.J. Kennedy, and M. Cross. 2001. Biology, distribution, and abundance of Peirson's milkvetch and other special status plants of the Algodones Dunes, California: Final Report. Unpublished report prepared Thomas Olsen Associates, Inc. for the American Sand Association.
- Porter et al. 2005 Porter, J.M., O. Mistretta, and S. Hobbs. 2005. Studies of the natural history of *Astragalus magdalenae* var. *peirsonii* (Peirson's milkvetch); final report. Unpublished report prepared for California Department of Fish and Game.
- Romspert and Burk 1979 Romspert, A. and J. Burk. 1979. Algodones Dunes sensitive plant project 1978-1979. Unpublished report prepared for the Bureau of Land Management (project number 1510(C-961.1).
- Rubin et al. 1998 Rubin, E. S., W. M. Boyce, M. C. Jorgensen, S. G. Torres, C. L. Hayes, C. S. O'Brien, and D. A. Jessup. 1998. Distribution and abundance of bighorn sheep in the Peninsular Ranges, California. The Wildlife Society Bulletin 26(3):539-551.
- USFWS 2000 U.S. Fish and Wildlife Service. 2000. Recovery plan for bighorn sheep in the Peninsular Ranges, California. U.S. Fish and Wildlife Service, Portland, OR. xv+251 pp.

- USFWS 2005 USFWS. 2005. Endangered and Threatened Wildlife and Plants: 90-Day Finding on a Petition To Delist the *Astragalus magdalenae* var. *peirsonii* (Peirson's milk-vetch) *Federal Register*: November 30, 2005 (Volume 70, Number 229), Proposed Rules, Page 71795-71799.
- USFWS 2007a USFWS. 2007. Peirson's Milk Vetch Fact Sheet. Accessed online: <http://www.fws.gov/carlsbad/Rules/PMV/pmv_fact.pdf>.
- USFWS 2007b USFWS 2007. Report of Investigations. Algodones Dunes 2006 Field Season: Estimates of off-highway vehicle impacts on the demography and survival of a threatened species. U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. Unpublished interim report.
- Wehausen 1980 Wehausen, J.D. 1980. Sierra Nevada bighorn sheep: history and population ecology. Ph. D. Thesis, Univ. Michigan, Ann Arbor. 243 pp.
- WESTEC 1977 WESTEC 1977. Survey of the sensitive plants of the Algodones Dunes. Unpublished report prepared for the Bureau of Land Management.
- Willoughby 2005 Willoughby, J.W. 2005. 2005 Monitoring of Peirson's Milk-vetch in the Algodones Dunes, Imperial County, California. Unpublished report prepared for the Bureau of Land Management, California State Office.
- Willoughby 2006 Willoughby, J.W. 2006. 2006 Monitoring of Peirson's Milk-vetch in the Algodones Dunes, Imperial County, California. Unpublished report prepared for the Bureau of Land Management, California State Office.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C
Air Emission Calculations



CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3 IMPERIAL COUNTY

Assumptions for Combustable 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
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950
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).

Coastruction Site Area Proposed Prioject	Foot Print Demension (ft)			Total Acres
	Length	Width	Units	
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 Combustable 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
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950
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

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
Fugitive Dust Emissions	0.11	15.76	4	6.93
				Total PM-2.5 (2)
				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).

Coastruction Site Area Proposed Prioject	Foot Print Demension (ft)		Total Acres
	Length	Width	
Fence Installation	5,280	130	1
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 Combustable 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
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950
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

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).

Coastruction Site Area Proposed Prioject	Foot Print Demension (ft)		Total Acres
	Length	Width	
Fence Installation	5,280	60	1
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 Combustable 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
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810

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
Combustible 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

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).

Coastruction Site Area Proposed Prioject	Foot Print Demension (ft)			Total Acres
	Length	Width	Units	
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

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**

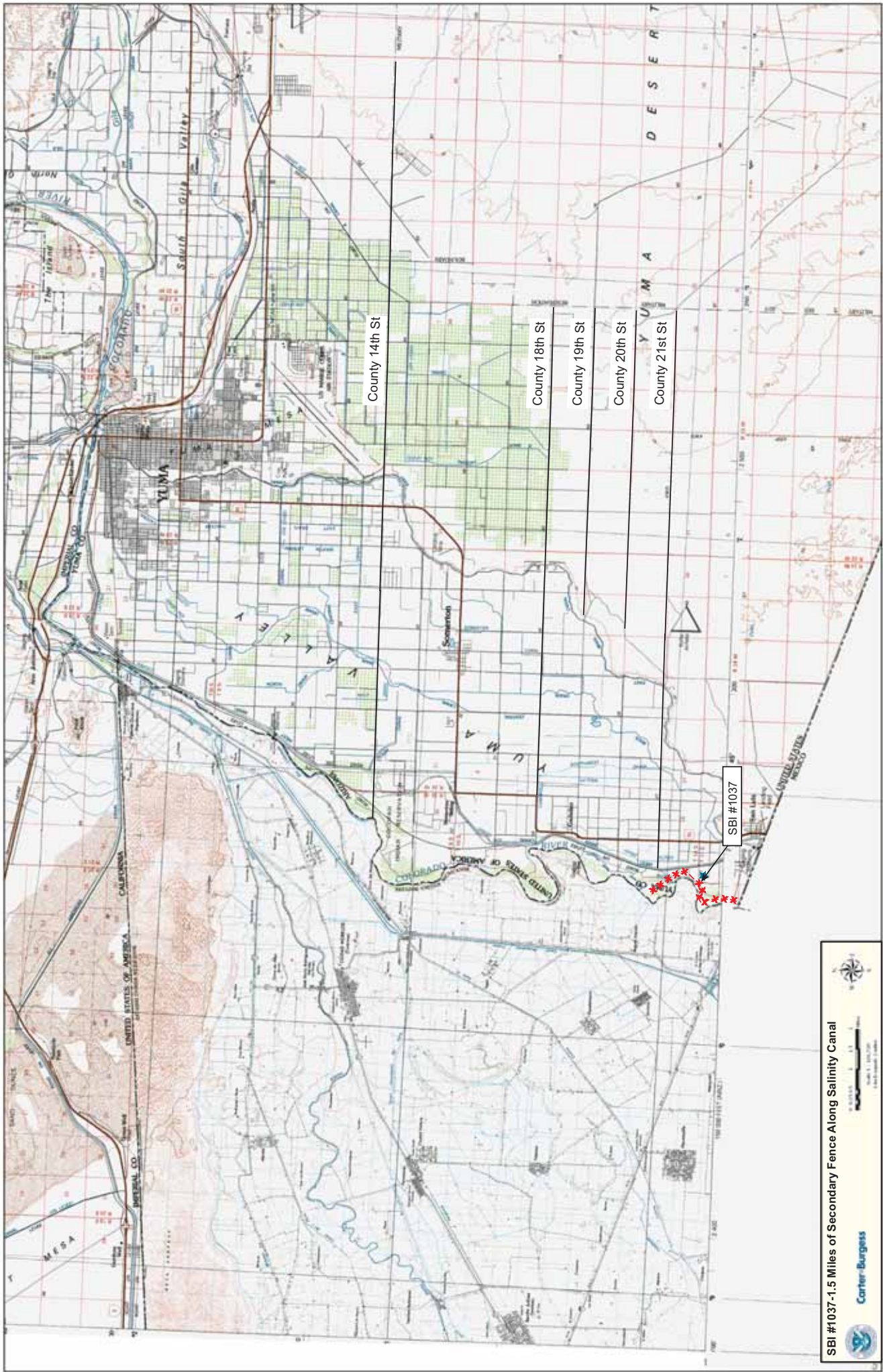
No. 195 – Works Required above the Morelos Diversion Dam to Protect Lands within the United States against damages from such floods as might result from the Construction, Operation, and Maintenance, from May 6, 1950 states that the Commission agreed that the design flood should be 310,000 second-feet. 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



County 14th St

County 18th St

County 19th St

County 20th St

County 21st St

SBI #1037

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

Carter-Burgess



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 in where near the salinity canal or proposed fence location.

Also, we have no survey data or 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. They 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

