

Nogales Mariposa US Land Port of Entry

United States General Services Administration

Revised Environmental Assessment

*for US Department of State use*

Nogales, Arizona

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June 29, 2010

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## **List of Acronyms and Abbreviations**

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ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
APNPL	Arizona Protected Native Plant Law
AVI	Automated Vehicle Identification
CAA	Clean Air Act
CANAMEX	Canada to Mexico Trade Corridor
CBP	Customs and Border Protection
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLOMR	Conditional Letter of Map Revision
CO	Carbon Monoxide
Corps	US Army Corps of Engineers
CRC	Community Representative Committee
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DEOG	Diesel Exhaust Organic Gases
DPM	Diesel Particulate Matter
DRO	Detention and Removal Operations
EA	Environmental Assessment
EPA	Environmental Protection Agency
EPIC	Expedited Processing at International Crossings
ESA	Endangered Species Act
FBFM	Flood Boundary and Floodway Map
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FIRM	Flood Insurance Rate Map
GSA	US General Services Administration
GSF	Gross square feet
HAPs	Hazardous Air Pollutants

I	Interstate
ICE	Immigration and Customs Enforcement
Leq	Steady state sound level
LLNB	Lesser long-nosed bat
LOMR	Letter of Map Revision
LOS	Level of Service
LPOE	US Land Port of entry
LUSTs	Leaking Underground Storage Tanks
MBTA	Migratory Bird Treaty Act
MP	Milepost
mph	Miles per hour
MSAT	Mobile Source Air Toxics
MVD	Motor Vehicle Department
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAP	Noise Abatement Policy
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NII	Non-Intrusive Inspection
NO <sub>2</sub>	Nitrogen dioxide
NOI	Notice of Intent
NO <sub>x</sub>	Nitrogen Oxides
O <sub>3</sub>	Ozone
Pb	Lead
PM	Particulate Matter
POV	Privately Owned Vehicle
RACM	Regulated Asbestos Containing Material
SENTRI	Secure Electronic Network for Travelers Rapid Inspection
SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
SR	State Route
SSA	Sole Source Aquifer
SWPPP	Storm Water Pollution Prevention Plan

US	United States
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife Service
USTs	Underground Storage Tanks
VACIS	Vehicle and Cargo Inspection System
Waters	Waters of the US



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## **1.0 Introduction**

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### **1.1 Executive Summary**

This Environmental Assessment (EA) has been prepared to meet the requirements of the National Environmental Policy Act (NEPA). The United States (US) General Services Administration (GSA) will use the EA to evaluate the potential social, economic, and environmental impacts for the reconstruction of the Nogales Mariposa US Land Port of Entry (LPOE).

The need for this action springs from the inspection requirements stipulated in recent immigration law and the increased trade volume between the US and Mexico brought about by the North American Free Trade Agreement. A larger, more efficient LPOE is needed to expedite trade and tourism while meeting the security needs of the US.

The Nogales Mariposa LPOE is a linchpin in the international trade infrastructure between the US, Mexico, and Canada. Since the existing LPOE was constructed in 1973, population in surrounding communities has grown as has the traffic, including trucks, privately owned vehicles (POV), pedestrians, and buses. Pedestrian crossings alone have more than tripled since 2002 and are expected to increase nearly 200 percent by 2025 (GSA 2007). Bus traffic at the LPOE doubled between 2002 and 2006 (GSA 2007). Once NAFTA is fully implemented, truck and POV traffic are expected to follow suit.

The current port infrastructure does not conform to GSA Design Guidelines governing layout, minimum vehicle clearances, pedestrian and employee safety, and national security. Due to its outdated equipment and inefficient traffic circulation, the existing LPOE configuration will not be able to handle predicted increases in traffic volume. The processing capacity of the facility has been reached; bottlenecks and poor circulation within the LPOE are producing internal gridlock and long queues of commercial vehicles on the Mexican side of the border. There are frequent conflicts between pedestrians and vehicular traffic within and adjacent to the LPOE and not enough parking on site to accommodate employees, visitors, and vendors. There is not enough room for trucks to maneuver and back in to the docks without impeding the flow of traffic to other inspection facilities.

The purpose of this project is to improve the operational efficiencies, processing capacity, and security and safety of cross-border travelers and agencies at the LPOE by modernizing and upgrading the facilities for enhanced safety, efficiency, accessibility, and security. The improvements will allow the agencies that utilize this facility to safely and efficiently carry out their missions to protect Americans and facilitate the trade and flow of commerce between the United States and Mexico.

