

APPENDIX D – ENVIRONMENTAL ASSESSMENT

SAN LUIS, ARIZONA COMMERCIAL PORT OF ENTRY PROJECT

ENVIRONMENTAL ASSESSMENT

Prepared For
U.S. Department of the Interior
Bureau of Reclamation

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HOW TO USE THIS ENVIRONMENTAL DOCUMENT

Summary

This chapter summarizes the project alternatives that are the subject of this Environmental Assessment (EA). This chapter identifies the project location, and summarizes the environmental review process that will be used to evaluate the potential environmental effects of the project. Also included is a summary of the impacts related to this project.

Chapter 1 - Purpose and Need

This chapter describes the need for the project and how the project would function once it has been constructed. Included in this chapter are descriptions of past, present, and future needs as well as how the project would be beneficial in meeting these needs.

Chapter 2 - Proposed Action and Alternatives

This chapter provides a description of the Proposed Action (project) and alternatives evaluated in this EA. The only alternative evaluated in detail is the No Action/No Project alternative.

Chapter 3 - Affected Environment

Affected Environment - This section describes the existing environmental conditions, especially as they relate to the various impact analyses.

Chapter 4 - Environmental Consequences

Environmental Consequences - The expected consequences (impacts) of the Proposed Action or No Action alternative are discussed in this section. For each impact, there is an analysis of potential or expected changes in the environment that would result from implementation of the Proposed Action or No Action alternative. The level of detail provided in the analysis is commensurate with the detail provided in the project description.

Chapter 5 - Mitigation Commitments

Where the actions discussed in Chapter 4 result in impacts that are considered significant, modifications to the action are proposed to reduce the impact to a level that is less than significant.

Chapter 6 - Preparers of the Document/References

This chapter provides a list of the references used to prepare the analysis, persons contacted, and names of the document preparers.

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SUMMARY

The Proposed Action would relocate the existing commercial port of entry to a 339-acre parcel situated approximately 5 miles east of the current port of entry site through a land transfer from the Bureau of Reclamation. Three phases of construction would occur. Phase I would construct the facility at the new port of entry site. Phase II would transform the existing port of entry, so that non-commercial vehicles and pedestrians could better access the facility. Phase III would expand the new port of entry facility on an as needed basis.

ENVIRONMENTAL REVIEW PROCESS

This Environmental Assessment has been prepared to meet the requirements of the National Environmental Policy Act (NEPA). The Bureau of Reclamation will use the EA to support the preparation of a Finding of No Significant Impact (FONSI) so that federal lands may be transferred and used to construct the new port of entry. The Proposed Action will include mitigation measures to reduce identified impacts to a level that is less than significant. These measures will be included as conditions of future project approval.

The EA will be circulated to the public and responsible agencies for a period of no less than 30 days. Responses to the comments received during circulation will be incorporated into the EA for certification by the Bureau of Reclamation and the Yuma Metropolitan Planning Organization.

PURPOSE AND NEED

The Proposed Action is intended to address the increase in trade between the U.S. and Mexico that is expected in the coming years. Increasing growth rates are placing growing pressure on the existing port of entry facilities, which are unable to properly process the current level of activity. Future increases in traffic levels will continue to cause more delays. A larger, well-equipped port of entry would reduce delays and allow for a greater quality and quantity of inspections due to a larger capacity to accommodate commercial traffic.

SUMMARY OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

No Action Alternative

NEPA requires that a No Action alternative be considered in the environmental review process. This alternative would maintain the existing port of entry located on 2.5 acres in the City of San Luis at the extreme westerly end of the Arizona-Sonora border along the Colorado River. The current facility is owned by the General Services Administration (GSA) and was built in 1984. A facility upgrade in 1991 added primary lanes, security systems, and truck docks, and provided general building repair and alterations. The existing facility is unable to efficiently accommodate current traffic levels, and northbound traffic often experiences delays of over an hour. Presently, the facility has an administration

building, six non-commercial primary inspection lanes, one commercial primary lane, two pedestrian processing lanes, 12 non-commercial secondary lanes, and 14 secondary truck dock bays. This alternative would also maintain the existing port of entry in San Luis Rio Colorado, Sonora. Established in 1924, the facility contains a main building, temporary structures, three vehicle selection inspection points (one commercial and two non-commercial), and nine primary inspection spaces (six commercial and three non-commercial). Under this alternative, both the U.S. and Mexican port of entry facilities would maintain current operational levels, standards, and procedures.

Proposed Action

The Proposed Action would create a new commercial port of entry on a 339-acre parcel located 5 miles east of the existing facility. The purpose of the project is to provide more direct access to major transportation routes between the United States and Mexico and to provide higher levels of service to users of the port of entry. New inspection facilities, administrative buildings, and access roadways would be built. The project would require three phases of construction spread out over a period of at least 10 years to allow for proper expansion to meet demands as they alter with time. First, a new facility, including an administrative building, parking lot, access roadway, support facilities, inspection facilities, impoundment areas, and hazardous waste holding areas would be built near the International Cattle Crossing near San Luis, Arizona. The U.S. primary inspection system would include electronic inspection systems and other computerized processing systems to decrease waiting times. New vehicle inspection facilities would be built to provide higher quality inspections and increased safety. Adequate land would be available for expansion of these facilities. Phase II would close the existing commercial port of entry and would relocate any useable furnishings, fixtures, and equipment to the new port of entry. Once this transition of equipment has occurred, the existing port of entry would be reused for non-commercial port of entry uses. Phase III would not occur until at least ten years after Phase I is completed. This final phase would expand the new facility as demand requires. At the same time, new facilities would be built on the Mexico side of the border to accommodate the same expansion needs.

ENVIRONMENTAL CONSEQUENCES

No major adverse environmental effects are expected from the Proposed Action alternative if the proper mitigation measures are enacted. The project could affect biological resources, cultural resources, water resources, growth, and other environmental factors. However, the project must comply with federal and state mandates and conditions of approval, thereby mitigating any potential effects. The conditions of approval are described in Chapter 5 of this EA. The No Action alternative would adversely affect some resources, particularly air resources and transportation as no sufficient mitigation could occur under this alternative.

1 PURPOSE AND NEED

1.1 INTRODUCTION

The purpose of this Environmental Assessment is to provide a comprehensive document addressing the potential environmental impacts of the project. The specific purposes of this EA are to: 1) incorporate pertinent information about the project and its impact on the environment into one document; 2) analyze the potential environmental impacts that would result from the project; 3) provide relevant text, figures, and references that will aid in the decision-making process; and 4) meet all the provisions as required under NEPA. An EA is required because federal lands under the jurisdiction of the Bureau of Reclamation will be transferred to the Yuma Metropolitan Planning Organization and subsequently used for the proposed port of entry facilities.

1.2 ENVIRONMENTAL REGULATION

This environmental document shall serve to meet the environmental review requirements of the National Environmental Policy Act (NEPA) of 1969.

The document will serve as an Environmental Assessment for the U.S. Bureau of Reclamation. The EA has been prepared in accordance with NEPA and the Council on Environmental Quality (CEQ) Regulations 40 CFR 1500 et seq. The EA is not, in and of itself, a decision document. The document's purpose is to disclose the environmental consequences of implementing the Proposed Action and alternatives. This disclosure will allow the responsible reviewing officials to either prepare a Finding of No Significant Impact (FONSI).

1.3 PURPOSE AND NEED

The Proposed Action is intended to address the increase in trade between the U.S. and Mexico that is expected in the coming years. A growth rate of 10 percent per year has been forecasted for binational commercial vehicle traffic. This forecast would result in an estimated 600 northbound trucks per day (150,000 per year). The existing port of entry currently handles only 180 trucks per day on average and is not located or equipped properly to handle this forecasted level of activity. Currently, northbound traffic experiences an average 1.8-hour delay per vehicle (Barton-Aschman Associates, Inc., 1998). Future increases in traffic levels will continue to cause more delays. Inspection quality and quantity may decrease due to the need to reduce traffic delays. A larger, well-equipped port of entry would reduce delays and allow for a greater quality and quantity of inspections due to a larger capacity to accommodate commercial traffic.

Many northbound commercial vehicles are carrying agricultural commodities or products assembled in Mexico by maquiladora industries for export to the U.S. The maquiladora program, begun in 1965 and formalized in 1971 through the Border Industrialization Program, is responsible for most of the growth in

trade across the Arizona-Sonora border over the past thirty years. Implementation of the North America Free Trade Agreement (NAFTA), beginning in 1994, has further relaxed trade barriers and is expected to continue the expansion of border economies and traffic/trade volumes well in the future (Barton-Aschman Associates, Inc and La Empresa S. de R.L., 1998).

To address the increasing volumes of traffic and trade vehicles crossing the border at San Luis-San Luis Rio Colorado, an integrated set of improvements to the Mexican and U.S. port of entry system has been proposed along with the construction of the Area Service Highway. Relocation of the port of entry provides a more efficient connection between trade routes from Mexico and U.S. roadways and to the Area Service Highway.

1.4 DESCRIPTION OF THE EXISTING PORT OF ENTRY

The existing San Luis port of entry was originally established in 1930 to provide trade access between Mexico and the United States. New facilities were constructed in 1984 and upgraded in 1991. This port of entry contains a commercial vehicle inspection station and related facilities, including an administrative building, six non-commercial and one commercial primary lanes, twelve non-commercial secondary lanes, 14 secondary truck bay docks, two pedestrian processing lanes, and a security system. Border visitors use the port of entry for commercial and non-commercial access.

1.5 PERMITS AND APPROVALS, STATUTES, REGULATIONS, AND OTHER PLANS

The EA must be certified by the Bureau of Reclamation as required under NEPA. It will also be used by the USFWS and EPA to support the issuance of a Finding of No Significant Impact (FONSI).

In addition to NEPA regulations, the environmental analysis in this EA is subject to other federal and state laws. The project must be in compliance with these laws and the standards created by these laws to prevent significant impacts. These laws address biological resources, historic resources, air quality standards, water quality standards, environmental justice issues, and federal building requirements. These statutes, regulations and plans are listed below.

Federal Acts

- National Environmental Policy Act of 1969;
- Endangered Species Act of 1973 as amended (16 USC 153);
- Fish and Wildlife Coordination Act of 1958;
- Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.);
- Clean Water Act of 1977 (33 USC 1251 et seq.);
- Clean Air Act as amended (42 USC 7401 et seq.);
- National Historic Preservation Act as amended (16 USC 470);
- American Indian Religious Freedom Act of 1978 (42 USC 1996) and Religious Freedom Restoration Act of 1993 (42 USC 2000);
- Archaeological Resources Protection Act of 1979;
- Archaeological and Historic Preservation Act of 1974;

- National Historic Preservation Act of 1996 as amended;
- Native American Graves Protection and Repatriation Act (PL 101-601);
- Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.);
- Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 USC 9603);
- Occupational Safety and Health Act of 1976;
- Federal Facilities Compliance Act; and
- Executive Order 12898, Environmental Justice.

State Acts

- Arizona Native Plant Law; and
- Arizona Air Quality Standards.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 PROJECT BACKGROUND

Over a twelve year period, from 1986 to 1998, northbound traffic served by the San Luis, Arizona International Port of Entry has grown rapidly. Northbound private vehicular traffic has nearly doubled over this time frame while commercial vehicular traffic has more than tripled. This increase in international border crossing activity is attributable to the economic and population growth of both San Luis Rio Colorado, Sonora and Yuma County, Arizona.

Nearly one-third of the northbound automobile crossings are people who are going to work, principally in service industries or agriculture; another one-third are going shopping in the U.S.; one-quarter of the motorists are returning home to the U.S., usually after visiting San Luis Rio Colorado; and the remaining nine percent are visiting the U.S. for recreation, study, health or other reasons. (Centro de Investigacion en Alimentacion y Desarrollo, A.C., 1997)

Northbound commercial vehicles are carrying agricultural commodities or products assembled in Mexico by maquiladora industries for export to the U.S. The maquiladora program, begun in 1965 and formalized in 1971 through the Border Industrialization Program, is responsible for most of the growth in trade across the Arizona-Sonora border over the past thirty years. Implementation of the North America Free Trade Agreement (NAFTA), beginning in 1994, has further relaxed trade barriers and is expected to continue the expansion of border economies and traffic/trade volumes well in the future (Barton-Aschman Associates, Inc and La Empresa S. de R.L., 1998).

To address the increasing volumes of traffic and trade vehicles crossing the border at San Luis-San Luis Rio Colorado, an integrated set of improvements to the Mexican and U.S. port of entry system has been proposed along with the construction of the Area Service Highway. This EA addresses one element of this transportation and inspection system, that being the U.S. commercial vehicle inspection facility.

The project site is located on land currently held by the Bureau of Reclamation under Minute No. 242, the Salinity Act, and the 1944 Treaty with Mexico. Under these agreements, the Bureau of Reclamation acquired and manages a 5-mile expanse of land extending from the border where groundwater pumping is not allowed to ensure an adequate water supply to Mexico. The Bureau of Reclamation may sell or transfer portions of this surplus land to other government agencies with use conditions included, or the surplus land may be leased for a period of time with water use restrictions. Since the port of entry would be operational longer than a lease would permit, the General Services Administration and the Greater Yuma Port Authority submitted a request to the Bureau of Reclamation to consider a transfer of land. After reviewing this request, the Bureau of Reclamation agreed to consider the transfer if the project would adhere to specific use conditions, including a condition that no groundwater pumping would occur on the site. The Greater Yuma Port Authority agreed to the

conditions established by the Bureau of Reclamation. Since the port of entry facility abides by the conditions and is in the best interest of the community, the Bureau of Reclamation agreed to further consider the project, pending environmental analysis.

Project Scoping

Project scoping was conducted on several different occasions prior to the preparation of this EA. A field survey was conducted on August 26, 1998, to discuss the Proposed Action. This meeting included attendees from various departments of the Bureau of Reclamation. Another meeting with the Bureau of Reclamation was held on February 23, 1999. During this meeting, the Bureau of Reclamation provided further recommendations on the conceptual design and field survey methods. Also, U.S. Customs, Immigration and Naturalization (INS), and the International Boundary and Water Commission, United States and Mexican Sections (IBWC) were identified as cooperating agencies who would provide input to the environmental process. On February 23, 1999, a public scoping meeting was held to obtain public comments on the potential environmental effects of the project and to discuss which alternative site would be most suitable for the project. The Yuma County Board of Supervisors agreed with individuals representing U.S. Customs, the Highlander Irrigation District, the Yuma Economic Development Corporation, and Mexican Industrial and Transportation groups that the project site located five miles east of the current site, near the International Cattle Crossing, would be the preferred site.

2.2 DEVELOPMENT OF THE PROJECT ALTERNATIVES

Summary of the Proposed Action and No Action Alternative

The Proposed Action and the No Action alternative provide a choice between maintaining the current status of the port of entry and expanding the port of entry to a new location. The Proposed Action would construct a new facility, including administrative buildings, new inspection technology and facilities, and improved roadways at a new site approximately 5 miles east of the existing port of entry. The No Action alternative would not require any new construction and would maintain the existing port of entry facilities at their present location.

Alternatives Considered but Eliminated from Detailed Evaluation

Alternative Site One

Alternative Site One is located adjacent to the eastern edge of the existing port of entry. This privately-owned parcel could be acquired through purchase or condemnation. This site currently contains structures that would need to be converted or demolished. This site would adequately accommodate the expansion of the U.S. commercial vehicle inspection facility. It would not, however, allow for the corresponding expansion of Mexico's commercial vehicle inspection facility. Nor would it allow for the expansion of the U.S. non-commercial vehicle inspection facility and the installation of a dedicated commuter lane and Secure Electronic Network for Travelers' Rapid Inspection (SENTRI) system.

Installation of the SENTRI system at the San Luis Port of Entry is a primary objective of the Proposed Action.

Alternative Site Two

Alternative Site Two is located 1.3 miles east of the existing port of entry, west of Avenue H. This site is situated opposite 16th and 17th Streets of San Luis Rio Colorado, adjacent to International Avenue. This site would adequately accommodate the expansion of the U.S. commercial vehicle inspection facility and would allow for construction of a modestly sized commercial vehicle inspection facility in San Luis Rio Colorado, between 16th and 17th Streets. This site would permit the installation of a dedicated commuter lane and SENTRI system at the existing port of entry in San Luis.

The Government of Mexico, Comisión de Avalúos de Bienes Nacionales (CABIN), does not support the use of this site in San Luis Rio Colorado, as it is too small to adequately meet future needs. Also, the City of San Luis, Arizona does not support the development of a commercial vehicle inspection facility at this site as such a commercial/industrial land use would not be consistent with adjacent residential land uses.

2.3 NO ACTION ALTERNATIVE

NEPA requires that a No Action alternative be considered in the NEPA environmental document. This alternative would maintain the existing port of entry located on 2.5 acres at the extreme westerly end of the Arizona-Sonora border along the Colorado River. This facility is owned by the General Services Administration (GSA) and was built in 1984. A facility upgrade in 1991 added primary lanes, security systems, and truck docks, and provided general building repair and alterations. The existing facility is able to accommodate current traffic levels, but delays are common in northbound traffic. Presently, the facility has an administration building, six non-commercial primary inspection lanes, one commercial primary lane, two pedestrian processing lanes, 12 non-commercial secondary lanes, and 14 secondary truck dock bays. This alternative would also maintain the existing port of entry in San Luis Rio Colorado, Sonora. Established in 1924, the facility contains a main building, temporary structures, three vehicle selection inspection points (one commercial and two non-commercial), and nine primary inspection spaces (six commercial and three non-commercial). Under this alternative, both the U.S. and Mexico port of entry facilities would maintain current operational levels, standards, and procedures.

2.4 PROPOSED ACTION

The Greater Yuma Port Authority is the project proponent and applicant and will own the land and pay for the construction and operation of the facilities. The facility will also be used by the Arizona Department of Motor Vehicles, the U.S. Federal Inspection Agency (U.S. Customs Service), the Department of Justice Immigration and Naturalization Service (INS), U.S. General Services Administration, and the U.S. Department of Agriculture Animal and Plant Health Inspection Service. Each of these agencies will use the facility for governmental purposes including the inspection of people

and vehicles entering and leaving the United States. The United States Border Patrol will have access to the site at all times and will maintain their 60-foot strip of patrol area north of the border.

Project Location

The proposed site for the San Luis International Port of Entry Relocation project is located at the border of the United States and Mexico in the city of San Luis, Arizona. San Luis is located in Yuma County, which encompasses 5,509 square miles (Barton-Aschman, 1998). Yuma County has become a center for trade between the southwest regions of the United States and northern Mexico. In 1995, the population of San Luis was 8,100 (www.house.gov, 1999), while the population of Yuma County was 130,000 in 1997. Population levels expand in the winter months when temporary residents and visitors inhabit the area. Agriculture, tourism, and military/government are the primary industries within the county. With Yuma's growing economy, stemming from population growth and increased tourism from the United States and Mexico, trade will increase in response to higher economic activity.