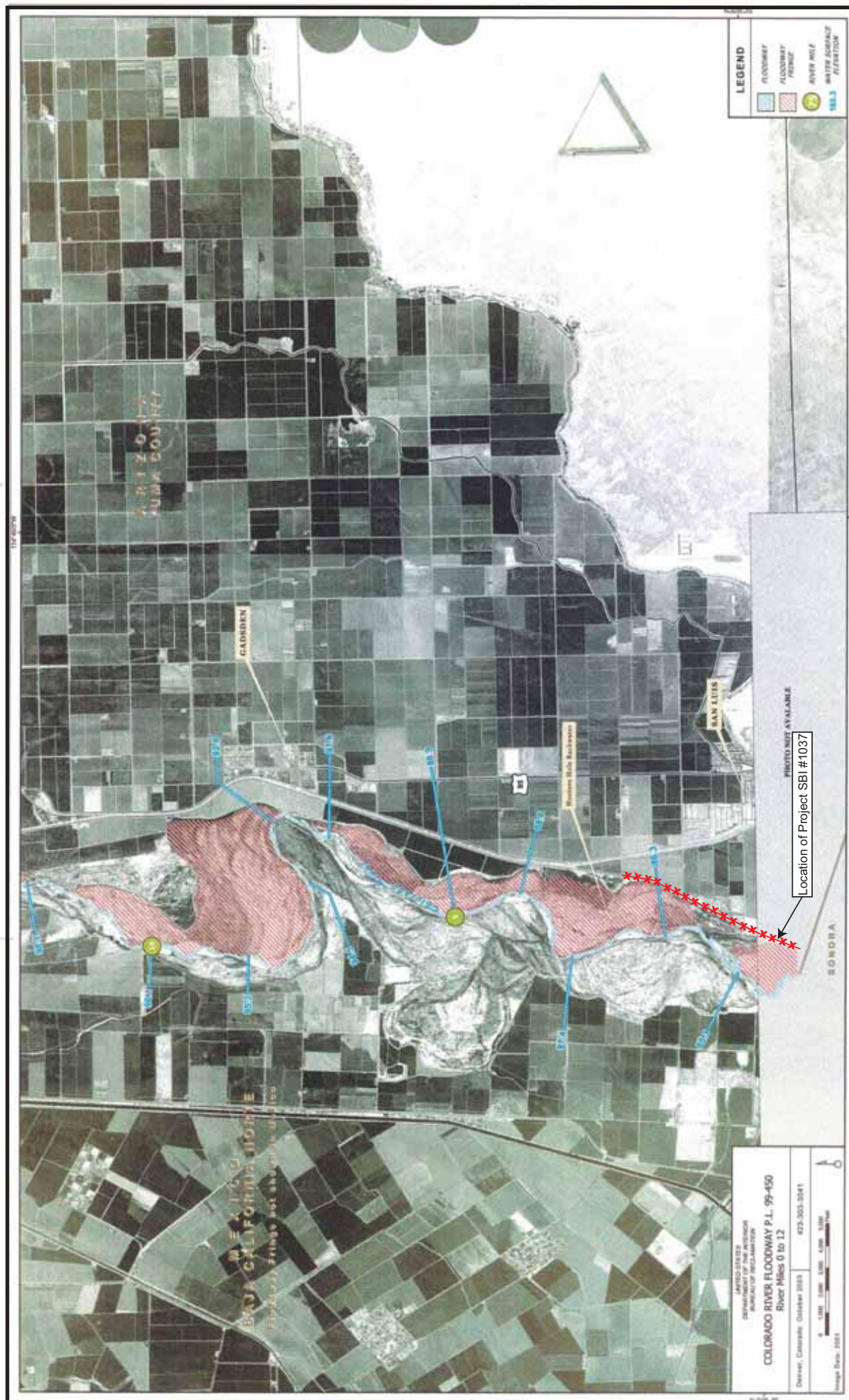
7301 Calle Agua Salada
Yuma AZ 85364



U.S. Department of the Interior
Bureau of Reclamation

office 928-343-8272
fax 928-343-8245
cell 928-588-3464
email migoe@lc.usbr.gov
web www.usbr.gov

EXHIBIT D



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, based on BOR's criteria for the design flood on 40,000 cfs.

However, the flood flows established in IBWC's **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. Through further research, it has been found by supporting IBWC documents that the design flood based on these minutes is 140,000 cfs. Given IBWC's criteria, the proposed project of 1.5 miles of secondary fence along the Bypass Drain Levee is within the floodway of the Colorado River. Using a design flood of this magnitude for the analysis of this project still would not cause impacts to the floodwaters for the following reasons. First, the alignment of this fence project is parallel to the flow of the river. When floodwaters reach the beginning terminus point of the fence, floodwaters will bisect and flow on both sides of the fence. Additionally, the material of the fence is proposed as a perforated expanded metal allowing for waters to flow through the fence. Secondly, if the concern is debris build up and blocking the perforation, then it is of opinion that most flow will be bisected and will not cause a rise in the water surface elevation. Lastly, there is existing infrastructure in this area, i.e. canals, power poles, wells, light poles, a water treatment facility and farmlands. If there is a storm event that carries the design flood, as set by IBWC, of 140,000 cfs, all of this infrastructure would also be within this floodplain.

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.

APPENDIX E
Biological Field Report





**BIOLOGICAL FIELD SURVEY 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

Author(s): Laurence N. Dean

Consulting Firm: Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, California 92064
(858) 484-0915

Report Date: December 31, 2007

Report Title: Biological Field Survey 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

Lead Agency: U.S. Army Corps of Engineers, Fort Worth District
819 Taylor Street
Fort Worth, Texas 76102

Submitted by: Brian F. Smith and Associates
14010 Poway Road, Suite A
Poway, California 92064
(858) 484-0915

USGS Quadrangle: *Yuma West and Gray's Well (7.5 minute)*

Table of Contents

	<u>Page</u>
1.0 Summary	1
2.0 Introduction	1
3.0 Methods and Survey Limitations.....	1
4.0 Biological Resources Associated with the Area of Potential Effect.....	2
5.0 Discussion.....	9
6.0 Certification.....	11
7.0 Bibliography	12
8.0 List of Preparers.....	12

Appendix 1 – Project Photographs

List of Figures

Figure 1 General Location Map.....	13
Figure 2 Project Location Map (USGS).....	14
Figure 3 East End Yuma TI Survey Area Vegetation Map.....	15
Figure 4 Peirson's Milk-Vetch	16
Figure 5 Wiggin's Croton.....	17
Figure 6 Giant Spanish Needle	18
Figure 7 Sand Food.....	19
Figure 8 Algodones Dunes Sunflower	20
Figure 9 Mud Nama	21
Figure 10 Flat-Tailed Horned Lizard.....	22
Figure 11 Western Yellow-Billed Cuckoo.....	23
Figure 12 California Black Rail.....	24
Figure 13 Yuma Clapper Rail.....	25
Figure 14 Western Burrowing Owl.....	26
Figure 15 Colorado Valley Woodrat.....	27

List of Tables

Table 1 Plant Species Observed	3
Table 2 Sensitive Plant Species Potentially Present.....	3
Table 3 Sensitive Animal Species Potentially Present (CNDDB 2007).....	6
Table 4 Summary of Sensitive Species Potentially Present.....	9

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 basilaris</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>Ephedra 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</i> var. <i>peirsonii</i>	T	E
Wiggin's Croton	<i>Croton wigginsii</i>	None	R
Giant Spanish Needle	<i>Palafoxia arida</i> var. <i>gigantea</i>	SC	SC
Sand Food	<i>Pholisma sonora</i>	SC	SC
Algodones Dunes Sunflower	<i>Helianthus niveus</i> ssp. <i>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 (CNDDB) 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 CNDDB 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 CNDDB 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 CNDDB 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 sighting 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 sonora</i>	SC	SC
Giant Spanish Needle	<i>Palafoxia arida</i> var. <i>gigantea</i>	SC	SC
Algodones Dunes Sunflower	<i>Helianthus niveus</i> ssp. <i>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.

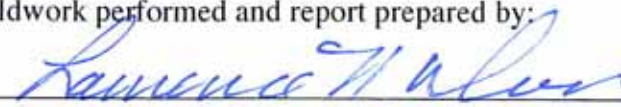
The California black rail may occur in those areas providing suitable habitat for the Yuma clapper rail. If present, the black rail like the Yuma clapper rail is not likely to be directly impacted by the proposed action but may experience indirect impacts as a result of construction related noise.

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: 22 May 08 SIGNED: 
Senior Biologist

1) Fieldwork performed and report prepared by:


Signature

Laurence N. Dean
Name

Senior Biologist
Title

7.0 **BIBLIOGRAPHY**

- CNDDDB 2007. California Natural Diversity Data Base. California Department of Fish and Game, Biogeographic Data Branch, 1807 13th Street, Suite 202, Sacramento, California 95811.
- CNPS 2007. The California Native Plant Society Inventory of Rare and Endangered Plants. <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>.
- CPC 2007. Center for Plant Conservation National Collection Plant Profile, *Pholisma sonora*. <http://www.centerforplantconservation.org>.
- Holland 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Non-game Heritage Program, Sacramento, California.
- Laymon, S. A. 1998. Yellow-billed Cuckoo (*Coccyzus americanus*). In *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California*. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/riparian_v-2.html.
- NCRS 2007. National List of Hydric Soils. <http://soils.usda.gov/use/hydric/lists/state.html>.
- Reiser 1994. Rare Plants of San Diego County. Aquafir Press, 1368 Grove Avenue, Imperial Beach, California 91932.
- USCOE 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*, US Army Engineer Waterways Experiment Station, Vicksburg, Miss.