Two alternatives were considered in further detail, the Proposed Action Alternative and the No Action Alternative. The Proposed Action Alternative is based on functional requirements, the GSA Design Guidelines for Ports of Entry, and a 15-year planning horizon. This alternative is a complete redesign and reconstruction of the site. This alternative meets predicted capacity needs through 2025 and is expandable for future growth beyond 2025. This design would also provide improved site circulation, improved efficiency, and improved working conditions for employees. The No Action Alternative proposes no major improvements or capacity increases at the LPOE and is the baseline condition used for comparison to the Proposed Action Alternative to determine the magnitude of impacts.

No substantial adverse environmental effects are expected from the Proposed Action Alternative. The project could affect biological resources, water resources, the local transportation network, and other environmental factors. However, Best Management Practices will be utilized that would mitigate adverse environmental impacts to a level that is not significant. The No Action Alternative would adversely affect some resources, particularly air resources and the local transportation network as traffic congestion and delays at the LPOE continue to worsen.

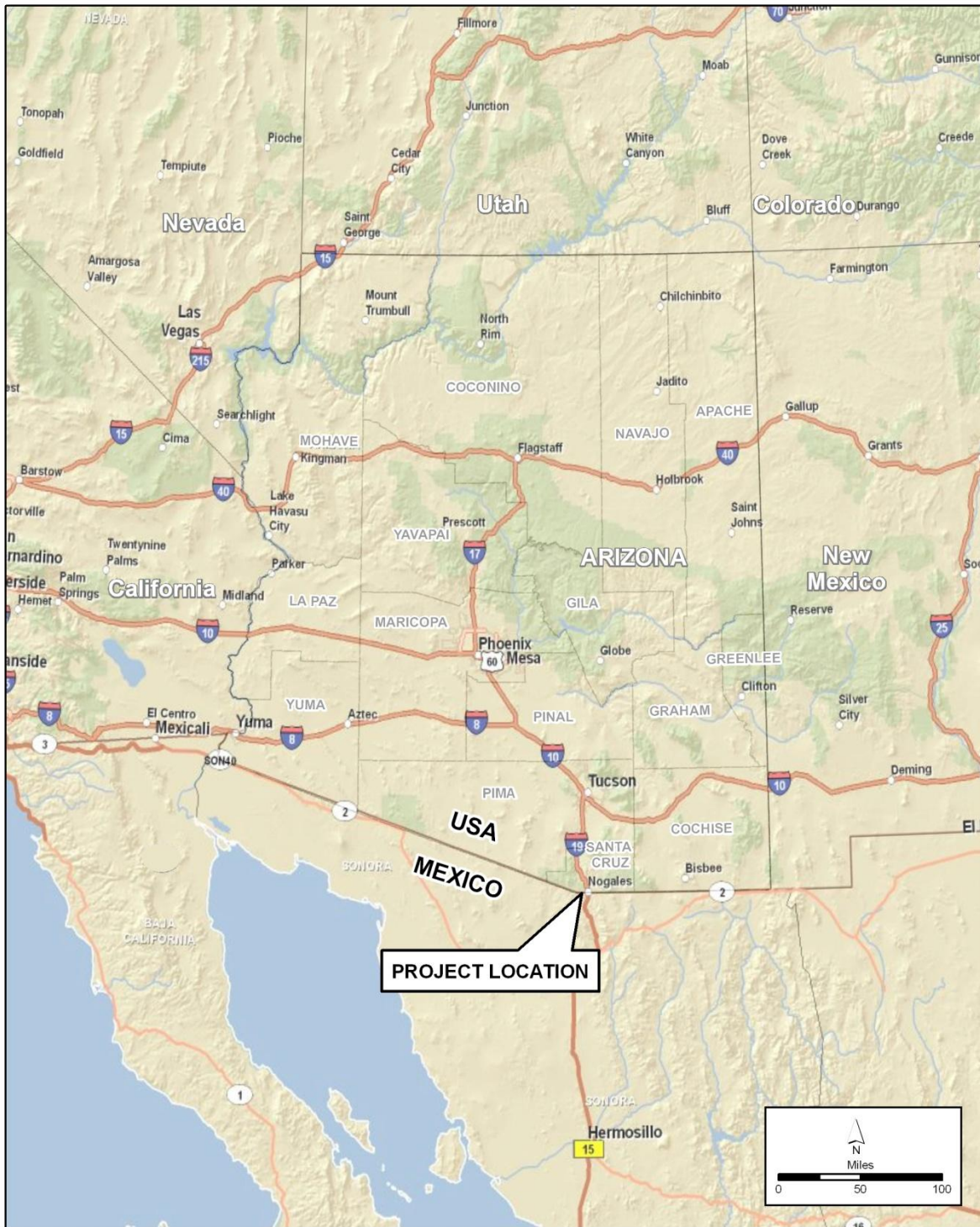
## **1.2 Location**

The LPOE is located at the US/Mexico border between the City of Nogales, Arizona, and the City of Nogales, Sonora, Mexico, approximately 65 miles south of Tucson, Arizona (Figure 1). The LPOE is a full-service facility inspecting primarily commercial vehicles, but also POV and pedestrians entering the US from Mexico. The LPOE is Arizona's main commercial crossing and is located on Arizona State Route (SR) 189 also known as Mariposa Road within the US and Mexican Federal Highway 15 within Mexico (Figure 2). The LPOE is linked to the US Interstate