The existing port of entry facility is located in San Luis, 5 miles west of the project site, 23 miles southwest of Yuma, Arizona, and 47 miles east of Mexicali, Baja California. Access to the San Luis port of entry is provided by U.S. Highway 95 to the north, and the Mexican Federal Highway to the east and west. Although there are no direct railroad connections at the port of entry, connections exist in nearby Yuma, Arizona and Riito, Sonora. The existing commercial port of entry facility would be deactivated and reused as a non-commercial port of entry.

The project site is located near the westerly border of Arizona and Sonora, Mexico. Commercial port of entry facilities would be built near the historic International Cattle Crossing. A related facility would be built adjacent to the site on the Mexican side of the border. Proposed facilities in Mexico will not be discussed in this document. The project site is located on a 339-acre parcel located 5 miles east of the existing San Luis port of entry and 22 miles south of the Andrade, California-Los Algodones, Baja California port of entry. (See Appendix A for legal description) The Lukeville, Arizona-Sonoyta, Sonora port of entry is located approximately 120 miles southeast of the project site. The project site is bordered on the east by the Yuma Desert Flat-tailed Horned Lizard Management Area, and agricultural lands to the north and west. Immediately south of the project site is the San Luis Rio Colorado Industrial Park in Mexico.

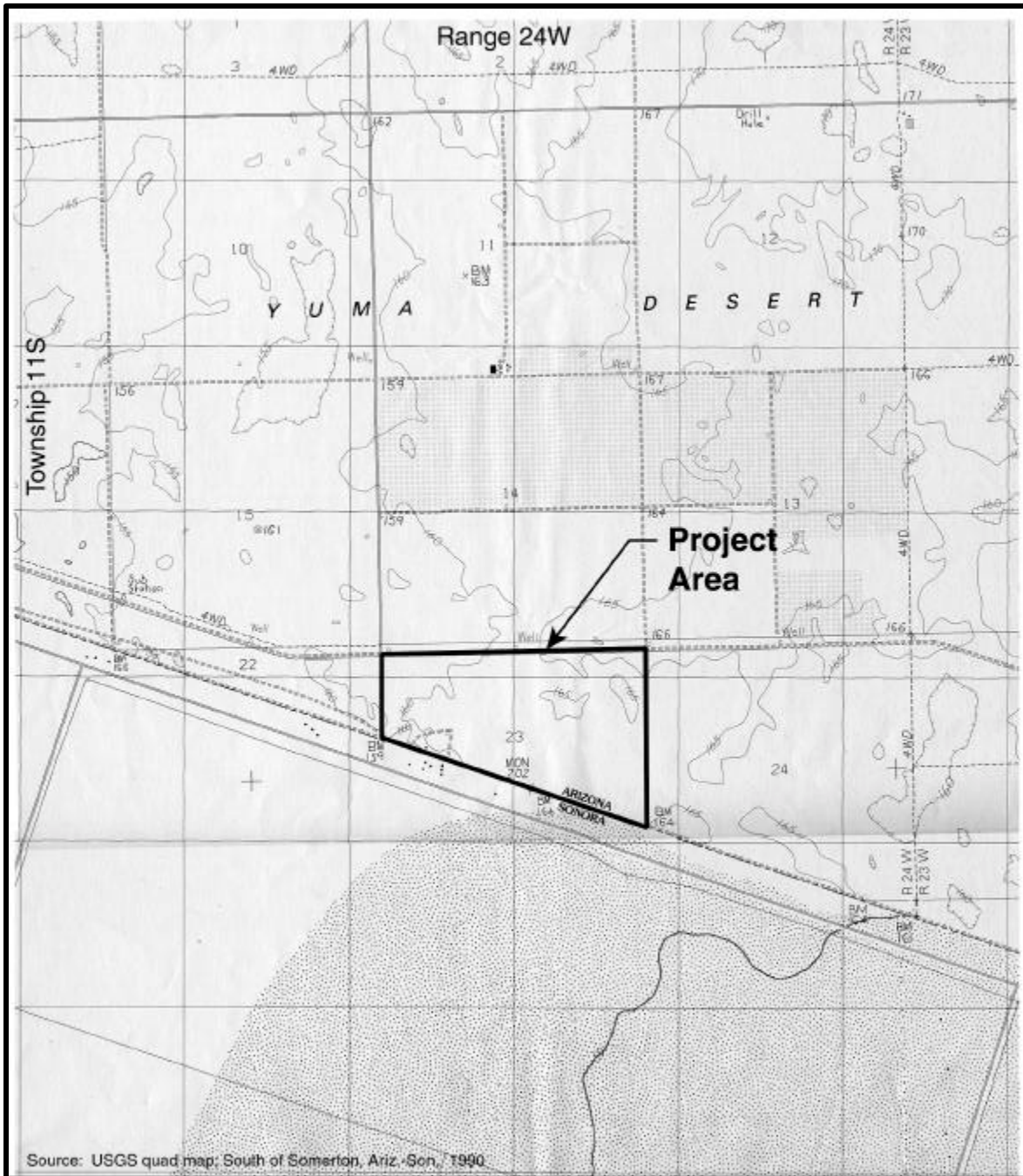


Figure 1
Project Location

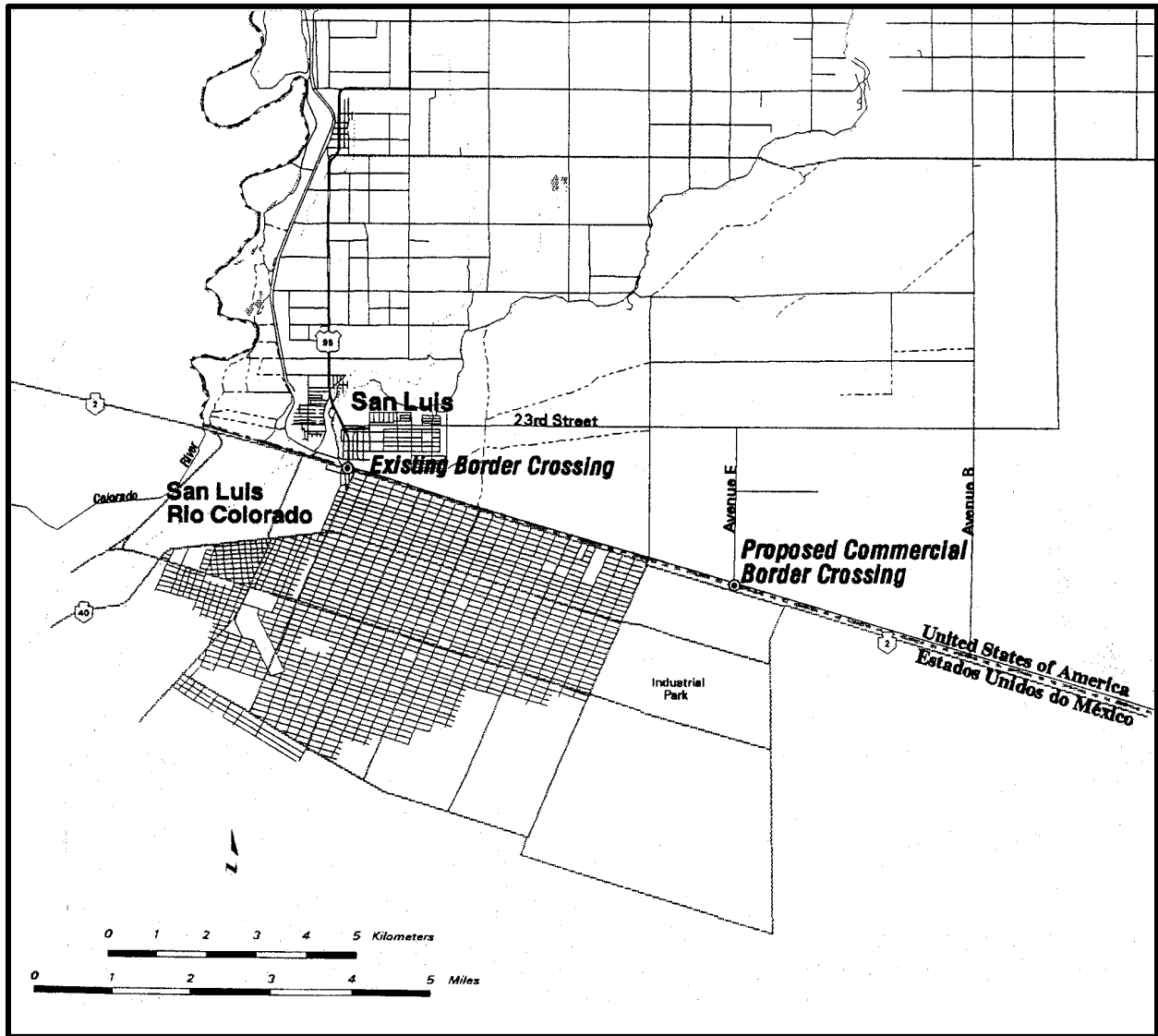


Figure 2
Existing and Proposed Commercial Ports of Entry

Project Phasing

Three phases of construction would occur under this action based on demand, federal inspection services needs, and programming considerations. Phase I would address the projected increase in trade between 2000 and 2011. Occurring from 2001 to 2002, the first phase would include the construction of two commercial vehicle port of entry facilities adjacent to the cattle crossing, on both sides of the U.S./Mexico border. Two miles of a two-lane roadway on Avenue E in Yuma County between 23rd Street and the port of entry, with associated traffic signals, would be constructed during this stage. At the U.S. commercial port of entry, inspection facilities and access roads would be built. Initially a two lane northbound roadway would be installed to provide access to the primary inspection booths. An inspection dock in the form of an expandable pinwheel and an expandable cargo building would also be constructed. A covered canine drug screening inspection area, vehicle scale, hazardous materials/impound area, employee and brokers parking lot, exit control booth, and site roadways to access these facilities would be built during this stage of construction. (See Appendix C - Design Concept Report)

Phase II would transform the existing port of entry, so that non-commercial vehicles and pedestrians could better access the facility. The commercial facilities would be decommissioned and any transferable equipment, fixtures, or furnishings would be re-established in the new commercial facility. A Secure Electronic Network for Traveler's Rapid Inspection (SENTRI) booth would be installed to provide a quick inspection service for frequent border crossing travelers. A Dedicated Commuter Lane (DCL) would also be installed by removing old commercial signs and trailers and adding new pavement striping to direct SENTRI system users. Minor renovation of the existing administrative buildings may be required to accommodate the SENTRI system and related personnel. Repavement of International Avenue between First and Second Streets would be completed during this phase as well as minor adjustments to roadway fencing. All reusable equipment and facilities would be kept intact at the existing port of entry to reduce costs.

Phase III would be based on need and tailored to traffic, inspection, and programming needs. Expansion facilities would be built and roads would be widened. A brokerage building and expanded dock space would be installed if demand requires. These facilities would be additions to the Phase I administrative and docking facilities. If expansion is needed, Yuma County Avenue E, Yuma County 23rd Street, and Mexican Highway 02 would each be expanded to four lanes to accommodate the increase in shipping activity. Expansion at the non-commercial port of entry would also take place during this phase. This expansion would include the addition of a third southbound vehicle selection lane equipped with traffic signals, and additions to the inspection patio. The southbound pedestrian walkway would also be widened, creating minor alterations to Mexico's Federal Inspection Service building. Additional SENTRI lanes could be added if the demand arises. Phase III presents an opportunity to expand the administrative building into the area occupied by the commercial vehicle dock and employee patio. The expansion of the administrative building may not be needed, but the opportunity to expand is possible during this phase. Phase III construction would occur at least ten years after the initial stage is completed.

Detailed Construction Plans

During Phase I, buildings will be spaced apart in a manner that would allow for future expansion of existing facilities and construction of new services. A northbound access roadway would be built to maximize queuing and processing efficiency. Figures 3a and 3b illustrate the general site construction plans for Phases I and III.

Scales

The scale would consist of a 350,000-pound capacity electronic scale with a concrete deck and multi-occupant booth. The booth would contain weight display equipment and work areas. Shipment weights would be taken at the vehicle scale. Vehicles with weights that exceed the legal weight limits for United States highways would not be allowed beyond the scale station. In lieu of the traditional vehicle scale, weigh-in-motion (WIM) scales may be installed within the inspection facility.

Primary Inspection Facilities

Primary inspection queuing lanes would branch off of the access roadway to provide quick access to the inspection lanes. Each queuing lane would be a minimum of 425 feet long, and sufficient pavement would be provided to store from 40 to 125 trucks, depending on the capacity of each inspection station. One North American Trade Automation Prototype (NATAP) lane would be available for those vehicles compatible with the NATAP system, allowing them to bypass waiting queues. Primary inspection booths would be located along each queuing lane. Currently, inspection rates are approximately 3.2 minutes per vehicle, but it is anticipated that primary inspection rates at the new facility would be similar to those at larger commercial vehicle facilities, which are approximately 1.5 minutes per vehicle. The initial four lanes constructed during Phase I are expected to expand to ten lanes (if needed) in the future. The inspection booths would be raised and would be able to contain more than one occupant. Those vehicles not requiring secondary inspections would then take the NATAP Rapid Enforcement lane to further decrease queuing delays.

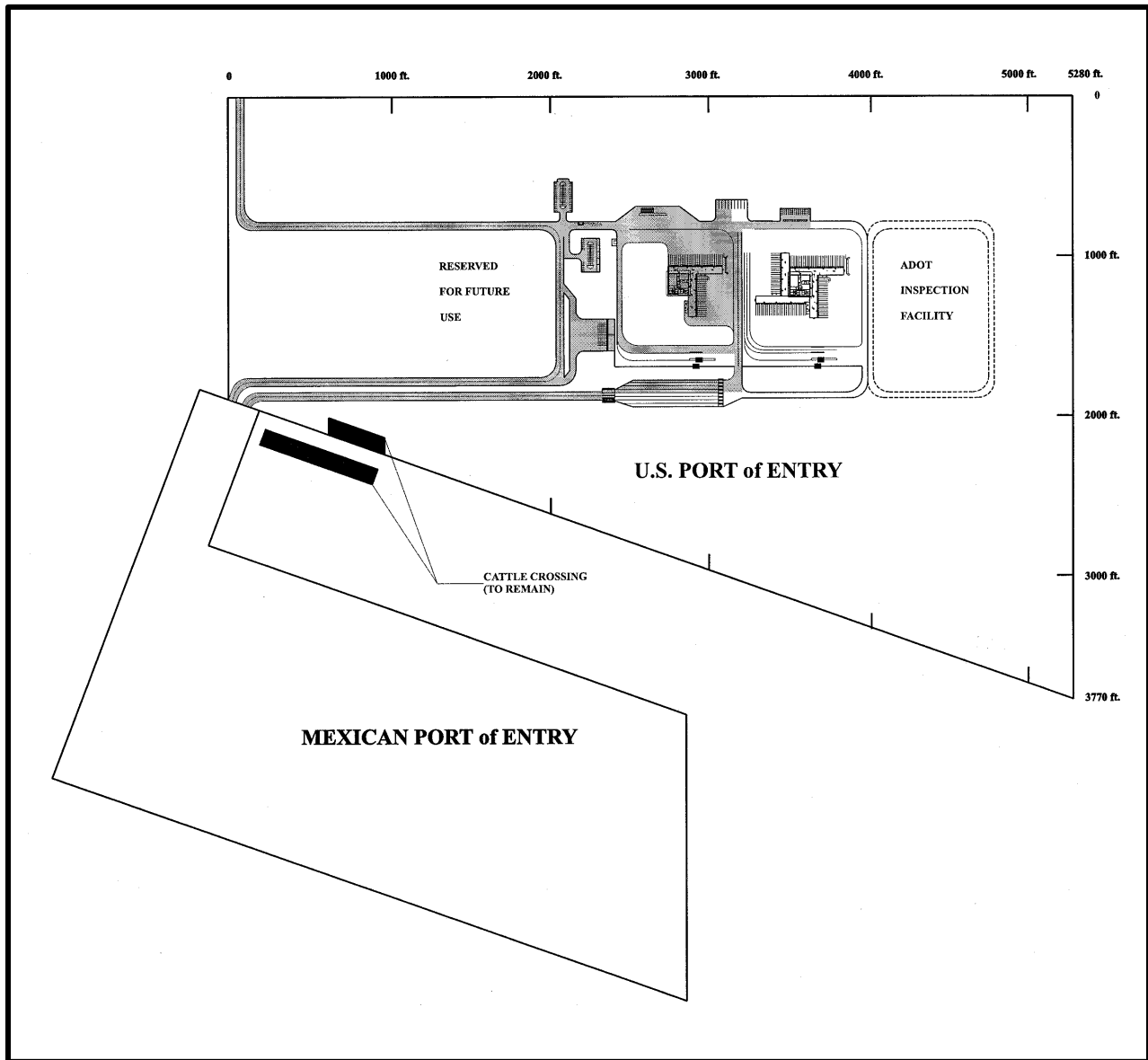


Figure 3a
Phase I Construction Layout

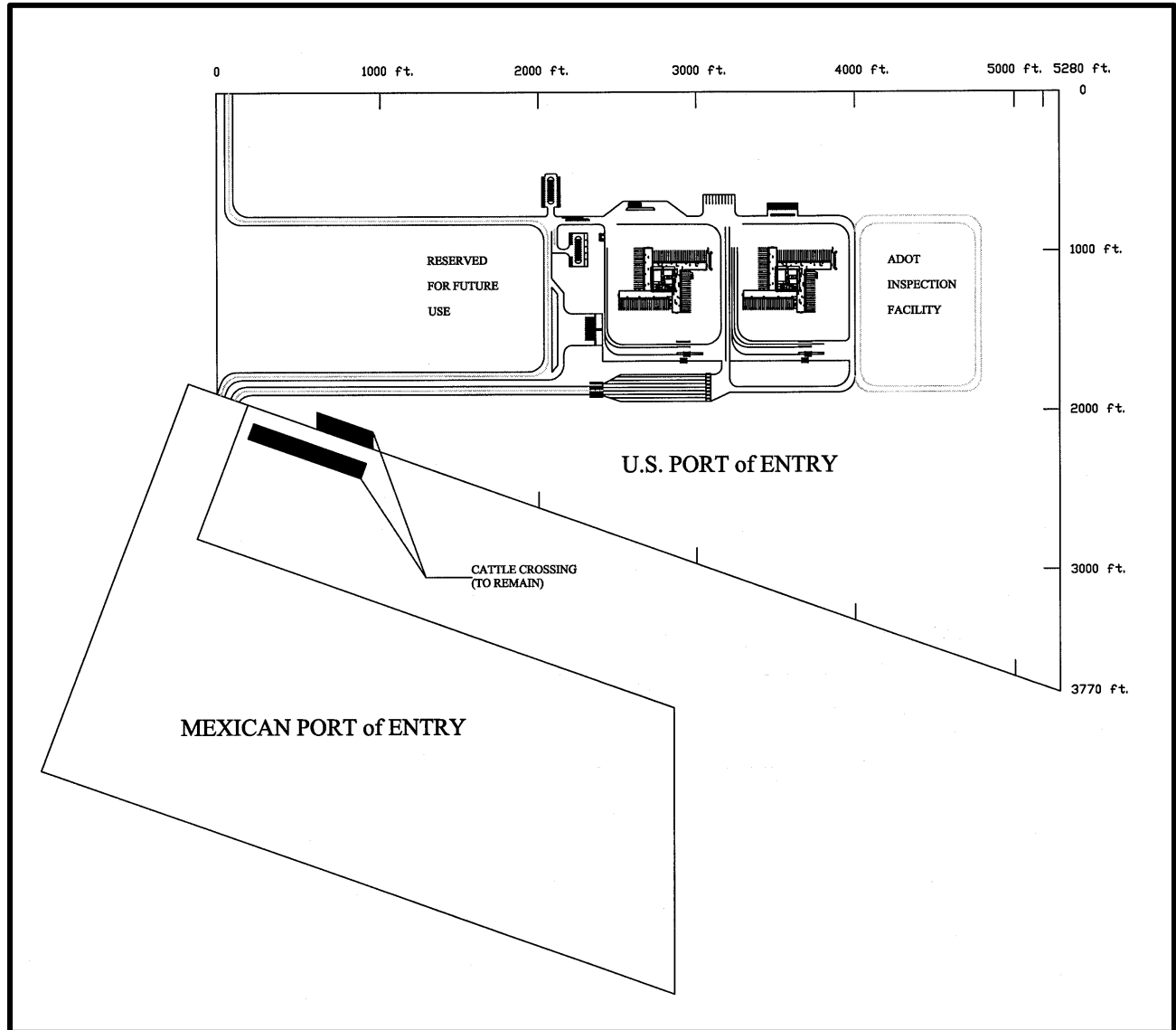


Figure 3b
Phase III Construction Layout

Secondary Inspection Facilities

Vehicles requiring a secondary inspection would proceed to the pinwheel shaped commercial inspection docks. These docks would be designed in a pinwheel shape to allow for greater docking capacity and expandability. A central facility would be surrounded by four arms branching off to allow for maximum capacity. Each cargo dock arm would contain 24 to 25 truck bays so that a total of 98 to 100 trucks may be parked at the secondary inspection facility at one time. The dock would be surrounded by a 225-foot paved truck maneuvering area to expedite traffic flows in the docking area. During Phase I, the inspection dock would only contain 49 to 50 truck bays, as only half of the pinwheel would be established at that time.