8.0 **LIST OF PREPARERS**

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

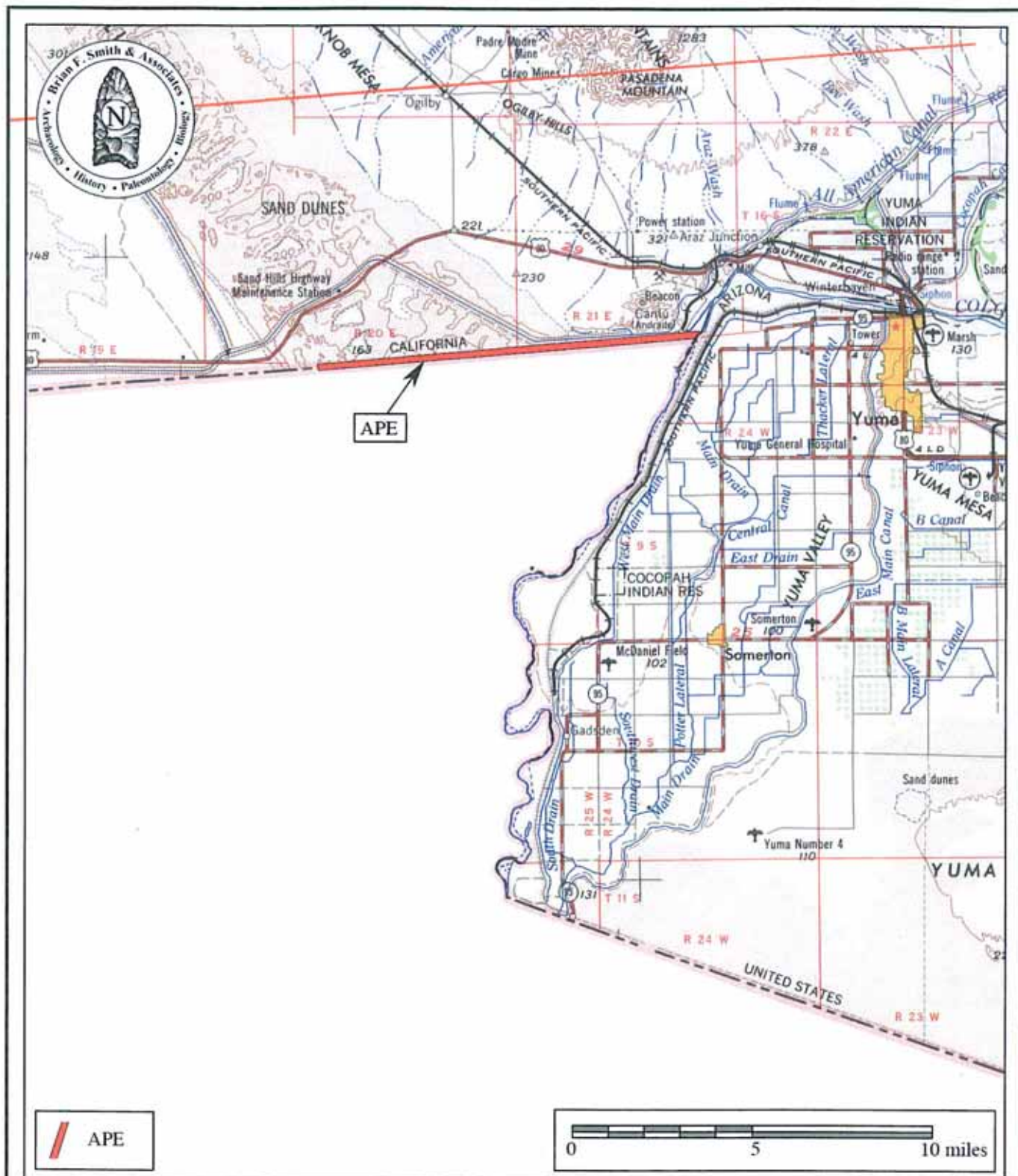
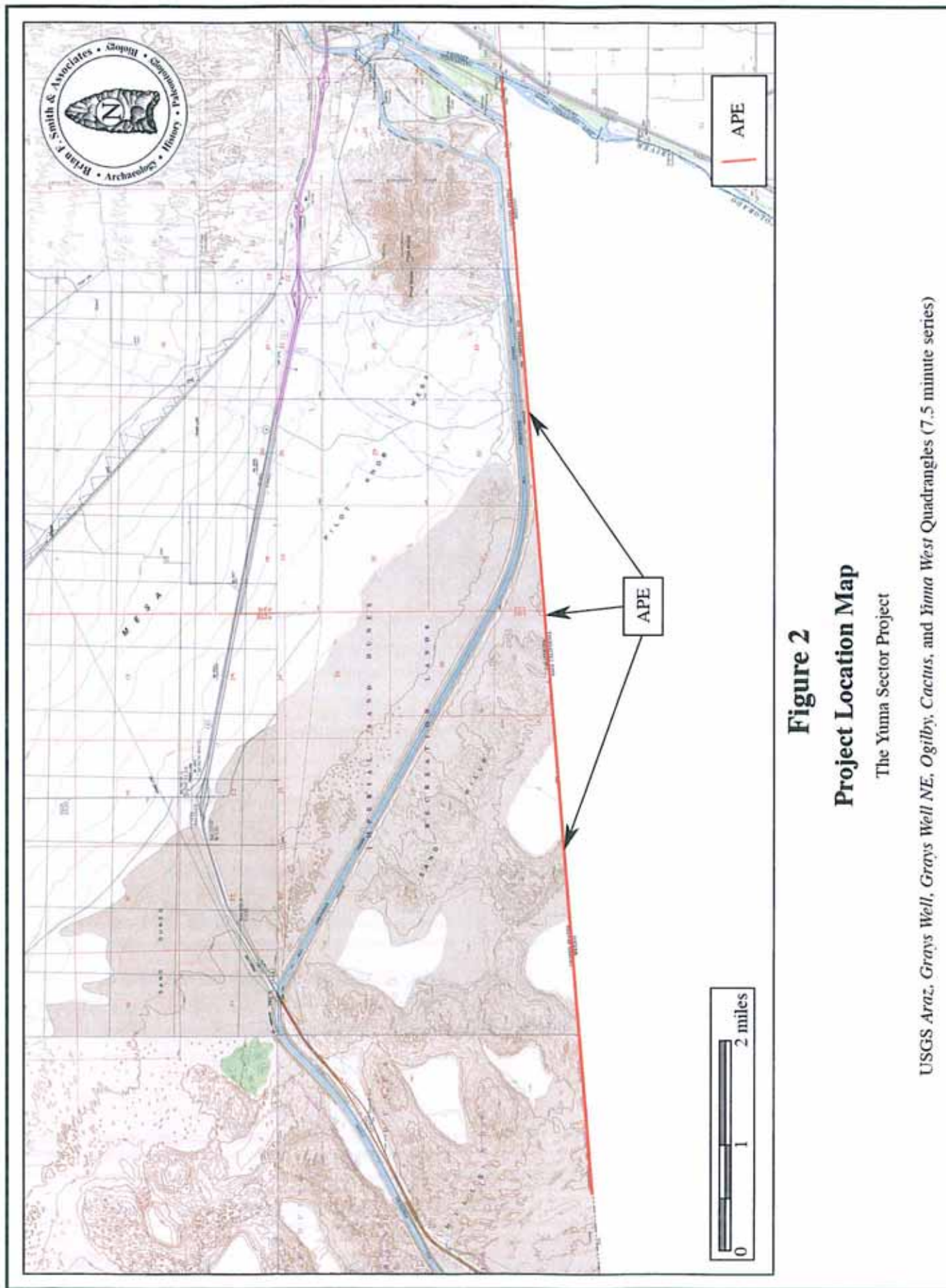


Figure 1
General Vicinity Map
 The Yuma Sector Project
 USGS El Centro (1:250,000 series)