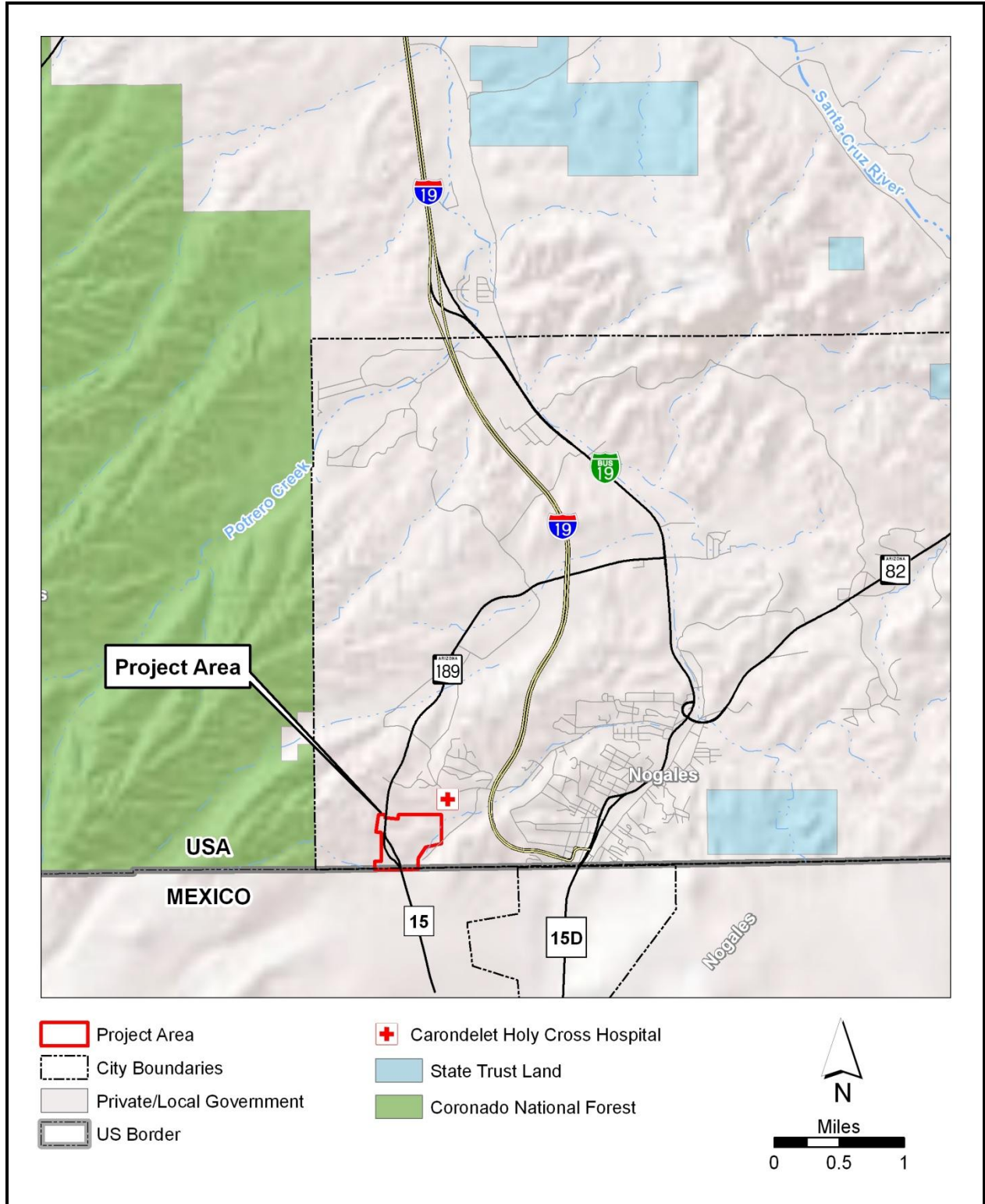
Highway System via Interstate (I-) 19. The SR 189 connects to I-19 approximately 4 miles north of the LPOE.