However, Phase III would expand the pinwheel fully and would possibly add another inspection dock of the same design and capacity near the original dock.

Administrative Building

An Administrative Building would be located within the inspection area. This facility would provide the center of administrative operations for the port of entry. Personnel from the United States Customs Service and other border inspections related agencies would operate in this building. Activities include administrative work, inspection work, entry and cashier work, import specialization work, and enforcement and violation control. Office space and storage space would be located in this building.

Hazardous Materials Facility

A special inspection and containment facility for hazardous waste would be constructed. Shipments of hazardous materials would be directed to this facility for increased safety during inspections. Trucks would pull into the covered facility and would park over containment tanks in the event a leak or spill should occur. Fire suppression capabilities would also be established in the facility, and possibly, exhaust-air fans or scrubbers would be installed. A multi-occupant booth would be included to store safety equipment.

Impoundment Lot

A fenced impoundment lot would be built to store seized vehicles and other large items. The lot would be paved and surrounded by a ten-foot high fence with a cantilever top and concertina wire. This lot would be continuously secured to guard against theft or violations.

X-ray Units

One or more vehicle x-ray units would be installed by the Federal Inspection Services (FIS) facility tenants. These would be VACIS-II x-ray units or equivalent, and/or TXR (truck x-ray) units, which include cabinet and operations buildings, along with supporting housings, guidance and traffic control systems.

3 AFFECTED ENVIRONMENT

INTRODUCTION

Each section of the Affected Environment chapter provides a background of the project area. This section includes a description of the existing environmental conditions, especially as they relate to the various impact analyses. An analysis of the potential impacts that would be associated with each of the alternatives considered in detail.

3.1 EARTH

Topography

The project site is located in the flat Yuma Desert plain portion of the greater Sonoran Desert (Yuma Mesa) approximately 7 miles east of the Colorado River. The main geographic features near the site are the Colorado River to the west, the remainder of the Yuma Mesa to the east and south, and the Yuma Valley to the north. The average elevation in the area is approximately 125 feet above mean sea level (USDI, 1990). The project site is essentially flat from compacted sand.

Seismicity

According to the U.S. Geologic Survey, the project site lies within a zone 4 seismic hazard area (1999). The Yuma region has the greatest risk of earthquake-induced ground shaking within the state of Arizona (Bausch and Brumbaugh, 1996). The threat of ground shaking is due to the proximity of the southernmost portion of the San Andreas fault system that runs through California. San Luis is roughly 30 miles from the Imperial Fault in California, 70 miles from the San Andreas Fault in California, 40 miles from the Cerro Prieto Fault in Mexico, and 10 miles from the Algodones Fault in Mexico. These faults are shown on Figures 4a and 4b. Historical, large (6.5+) earthquakes along the California faults in 1940 and 1979 have created ground shaking in Yuma County. Smaller out-of-state earthquakes are felt in the region an average of once a year (Bausch and Brumbaugh, 1996). An earthquake of magnitude 4.5 centered on the Cerro Prieto fault 47 miles southwest of Yuma occurred on October 18, 1999 (pers. comm. Chris Bates, 1999). Other earthquakes that have occurred within the past year have been located at 33.25N latitude/116.26W longitude (5/18/98) and 31.73N latitude/115.72W longitude (5/3/98) at magnitudes of 3.1 and 3.6 respectively (ASU, 1998). These earthquakes were located roughly 52 and 39 miles, respectively, from the project area.

San Luis is located in earthquake hazard zone 4, the ranking of greatest earthquake risk (ASU, 1998). The risk of structural damage is due to the loose, sandy soil structure and relatively shallow water tables that cause liquefaction. Liquefaction occurs when groundshaking increases water pressure between soil pores, causing the soil to lose strength and behave as a liquid. Therefore, structural damage occurs due to the weakening of the foundation. Although the existing commercial port of entry in San Luis is located in a liquefaction hazard zone, the proposed relocation site is not, due to lower groundwater

tables. This does not eliminate the possibility of liquefaction at the relocation site, but does decrease the risk.

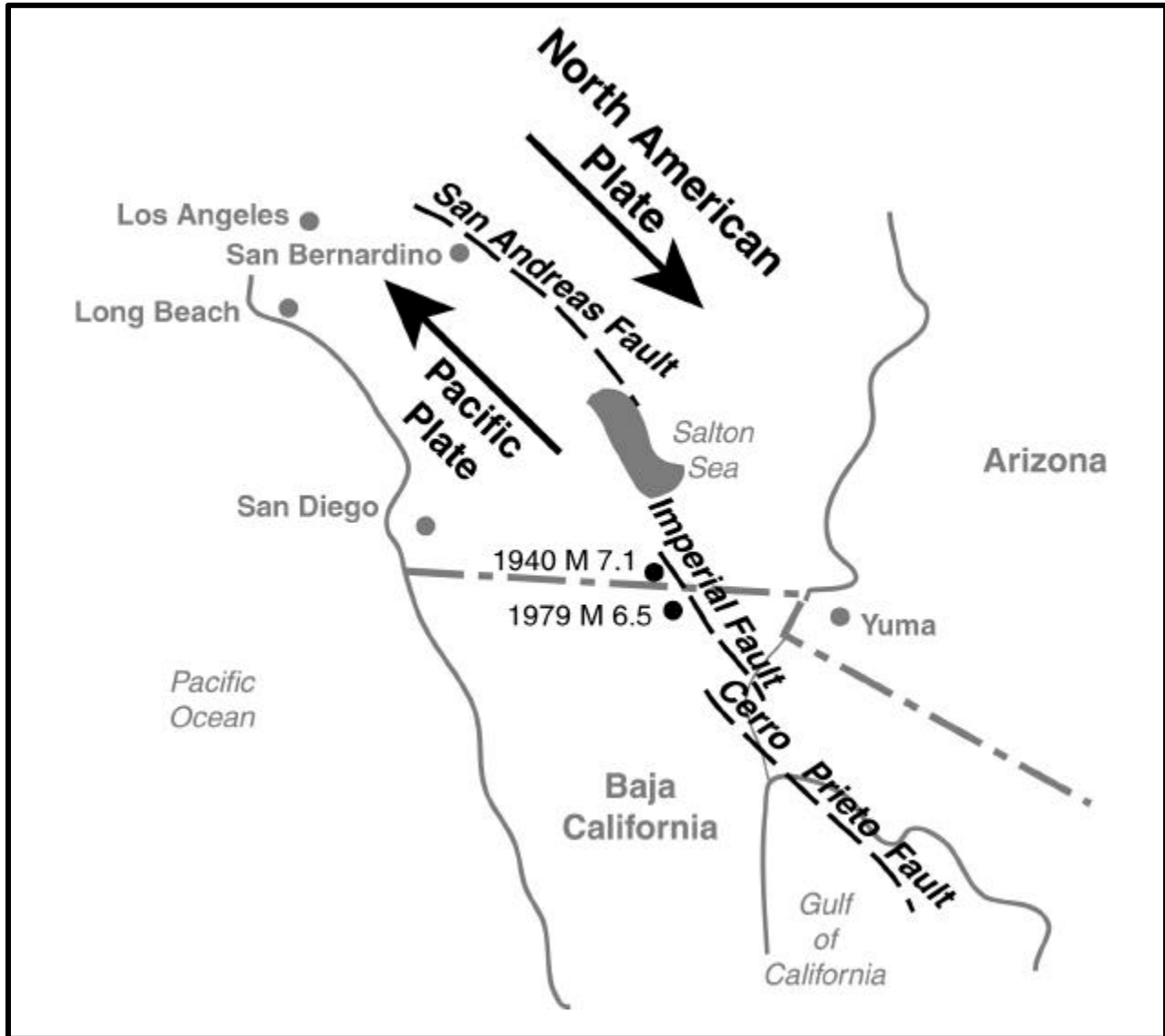


Figure 4a
Fault Lines

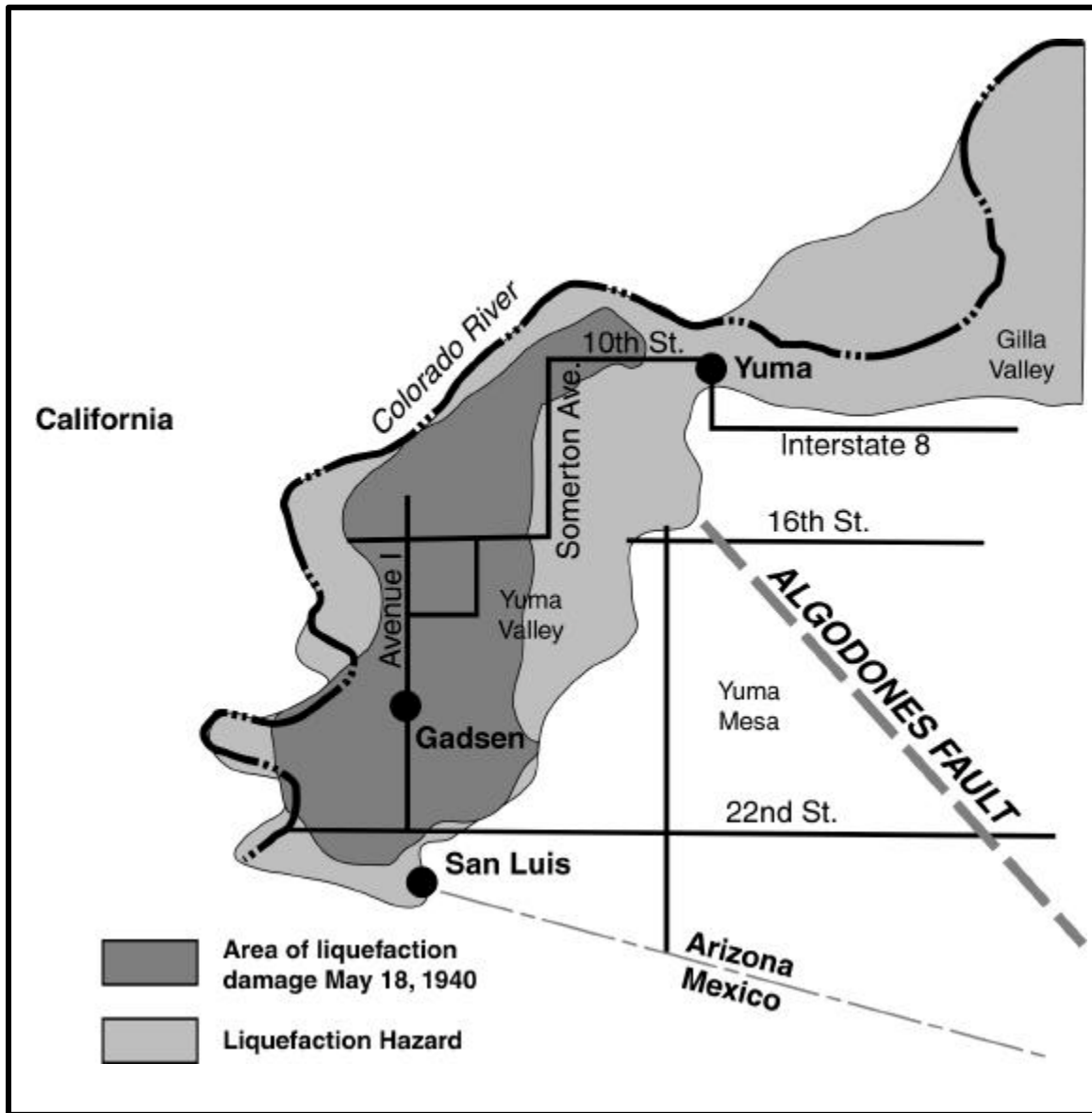


Figure 4b
Fault Lines

Soils

Field surveys conducted by Barton-Aschman, on August 27, 1998, determined that the substrate within the project site consists primarily of wind-blown sand, suggesting that unstable surface soil is common throughout the landscape. There are no known mineral deposits within the project area (USDI, 1990).

According to data provided by the USDA Natural Resources Conservation Service (1980), Rositas sand in the Rositas series is located in and surrounding the project site. The Rositas series consists of deep, somewhat excessively drained soils on terraces, alluvial fans, and sand dunes. These soils formed in mixed, sandy, windblown material, and have slopes of 0 to 20 percent. Rositas series soils are more than 15 percent coarse and very coarse and have a sand or loamy sand control section (NRCS, 1980).

The Rositas sand soil type is deep, somewhat excessively drained, and nearly level to rolling. The elevation range for this soil is from 75 to 700 feet, and annual precipitation in these areas averages approximately 2 to 4 inches. On average, this soil is of a light brown texture and can be found to a depth of 60 inches or more. Rositas sand experiences rapid soil permeability, with a low water capacity. Surface runoff is very slow, while the hazard of wind erosion is high. Since Rositas sand is classified in hydrologic group A, which has a high rate of water transmission, flooding does not occur on this soil type. Shrink-swell potential is low. The risk of corrosion is high for uncoated steel, yet low for concrete. On steeper slopes this soil type has moderate construction limitations for roads and dwellings, and severe limitations for small commercial buildings and shallow excavations. Recreational use is limited due to the texture of the soil. The soil capability for Rositas sand is VIIs (NRCS, 1980).

3.2 HYDROLOGY AND WATER QUALITY

Hydrology

Large gravel aquifers known as the Yuma Basin underlie the Yuma Mesa. Depths of these aquifers range from 80 feet in the valley to 800 feet on the mesa (USDI, 1990). Groundwater in the Yuma Basin is separated into two major subdivisions. One subdivision forms the upper portion of the aquifer. Within the upper portion of the aquifer, alluvium deposits from the Colorado and Gila Rivers are divided into an upper fine-grained zone, a coarse gravel zone that produces most of the groundwater, and a wedge zone (Corps of Engineers, 1998). The second subdivision, or lower portion of the Yuma Basin, is composed of the Bouse Formation, which includes marine sedimentary rocks, volcanic rocks, and nonmarine sedimentary rocks. Groundwater flows toward the southwest and is recharged primarily by the Colorado and Gila Rivers and irrigation flows. The Gila River contributes approximately 1,000 acre-feet of underflow groundwater annually to the Yuma Basin, while the Colorado River recharges groundwater during flood stages.

With the exception of the seasonal aqueduct near the northern boundary of the project site, there are no sources of surface water in the project vicinity. The nearest steady source of surface water is the Main Drainage Canal, located approximately 5 miles from the project site. The 242 Drainage Channel is located along the existing dirt road that borders the parcel. During site visits in August, the channel was dry and filled with sand. According to the Yuma-Wellton Area Soil Survey, there is no risk of flooding

on the type of soil found in the project site (USDA, 1980). It is likely that water generated from normal storm events would evaporate or infiltrate before reaching a surface water source.

The Bureau of Reclamation maintains the Yuma 5-Mile Protective and Regulatory Groundwater Pumping Zone (Yuma 5-Mile Zone) that encompasses the project site. This zone contains a number of wells within the vicinity of the project. There are at least six wells and one substation within a one-mile radius of the project. One of these wells is located on the project site at the northeastern edge of the cattle crossing property. Under Minute No. 242 of the International Boundary and Water Commission, the United States is not allowed to pump more than 160,000 acre-feet of water a year within the designated five miles along the international boundary. Current pumping rates are below this maximum, but could possibly increase with time. Any new land uses that require groundwater pumping within the Yuma 5-Mile Zone must be permitted by the Bureau of Reclamation, and must be considered significantly beneficial for the general public. New land uses within the Yuma 5-Mile Zone that require the Bureau of Reclamation to sell water from existing sources to the user are limited (USDI, 1990). The Bureau may allow land uses within the 5-Mile Zone if the use meets certain Bureau established conditions and if the use is in the best interest of the community. No groundwater pumping is allowed under the conditions established by the Bureau for this project.