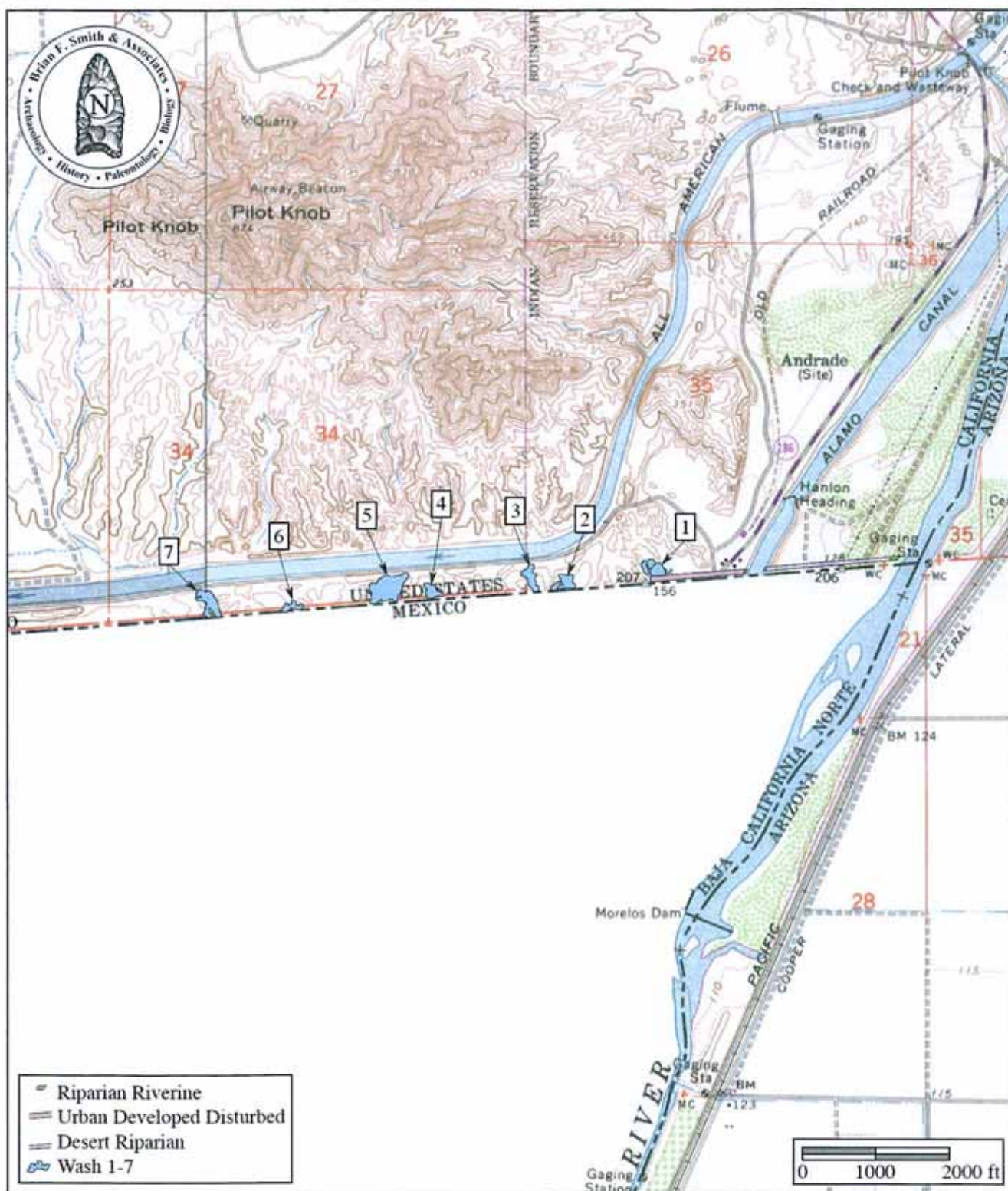
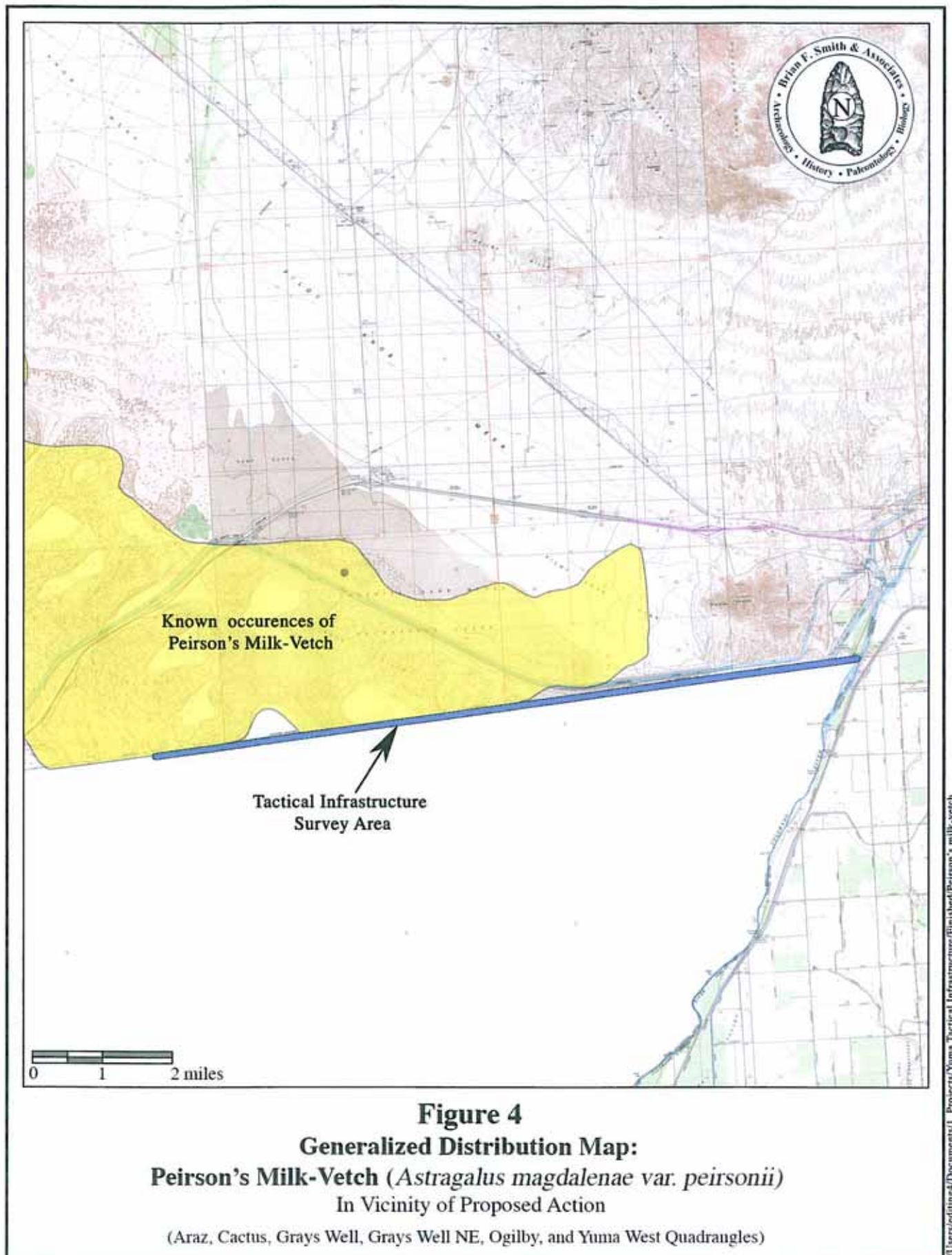
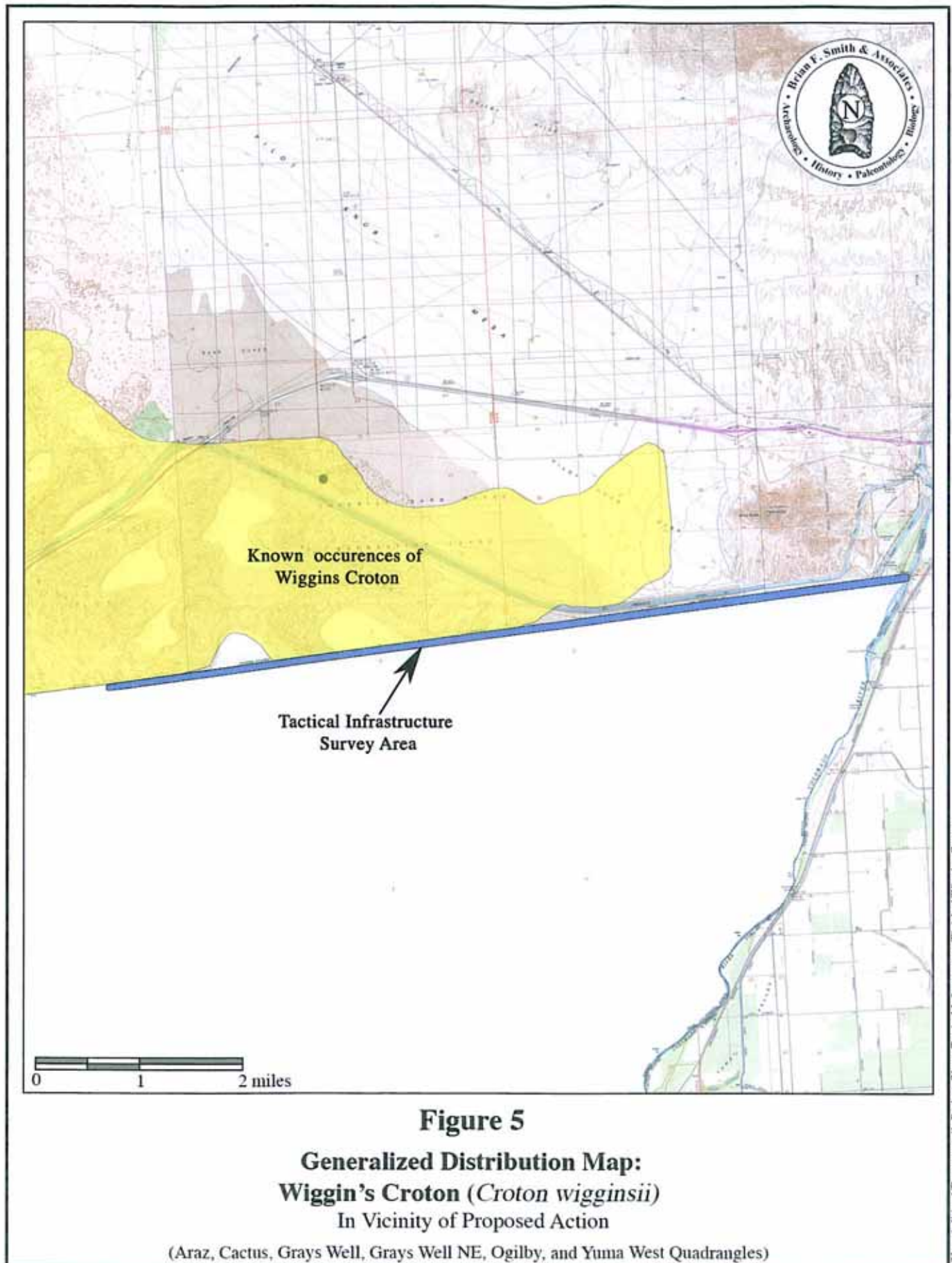


Figure 3
East End Yuma Tactical Infrastructure Survey Area
 Vegetation Map
 USGS Grays Well NE, and Yuma West Quadrangles (7.5 minute series)