### **1.3 Background and Overview**

The LPOE was originally constructed in 1973 on a 43-acre GSA owned parcel on top of a large plateau, and today is one of the 10 busiest cargo ports along the entire US-Mexico border. Subsequent to the implementation of the North American Free Trade Agreement, the City of Nogales was included by Congress in the 1995 National Highway Systems Designation Act to become part of the Canada to Mexico Trade Corridor (CANAMEX). The LPOE serves as the primary commercial truck route between the US and Mexico in the Nogales area. The CANAMEX trade corridor segment within Arizona generally follows I-19 from Nogales to Tucson; I-10 from Tucson to Phoenix; and US Highway 93 from Phoenix to the Nevada border (Public Law 104-59, November 28, 1995). The CANAMEX corridor is a joint effort by Arizona, Nevada, Idaho, Utah, and Montana to stimulate investment and economic growth and enhance safety and efficiency (CANAMEX, 2007). The transportation element of the CANAMEX plan calls for the development of a continuous four-lane roadway from Mexico through the US and into Canada (CANAMEX, 2007)



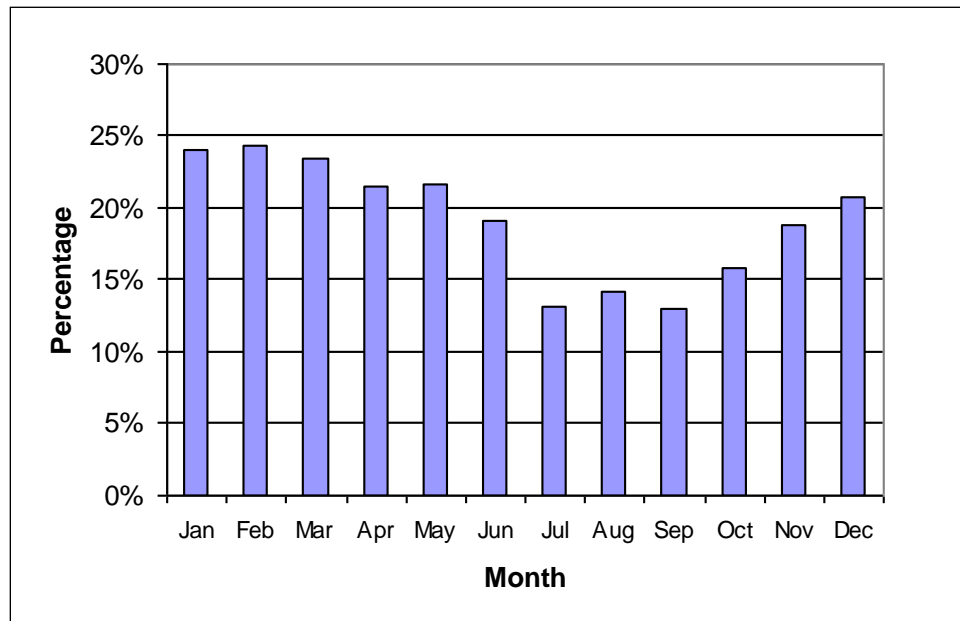
**Figure 1. State Location Map.**



**Figure 2. Vicinity Map.**



A large percentage of the commercial traffic going through the LPOE is transporting winter produce grown in Mexico. The LPOE processes approximately 49 percent of the agricultural commodities entering the US along the southern border (GSA, 2005). At the peak of the growing season, January to March, (Figure 3), the LPOE processes as many as 1,400 trucks per day (GSA, 2005).



**Figure 3. Monthly Commercial Truck Traffic Percentages of Total Vehicular Traffic at the Nogales Mariposa US LPOE, 2006.**

#### **1.4 Explanation of an Environmental Assessment**

This EA is being prepared to comply with NEPA of 1969 and the policies of the GSA, as the lead federal agency. The EA process provides steps and procedures to evaluate the potential social, economic, and environmental impacts of a Proposed Action while providing an opportunity for public and local, state, or other federal agencies to provide input and/or comment through scoping, public information meetings, and/or a public hearing. These social, economic, and environmental considerations are evaluated and measured, as defined in the Council on Environmental Quality's (CEQ) regulations, by their magnitude of impacts. In addition, the EA also provides GSA a detailed analysis to examine and consider the environmental conditions of any sensitive social, economic, and environmental resource and assist in their decision-making process.

## 2.0 Project Purpose and Need

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### 2.1 Purpose of the Project

The purpose of this project is to improve the operational efficiencies, processing capacity, and security and safety of cross-border travelers and agencies at the LPOE by modernizing and upgrading the facilities for enhanced safety, efficiency, accessibility, and security. The improvements will allow the agencies that utilize this facility to safely and efficiently carry out their missions to protect Americans and facilitate the trade and flow of commerce between the United States and Mexico.