Water Quality

Most water supplies throughout Yuma County have at least 500 parts per million total dissolved solids due to irrigation runoff, salination, and other particles (USDI, 1990). High salinity levels are linked to agricultural runoff, over-consumption, evaporation, and saline springs. On June 24, 1974, Congress passed the Colorado River Basin Salinity Control Act, in response to high salinity levels in the water delivered to Mexico. In 1961, salinity levels rose from between 700 to 920 ppm to 1,349 to 2,500 ppm. The International Boundary and Water Commission's Minute No. 218 recommended action to reduce salinity levels. Although salinity levels decreased to 1,240 ppm by 1971, salinity levels were still 40 ppm in excess of Mexican farming standards. Therefore, 40,000 to 75,000 acre-feet of Wellton-Mohawk drainage water were not used annually by Mexico, and were bypassed into the Colorado River below Morelos Dam. By sacrificing water allotted to them under the 1944 Mexican Water Treaty, a guaranteed annual allotment of 1.5 million acre-feet, Mexico was able to reduce salinity levels. However, growing concern over the status of Mexican farms gave rise to Minute No. 241, which was later replaced by Minute No. 242. Under Minute No. 242, both Mexico and the United States agreed to limit ground-water pumping to 160,000 acre-feet annually within five miles of the border. Construction of a desalination plant and water bypass systems reduced salinity levels of waters flowing from the United States into Mexico. In addition, both countries must consult with each other before new developments occur in the Five-Mile Zone. The Salinity Act authorized the Secretary of the Interior to develop a program to comply with the United States' obligations to Mexico under Minute No. 242. Under the Salinity Act and the creation of the 5-Mile Zone, the project site is considered surplus land that is not necessary for the Bureau of Reclamation's operation. Therefore, the Bureau can sell the land or give the land to other government agencies for their use if they find that the land use meets certain Bureau established use conditions and if the use is in the best interest of the community. No groundwater pumping is allowed under the conditions established by the Bureau for this project.

3.3 TRAFFIC AND CIRCULATION

Existing Port of Entry Traffic

Traffic at the existing port of entry and its access routes is a growing problem. The number of private vehicles utilizing the port of entry has grown from approximately 1,491,627 vehicles in 1986 to a high point of 3,033,624 vehicles in 1994, decreasing slightly to approximately 2,740,807 vehicles in 1997 due to peso devaluation and a shift in tourism. A list of private vehicle activity by month and year can be found in Table 3.3-1. The number of commercial vehicles utilizing the port of entry has also grown. In 1986, the number of commercial vehicles utilizing the port of entry was 13,230, as compared to 42,351 in 1997, down from a high of 46,653 in 1996 due to peso devaluation. A list of commercial vehicle activity by month and year can be found in Table 3.3-2. As the economy continues to stabilize, the level of activity is projected to rise.

Traffic studies by Barton-Aschman (1998) reveal that queuing at the existing commercial port of entry is significant. Queues of 325 to 350 vehicles form during peak hours, while queues of 50 to 200 vehicles form during non-peak hours. The study revealed that queuing delays caused vehicles to idle for up to 1.5 hours. The average delay was 42 minutes per vehicle. Long queues cause traffic to become congested on major roadways surrounding the port of entry. These queues are caused by a number of factors related to the capacity and location of the existing port of entry facility. The facility is located within the City of San Luis, which is growing in both population and commercial activity. The main roads leading to the port of entry facility are also heavily traveled to access not only the port of entry, but other nearby services, such as the commercial centers of San Luis and San Luis Rio Colorado. While it is desirable to be located near commercial centers and major access routes, the growing level of activity in the vicinity of the existing facility creates traffic hazards on mixed-use roads. Adding to this problem is the lack of capacity at the existing site. With no room to expand, limited docking stations, and poor design, the existing site is not able to process the increasing level of vehicles in a timely manner. This causes large queues to form, further increasing traffic hazards. During surveys conducted on February 13, 1998, by the Centro de Investigación en Alimentación y Desarrollo (CIAD), it was noted that the queue at the U.S. primary inspection lanes was never clear and always extended beyond 2nd Street, equaling an excess of 50 cars in the queue.

The mix of commercial and non-commercial vehicles creates traffic safety problems as trucks and cars are required to cross between each other. Commercial trucks create visibility problems for non-commercial vehicles, and non-commercial vehicles often back up, congest, and cross paths designed for commercial activity. For example, southbound commercial vehicles must cross through passenger vehicle queues in order to cross International Avenue. As each of these vehicle types increase use of the port of entry, more conflicts and safety hazards will arise. Also, pedestrian use of the port of entry has increased in response to long vehicle queues. An increase in pedestrian traffic contributes to the growing safety problem.

Table 3.3-1

San Luis, Arizona Port of Entry Traffic Statistics - Private Vehicles

Month	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan.	148,820	152,159	184,718	192,039	207,539	201,024	205,938	228,803	258,005	262,108	240,833	220,601
Feb.	141,323	146,196	186,478	175,603	191,010	195,213	197,393	213,764	246,290	233,738	204,523	214,757
Mar.	154,377	148,405	208,118	197,905	221,746	219,410	200,019	242,451	267,178	218,996	220,494	236,809
Apr.	120,986	150,657	187,261	185,541	204,172	207,736	194,280	226,905	239,821	210,195	205,276	222,937
May	120,029	148,697	183,007	187,674	213,336	218,555	209,427	230,641	252,977	184,145	223,593	232,392
June	100,530	138,732	171,882	175,241	204,550	206,237	181,792	213,463	217,693	219,799	213,550	218,062
July	94,782	138,640	175,042	274,054	188,501	202,969	183,946	215,261	247,176	224,032	208,342	225,280
Aug.	107,777	143,638	143,100	173,309	195,110	201,416	185,099	217,840	249,231	171,989	220,648	215,071
Sept.	115,973	158,013	149,367	189,693	203,319	204,430	194,641	224,141	254,156	212,468	235,667	218,915
Oct.	115,895	180,219	174,016	199,679	214,852	212,439	214,871	227,736	272,476	210,652	211,785	242,490
Nov.	125,190	173,292	189,737	192,234	199,414	210,499	220,567	242,804	257,293	222,983	206,349	231,919
Dec.	145,945	184,080	186,384	209,336	208,690	207,886	237,859	258,216	271,328	221,230	206,674	261,574
Total:	1,491,627	1,862,728	2,140,100	2,252,308	2,452,239	2,478,814	2,425,832	2,742,025	3,033,624	2,592,335	2,587,734	2,740,807

Source: U.S. Customs Service

Table 3.3-2

San Luis, Arizona Port of Entry Traffic Statistics - Commercial Vehicles

Month	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Jan.	1,398	2,141	2,678	3,477	3,819	3,523	4,175	4,141	4,319	4,976	4,744	5,093
Feb.	1,415	1,988	2,549	3,646	3,537	3,522	4,229	4,350	4,900	5,355	5,034	4,501
Mar.	1,413	1,703	2,868	3,681	4,199	3,143	3,857	4,350	5,994	5,129	5,280	4,862
Apr.	1,435	1,914	2,087	2,679	3,209	3,220	3,089	3,544	3,938	3,564	4,049	4,155
May	1,165	1,564	2,055	2,669	3,073	2,789	2,955	3,034	3,825	2,948	3,781	3,863
June	1,146	2,063	2,001	2,473	2,727	2,932	2,842	3,342	4,033	5,177	3,148	3,016
July	692	1,204	1,075	2,400	1,714	2,462	1,837	2,174	2,417	3,050	2,787	2,644
Aug.	515	1,050	1,107	1,636	1,645	1,904	1,731	1,865	2,539	2,073	2,828	2,162
Sept.	593	1,112	1,032	1,465	1,455	1,722	1,727	1,950	2,599	2,034	2,577	2,454
Oct.	838	1,573	1,284	1,841	1,763	2,377	2,226	2,365	2,906	2,570	3,719	2,403
Nov.	1,296	2,077	2,007	2,795	2,527	2,789	2,573	2,980	3,334	3,814	4,225	3,268
Dec.	1,324	2,424	3,141	3,628	2,949	3,239	3,071	3,447	3,668	3,765	4,481	3,930
Total:	13,230	20,813	23,884	32,390	32,617	33,622	34,312	37,542	44,472	44,455	46,653	42,351

Source: U.S. Customs Service

Regional Traffic and Circulation

Regional road access to the existing port of entry is provided to the north by U.S. Highway 95, a two-lane National Highway System route running north through Yuma, where it connects with Interstate 8, and continuing north to Quartzsite where it connects with Interstate 10. East-west regional access is provided by Mexican Federal Highway 02, a four-lane Type B facility which connects with Mexicali, 47 miles to the west, and Sonoyta, 126 miles to the east via a two-lane road. Additional regional connectivity is furnished by Sonora State Highway 40 (a Type C two-lane facility) and Federal Highway 5 (a Type B/C facility with two to four lanes) which lead to various towns along the Sea of Cortez (Gulf of California). U.S. Highway 95 carries approximately 15,000 vehicles per day on average and is known as Main Street. G Street is a principal east-west roadway on the U.S. side of the border. Upon leaving the San Luis city limits it becomes County 23rd Street, leading to the Arizona State Correctional Facility. Its average daily traffic volume is 5,000 to 6,000, with higher volumes observed during the winter months.

County 23rd Street and Avenue E are the principal roadways leading to the project site (Figure 5). Avenue E is an unpaved two-lane road that would be paved between the international boundary and 23rd Street as an element of the Proposed Action. County 23rd Street is currently a paved two-lane road. This facility will be upgraded to a four-lane divided highway and linked to Interstate 8 via the construction of an Area Service Highway (ASH), which is partially funded for construction.

An abandoned airstrip,(Rolle Field), is located approximately 3.3 miles north of the project location. An expansion to the airfield is being proposed, that would allow the use of the airfield by general aviation aircraft. Personnel that need to go to the port of entry could utilize this new proposed improved airfield.

The project area and surrounding areas experience a high level of illegal entry activity daily. Approximately 100 persons attempt an illegal entry each day in addition to the many vehicles attempting illegal entry in this area. Therefore, the area is heavily patrolled 24 hours a day by at least two U.S. Border Patrol vehicular units.

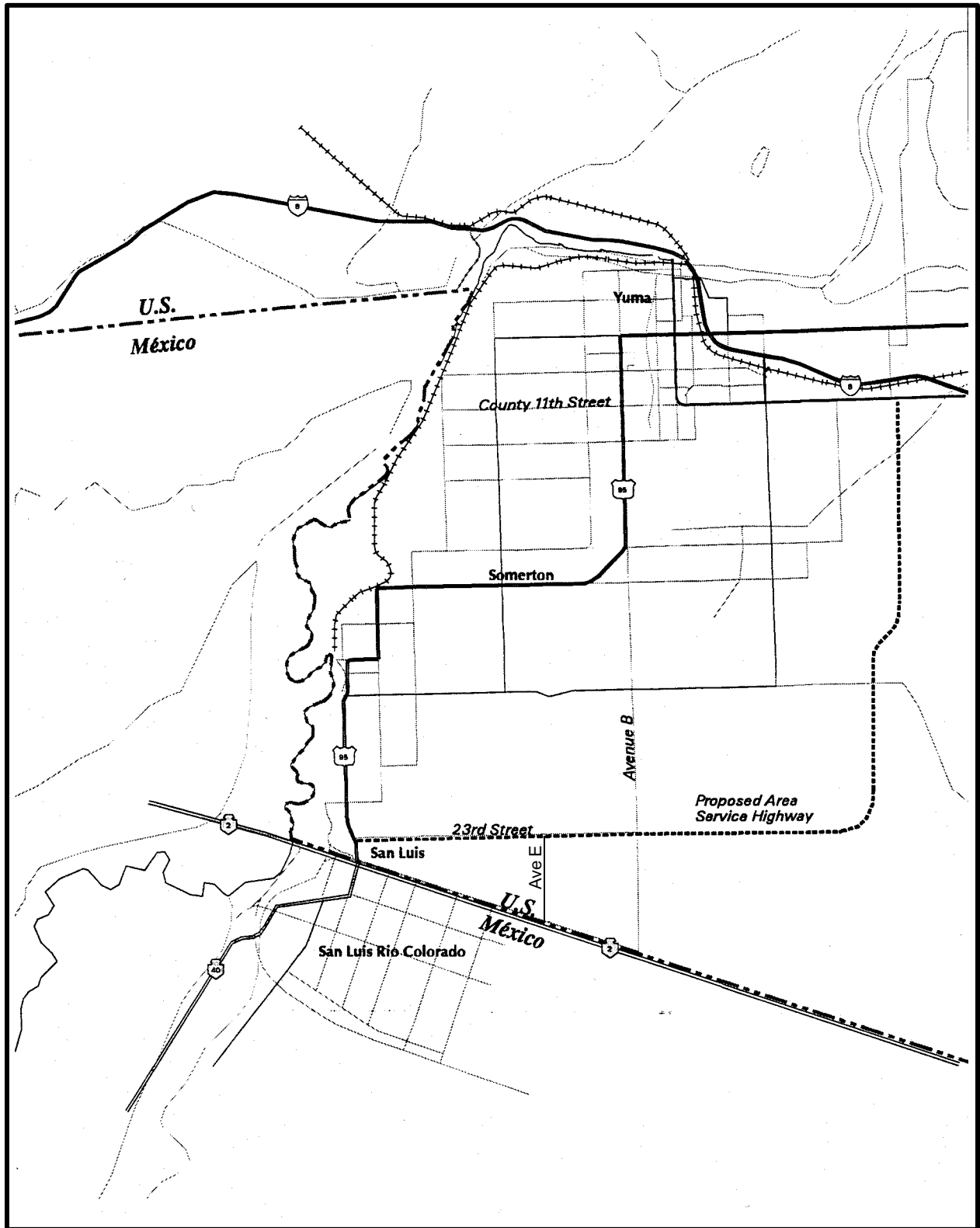


Figure 5
Local Access Routes

3.4 AIR QUALITY

The Yuma Mesa is subject to windstorms and occasional thunderstorms. Dust from loose desert soil can be easily kicked up into the air during a windstorm, causing air quality to temporarily decrease. In the past, ambient air particulate matter (PM10) in the Yuma area exceeded Federal and State standards at a frequency of approximately 98 percent (USDI, BoR, 1990). Data provided by the EPA lists Yuma County as a non-attainment area for PM10 (U.S. EPA, 1998). Federal and State air quality standards are shown in Table 3.4-1.

Table 3.4-1

Ambient Air Quality Standards

Pollutant	Average Time	Federal and State Standards*
		Concentration
Ozone	1-Hour	0.12 ppm
Carbon Monoxide	1-Hour	35 ppm
	8-Hour	9 ppm
Nitrogen Dioxide	Annual Average	0.053 ppm
Sulfur Dioxide	24-Hour	365 µg/m ³
	Annual Average	80 µg/m ³
Suspended Particulate Matter (PM ₁₀)	24-Hour	150 µg/m ³
	Annual Arithmetic Mean	50 µg/m ³
Lead	Calendar Quarter	1.5 µg/m ³

Source: Arizona Department of Environmental Quality, 1999

ppm = parts per million

µg/m³ = micrograms per cubic meter

*National standards other than for ozone and those based on annual averages or annual arithmetic means are not to be exceeded more than once per year. The ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

According to the Arizona Department of Environmental Quality (1999), 1991 is the last year Yuma County exceeded the 24-hour standard for PM10, with a particulate level of 229 micrograms per cubic meter, and 1990 is the last year a violation of the annual arithmetic mean occurred, with a particulate level of 57 micrograms per cubic meter. The Arizona Department of Environmental Quality found that the largest source of PM10 dust is agricultural tilling, accounting for 38.5 percent of the regional problem. PM10 air emissions from unpaved roads account for 36.0 percent of the problem. Other dust emissions in Yuma County are caused by vehicle emissions, agricultural burning, windblown agricultural land, off-road vehicles, and the use of unpaved parking lots (ADEQ, 1999). PM10 air

emissions have caused visibility in the area to decrease. Yuma County has not exceeded air quality standards for the other pollutants listed on Table 3.4-1.

3.5 NOISE

Yuma County contains both noisy, high-density areas and relatively quiet, low-density areas. The area surrounding the project site is primarily rural and undeveloped. Surrounding land uses, such as the agricultural lands, cattle crossing, and flat-tailed horned lizard management area, do not generate high levels of noise. There are wells and pumping substations within the Yuma 5-mile Zone that generate low levels of noise while in operation. Mexican Federal Highway 02 is located along the border and generates noise from heavy vehicles. Similarly, agricultural operations near the site generate seasonal noise from agricultural equipment and trucks.

An abandoned airstrip,(Rolle Field), is located approximately 3.3 miles north of the project location. An expansion to the airfield is being considered, that would allow the use of the airfield by general aviation aircraft.

There are no sensitive receptors within the project vicinity. Sensitive receptors may include schools, hospitals, residences, and other land uses sensitive to noise.

3.6 BIOLOGICAL RESOURCES

Vegetation

The project site is located within the Yuma Desert portion of the Sonoran Desert. With the exception of agricultural cropland to the north of the project site, primary habitat in this area consists of desert scrub, classified as a "Unique Natural Area and Feature" by the Bureau of Land Management (BLM, 1985). Succession rates in this habitat are slow due to dependence on scarce rainfall and competition for water resources. The sparse vegetation in this habitat is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other shrubs associated with this habitat include longleaf ephedra (*Ephedra trifurca*) and desert buckwheat (*Eriogonum deserticola*). The perennial grass big galleta (*Hilaria rigida*) commonly grows in this habitat (USDI, 1990).

Wildlife

Small mammals, birds, and reptiles are commonly found in this desert scrub habitat. Rodents include antelope ground squirrel (*Ammospermophilus harrisi*), desert kangaroo rat (*Dipodymus deserti*), and Merriam's kangaroo rat (*Dipodomys merriami*). Larger mammals include coyote (*Canis latrans*) and kit fox (*Vulpes macrotis*). A variety of birds also occur within the area. Red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), lesser nighthawk (*Chordeiles acutipennis*), burrowing owl (*Athene cunicularia*), and roadrunner (*Geococcyx californianus*) are commonly found in desert scrub habitat. Snakes, including the sidewinder (*Crotalus cerastes*), and lizards, including desert iguana (*Dipsosaurus dorsalis*), zebra-tailed lizard (*Callisaurus draconoides*), flat-tailed horned

lizard (*Phrynosoma mcallii*), and Cowle's fringe-toed lizard (*Uma notata rufopunctata*) are found in this habitat association (USDI, 1990).

During the August 27, 1998 field survey, the following species were observed or were identified through scat or other evidence: burrowing owl, American kestrel, loggerhead shrike (*Lanius ludovicianus*), horned lark (*Eremophila alpestris*), zebra-tailed lizard, desert iguana, coyote, blacktail jackrabbit, and Yuma antelope ground squirrel. Most of the bird species were observed along the access road on the northern border of the project site.