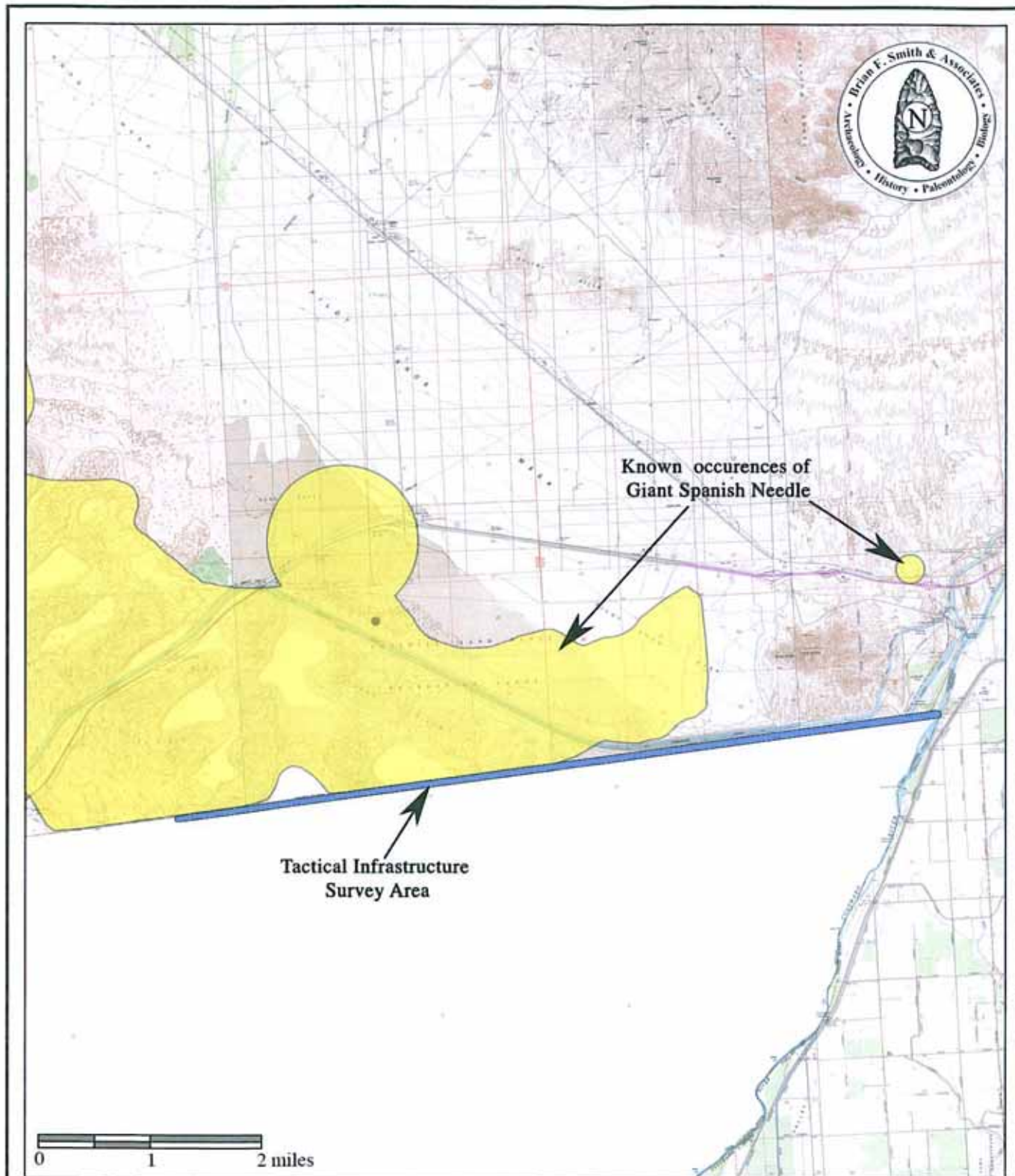


Figure 6
Generalized Distribution Map:
Giant Spanish Needle (*Palafoxia arida* var. *gigantea*)
 In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

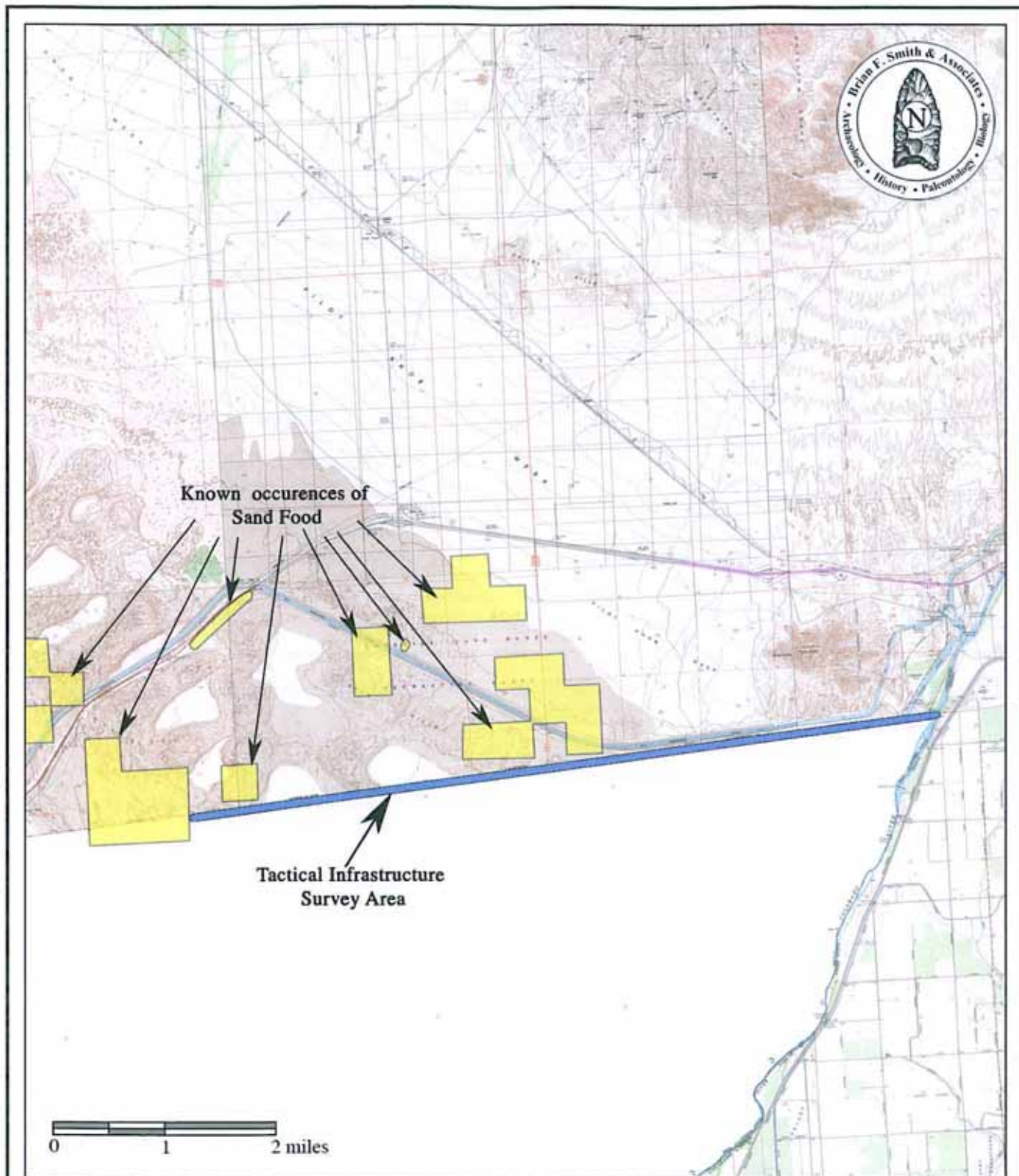


Figure 7
Generalized Distribution Map:
Sand Food (*Pholisma sonora*)
In Vicinity of Proposed Action

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

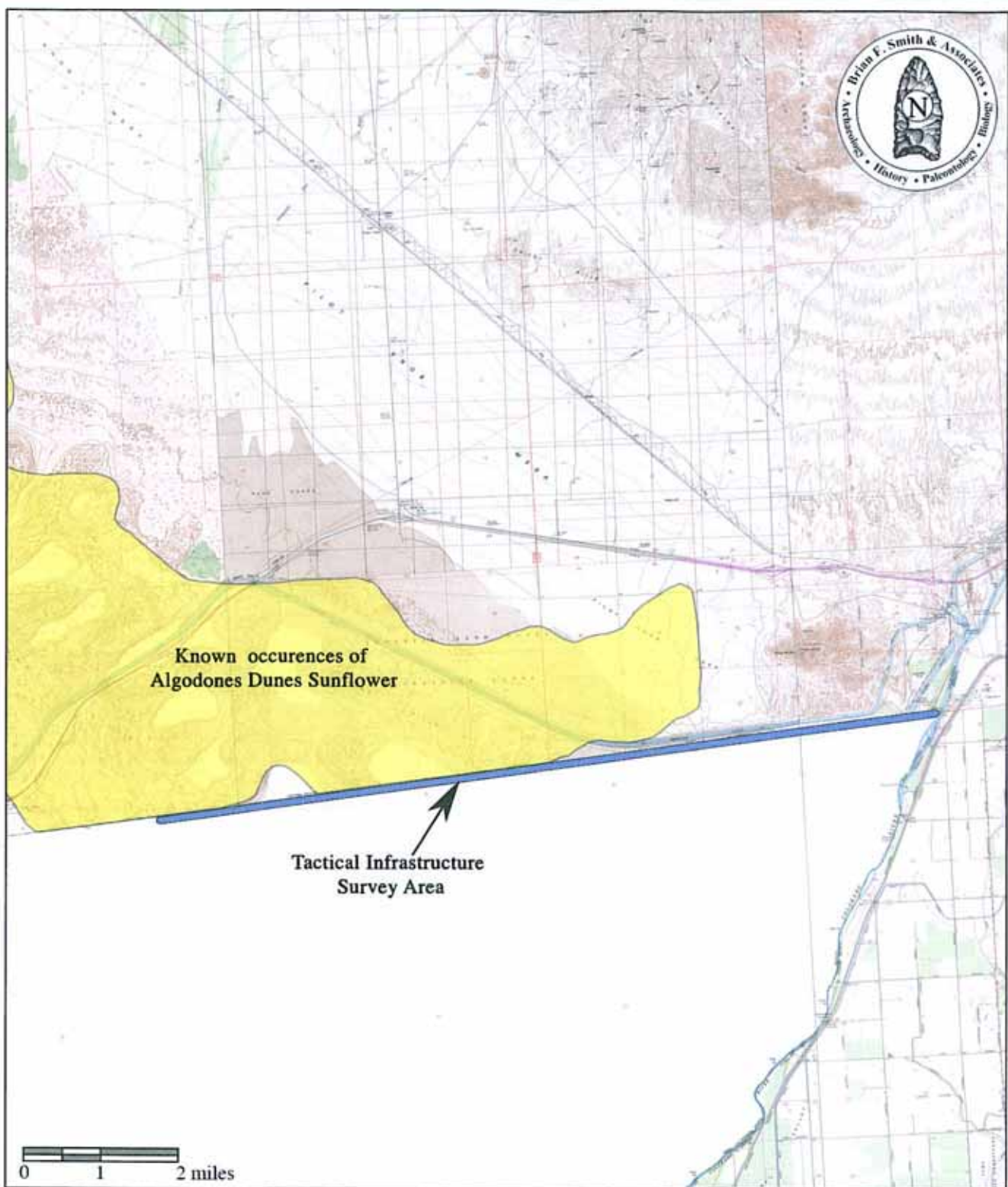


Figure 8
Generalized Distribution Map:
Algodones Dunes Sunflower (*Helianthus niveus* ssp. *tephrodes*)
In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