The agencies using this LPOE include:

- US Customs and Border Protection (CBP)
- US Immigration and Customs Enforcement/Detention and Removal Operations (ICE/DRO)
- GSA
- US Food and Drug Administration (FDA)
- Federal Motor Carrier Safety Administration (FMCSA)
- United States Department of Agriculture (USDA)
- Arizona Department of Transportation (ADOT)

Specific goals of this project include the development of a LPOE that would:

- Alleviate the traffic back-ups of northbound commercial trucks from Mexico
- Upgrade all components per the LPOE Design Guide
- Achieve adequate capacity to handle traffic through 2025 and allow for future capacity expansion
- Accommodate the safe inspection of pedestrian traffic separate from vehicle processing
- Create secure control over commercial traffic through the use of booths at both the primary inspection and the exit of the inspection facility



- Address effectively the inspection of perishable food
- Separate CBP and ADOT inspection facilities
- Minimize impacts to the natural environment, including vegetation, water resources such as washes, and floodplains

## **2.2 Need for the Project**

The need for this action springs from the inspection requirements stipulated in recent immigration law and the increased trade volume between the US and Mexico brought about by the North American Free Trade Agreement. A larger, more efficient LPOE is needed to expedite trade and tourism while meeting the security needs of the US.

The Nogales Mariposa LPOE is a linchpin in the international trade infrastructure between the US, Mexico, and Canada. Since the existing LPOE was constructed in 1973, population in surrounding communities has grown as has the traffic, including trucks, privately owned vehicles (POV), pedestrians, and buses. Pedestrian crossings alone have more than tripled since 2002 and are expected to increase nearly 200 percent by 2025 (GSA 2007). Bus traffic at the LPOE doubled between 2002 and 2006. Once NAFTA is fully implemented, truck and POV traffic are expected to follow suit.

The current port infrastructure does not conform to GSA/CBP Design Guidelines governing layout, minimum vehicle clearances, pedestrian and employee safety, and national security. Due to its outdated equipment and inefficient traffic circulation, the existing LPOE configuration will not be able to handle predicted increases in traffic volume. The processing capacity of the facility has been reached; bottlenecks and poor circulation within the LPOE are producing internal gridlock and long queues of commercial vehicles on the Mexican side of the border. There are frequent conflicts between pedestrians and vehicular traffic within and adjacent to the LPOE and not enough parking on site to accommodate employees, visitors, and vendors. There is not enough room for trucks to maneuver and back in to the docks without impeding the flow of traffic to other inspection facilities.

A large part of the business of the Nogales Mariposa LPOE is the inspection of agricultural products. High ambient temperatures, long wait times (up to five hours), and thorough

inspections can lead to the spoilage of perishable goods or reduced shelf-life, and the subsequent financial losses that entails. (University of Arizona, 2008)

The current facilities do not provide adequate site security. The Secondary POV inspections are within the view of the public. No clearly defined public parking is available. This results in the uncontrolled movement of unauthorized personnel around the site.

As traffic has increased and changes in processing requirements and procedures have been implemented, the LPOE has expanded opportunistically with facilities added wherever space is available. Portable buildings and cargo containers for document storage have been placed in the commercial dock areas. The amount of interior space available to perform duties and functions of the various agency tenants is limited. Office space, locker rooms, workstations, desk space, and processing areas are all too small to handle current requirements. Due to these space limitations, interior areas have been converted to uses other than what was initially intended. For example, two detention cells in the Main Building are being used for temporary evidence storage.

Many areas within the LPOE do not provide adequate working conditions for inspectors and other employees. In the Commercial Pre-Primary Building, poor ventilation and heavy exhaust fumes restrict shifts to 90 minutes before inspectors must rotate to other duties outside this building. Employee lockers in the Main Building are located in corridors, and the limited number does not allow for most of the inspectors to have a locker space. Several inspection lane booths are not located under a canopy, exposing inspectors to the full force of the desert sun.

Crowding and inefficient operations will continue to worsen as traffic increases. In 2005 there were 277 employees. In 2025 as many as 459 employees are expected to work at the LPOE (GSA 2007). The existing facilities cannot effectively accommodate these additional employees. If approved, this project will provide a facility that will allow the agencies that utilize this facility to safely and efficiently carry out their missions to protect Americans and facilitate the trade and flow of commerce through 2025. Additionally, the project will increase operational efficiencies and processing capacity, and improve safety.