Special-Status Species

A number of plant and animal species are listed by the Fish and Wildlife Service (1/22/99) for Yuma County. Federally listed endangered species include Nichol's Turk's head cactus (*Echinocactus horionthalonius var nicholii*), Sonoran pronghorn (*Antilocarpa americana sonoriensis*), razorback sucker (*Xyrauchen texanus*), brown pelican (*Pelecanus occidentalis*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Yuma clapper rail (*Rallus longirostris yumanensis*). Bald eagle (*Haliaeetus leucocephalus*) is listed as a federally threatened species for Yuma County, while mountain plover (*Charadrius montanus*) is a candidate species. The Arizona Game and Fish Department has also listed a number of species near the project vicinity (2/22/99). Flat-tailed horned lizard is listed as a wildlife species of special concern for Arizona. Southwestern willow flycatcher and Yuma clapper rail are state listed as endangered and as wildlife of special concern. A "sensitive" classification on USDA Forest Service lands has been given to Yuma clapper rail by the Regional Forester. Finally, sand food (*Pholisma sonorae*) is listed as highly safeguarded by the Arizona Game and Fish Department. Under Arizona Native Plant Law, this species has a low prospect for survival and is in jeopardy of extinction, or is likely to become so in the future.

The only special-status species that could potentially exist on the project site are the flat-tailed horned lizard and sand food. Habitat at the project site is not suitable for the other species primarily due to a lack of water, although other factors, such as topography and vegetation also affect habitat suitability. Table 3.6-1 summarizes the special-status species for Yuma County.

Flat-tailed Horned Lizard

The flat-tailed horned lizard is known to occur near the project site. This species is commonly found in creosote bush and white bursage, which are two primary components of Sonoran desert habitat (Foreman, 1997). The species occurs at elevations below sea level to approximately 600 feet above mean sea level (Stebbins, 1985). Studies have also found that flat-tailed horned lizard is associated with big galleta grass in Arizona, another species commonly found within the loose, sandy soils of the project site (Rorabaugh et al., 1987). From May to June, flat-tailed horned lizards lay one or two clutches of seven to ten eggs (Stebbins, 1985). Flat-tailed horned lizard diet consists primarily of ants. Since coloration acts as a camouflage against predators, flat-tailed horned lizards are more apt to remain still when approached, making sightings of the species difficult and mortality of the species on roads relatively high (Foreman, 1997). Individuals often create burrows under the sand to escape from the

high temperatures found in the region and for adult hibernation. They typically have large home ranges, averaging approximately 6.7 acres (Muth and Fisher, 1992).

Agricultural land expansion, urbanization, off-road vehicle use, infrastructure expansion, and a variety of other land uses that disturb habitat threaten the flat-tailed horned lizard. These developments have caused a loss of 31 percent, conservatively, of flat-tailed horned lizard habitat in the Yuma Desert. The species maximally inhabits 140,301 acres in Arizona (Hodges, 1998). Agricultural development, which occurs north of the project site, can attract predators such as roadrunner, loggerhead shrike, American kestrel, and burrowing owl, and can decrease the number of ants and other prey through pesticide drift. Urbanization, such as the 8,000-acre San Luis Rio Colorado industrial park south and west of the project area, disrupts habitat and encourages predators in the area. Growth of urbanization in San Luis, Arizona and San Luis Rio Colorado, Sonora are likely to increase as population and seasonal tourism grow. Urban growth often increases the number of access roads, expands existing roads, and increases the level of traffic in the area. Such expansions limit movement within home ranges and increase mortality levels on roads. A study by the Arizona Department of Game and Fish in 1994 revealed that 23 percent of observed flat-tailed horned lizards were killed by traffic on a relatively quiet military road (AGFD, 1994).

Flat-tailed horned lizard was proposed as a threatened species by the U.S. Fish and Wildlife Service on November 29, 1993, and is a species of special concern in Arizona. Due to the 1997 conservation agreement and creation of habitat management areas (MA), this species has since been withdrawn as a proposed federally listed threatened species. The state designation of special concern does not legally protect the species, but does encourage consideration of the species during planning and management.

Biological field studies conducted on August 27, 1998, resulted in no observations of flat-tailed horned lizard. However, sightings on September 3, 1999, of four flat-tailed horned lizard have been recorded at the project site by the Bureau of Reclamation Yuma Area Office (pers. comm. Chris Bates, 1999). The Bureau of Reclamation survey was conducted by walking four transects of the project site. Although no sightings occurred in transects 1 and 4, scat was observed. One male was observed in transect 2 and one female was observed in transect 3. Two flat-tailed horned lizards were observed during a driving survey along the Border Patrol Drag Road. The entire site contains suitable habitat and an MA for flat-tailed horned lizard is located immediately adjacent to the eastern border of the site.

The Flat-tailed Horned Lizard Management Strategy requires the establishment of management areas to protect the species in Arizona and California. The Yuma Desert Flat-tailed Horned Lizard Management Area borders the eastern edge of the project. The overall goal of the 1997 Management Strategy is to maintain viable populations for at least 100 years, and the objectives include: "(1) conserve sufficient habitat to maintain viable populations of flat-tailed horned lizards in five management areas; (2) maintain a 'long-term stable' or increasing population trend in all management areas; (3) establish a research area of no less than 60,000 acres in which research related to the flat-tailed horned lizard will be conducted and encourage other research anywhere that promotes conservation of the species; (4) encourage the protection through strong conservation management of one additional management area in the Coachella Valley; (5) outside of management areas, limit the loss of habitat and effects on populations of flat-tailed horned lizards through the application of effective mitigation and compensation; and (6) encourage

adoption of a flat-tailed horned lizard conservation program in Mexico.” Under the Management Strategy, construction and disturbance are limited to one percent of the MA and are restricted to those portions of the MA that do not contain suitable habitat. Land use authorizations, surface disturbance limits, vehicle access limits, recreational limits, and other discretionary actions are listed under the management plan to reduce disturbance within management areas and suitable habitat.

Since the project is located outside of the MA, land alterations to the project site are not restricted. However, a 1:1 replacement ratio is required to compensate for loss of habitat to offset or neutralize residual effects of the project. Adverse residual effects to habitat are compensated through acquisition of habitat within the MA or contribution to a compensation fund used to acquire lands in the MA. Section 5.1 of the Management Strategy recommends that habitat corridors between the Yuma Desert MA and Mexico be maintained, and that any activities that prevent interchange across the U.S./Mexico border be prohibited (Foreman, 1997). Furthermore, Section 5.2 requires coordinated conservation efforts between Mexico and the U.S. Immigration and Naturalization Service to ensure species interchange may take place across the border.

Sand Food

Listed as Highly Safeguarded by the Arizona Native Plant Law, the rare species is a parasitic flowering plant found on sand dunes in southwest Arizona, southeast California, and northern Mexico and was once a major food source for Native Americans in the area. Sand food is a root parasite with a thick scaly stem that extends six or more feet into the dune where it attacks the roots of nearby shrubs, primarily dune buckwheat (*Eriogonum deserticola*), borage (*Coldenia plicata* and *Coldenia palmeri*), dyeweed (*Psoralea emoryi*), bursage (*Ambrosia dumosa*), and arrowweed (*Pluchea sericea*). Sand food usually outweighs its host by over 3,600 percent. The entire plant lives below the sand except for the purple flower head that pushes above the sand in early spring. Since the plant is rarely visible above-ground, locating the plant can be difficult. Often there are many ants and mealy bugs on the plant, which can attract other wildlife (Wayne P. Armstrong, 1998). The primary threat to this species is off-road vehicles and development.

No evidence of sand food was found on the project site during surveys conducted on August 27, 1998 and September 3, 1999, by the Bureau of Reclamation Yuma Area Office (pers. comm. Chris Bates, 2000). However, it was identified in sand piles created by canal dredging east and west of the project site along the canal bank during the same surveys. Sand food has the potential to exist on the site if sand piles are created during construction. Sand food could not establish itself on the site's current compacted sand structure.

Other Species

The other listed species on Table 3.6-1 are not found at the project site due to unsuitable habitat within the project area.

Table 3.6-1

Threatened, Endangered, or Species of Concern in Yuma County, AZ

Common Name	Scientific Name	ESA	Critical Habitat	USFS	State of Arizona	NPL
Birds						
Bald eagle	<i>Haliaeetus leucocephalus</i>	LE				
Brown pelican	<i>Pelecanus occidentalis</i>	LE				
Mountain plover	<i>Charadrius montanus</i>	SC				
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	LE	Y		WC	
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	LE		S	WC	
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	LE		S	WC	
Fish						
Razorback sucker	<i>Xyrauchen texanus</i>	LE	Y	S	WC	
Mammals						
Sonoran pronghorn	<i>Antilocarpa americana sonoriensis</i>	LE				
Plants						
Nichol's Turk's head cactus	<i>Echinocactus horizonthalonius var. nicholii</i>	LE				
Sand food	<i>Pholisma sonorae</i>	SC				HS
Reptiles						
Flat-tailed horned lizard	<i>Phrynosoma mcallii</i>	SC			WC	

ESA Endangered Species Act (1973 as amended)
 LE Listed Endangered
 NPL Arizona Native Plant Law
 S Sensitive: those taxa occurring on National Forests in Arizona considered sensitive by the Regional Forester
 SC Species of Concern
 WC Wildlife of Special Concern in Arizona
 Y Critical habitat has been designated
 USFS United States Forest Service
 HS Highly Safeguarded under the Native Plant Law

3.7 LAND USE, ENVIRONMENTAL JUSTICE, AND SOCIOECONOMIC RESOURCES

Land Use

San Luis is primarily an agricultural area with urban residences and goods-related industries. At the proposed relocation site, agricultural fields, well pumping stations, open space, and the cattle crossing form borders to the north, west, and southeast. An 8,000-acre industrial park is located to the southwest of the project site in San Luis Rio Colorado, Sonora. Minor recreational use may occur in the vicinity of the project site, but due to the lack of established campsites or available water, recreational activity remains localized and limited to off-road vehicle use, nature study, and hiking. A dirt road and the 242 Wellfield Channel run along the northern edge of the project site, and Mexican Federal Highway 02 runs near the southern border of the project site. A Flat-tailed Horned Lizard Management Area is located directly east of the project site. The Yuma Flat-tailed Horned Lizard Management Area is managed by the Bureau of Land Management, the Bureau of Reclamation, and the U.S. Marine Corps. Activity in this management area is restricted. There are no residential developments, schools, or other urbanized land uses near the project site on the U.S. side of the border.

A portion of the egress and ingress routes lie within the State Department Land Border Patrol area. A sixty-foot wide strip of land extending north along the border is maintained by the Border Patrol to monitor illegal entry into the United States. The Border Patrol requires minimum interference of their work in this area and must maintain access to the area at all times. No structures other than roadways would be located on the 60-foot border strip

According to the Yuma County Planning and Zoning Division (July 2, 1999), the site is zoned RA-10 (Rural Area-10 Acre Minimum). Lands within this zone are intended to permit uses compatible with agriculture, farming, and open space preservation. According to the Zoning Ordinance (as amended, 1997), the predominantly rural character of the RA-10 zone is to be maintained. Permitted uses within this zone are one single-family residence, farms or other agricultural operations, home occupations, seasonal roadside stands, and accessory uses customary with agricultural operations. Special uses include but are not limited to schools, resorts, cultural facilities, recreational facilities, landfills, commercial airports, and labor camps.

The project site lies entirely within the Yuma 5-mile Zone, for groundwater pumping. Since this land is owned and managed by the Bureau of Reclamation, Bureau approval for sale of the land would need to be acquired. Due to its location within the Yuma 5-mile Zone, water use limits would be imposed and no groundwater pumping is allowed under the Bureau of Reclamation's conditions of approval for the land transfer.

Environmental Justice

Pursuant to Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," this document shall address any disproportionately adverse health or environmental effects of the project. The proposed relocation site is located in a rural area

with industrial facilities in the distance toward the southwest. According to 1990 U.S. Census Data, there are approximately 2,636 people, 72 percent of which are people of Hispanic origin, and 32 percent of which are living below the poverty level (835 people) in Block Group 1-Census Tract 114, which contains the project site. Block Group 1 is quite large, covering the widest area in Census Tract 114. There are no minority or low-income populations concentrated near the project site as few, if any, residences occur nearby.

The existing port of entry is located in a more urbanized area and has more potential to impact low-income and minority groups. Located in Block Group 2-Census Tract 114, the existing port of entry concentrates an approximately equal number of people into an area less than a fourth of the size of Block Group 1. In this block group, there are 2,523 people, 32 percent of which (822 people) live below the poverty level. All persons below the poverty level were of Hispanic origin as all persons in the block group were of Hispanic origin, although most persons were considered White.

An additional census was taken in 1995 in Yuma County. However, the data from this census count is very limited. In 1995, the population of Census Tract 114 grew to 8,846 people, primarily of Hispanic origin (83%). Therefore the population increased from 5,884 in 1990 to 8,846 in 1995, resulting in an annual growth rate of 10 percent. The number of occupied housing units increased from 1,642 to 2,125 or approximately 6 percent annual growth. Since the 1995 vacancy rate was extremely high (13%), it is not likely that additional dwelling unit construction will occur on a significant level.

Socioeconomic Resources

Yuma County lies along the Colorado River, bordering California and Mexico. Encompassing 5,509 square miles, its location acts as a crossroads for international and interstate trade in the southwest. The county population reached 130,000 in 1997, growing to 210,000 during the winter tourist season (Barton-Aschman, 1998). The leading industries in the county are farming and cattle feeding, tourism, and government. Agriculture contributes approximately \$800 million to the annual county economy, while tourism and military/government contribute approximately \$450 million and \$300 million respectively (Barton-Aschman, 1998). Shoppers from Mexico contribute approximately \$160 million annually to the county economy. Yuma County has experienced rapid economic growth in the past decade due to free trade and growing permanent and tourist populations. These populations increase demand for goods and services, causing the job market and the trade economy to expand in the area.

San Luis is located within Yuma County, Arizona, and is a popular area for border tourists to shop, take advantage of the warm winter climate, and access low cost goods and healthcare services in Mexico. According to 1990 U.S. Census Data, the City of San Luis had a population of 4,212, with a median household income of \$15,554. In contrast, the 1995 Census shows that the population in San Luis increased to 4,390, a growth rate of less than one percent annually. Over 97 percent of the population was of Hispanic origin in 1995, a slight decrease from the 99.6 percent Hispanic population in 1990. The number of dwelling units has increased more than the population. In 1990 there were 998 dwelling units with 11 percent vacancy. By 1995 there were 1,083 dwelling units, which was a nine percent growth rate. The vacancy rate fell slightly to eight percent, but is still considered high and does not lend to a growing housing development market. The primary industries in the city according to the

1990 Census are: (1) agriculture at 32 percent of total industrial activity; (2) retail trade at 15 percent; and (3) business and repair services at 11 percent.

Operation efficiency is important in maintaining competitive and thriving businesses. Goods produced on one side of the border are often shipped to the other side in border areas such as San Luis. Therefore, a major component of business in the area is commercial shipping. Time spent shipping products can cost companies large sums of money depending on the duration of shipment. Delays caused by queues at the port of entry also cost the company in wages expended on trucking employees. Table 3.7-1 illustrates the total cost lost in shipping delays at the existing port of entry.

Northbound commercial vehicles carry agricultural commodities or products assembled in Mexico by maquiladora industries for export to the U.S. The maquiladora program, begun in 1965 and formalized in 1971 through the Border Industrialization Program, is responsible for most of the growth in trade across the Arizona-Sonora border over the past thirty years. Implementation of the North America Free Trade Agreement (NAFTA), beginning in 1994, has further relaxed trade barriers and is expected to continue the expansion of border economies and traffic/trade volumes well in the future (Barton-Aschman Associates, Inc and La Empresa S. de R.L., 1998).

Some industry has grown around the existing port of entry in response to the market created by commercial shipping, tourists, and workers crossing the border. Merchants selling basic supplies and other shipping related products have established themselves along the port of entry corridor. The increase in economic activity fosters population growth because the local opportunities afforded by NAFTA and undeveloped industrial zones in the City of Yuma increase income and employment. However, the increase in trade and manufacturing activity places additional pressure on the existing port-of-entry, creating longer delays.

Table 3.7-1

Cost of Delays at the San Luis, Arizona Port of Entry

Performance Measure	1998 Base Condition
Non-Commercial Vehicles	
Vehicle Arrivals ¹	6,517
Vehicle Hours of Delay	4,537
Average Delay/Vehicle (minutes)	42
Daily Person Hours of Delay	8,348
Annual Person Hours of Delay ²	3,419,179
Annual Cost of Delay ³	\$15,386,000
Commercial Vehicles	
Vehicle Arrivals ¹	173
Average Queue (vehicles)	32.5
Vehicle Hours of Delay	324
Average Delay/Vehicle (minutes)	112.5
Annual Vehicle Hours of Delay ²	84,564
Annual Cost of Delay	\$6,955
Annual Cost ⁴	\$1,816,000

Notes:

¹ Northbound vehicles on 2/13/98.

² Annualization based on FY 97 Annual Vehicle count in proportion to 2/13/98 vehicle count.

³ Value of time equals weighted average of \$4.50 per person per hour.

⁴ Vehicle Delay Cost equal to \$0.3575 per minute or U.S. \$21.45 per hour. Equal to \$17.25/hour for driver and T3-S2 trailer set, and \$4.20/hour for diesel fuel.

Source: Barton-Aschman Associates, Inc., 1998.

3.8 PUBLIC SAFETY

Emergency Services

The nearest hospital, the Yuma Regional Medical Center, is located in the city of Yuma, approximately 15 miles from the project site. INS Border Patrol agents are available at all times at port of entry facilities to make sure shipments are safe and legal. Port of entry facilities also have armed police agents on site to ensure that any illegal altercations are properly handled. Further emergency support is available through county services. The Yuma County Sheriff's Office is located at 141 S. 3rd Avenue in the City of Yuma. Other nearby safety officers include the Yuma Police Department and the San Luis Police Department.

Fire

With sparse vegetation in the project area, the risk of wildfire is low. Although the gap between rainy seasons causes a cycle of vegetation growth and dead brush collection that could easily ignite during the dry season, the sparseness and meager size of vegetation in the area makes containment possible. The San Luis Fire Department is located on Second Street in San Luis, approximately 5 miles from the project site.

Hazardous Waste

Military testing sites were located approximately 19 miles east of the project site. The possibility of contamination due to military testing near the project site is extremely low. According to the U.S. Army Corps of Engineers' 1998 EA for the border fencing project that lies within the port of entry project area, there are no known or suspected toxic or hazardous substances contaminating the underlying soil or groundwater. However, since the Border Patrol has evidence that illegal dumping of trash may have occurred along various portions of the border in the past, it is possible that potentially hazardous substances may have been dumped along the border at the project site (Corps of Engineers, 1998).

Hazardous materials being shipped across the border come through the existing port of entry in San Luis. In 1997, six companies in San Luis Rio Colorado shipped 129.9 tons of RCRA hazardous waste to the United States (EPA, 1998). Hazardous waste generated in San Luis Rio Colorado that is shipped into the United States is comprised of ignitable waste, lead, methyl ethyl ketone, non-halogenated spent solvents, electroplating wastewater treatment sludge, or a combination of the above wastes (EPA, 1998). The port of entry stores confiscated hazardous materials until they can be disposed of properly.