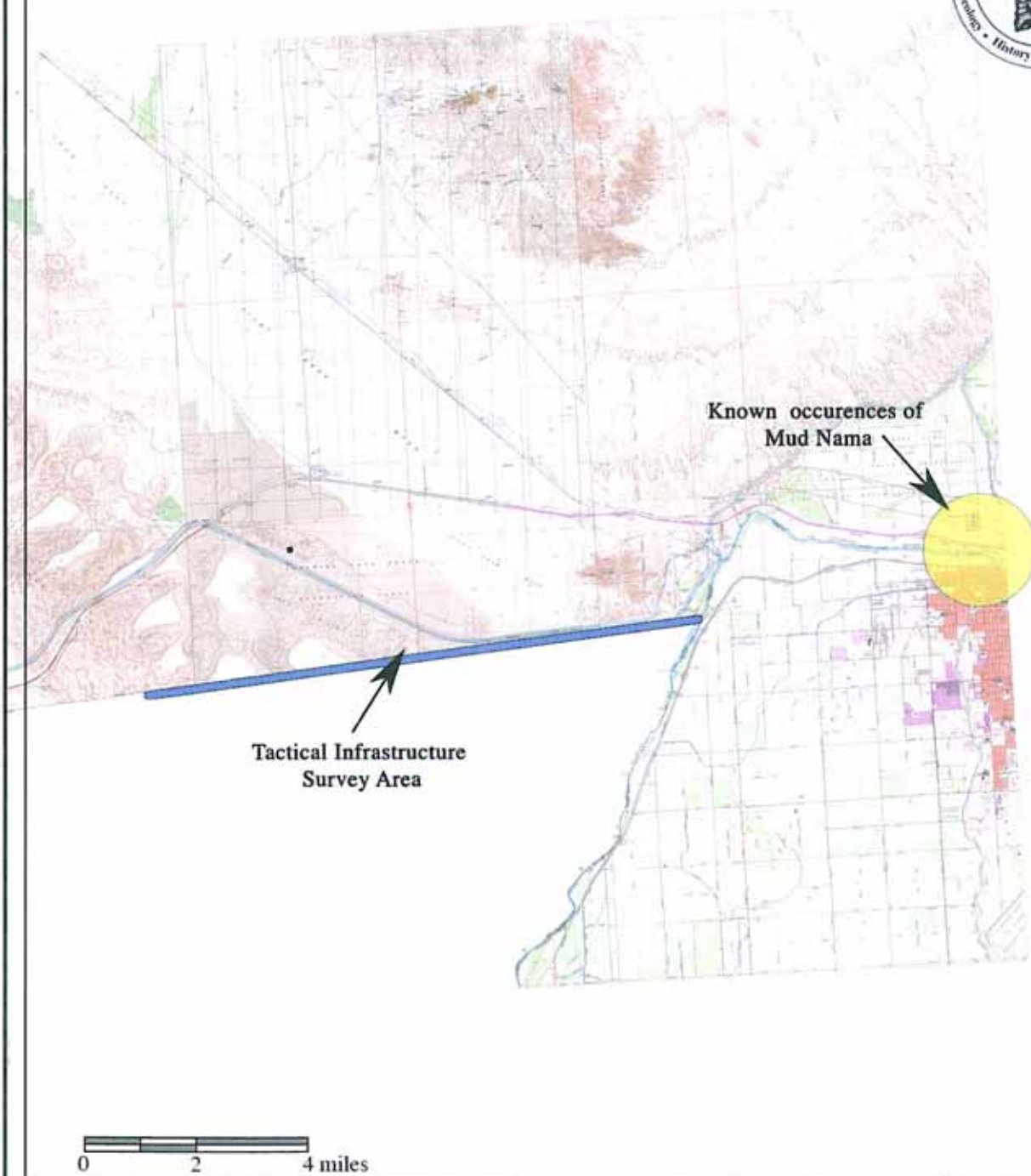


Figure 9
Generalized Distribution Map:
Mud Nama (*Nama stenocarpum*)
In Vicinity of Proposed Action

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

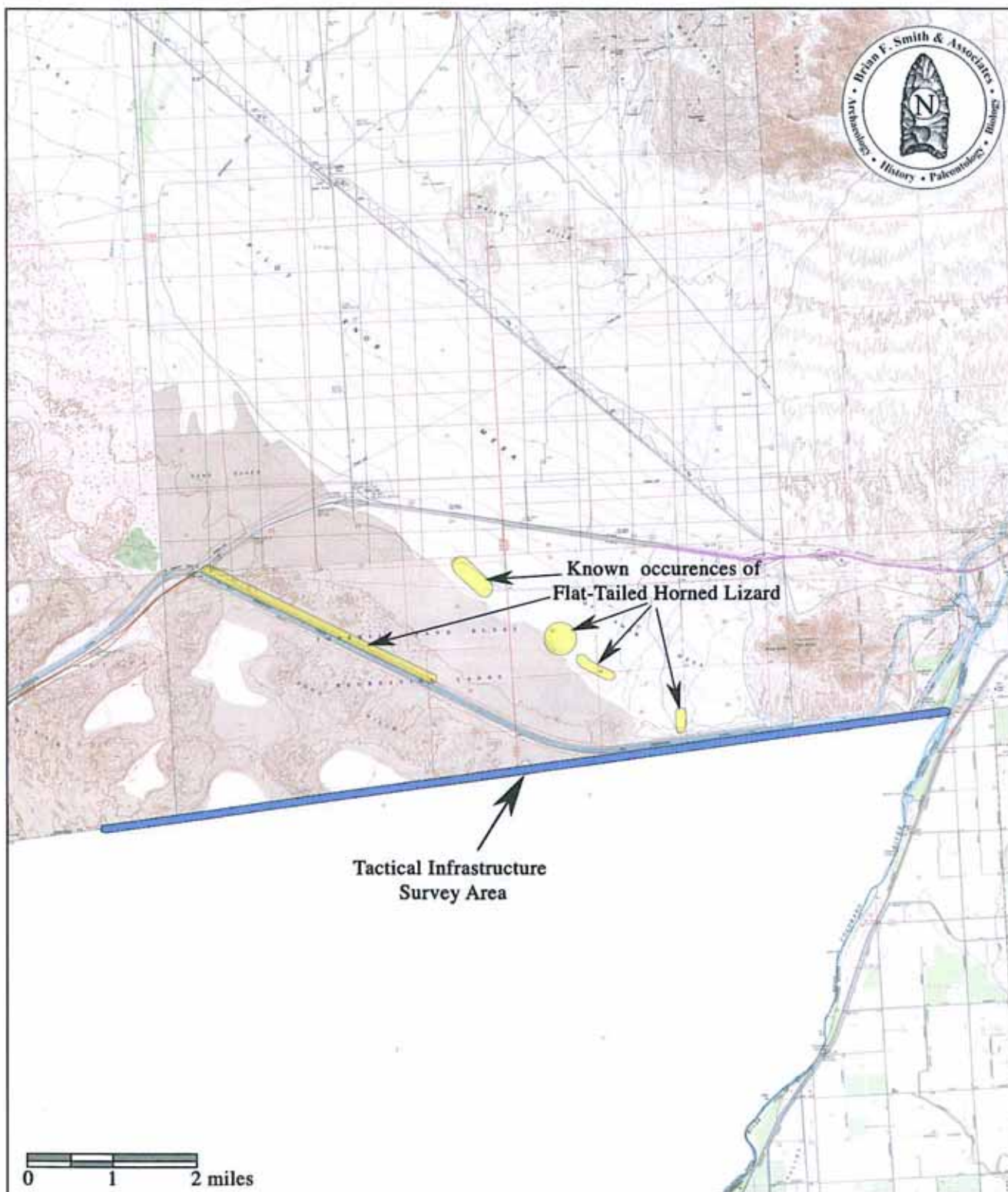


Figure 10
Generalized Distribution Map:
Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)
 In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