### 2.3 Border Wizard

The Border Wizard is a traffic modeling computer program that simulates the flow of pedestrian, POV, and commercial traffic through a LPOE. The program is operated by the GSA on behalf of the CBP. Its purpose is to assist in the planning and evaluation of proposed plans for ports of entry. Border Wizard does not forecast traffic demand; rather, it is an operational model that takes forecast numbers as inputs and then sizes the number of elements for the specified port of entry. Using these forecast numbers the Border Wizard predicts the required number of Primary Inspection Booths, Secondary Inspection Stations and Commercial Docks, and Exit Booths for commercial and POV processing. The input includes the historic operational parameters from the port to be analyzed, such as traffic volumes and processing time at each stage of inspection.

In 2006 the GSA utilized Border Wizard to size the elements of the LPOE based on the 2025 forecasted volumes as shown in Table 1. The results indicated that in order to handle the future traffic, the LPOE facilities should be expanded by constructing additional traffic lanes and renovating and/or reconstructing the existing LPOE facilities as shown in Table 2.

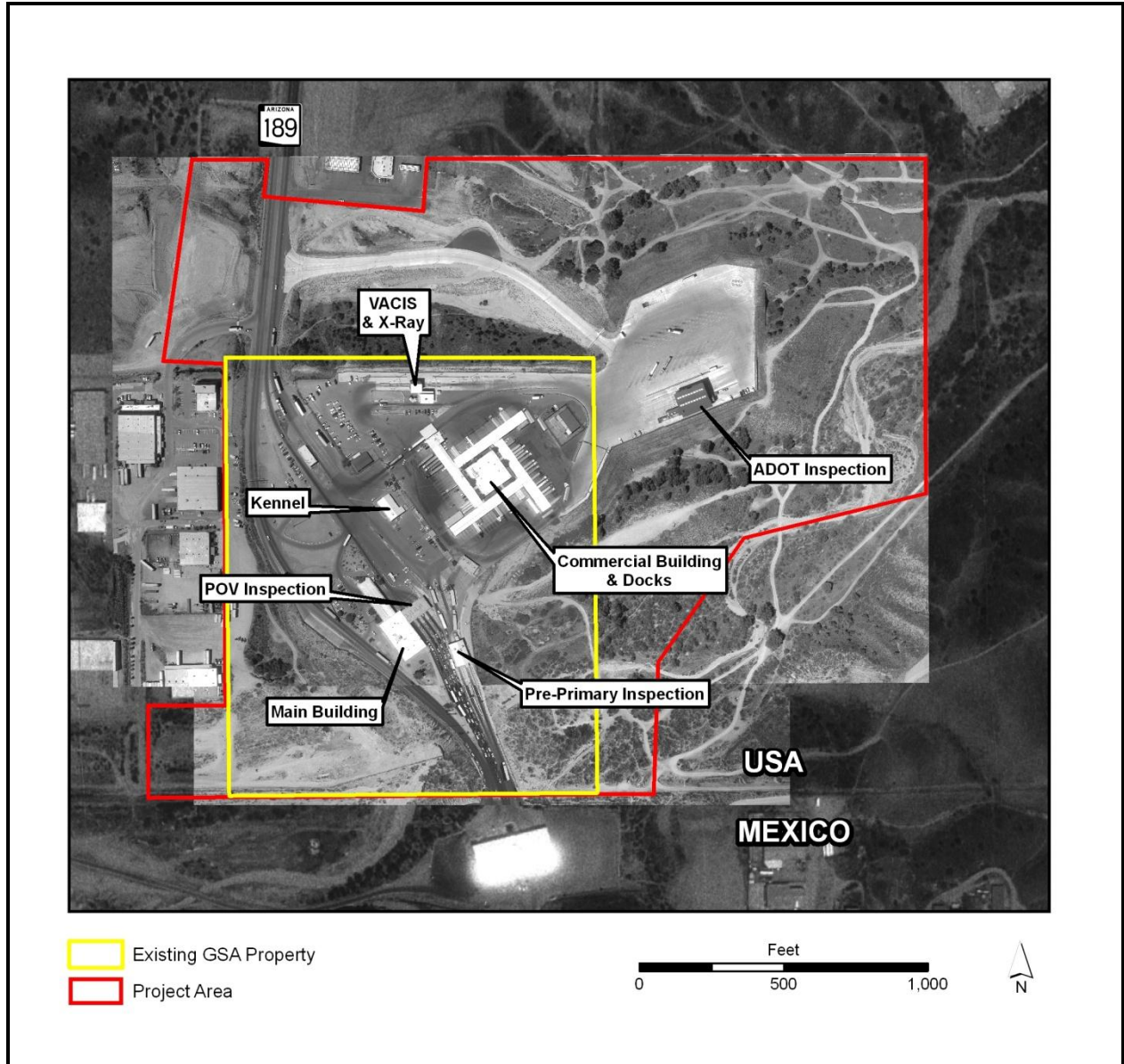
<b>Table 1. Traffic Projections Used in Border Wizard Modeling.</b>			
<b>Type</b>	<b>FY2003 Total</b>	<b>FY2025 Total</b>	<b>% change</b>
POV	1,417,456	1,633,421	15.2%
Buses	4,207	10,079	139.6%
Commercial Vehicles	238,340	338,468	42.0%
Pedestrians	80,258	233,466	190.9%
Source: GSA 2007 Program Development Study			