A Phase I Environmental Site Assessment was performed by Applied EnviroSolutions (AES) in July 1999. Visual and physical observations of the project site, excluding the 60-foot border zone, and a review of public records were conducted and revealed no evidence of environmental contaminants. In accordance with ASTM Standard Practice for Environmental Site Assessments, Phase I Environmental Site Assessment Process E 1527-97, Mr. Robert Grounds, operator of the commercial cattle crossing facility, and Mr. Kevin Bays, Realty Specialist of the Bureau of Reclamation, were contacted regarding

current and historical uses of the project site that may contribute to hazardous conditions. Although the Bureau of Reclamation did not respond, Mr. Grounds revealed that the site had not been previously used in a manner that would generate hazardous conditions, nor is there any current evidence of contamination.

A site reconnaissance visit was conducted on July 28th 1999. A vehicular reconnaissance of the area surrounding the project site was conducted in order to determine whether the current land uses poses an environmental threat to the project site. In addition, the project site was assessed by physically walking the site. The site visit revealed the existence of a tower for water storage at the cattle crossing house, an above-ground storage tank that contains water for cattle, and 55-gallon storage drums used to store gasoline and diesel fuel for the generator and cattle truck in the 60-foot border strip. No soil stains or hazardous solid materials were observed. One underground septic tank is located at the cattle crossing. The site visit revealed no indications of PCBs, solid waste disposal, pits, ponds, lagoons, stained soil, stained pavement, odors, pools of liquid, stressed vegetation, wastewater, or potentially hazardous wells. In general, the project site is not located on a uranium deposit. The cattle crossing structures on the project site were not inspected for asbestos-containing materials, radon, or lead. However, the proposed action would not require the demolition of cattle crossing structures, nor would new construction occur at the cattle crossing facility under the proposed action.

Federal and state records were searched for evidence of hazardous listings of the project site. No evidence of hazards on the project site were found on the Superfund National Priorities List, Water Quality Assurance Revolving Fund Sites list, Arizona Comprehensive Environmental Response database, Compensation and Liability Act (CERCLA) Information and Data Systems, Resource Conservation and Recovery Act (RCRA) database, RCRA TSD Facilities database for facilities involved in the treatment, storage, and disposal of hazardous waste, RCRA Generators database, RCRA Compliance Log, Emergency Response Notification System list, City of San Luis Fire Department records, or listings of landfills, underground storage tanks, leaking underground storage tanks, and drywells provided by the Arizona Department of Environmental Quality.

Flooding

Since the nearest source of surface water, the Colorado River, is located approximately 8 miles west of the project site and soils in the area are conducive to drainage, the risk of flooding is extremely low. Yuma County receives an average of 2.94 inches of rainfall a year that is divided between the winter and summer rainy seasons (USDI, 1990). Therefore, an average of 1.47 inches falls per season. This low level of rainfall and the presence of upstream dams on the Colorado and Gila Rivers nearly eliminates the risk of flood. However, the project site is located within the 100 to 500-year flood zone (less than one-foot flood depth). The 242 Wellfield Channel runs along the northern edge of the project site. The channel is part of the water conveyance system within the Yuma 5-mile Zone. Because water flows running through the channel are strictly managed, there is little risk of flooding.

Traffic Hazards

Avenue E and 23rd Street access the project site from the north, east, and west. Twenty-third Street is the major route leading from San Luis to the west and the Arizona State Correctional Facility to the east. Vehicles must travel on Avenue E, an unpaved road, from 23rd Street to access the project site. Little traffic passes on Avenue E, as there is little activity in the project area between the border and 23rd Street. Approximately 5,000 to 6,000 vehicles travel 23rd Street each day.

3.9 CULTURAL AND HISTORIC RESOURCES

Cultural Resources

The lower Colorado River region has likely hosted human inhabitants throughout the Holocene, and most archaeologists place the first occupations of this area around 11,000 BC (McGuire and Shiffer 1982; Sterner and Bischoff 1997). Rogers (1939) termed the earliest cultural tradition in this area as the Malpais Phase of the San Dieguito Complex. Though a lack of independently dated diagnostic artifacts makes the inception of the Malpais Phase controversial, a simple flake-core-chopper technology characterizes Malpais Phase stone technology. The earliest accepted period of occupation in southwestern Arizona is associated with the San Dieguito Complex (Rogers 1939, 1966). San Dieguito stone technology is essentially analogous to that of the preceding Malpais Phase. The dietary importance of plant foods during these early phases remains unclear. Ground stone artifacts - the basic indicators of plant processing - have not been dated to the Malpais or San Dieguito phases. At present, only the most basic facets of these early desert cultures are understood and the economy was probably a mixture of hunting and gathering, though hunting probably played a more significant role compared to later periods.

The early Malpais and San Dieguito traditions seem to disappear by 7,000 BC when they are replaced by Archaic traditions that incorporated stone grinding implements such as metates, manos, mortars, and pestles. Archaic occupation of Arizona's western deserts was originally labeled as the Amaragosa Tradition by Rogers (1939). Haury (1975) divided the Amaragosa Tradition into three phases, Amaragosa I, II, and III. Amaragosa I (7500 - 5000 BC) stone tool kits are distinguished by crudely made, basally notched, stemmed projectile points. Though rarely found, grinding implements made of thin, flat schist slabs were also used. People began producing metates and manos, along with Pinto- and Gypsum-style projectile points, during Amaragosa II (5000 - 2000 BC) times. Amaragosa III (2000 BC - AD 1) is characterized by an elaboration of stone projectile-point styles, diversification of bifacially flaked tools, and the possible production of plain brown ware ceramics (Hayden 1976).

Ceramic production is often identified as the hallmark of new cultural traditions, but like the preceding traditions, the ceramic period cultures of the Lower Colorado River remain poorly understood. Rogers (1945) originally defined three phases for the ceramic period: Yuman I, II, and III. McGuire and Schiffer (1982) substituted the term "Patayan" for Roger's "Yuman" and the term Patayan is used here. Patayan people occupied the lower Colorado and Gila Rivers perhaps as early as 700 AD (Sterner and Bischoff 1997). Patayan I, the earliest accepted ceramic stage, extended from 700 to 1000 AD. People traveled and traded extensively during Patayan I times, as demonstrated by the presence of

Californian shell and steatite artifacts in sites along the Lower Gila River. Between AD 1000 and 1500, during the Patayan II stage, ceramic exchange or production expanded up the Gila River into the Californian deserts. The Patayan III stage, AD 1500 to the Historic period, witnessed refinement in vessel shape and quality and the zenith of ceramic exchange. Patayan social and settlement systems have been interpreted as similar to the historical-period River Yumans (Stone 1991).

The native people that occupied the lower Colorado River during the Historic period were Yuman speakers - a subgroup of the Hokan language family (Kroeber 1943). Yuman speakers historically occupied western Arizona, southern California, and northwest Mexico. Kroeber linguistically classified Yuman speaking peoples as belonging to one of the four geographic groups: the Colorado River-delta Yumans (Cocopa, Kohuana, and Halyikwamai), the River Yumans along the Colorado and Gila Rivers (Yuma or Quechan, Mohave, Halchidhoma, and Maricopa), the upland Yumans in western Arizona (Yavapai, Walapai, and Havasupai), and the western Yumans of the California deserts (Diegueno, Kamia, Kailiwa, and Papai).

The Cocopah and Quechan Tribes have historical associations with the project site. The Cocopah Reservation is located near the project site, but the Cocopah do not have traditional areas of cultural value or sacred sites within the project site. The project site is within Quechan aboriginal lands. Archaeological artifacts of historic, religious, and cultural value, along with ancestral burials, may be located on the project site.

Indian Trust Assets

American Indian Trust Assets (ITAs) are legal asset interests held in trust by the United States for Indian tribes or individual Indians. Anything that has monetary value can be considered an asset, including real property, physical assets, or intangible property rights. These assets include land, mineral resources, water rights, instream flows, and hunting and fishing rights. Protection and maintenance of these rights are the responsibility of the United States through the Secretary of the Interior. The Bureau of Reclamation and all other agencies under the Department of the Interior must act responsibly to protect ITAs. The 1993 Bureau of Reclamation policy regarding the protection of ITAs states that the Bureau of Reclamation will act in a manner that protects ITAs and avoids adverse impacts where possible. Under the 1993 policy, the Bureau of Reclamation must provide appropriate mitigation or compensation for these assets. There are no Cocopah Tribe or Quechen Tribe ITAs associated with the project site or any of the resources within the boundaries of the site.

3.10 VISUAL AND AESTHETIC RESOURCES

The project site is located in a rural area containing open desert lands and agricultural land. The citrus grove to the north of the project site, interspersed with small farm structures and power lines, interrupts the naturally sparse desert scrub habitat. Well pumping operations are scattered to the north of the project site. The project site contains structures associated with the cattle crossing, including overhead road lights. Factories and other industrial facilities are located to the south of the project site in Mexico, but are less visible due to the distance from the project site. Overall, the areas north, east, and west of the project site are either agricultural land or open space, with few buildings or development. However,

the views include more developed lands toward the south, approaching Mexican Federal Highway 02 and the industrial park.

4.0 ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

Each section of the Environmental Consequences chapter provides an analysis of a potential or expected change in the environment that would result from implementation of the Proposed Action and No Action alternatives.

4.1 EARTH

No Action Alternative

Impact 4.1.1: Structural Damage Caused by Ground Failure During Seismic Activity

Analysis: The existing commercial port of entry is located within earthquake hazard zone 4. The potential for damage caused by seismic activity is high in this zone due to seismic activity and related seismic phenomena such as liquefaction. Damage could occur to structures that are not properly reinforced according to federal Uniform Building Code standards. The existing port of entry was built in 1984 after seismic reinforcement standards had been established. However, reinforced structures may still experience damage if not properly maintained. Mitigation measures are prescribed in Chapter 5, mitigation measure 5.1.1.

Proposed Action

Impact 4.1.2: Erosion Due to Project Construction

Analysis: Construction activity would temporarily increase the risk of soil erosion at the project site. The flat topography, lack of surface water drainageways, and high soil permeability within and adjacent to the project site suggest that loosened soils would not be subject to water erosion. However, soils exposed during construction would be subject to increased levels of wind erosion. This impact would be reduced through the use of erosion control measures during construction as described in mitigation 5.1.2 of Chapter 5.

Impact 4.1.3: Structural Damage Caused by Ground Failure During Seismic Activity

Analysis: The project site is located within earthquake hazard zone 4. The potential for damage caused by seismic activity is high if structures are not constructed to withstand severe earth shaking. Damage could occur to structures that are not properly reinforced according to building standards for zone 4 areas. Mitigation 5.1.3 addresses these impacts.

Cumulative Impacts

There are no cumulative earth resources impacts.

4.2 HYDROLOGY AND WATER QUALITY

No Action Alternative

The No Action alternative would not result in new impacts to water quality or violations of established treaties or other agreements. Under this alternative, the need for water allocation would not be necessary as no new construction would occur within the Yuma 5-Mile Zone.

Proposed Action

Impact 4.2.1: Decreased Water Quality Due to Project Construction

Analysis: Although there are no steady sources of surface water in the vicinity of the project site, aquifer recharge does occur in the area. If contaminants from construction or operation of the facility are released into the environment, the water quality of the aquifer could be adversely affected. Vehicle contaminants that build up on the site over the course of the dry season may be washed onto open soils. Other sources of contaminants are discussed in the hazardous waste portion of Section 3.8 - Public Safety. These pollutants could seep into the groundwater if proper drainage is not available. Mitigation 5.2.1 in Chapter 5 addresses this impact.

Impact 4.2.2: Violation of the Salinity Act/ 5-Mile Zone and other International Water Treaties

Analysis: Under the 5-Mile Zone, Salinity Act, and Minute No. 242, water pumping in the project area is subject to approval, and dependent upon demand, in both the United States and Mexico. These regulations allow water-pumping leases to be established through the approval of the Bureau of Reclamation. Under land use conditions established by the Bureau of Reclamation, no groundwater pumping may occur and water must be brought in from outside the 5-Mile Zone. The project is not expected to require large quantities of water that would be beyond the capacity or legal allocation of water, as water would only be needed for restroom facilities, drinking fountains, and emergency fire suppression. Therefore, the project would not impact salinity levels of the aquifer, water supply levels for Mexico, or result in increased pumping operations. The project would not negatively affect Well Field operations as the project is designed to expand only within the 339-acre parcel, avoiding the wells and interference with their future operation and maintenance. No mitigation is necessary.

Impact 4.2.3: Trans-boundary Water Effects

Analysis: Under Minute No. 242, water pumping in the project area is limited to ensure water availability in Mexico and to protect against high salinity levels. Minute No. 242 requires the United States and Mexico to consult when new developments are planned within 5 miles of either side of the border. This project and the proposed sister facility in Mexico have been developed under consultation between the United States and Mexico. Since the facility is not permitted to pump groundwater within the 5-Mile Zone, no impacts would occur to the water supply or salinity levels of the groundwater. Because the facility is bound by Minute No. 242 and use conditions from the Bureau of Reclamation, water supply and quality in the area will be maintained. Compliance with these regulations ensures that the project will not negatively impact Mexico's water supply and will not change or result in violation to international and congressional water rights requirements and regulations. No further mitigation is necessary.

Cumulative Impacts

Impact 4.2.4: The Project Could Contribute to Cumulative Violation of Yuma 5-Mile Zone Regulatory Plan

Analysis: Water supplies in the Yuma 5-Mile Zone are limited, depending on demand from Mexico and the number of leases already established. The United States and Mexico must consult to approve new developments within the 5-Mile Zone. If a proposed development will cause negative water impacts, the two countries can restrict their development and the Bureau of Reclamation can limit their water supply lease. Projects outside the 5-Mile Zone are not subject to these international regulations and therefore would not violate the Treaty, Minute No. 242 or other international water agreements. This project would not cause a cumulative violation as the project will not pump groundwater and the Bureau of Reclamation must approve water use for other projects in the area. As a condition of approval for this project, no groundwater pumping may occur. A 500 dwelling unit residential project is proposed south of County 23rd Street, which falls within the Yuma 5-Mile Zone. However, development of the residential units is subject to approval by the Bureau of Reclamation and would not result in increased water use at the port of entry facility. The port of entry facility and other projects in the area will not result in violations to international and congressional requirements for the 5-Mile Zone as these projects are all subject to approval and use conditions by governing authorities. No mitigation is necessary.

4.3 TRAFFIC AND CIRCULATION

No Action Alternative

Impact 4.3.1: Increase in Traffic and Safety Hazards as a Result of the No Action Alternative

Analysis: Under the No Action alternative, safety hazards will continue at the existing port of entry due to increasing traffic volumes, long queues, and the mixed use of commercial vehicles, non-commercial vehicles, and pedestrians. As activity continues to rise, these problems will worsen due to a lack of space for improvements and expansion. If more inspection lanes cannot be added, queues will continue to become longer, and pedestrian traffic will increase as more people choose to cross by foot to avoid vehicle queues. While new technologies would temporarily help to reduce traffic delays, a significant change would not occur, particularly in the long-term, due to a lack of processing space to get vehicles off of the main roads and into the confines of the port of entry facility. Mitigation 5.3.1 in Chapter 5 addresses this impact.

Proposed Action

Impact 4.3.2: Hazards to Motorists and Pedestrians as a Result of Project Operation

Analysis: Non-vehicular traffic at this site may increase with facility development. The proposed facility will be equipped with a pedestrian walkway to accommodate non-vehicle passage of customs brokers and other non-vehicular traffic.

Vehicular circulation patterns at the proposed port of entry would follow an efficient pattern. Detailed circulation patterns at the project site during Phase I and Phase III are illustrated on Figures 6a and 6b respectively.

Northbound vehicles would cross the signalized Mexican Federal Highway 02 after leaving the Mexican port of entry and would enter the U.S. port of entry. After maneuvering through the main entrance roadway, commercial vehicles would pass through primary and secondary inspection. After inspection, vehicles would travel to the exit lane, leading to Avenue E and 23rd Street. Southbound traffic would enter the port of entry on the western side of the facility from Avenue E. Vehicles would provide their papers and proceed directly south to the Mexican port of entry at the signalized crossing on Mexican Federal Highway 02. The long driveways and "U" shaped pattern of activity help to contain potential queues onsite, so as not to congest roadways. No mitigation is necessary.

Impact 4.3.3: Improvements to Roads May Increase Traffic

Analysis: Improvements would be made to the roads surrounding the new port of entry to accommodate the increase in traffic resulting from project buildout. Avenue E would be improved to accommodate, initially, a two-lane road in a four-lane divided highway

right-of-way. Approximately 2 miles of new roadway construction would be required between the proposed port of entry and 23rd Street. As part of a separate project, 23rd Street would be upgraded from a two-lane County road to a four-lane divided highway and would be linked to Interstate 8 via the construction of the proposed Area Service Highway. Other access roadways would be constructed within the project site to direct traffic flows and patterns in an efficient manner. Improvements to these roads and the construction and operation of the port of entry would increase traffic, particularly truck traffic, in an area of light vehicular use. Although traffic would increase along these roads, road improvements and separation of commercial and non-commercial traffic would result in an overall increase in safety, reduction in traffic delays and improvement of roadway circulation at the existing port of entry. No mitigation is necessary.