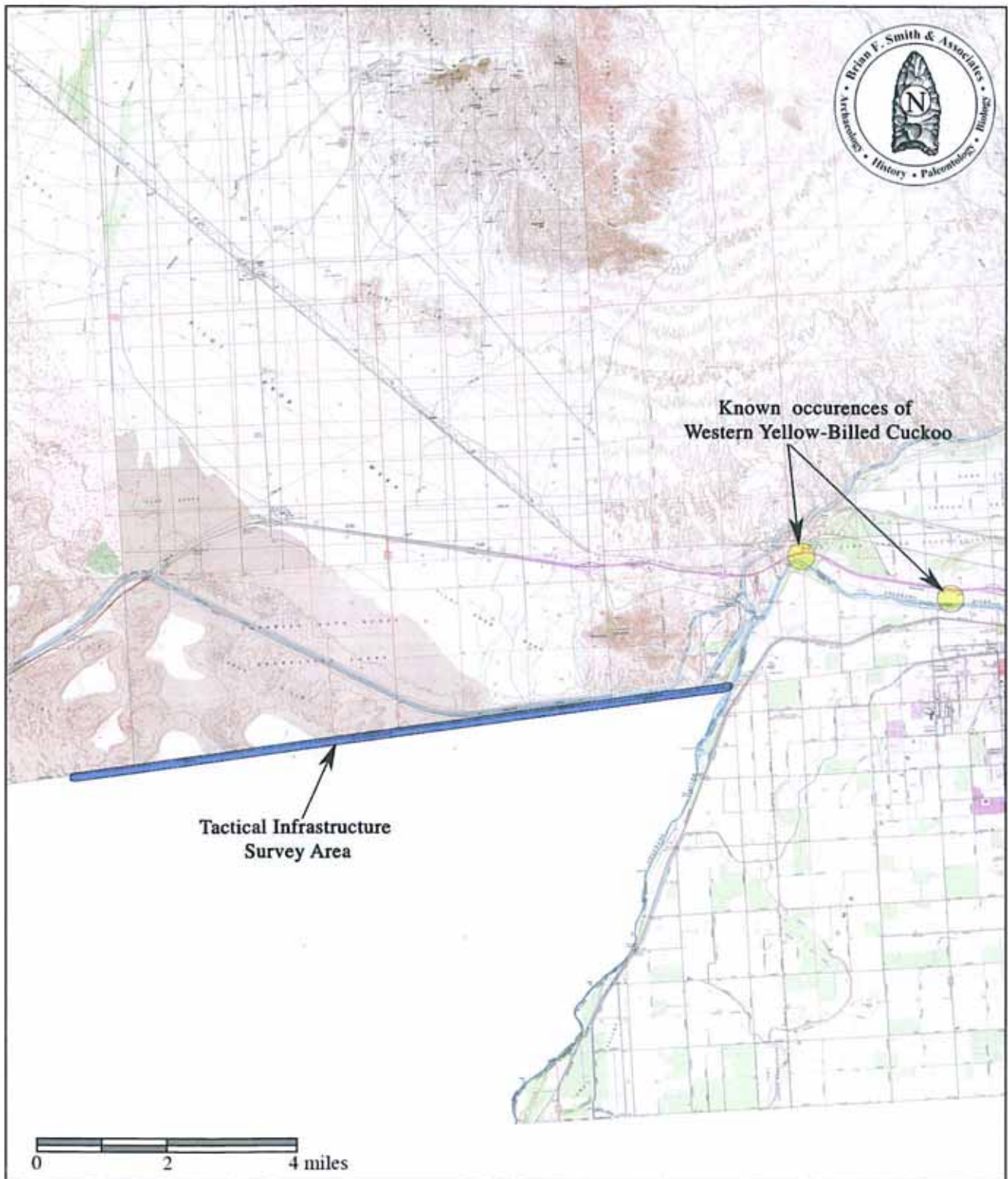
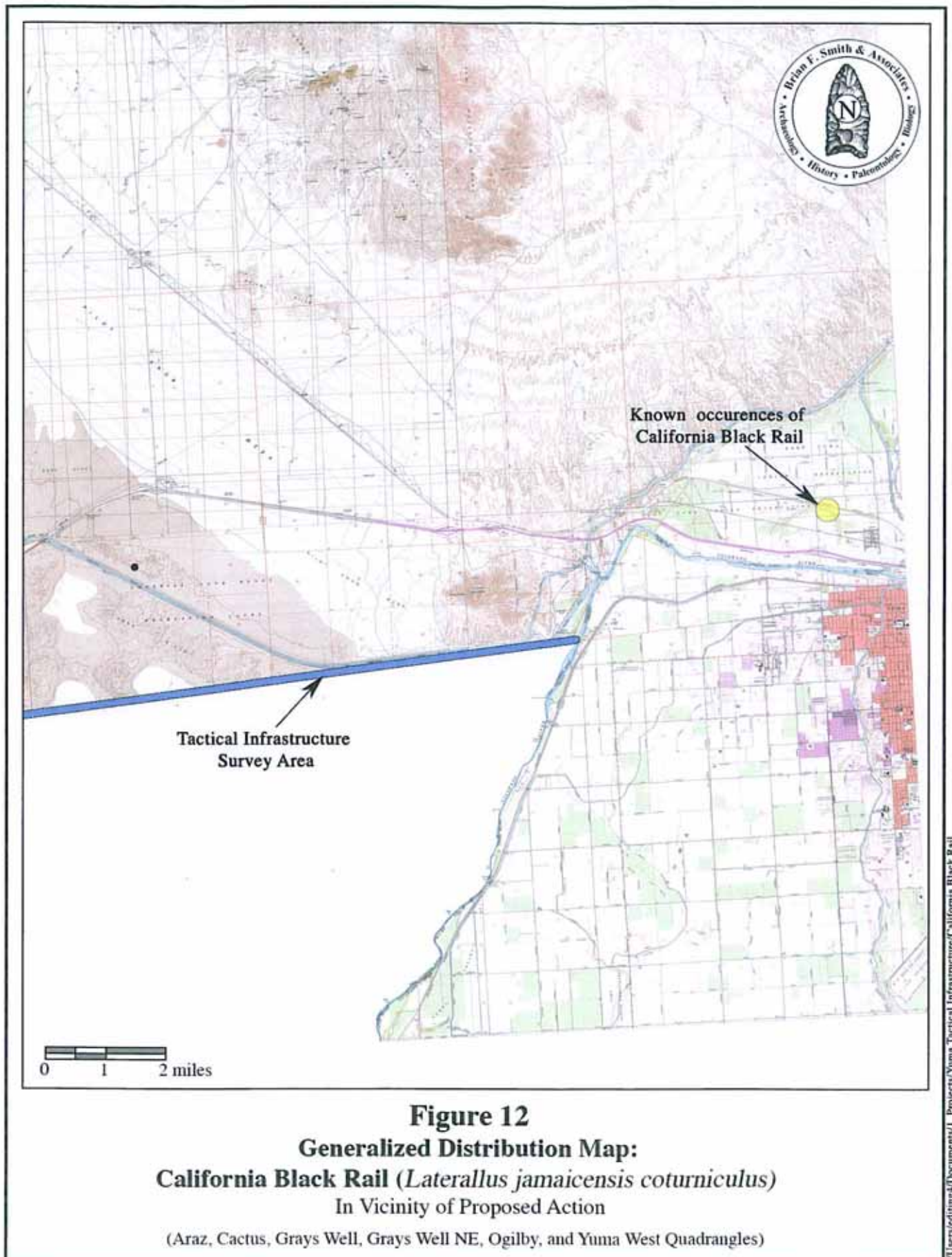


Figure 11
Generalized Distribution Map:
Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)
 In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)