<b>Table 2. Capacity Design Needs Using Border Wizard.</b>		
<b>Facility</b>	<b>Existing</b>	<b>Border Wizard Projections</b>
Primary POV Booths	4	7
Secondary POV Booths	8	16
Commercial Pre-Primary Booths	2	3
Primary Booths	3	7
Commercial Docks	23	40
Export Docks	0	6
VACIS & X-ray Processing	1	4
Exit Booths	1	2
Pedestrian Primary	1	4
Pedestrian Service Station	2	4
Source: GSA 2007 Program Development Study		

**2.4 Existing Conditions and Processes**

The original facility was designed with two primary entry points, one for commercial vehicles and one for POVs. Pedestrian processing was not planned for in the original design (GSA, 2005). The LPOE is currently open daily from 8:00 am to 10:00 pm to process pedestrian, commercial, and non-commercial traffic. Historically, the LPOE did not process commercial vehicles on Sunday; however, there is a temporary program to keep the commercial facility open seven days a week to service the high demand at this facility.

Traffic entering the LPOE from Mexico is separated into non-commercial traffic and commercial traffic. Non-commercial traffic can include POVs, pedestrians, and buses. Non-commercial inspection is routed adjacent to the Main Building. The majority of northbound POVs access the site from a ramp that is separate from the commercial vehicle route. The commercial vehicle route is one lane that branches into two lanes on the US side of the border (Figure 4).



**Figure 4. Existing LPOE Configuration.**

## 2.4.1 Non-Commercial Inspection

### 2.4.1.1 Main Building

The Main Building, totaling 8,506 gross square feet (GSF), houses administrative functions for POV and pedestrian Primary and Secondary Inspections, the Headhouse functions, import specialists, staff toilets and showers, and holding cells. The Building, as designed, has separate areas for Immigration and Customs. There are two offices serving as the pedestrian processing

inspector work areas; these are combined with the processing areas, forms storage, break room, and computer equipment.

The POV work area is small with only two workstations where 20–25 inspectors perform the POV Primary and Secondary functions. A small portable building is used by the inspectors for breaks and paperwork. Crowded conditions at the Commercial Building have resulted in assigning space to the import specialists within the Main Building. A separate building, located north of POV Secondary, is provided for public toilets.

#### **2.4.1.2 *Pedestrian Traffic***

Currently pedestrians cross over the border on the POV land bridge. As pedestrian processing was not originally planned for this Port, procedures are atypical. Pedestrian traffic is increasing due to changes in vehicle registration laws and CBP policy that only the driver of a commercial vehicle will accompany that vehicle through the inspection process. All passengers of the commercial vehicle must leave be processed as pedestrians. Pedestrians must leave the commercial vehicle and cross commercial and POV traffic to access a footpath to the Main Building. Pedestrian Primary Inspection is completed by a roving agent stationed at the western-most POV Primary Booth or by the booth agent. If Secondary Inspection is required, the pedestrian must back-track to the secondary entrance of the Main Building. Once cleared, the pedestrians proceed parallel to POV Secondary Inspection.

#### **2.4.1.3 *POV Primary Booths***

Four POV Primary Booths are located facing the international border, east of the Building. The Booths are 22 GSF each.

#### **2.4.1.4 *Privately Owned Vehicle Processing – Secondary Inspection***

There are six existing Secondary stations with longer lanes allowing two vehicles to be inspected within the same lane and are covered by a lighted canopy. Inspection tables and islands are not configured per the current US LPOE Design Guide. One of the inspection lanes in this area is blocked by the impound lift. A few benches and vending machines are installed under the Secondary canopy for a public waiting area, but no screening is used to stop inspections from

being observed by the public. The lift is not screened, also allowing persons to watch inspections.

An X-ray enclosure and machine are located adjacent to the impound area on the northern edge of the Secondary stations. This machine is used for X-raying baggage from either POVs or from buses. The public toilets are located north of this area and are completely concealed from observation from the Primary and Secondary areas. A small portable building is located on the northern edge of the impound area and is used for vehicle exports.