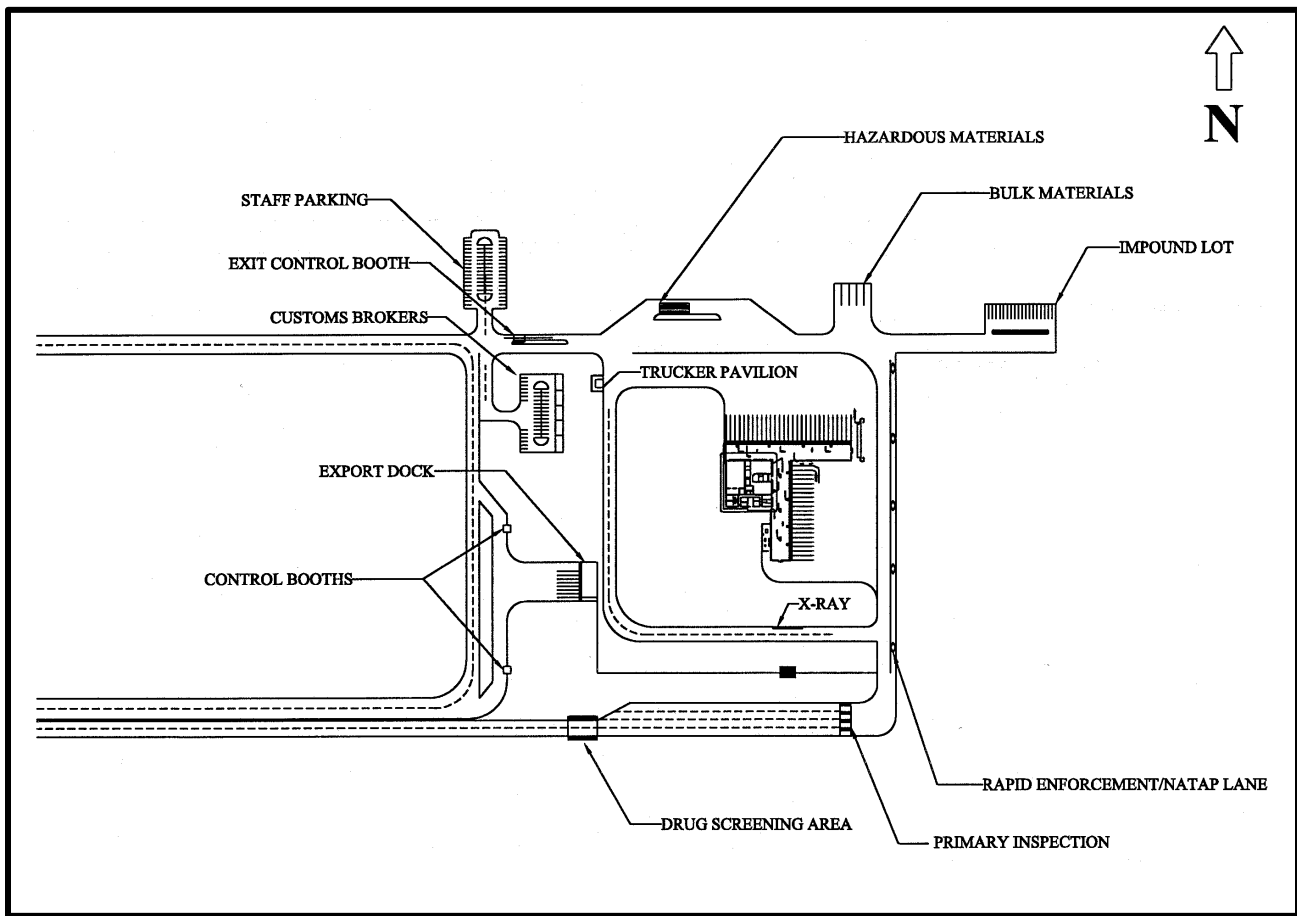


Figure 6a
Phase I Site Circulation Patterns

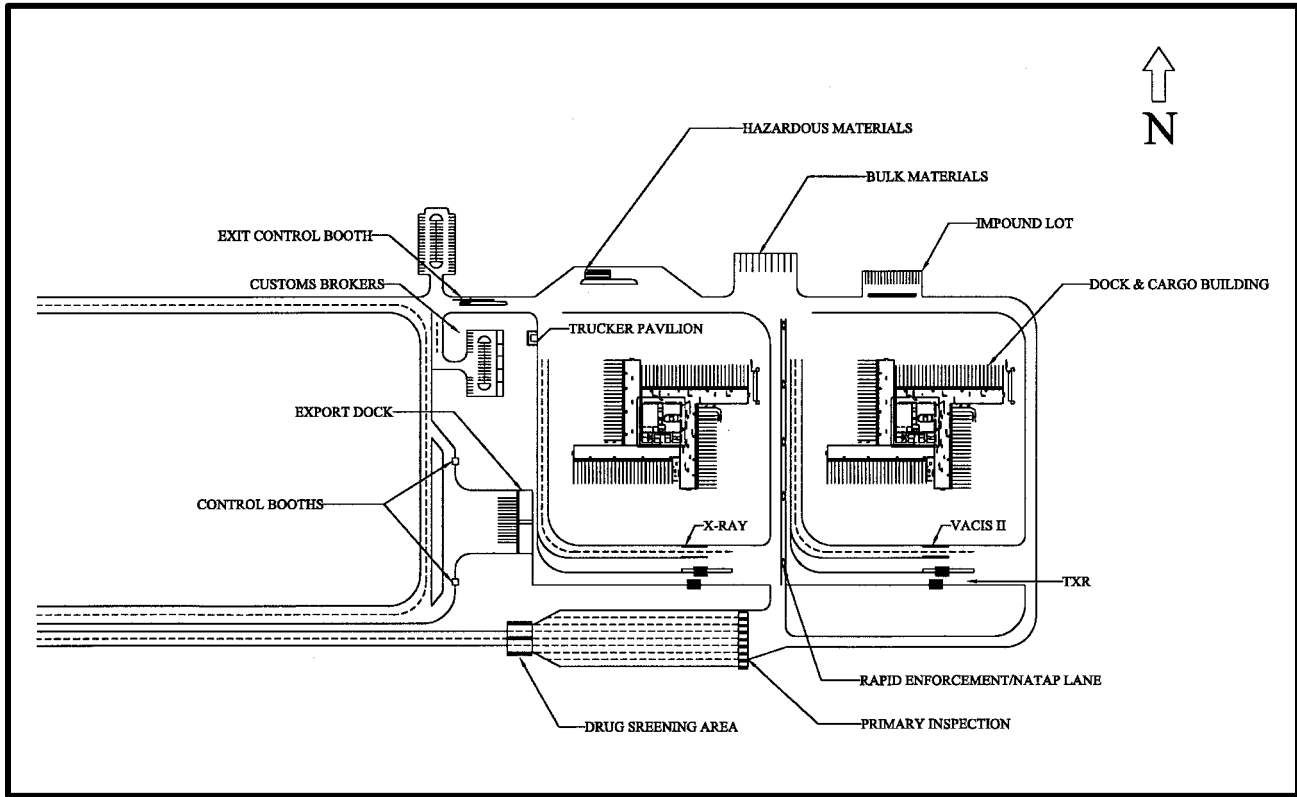


Figure 6b
Phase III Site Circulation Patterns

Impact 4.3.4: Construction May Cause Safety Hazards on Roads

Analysis: Construction of the new port of entry facility would be confined to the off-road area of the project site. However, equipment and materials will need to be transported to the project site, and improvements to surrounding roadways will need to be made. Equipment transport and off-site construction activities may create temporary hazards along project area roadways. Vehicles traveling by the site may face hazardous situations caused by trenching, lane closures, and other construction activities. Equipment and material staging areas along roads may be hazardous to vehicles and pedestrians without proper signage. Mitigation 5.3.2 in Chapter 5 addresses this impact.

Impact 4.3.5: Construction and Operation May Interfere with Border Patrol Activities

Analysis: Construction of the new port of entry facility would be confined to the off-road area of the project site. However during and after construction, U.S. Border Patrol must be able to access the area to prevent illegal border crossings. Equipment and material

staging areas along roads may interfere with patrolling activities without proper signage and access. The facility itself will be located outside of the 60-foot patrol strip. The egress/ingress route to the facility would cross the 60-foot patrol strip, but no operational facilities would be located within the patrol area to disturb patrol activities. Mitigation 5.3.3 in Chapter 5 addresses this impact.

Cumulative Impacts

This project, along with the proposed Area Service Highway and proposed expansion of the Rolle Airfield, would have a beneficial impact on traffic and circulation in the area by providing a new port-of-entry and associated roadway improvements for commercial border crossings. Therefore, the project would not contribute to adverse cumulative impacts on traffic and circulation.

4.4 AIR QUALITY

No Action Alternative

Impact 4.4.1: Violation of Federal and State Ambient Air Quality Standards resulting from Operation of the Existing Port of Entry

Analysis: The No Action alternative would not change current activity at the existing port of entry or alleviate the queuing backlog that occurs. Vehicle idling time would increase as shipping and trade activities increase, generating more air pollutants. Although the area has remained below the federal and state air standards for the past eight years, violations could occur in the future due to cumulative increases in air emissions. No mitigation is possible due to the limited space for expansion at the existing port of entry.

Proposed Action

Impact 4.4.2: Violation of Federal and State Ambient Air Quality Standards due to Project Construction

Analysis: Although no Federal or State air quality violations have occurred in Yuma County for the past eight years, construction of the proposed project may temporarily cause PM10 emissions to rise. Construction activities on the loose soils of the project site, which are prone to wind blowing even without human activity, may cause significant PM10 emissions, potentially causing a violation of the 24-hour standard. An estimate of dust emissions can be made using a general construction emission factor of 1.2 tons of particulate matter per acre per month of activity (EPA, 1995). Assuming that construction would occur 21 days per month, a maximum of 1,000 pounds per day of PM10 would be emitted during construction. Pollutant emissions from construction equipment engine exhaust also depend on the level of activity and can produce significant amounts of reactive organic gases, nitrogen oxides, and particulate matter. Mitigation 5.4.1 in Chapter 5 addresses this impact.

Impact 4.4.3: Violation of Federal and State Ambient Air Quality Standards resulting from Operation of the Port of Entry

Analysis: This project will reduce air quality emissions by reducing queuing delays at the port of entry. Traffic studies by Barton-Aschman (1998) reveal that queuing at the existing port of entry is significant. Queues of 325 to 350 non-commercial vehicles form during peak hours, while queues of 50 to 200 vehicles form during non-peak hours. The study revealed that queuing delays caused vehicles to idle for up to 1.5 hours. The average delay was 42 minutes per vehicle. Idling vehicles can release up to approximately 13 grams of air pollutants per minute (EPA, 1999). It should be noted that PM10 releases from gasoline-fueled vehicles are negligible according to EPA studies, and that the EPA number is caused by a combination of volatile organic compounds, carbon monoxide, and oxides of nitrogen, which are currently within pollution level standards for Yuma County.

The Port of Entry project would reduce both commercial vehicle and non-commercial vehicle queuing delays by providing more efficient inspection services with the capacity to accommodate more vehicles per minute. Commercial vehicles would be able to dock and turn off their engines instead of waiting for a docking space to become available. Also, the improvements planned for the existing port of entry would reduce queuing delays for non-commercial vehicles. Separating the two port of entry stations into commercial and non-commercial ports decreases delays caused by mixed use and increases efficiency of inspection processing, which also reduces delays. The reduction of these delays would reduce the level of air emissions even with an increase in shipping activities.

Current volumes of vehicle traffic would be maintained, as only a shift in the location of the activity and a reduction in queuing would occur as a result of this project. An increase in the number of vehicles at the port of entry would result over time from increased economic and tourist activity in the region and other factors not related to the port of entry facility. Although this project does not include land uses that would generate new vehicle trips, it would allow for an increase in the number of average daily trips through the port of entry, which may contribute to an increase in emissions in the project area.

The Proposed Action would also reduce air quality emissions by paving dirt roads located at the project site. Vehicles driving on unpaved surfaces kick dust into the air from their tires, and loosen soils, making them prone to erosion. Paving these roads would reduce dust emissions.

Overall, a general improvement of air quality will result from this project due to a more efficient inspection processing systems, smaller vehicle queues, and reduced vehicle emissions. The project would also reduce dust emission by paving the dirt roads at the project site. No mitigation is necessary.

Cumulative Impacts

Impact 4.4.4: Construction activities may violate air quality standards and contribute to existing or potential air quality violations

Analysis: Particulate matter generated by construction activities would settle out rapidly from the source. However, any major construction activity located less than 1,000 feet away from the project site could contribute to cumulative air quality impacts resulting from construction-related fugitive dust emissions. On very windy days, it is possible that particulates from more distant construction sites could be transported to the project area. Although cumulative construction-related air emissions would be temporary, they would have the potential to result in an exceedance of the state and federal PM10 air quality standard at locations adjacent to the site. Mitigation 5.4.2 in Chapter 5 addresses this impact.

4.5 NOISE

No Action Alternative

Impact 4.5.1: Noise Disturbance Due to an Increase in Vehicle Traffic and Activity

Analysis: Traffic will continue to increase at the existing port of entry, which will create more noise in the vicinity. However, the current port of entry in San Luis is located in a commercial/industrial area. There are no sensitive receptors that would be significantly affected by the increase in traffic noise. No mitigation is needed.

Proposed Action

Impact 4.5.2: Noise Disturbance Due to Construction

Analysis: Although project construction would temporarily increase noise levels in the area, there are no nearby sensitive receptors. Construction noise could reach a level of up to 89 dBA at 50 feet from the source. Sensitive receptors are all located outside of this range and would not be impacted by noise. Mufflers may be placed on construction equipment to further reduce temporary construction noise. No mitigation is necessary.

Impact 4.5.3: Noise Disturbance Due to an Increase in Vehicle Traffic and Activity

Analysis: An increase in commercial vehicle traffic in the project area would occur as a result of this project. With even minor use, the noise level in the area would be raised. However, there are no sensitive noise receptors in the area to be impacted by an increase in noise level.

Noise levels would significantly decrease at the current port of entry as fewer vehicles would be processed there and queues would be shorter, resulting in less idling noise. No mitigation is necessary.

Impact 4.5.4: Noise Disturbance Due to Increased Aircraft Activity in the Area

Analysis: There is a possibility that there would be a future increase in aircraft activity. Any increase in aircraft activity as a result of this project would have to be scheduled through the Yuma International Air Port Authority and the Control Tower at the Marine Corps Air Station Yuma. An increase in noise levels from general aviation aircraft from any future expansion of the Rolle Airfield may occur. Due to the agricultural, commercial, and industrial nature of the area, increased noise levels are expected and are not considered significant.

Cumulative Impacts

Cumulative noise impacts would occur as a result of this project. The increase in noise would occur in an area zoned for agriculture, commercial, and industrial uses; therefore, the increase would be considered at an acceptable level.

There are benefits to the current noise impacts through this proposed Port of Entry project. The current commercial traffic and its associated noise would be moved from the residential areas of San Luis Sonora Mexico and San Luis, Arizona to this new location zoned non-residential.

4.6 BIOLOGICAL RESOURCES

No Action Alternative

The No Action alternative would not disturb biological resources as no new construction would occur.

Proposed Action

Impact 4.6.1: Loss of Flat-tailed Horned Lizard Habitat

Analysis: The proposed project would result in the loss of approximately 339 acres of creosote bush scrub habitat suitable for flat-tailed horned lizard. Although the project is located near agricultural areas in the United States and industrial areas in Mexico, it also borders the Yuma Desert Flat-tailed Horned Lizard Management Area. Both short and long-term impacts are associated with this project. Construction activities, including equipment stockpiling and machinery operation, may directly disturb or could potentially crush lizards burrowed on the site. The increase in traffic caused by construction may cause short-term indirect disturbance impacts within the vicinity of the project. Direct long-term effects include the permanent loss of habitat and increased road mortality due to a high level of commercial traffic in the area. The increase in commercial shipping may cause an increase in urbanization and infrastructure in response to the new

economic opportunity created by the port of entry. This response could further disturb habitat, causing long-term indirect effects. Mitigation 5.6.1 in Chapter 5 addresses this impact.

Impact 4.6.2: Disturbance or Direct Mortality of Sand Food

Analysis: The proposed project would result in the loss of approximately 339 acres of creosote bush scrub habitat in the vicinity of known sand food occurrences. Also, the project site contains brush species that commonly host sand food. However, sand food has the potential to exist on the site only if sand piles are created during construction as the site's current compacted sand soil structure is not loose enough to be proper habitat for the species. Since sand food has been identified near the project site in a canal dredge sand pile, sand food could establish itself on the project site if sand piles are created during or as a result of construction activities. These loose manmade dunes would serve as proper habitat for the species as it is known to inhabit such structures as evidenced by the canal sand dredge piles. Mitigation 5.6.2 in Chapter 5 addresses this impact.

Cumulative Impacts

Impact 4.6.3: The Project Could Contribute to Cumulative Loss of Habitat or Direct Mortality of Flat-tailed Horned Lizard

Analysis: The project itself would not contribute to the cumulative loss of flat-tailed horned lizard habitat since an equal acreage of compensatory habitat will be preserved on State Land Department land in the Yuma Desert Management Area, or in lieu fees will be paid. However, the development of the area and future road widening or other improvements are likely to occur as the port of entry becomes established. With development of the area service highway, in addition to this project, commercial growth in the form of truck stops and restaurants may occur, further reducing habitat for these species and increasing mortality. Like this project, future projects will be required to adhere to the regulations set forth the Flat-tailed Horned Lizard Rangeland Management Strategy, thereby compensating for lost habitat or avoiding direct mortality. No further mitigation is necessary.

4.7 LAND USE, ENVIRONMENTAL JUSTICE, AND SOCIOECONOMICS

No Action Alternative

Impact 4.7.1: The Project Could Negatively Impact Low-income and Minority Groups

Analysis: It is unknown where the concentrations of low-income and minority groups are located within the census block groups; however, given that the existing port of entry is located in a highly populated area, it is possible that concentrations of low-income or minority groups are located in the vicinity. Air pollutants, noise, traffic, and hazardous waste

impacts will increase as use of the existing port of entry increases. Therefore, minority and low-income populations could be disproportionately impacted. No mitigation is possible without construction of a new facility.

Proposed Action

Impact 4.7.2: Construction of the Proposed Action May Disrupt Land Use in the Area

Analysis: If the project is approved, the Greater Yuma County Port Authority would need to purchase the parcel from the Bureau of Reclamation. The project site is zoned by the County as Rural Area-10 Acre Minimum (pers. comm. Yuma County Planning and Zoning Commission, July 2, 1999). The project will require a change in zoning to Light Industrial (LI) to allow use as a truck terminal with scales, storage facilities, and offices, which are all permissible in the LI zone. The project would conform to size and coverage allowances of the LI zone. However, the rezoning of the parcel would result in the construction of industrial facilities in an area surrounded primarily by agricultural and open space lands. The port of entry would be located in the central portion of the parcel, away from the flat-tailed horned lizard management area and with a significant buffer from agricultural uses and the cattle crossing. Fencing will be placed around the facility to separate the project from surrounding land uses. The border patrol would have continuous access to their 60-foot strip of land extending north from the border for patrolling activities. With acquisition of the zoning permit and compliance with the permit and zoning restrictions, the impact is mitigated.

Impact 4.7.3: The Project Could Negatively Impact Low-income and Minority Groups

Analysis: The project would result in less traffic at the existing port of entry, which would decrease air pollution and noise levels, traffic hazards, and hazardous waste impacts in the vicinity.

Air pollutants, noise, traffic, and hazardous waste impacts will be shifted into the area surrounding the project site. However, there are no residences nearby to be affected by these impacts. Therefore, minority and low-income populations would not be disproportionately impacted. No mitigation is necessary.

Impact 4.7.4: Relocation of the Port of Entry Could Decrease Economic Activity Surrounding the Current Port of Entry

Analysis: Since San Luis, Arizona has been the site of the commercial port of entry for a number of decades, an economy associated with trade, shipping, and tourism has grown around the area. New growth is likely to occur around the new port of entry, creating more opportunity and jobs in the area. Since the relocation would occur in an area only five miles from the current port of entry and the port of entry would remain in operation for non-commercial activity, economic activity would remain competitive near the existing facility. Businesses around the existing port of entry would also continue to serve traffic

coming from the proposed project as main roadways from the proposed port of entry pass through San Luis to access Highway 95 leading to Yuma.