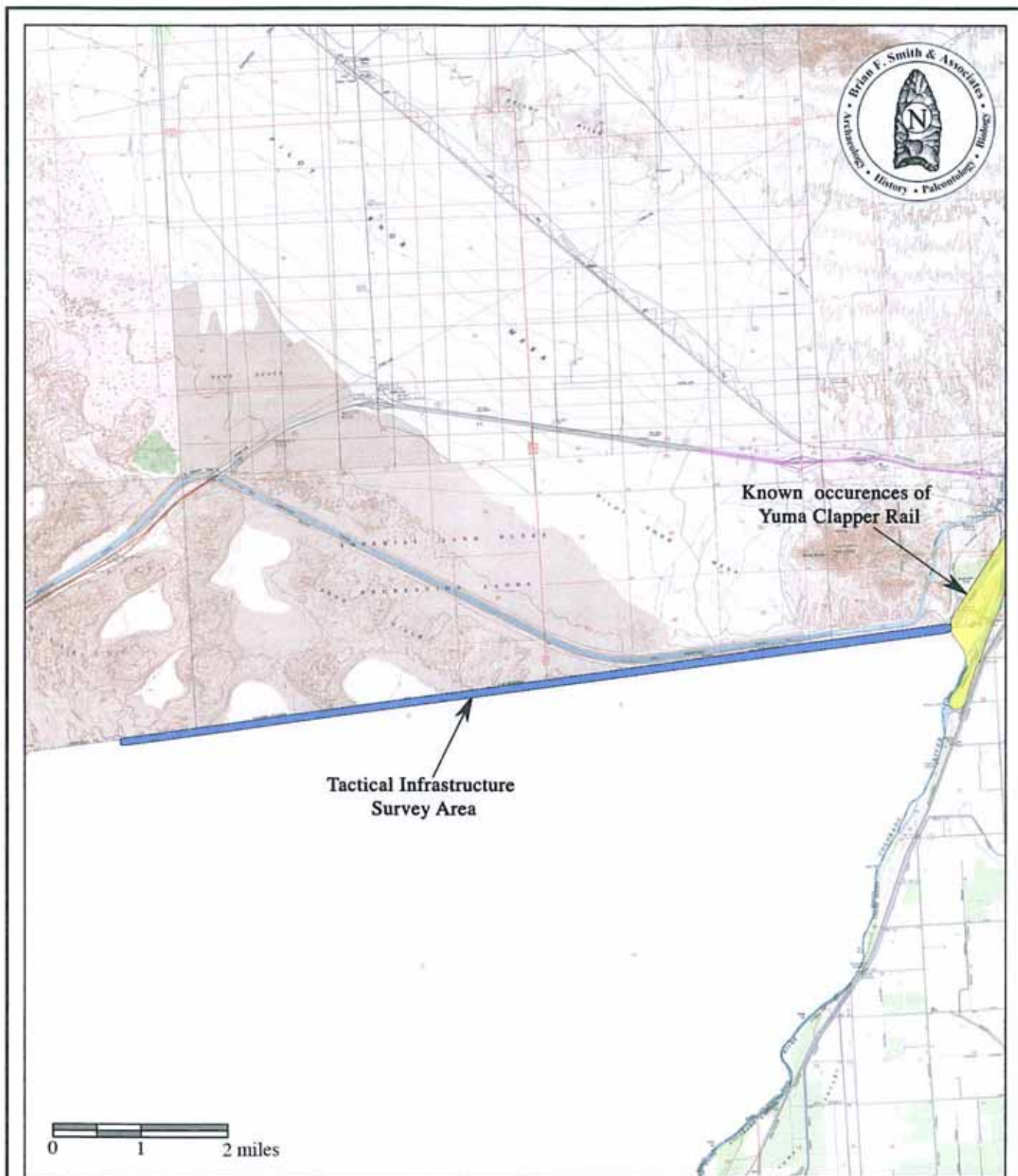
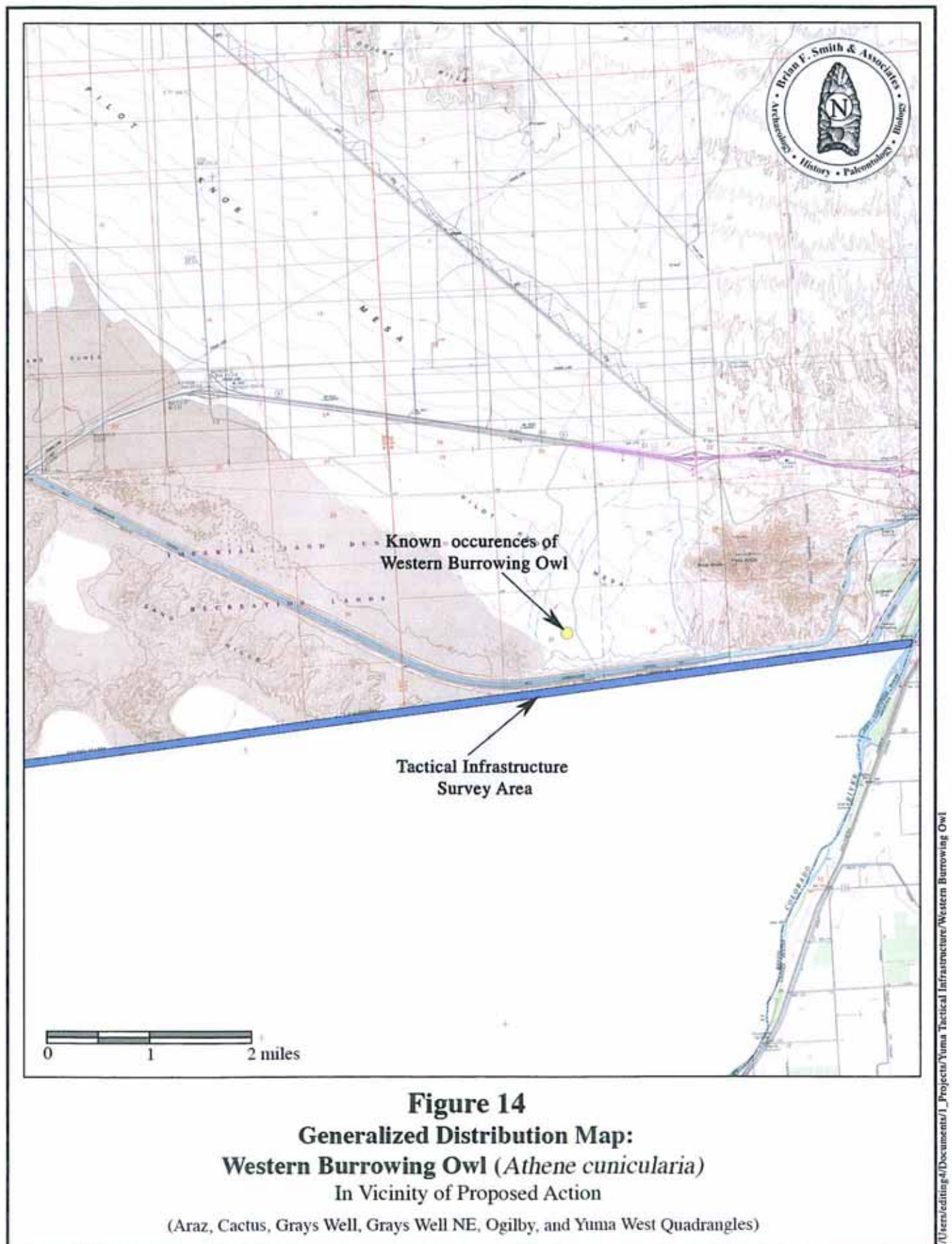


Figure 13
Generalized Distribution Map:
Yuma Clapper Rail (*Rallus longirostris yumanensis*)
 In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)



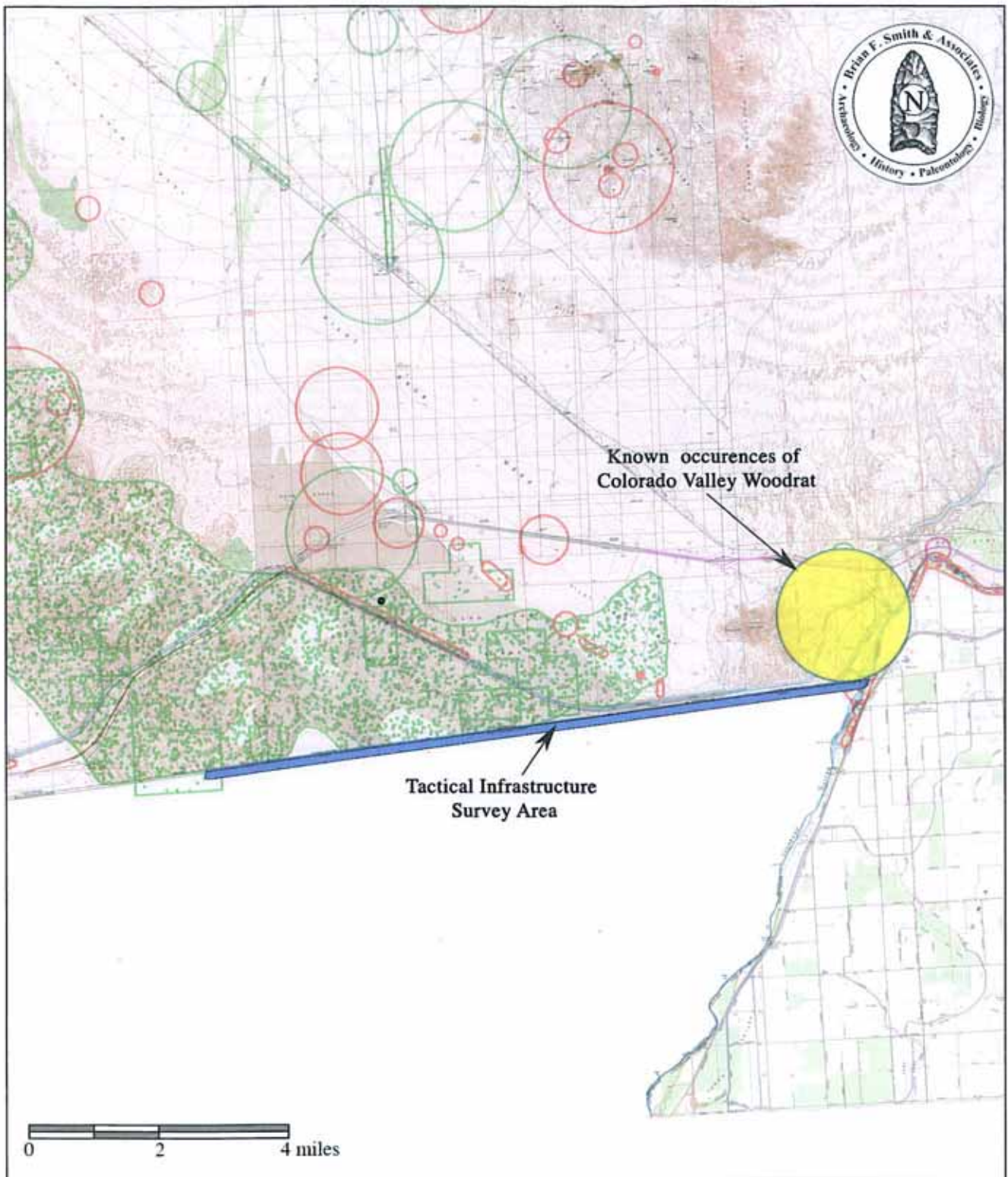


Figure 15
Generalized Distribution Map:
Colorado Valley Woodrat (*Neotoma albigula venusta*)
 In Vicinity of Proposed Action
 (Araz, Cactus, Grays Well, Grays Well NE, Ogilby, and Yuma West Quadrangles)

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.