Those establishments near the existing port of entry that cater specifically to commercial shipping interests may experience some degree of economic loss if the focus of the port of entry shifts to non-commercial interests. These businesses may feel the need to relocate or may face new competition from businesses that establish themselves closer to the proposed commercial port of entry.

Overall, the entire area should experience socioeconomic growth due to an increased efficiency in access between Arizona and Sonora. Tourism, trade, and other economic activity may grow as both the population and popularity of the area grow. While a few individual businesses may be negatively impacted, it is likely that area as a whole will experience long-term economic growth. In addition, money will be saved by decreasing the traffic delays for commercial shipments. No mitigation is necessary.

Cumulative Impacts

Impact 4.7.5: The Project Could Contribute to Cumulative Socioeconomic Losses

Analysis: Since the economy in the area is growing, the project would not create a cumulative socioeconomic impact. No mitigation is necessary.

4.8 PUBLIC SAFETY

No Project

Impact 4.8.1: Traffic Hazards Resulting from Continued Operation of the Existing Port of Entry in San Luis

Analysis: As discussed in the Traffic and Circulation section (3.3) of this document, traffic hazards caused by the high volume of mixed use traffic at the port of entry will become worse as traffic increases. As queues cause more delays, people will choose to cross by bicycle or on foot to avoid long lines. This will also increase hazards to pedestrians and bicyclists. No mitigation is possible.

Proposed Action

Impact 4.8.2: Disruption of Emergency Services Due to Project Construction and Operation

Analysis: Construction of roadway improvements required as part of the project would have the potential to disturb emergency service response in the area.

The port of entry would be equipped with policing agents to maintain facility safety, and emergency kits would be available in case of injury or accident. Emergency response to

the port of entry would be aided by the two-lane roadway that would be constructed during Phase I along County Avenue E between 23rd Street and the port of entry right of way. Mitigation 5.8.1 in Chapter 5 addresses this impact.

Impact 4.8.3: Wildfire Caused by Project Construction

Analysis: The project has the potential to cause a wildfire on or adjacent to the project site if sparks from equipment used during construction ignite the surrounding brush. However, brush is so sparse in the area that they do not pose as fuel to spread the fire throughout the area. Brush on the project site would be cleared at the onset of construction, fire extinguishers would be onsite during all phases of construction, and all equipment would be kept tuned and in proper working condition. After construction is completed, the site would be paved and equipped with fire extinguishers and overhead sprinklers to manage fire risks associated with project operations. No mitigation is necessary.

Impact 4.8.4: Hazardous Waste Spillage During Construction and Operation

Analysis: No hazardous wastes were recorded on the project site and, therefore, would not cause exposure or spread of hazardous materials during construction. However, the cattle crossing facility may contain asbestos-containing material since it was built prior to 1973. However, the cattle crossing facilities would not be demolished or moved in any way as a result of this project, and, therefore would not present a risk of asbestos exposure.

No underground fuel storage tanks would be constructed onsite. Construction will require some use of hazardous substances, such as oil, transmission fluid, brake fluid, etc. During construction, machinery and equipment may leak these substances onto the ground, causing soil and groundwater contamination if not properly cleaned up.

After the facility is established, hazardous waste shipments may enter the area with the risk of accidental spillage. Spilled hazardous materials would be contained in an underground containment tank until proper removal and disposal is accomplished. Confiscated materials that have the potential to be hazardous would be stored in bulk materials bins or the Cargo building until removal to an acceptable disposal site. Nevertheless, accidental spills could expose people to hazardous materials, posing a serious health threat. Also, some risk of fire is present due to the possibility of hazardous substances shipped through the port. Mitigation 5.8.2 in Chapter 5 addresses this impact.

Impact 4.8.5: Flooding Due to Increased Project Ground Coverage

Analysis: Ground coverage associated with the project will increase run-off rates. Runoff would not be allowed to flow offsite and into Mexico, but would be collected and disposed of

at an acceptable receiver. The increased ground coverage would, therefore, not create a flood risk in the project area. No mitigation is necessary.

Impact 4.8.6: Traffic Hazards Resulting from Project Construction and Operation

Analysis: As discussed in the Traffic and Circulation Section (3.3) of this document, potential traffic hazards exist during construction; however, the traffic hazards will decrease once the facility is operating. During construction, road improvements may create hazards if trenches are left open at night or if materials and equipment are stored on the roadside as discussed in Section 3.3. With construction of the new port of entry, commercial and passenger vehicles would be separated, reducing automotive hazards at the existing facility. As discussed in the Traffic and Circulation section of this EA, the new commercial port of entry will decrease standing traffic time, making traffic flow easier and reducing backups and traffic related accidents at the existing port of entry. Roads would be equipped with signs and signals to direct traffic. Mitigations 5.8.3, 5.3.1, 5.3.2, and 5.3.3 in Chapter 5 address this impact.

Cumulative Impacts

With implementation of project-level mitigation measures, no cumulative impacts to public safety would occur as a result of this project. No mitigation is necessary.

4.9 CULTURAL AND HISTORIC RESOURCES

No Project

The No Action alternative would not disturb cultural or historic resources as no new construction would occur. No mitigation is necessary.

Proposed Action

Impact 4.9.1: Disturbance of Cultural and Historical Resources During Construction

Analysis: Statistical Research, Inc., of Tucson conducted a cultural resources survey of the 360-acre project site including a records search and site visit. The records search of Federal and State files revealed that no previous surveys had been conducted and that no previously recorded cultural resources or National Register of Historic Places properties were present on the project site. Using transects throughout the entire 360-acre site and an additional 20 acres along Avenue E, the survey revealed no prehistoric or historical-period resources of any kind. The cattle crossing structures, including the corrals, feed bins, water tank, and weighing house, were inspected to determine the time of their construction. All of the structures were dated between 1973 and 1983, postdating the Historic-period.

However, the site is within aboriginal lands of the Cocopah and Quechen Tribes. The Cocopah have participated in project development and did not identify any traditional areas that could be impacted by the project. Although the Quechen did not attend any public meetings, they have identified that the parcel lies within their aboriginal lands and indicated a likelihood of archaeological artifacts of historic, religious, and cultural importance along with ancestral burial grounds. On February 14, 2000, the Bureau of Reclamation and the Yuma Metropolitan Planning Organization met with the Quechen to discuss their concerns. The Quechen indicated that they only wish to be notified if any ancestral cultural resources are identified.

The Arizona State Historic Preservation Officer has reviewed the mitigation (5.9.1) and concurs with this analysis and adequacy of the mitigation.

Cumulative Impacts

With implementation of project-level mitigation measures, no cumulative impacts to cultural or historic resources would occur as a result of this project. No further mitigation is necessary.

4.10 VISUAL AND AESTHETIC RESOURCES

No Action

No impact to visual and aesthetic resources would occur as a result of the No Action alternative. No mitigation is necessary.

Proposed Action

Impact 4.10.1: Construction and Operation of the Project May Alter the Visual Character of the Project Site

Analysis: Construction of the proposed project would result in the replacement of existing vegetated open space lands with buildings, roads, and traffic associated with the commercial port of entry. The project site does not contain any unique visual or scenic resources. Although the visual character of the site would change substantially from existing conditions, with appropriate landscaping and design controls the project would not degrade the visual quality of the area, particularly in relation to the industrial park in Mexico that is visible from the project site. Mitigation 5.10.1 in Chapter 5 addresses this impact.

Cumulative Impacts

Impact 4.10.2: The Project Could Contribute to Cumulative Visual Impacts

Analysis: Build-up of uses related to the shipping industry could contribute to a cumulative visual impact in the vicinity of the project site. Adjacent lands would likely be targeted for the

development of businesses such as restaurants, general stores, and others that cater to shipping-related activities. Although such growth may be limited by the Yuma 5-Mile Zone and water availability, it is likely that some degree of development would occur as a result of the project. This new development would create a pocket of commercial buildings and structures within a primarily open space viewshed. Mitigation 5.10.2 in Chapter 5 addresses this impact.

5.0 ENVIRONMENTAL COMMITMENTS

INTRODUCTION

The Environmental Commitments chapter summarizes the mitigation measures developed for each of the project impacts discussed in the Environmental Consequences chapter.

5.1 EARTH

5.1.1 To minimize potential damage to the existing port of entry under the NO Action alternative, the existing structures should be maintained according to federal Uniform Building Code standards for zone 4 areas. Under this code, structures would be able to withstand an earthquake measuring 8.0.

5.1.2 To minimize wind erosion, erosion control measures such as site watering, ground mesh, and temporary berms and wind breaks would be used. Site watering would be used during windy conditions to keep sand from blowing from the site. Also, a mesh groundcover made of easily transportable material would be placed over areas prone to wind erosion. Finally, temporary wind breaks made from straw bale berms or temporary filter fencing would be constructed around the site to minimize wind erosion.

5.1.3 To minimize potential damage, structures would be constructed and maintained according to federal Uniform Building Code standards for zone 4 areas. Under this code, structures would be able to withstand an earthquake measuring 8.0 through design and construction measures, including, but not limited to foundation reinforcement, compaction, or edge containment.

5.2 HYDROLOGY AND WATER QUALITY

5.2.1 Pursuant to project plans, runoff from the port of entry would be collected onsite. Runoff would be conveyed to the collection system through a series of gutters. Runoff collected on-site would be skimmed to filter out oil and other hazardous materials to be disposed of at a state-approved facility in accordance with state and local law.

5.3 TRAFFIC AND CIRCULATION

5.3.1 No mitigation is possible for the No Action alternative. Increased staffing levels and improved technologies to decrease processing time, such as dedicated commuter lanes or faster computers, would decrease traffic queues. However, with no room to expand, the creation of a dedicated commuter lane would take away space used for regular processing, creating a greater impact on commercial queues. This remains a significant and unavoidable impact for the No Project Alternative.

5.3.2 A number of measures would be implemented to prevent accidents. First, temporary signage would be placed around the construction site and any staging areas to warn and inform passersby of the activity and potential dangers in the area. Trenches would be covered at night or during periods when construction is not active. Fencing would be placed around the port of entry site during construction to keep people away from potential dangers. In addition, perimeter lighting will be installed around the construction compound to illuminate the area so that intruders can be easily seen. South facing lighting shall be installed to illuminate the international boundary and any equipment/supplies stored in the area. A security guard will be placed onsite during non-construction hours to maintain security of the construction site. Road improvements will be completed in stages, leaving one lane open at all times to decrease potential hazards caused by construction traffic and to maintain access along the roads, particularly for border patrol activities. Border patrol agents will have access to the compound to apprehend intruders and illegal crossings, but primary security of the site shall be maintained by the security guard.

5.3.3 A number of measures would be implemented to prevent interference between construction and operation and Border Patrol activities. First, the U.S Border Patrol will be informed of where and when construction will occur. Trenches will be covered at night or during periods when construction is not active to decrease hazards to the patrol units. Fencing will be placed around the port of entry site during construction to confine construction materials to as small an area as possible. Road improvements will be completed in stages, leaving one lane open at all times and access along the roads and border will be made available to the patrol units. The Border Patrol will be able to access the international boundary fence through a lockable gate if needed to prevent illegal entry when the facility is closed.

5.4 AIR QUALITY

5.4.1 The following mitigation measures would be implemented to control dust during construction activities of the Proposed Action alternative:

- Construction Site Watering - exposed soils at the construction site shall be watered at least twice daily. A water truck shall be on-site at all times during grading when soils are exposed. The frequency of watering shall be increased when average wind speeds are above 15 mph.
- Unpaved Surfaces - unpaved roads, parking areas, and staging areas shall be watered at least three times daily or treated with non-toxic soil stabilizers.
- Soil Stockpiling - all soil stockpiles or other materials that can be blown by wind shall be enclosed, covered, watered at least twice daily, or treated with non-toxic soil binders.
- Restrict Traffic Speeds - traffic speeds on all unpaved surfaces at the site shall be limited to 15 mph.

- Ground Cover - temporary disturbance areas shall be revegetated or covered with pavement or landscaping as quickly as possible and no more than 30 days after the completion of grading and site stabilization activities.
- Equipment Maintenance - construction equipment shall be maintained and tuned at the interval recommended by the manufacturers to minimize exhaust emissions.
- Equipment Idling - equipment idling shall be kept to a minimum when equipment is not in use. No equipment shall be left to idle in one place for more than 30 minutes.

5.4.2 Construction of the Proposed Action would be timed to not coincide with nearby construction projects. Implementation of the project-level mitigation measures for control of fugitive dust would also reduce any cumulative impacts expected during construction.

5.5 NOISE

Mitigation: Operations at Rolle Airfield during the hours from 10 pm to 6 am would be limited. The area is zoned for agriculture, commercial, and industrial uses; therefore, residential housing should not be allowed within the noise contours of the proposed Airport, Highway and the Port of Entry.

5.6 BIOLOGICAL RESOURCES

5.6.1 The direct and indirect impacts would be minimized by mitigation measures enacted at the construction site, and through habitat replacement. According to the Flat-tailed Horned Lizard Rangeland Management Strategy Policies 2.1, 2.1.1, and 2.1.2, and the Management Strategy Implementation Program, purchase of State-owned land or contribution of compensatory funds will mitigate for loss of habitat. Since 339 acres of suitable habitat would be disturbed, an equal 339 acres of suitable habitat must be purchased and permanently preserved on land owned by the Arizona State Land Department within the 131,000-acre Yuma Desert Management Area. Or, compensation funds for research or future purchase of land for Flat-tailed horned lizard habitat may be made at a rate of equal compensation. There are also a number of ways to protect animals found on the project site and within the vicinity. Section 2.2.4 of the Flat-tailed Horned Lizard Management Strategy requires that lizard exclusion fencing be established for new road construction along the boundary of the Yuma Desert MA, particularly for the Area Service Highway that would run north of the port of entry project. The protective fencing would help to reduce potential mortality caused by trucks and other vehicles on the roads.

The Management Strategy also lists a variety of mitigation measures for projects that may disturb surface habitat. For projects containing suitable habitat outside of the MA boundaries, the Management Strategy recommends worker education programs, project boundary flagging to contain construction activities, field contact representatives

to ensure compliance with management strategies, minimum clearing of the project area, limited access roads and staging areas, and the development of project-specific habitat restoration plans.

A biological monitor, authorized to handle flat-tailed horned lizard by the Arizona Department of Game and Fish, will be on-site during construction, unless the project area has been completely fenced and cleared of flat-tailed horned lizard. To ensure species protection, the biological monitor shall have the authority to halt activities that violate flat-tailed horned lizard protection measures. They shall also examine the site for the presence of flat-tailed horned lizard periodically throughout the day and shall check all trenches for the species prior to backfilling activities. Biological monitors must also consult with construction supervisors to avoid species disturbance. If any flat-tailed horned lizards are found trapped in trenches or other construction areas, the lizard shall be captured and relocated near the construction site, but in the direction of undisturbed habitat as set forth in the Management Strategy - Section 9 of the Standard Mitigation Measures for Flat-tailed Horned Lizard.

- 5.6.2 Current soil structure is not habitat for sand food. However, sand piles that may be created during construction can be suitable habitat for the species. If sand food establishes itself in sand piles created during project construction, these sand piles will be considered habitat and will not be disturbed to allow the plant to remain within the manmade sand dune. Therefore, if construction sand piles are left on the project site, they would be located on portions of the property where future construction would not occur. The plant would not spread to other portions of the project site that do not contain these sand piles as proper habitat does not exist, so there is no threat of disturbance through operation of the facility.

5.7 LAND USE, ENVIRONMENTAL JUSTICE, AND SOCIOECONOMICS

No Mitigations.

5.8 PUBLIC SAFETY

- 5.8.1 As established in the Traffic and Circulation section of this document, at least one lane will remain open at all times to maintain access during construction of roadway improvements.
- 5.8.2 To contain hazardous waste in the event of a spill, the project will include a containment tank area underneath the truck bay, overhead dry pipe sprinkler systems in case of fire, and exhaust air-fans with scrubbers or other treatment equipment. To maintain worker safety, the facility will be equipped with an emergency shower and eye wash. Employees working in the inspection area will be trained to handle accidental spills. All construction activities will be subject to construction safety standards and workers will be trained to properly handle materials prior to construction. Equipment and machinery

shall be kept tuned and in efficient working order to decrease leakage risks. When handling potentially hazardous substances, workers will be required to follow proper handling and cleanup procedures to prevent possible spills. If a spill should occur, the Arizona Department of Environmental Quality will be contacted immediately and the site will be cleaned according to protocol.

- 5.8.3 The mitigation measures 5.3.1, 5.3.2, and 5.3.3 established in Section 5.3 - Traffic and Circulation address these impacts.

5.9 CULTURAL AND HISTORIC RESOURCES

- 5.9.1 In the event of an inadvertent discovery of archaeological or historical cultural resources, all activity in the discovery area shall cease. Immediate telephone notification of the discovery shall be made to the BOR area archaeologist or a responsible Federal agency official. In addition, all reasonable efforts to protect the cultural resources discovered shall be made. The activity may resume only after the Federal agency has authorized a continuance.

5.10 VISUAL AND AESTHETIC RESOURCES

- 5.10.1 Facilities shall be of a simple design and in a color that blends with the surrounding landscape. Landscaping shall be used to visually shield the facility from adjacent viewpoints and improve the visual quality of the facility. Trash bins and other storage areas shall be fenced or otherwise screened from view.
- 5.10.2 Implementation of appropriate design controls and landscaping requirements would maintain the visual quality of new development areas. No additional mitigation is required.

6.0 LIST OF REFERENCES

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APPENDIX A

Legal Description of Land Acquired for the San Luis East Commercial Port of Entry Project

- (A) All right, title, and interest of the United States in and to the lands comprising Section 23, Township 11 South, Range 24 West, G&SRBM, Lots 1-4, NE 1/4 , N 1/2 NW 1/4 , excluding lands located within the 60-foot border strip, in Yuma County, Arizona.
- (B) All right, title, and interest of the United States in and to the lands comprising Section 22, Township 11 South, Range 24 West, G&SRBM, East 300 feet of Lot 1, excluding lands located within the 60-foot border strip, in Yuma County, Arizona.
- (C) All right, title, and interest of the United States in and to the lands comprising Section 24, Township 11 South, Range 24 West, G&SRBM, West 300 feet, excluding lands in the 60-foot border strip, in Yuma County, Arizona.
- (D) All right, title, and interest of the United States in and to the lands comprising the East 300 feet of the Southeast Quarter of Section 15, Township 11 South, Range 24 West, G&SRBM, in Yuma County, Arizona.
- (E) The right to use lands in the 60-foot border strip excluded under subparagraphs (A), (B), and (C), for ingress to and egress from the international boundary between the United States and Mexico.