#### **2.4.2 Commercial Inspection**

As the commercial vehicles approach the inspection compound, the vehicle is sorted into one of two lanes. All commercial vehicles are routed through the Pre-primary Building. Traffic is stopped approximately 200 feet prior to the building. A traffic control light is operated by the inspectors, indicating to the drivers when to proceed. The trucks pass a Weigh-in-Motion scale and automated vehicle identification (AVI) tag readers. The scale monitors the gross vehicle weight, axle weights and truck/trailer sizes; the AVI readers identify the driver, truck and trailer(s). The truck/trailers are pulled into the Pre-primary Building which allows for laden and empty trailers to be inspected at this location. The vehicle is stopped manually by a CBP officer, at the same time the gross vehicle weight is posted on a digital display board in front of the driver. All of the information captured at the Pre-primary is posted on the operator terminals in the Pre-primary office.

The vehicle then proceeds to the Primary Super Booth where the information captured electronically at the Pre-primary inspection is displayed again on one of three terminals. A representative from each of the FMCSA, CBP, and ADOT will review the posted information and the operator's manifest for compliance with their agency and FDA requirements. The manifest data has to be entered into the system one to two hours prior to the arrival of the truck. The data is transmitted to the LPOE by the broker companies at their main facilities. The inspection strategies are generated automatically based on the system settings, the risk assessment, and the manifest information for commodities requiring certain mandatory inspections. Manual entries can be added to the inspection strategy for each vehicle at any point during the inspection process. Upon arrival, the manifest information is accessed and if

warranted, the driver is directed to report to each of the necessary departments within the Secondary Inspection compound. Vehicles will travel to various buildings and inspection stations as the vehicle operator executes their inspection requirements.

#### **2.4.2.1 *Pre-primary Inspection Building***

The Pre-Primary Inspection Building comprises 4,045 GSF. This Building serves as the first line of inspection for commercial traffic entering the US. This area allows for commercial vehicles that enter the US to be inspected for contraband or foreign nationals trying to enter the country illegally. The Pre-primary canopy is located at the entrance of the commercial vehicle inspection area. Poor ventilation and heavy exhaust fumes restrict shifts within this structure to 90 minutes before inspectors must rotate to other duties outside of this building.

#### **2.4.2.2 *Commercial Primary Inspection Booths***

Primary Inspection activities include processing trucks and drivers, as well as collection of any fees. Vehicles are either directed to Secondary Inspection areas or cleared to exit the Port. Three Primary Inspection Booths exist on-site. These Booths were among the first “super booths” and are sized for three occupants from CBP, ADOT Motor Vehicle Division (MVD), and FMCSA. The Booths are approximately 122 GSF and are not covered by a canopy.

#### **2.4.2.3 *Commercial Building and Docks***

The Commercial Building is a 9,070 GSF building located in the center of a pinwheel configured dock layout. The Commercial Building currently houses the Assistant Port Director, entry control, most of the import specialists, agriculture inspections (workroom and lab), small break room, supervisors’ offices, pat down and a dry cell, staff toilets, shower and lockers, and mechanical and electrical services. This facility is greatly undersized for the operations performed at the commercial Port. As a result, a number of mobile or temporary facilities have been added to compensate for the lack of space.

Additional space is provided by the following items located around the Commercial Building.

- A 120 GSF portable building is located on the east dock and is utilized as a field office for agriculture inspections. Detailed inspections are handled within the Commercial Building. Three other 120 GSF portable buildings are located at each corner of the



pinwheel. One is used by the post-audit team; one is used by CBP; and the other is not used at this time.

- FDA facilities currently comprise 1,377 GSF on the north end of the west docks. These on-site facilities currently house six inspectors, with an additional three inspectors housed off-site.
- A 900 GSF portable building has been placed adjacent to the south docks on the west end. This portable building currently houses the Free and Secure Trade (FAST) program registration and the unified cargo processing. The unified cargo processing area contains both legacy Agricultural Quarantine and Inspection and legacy customs inspectors.
- An approximately 480 GSF portable building has been placed adjacent to the east docks on the south end. This portable building houses the Seized Property office. It is crowded and has no rest room facilities or room for expansion.
- A 555 GSF permanent storage area has been constructed adjacent to the east end of the north docks.
- Additional storage is provided by the use of semi trailers located at the Docks. Two of these trailers are refrigerated and are used for cold storage.
- A small portable building located in the south dock is used for bird quarantine space.
- The remaining nine portable buildings, located on the docks, are used as brokers' offices.
- A separate building located on the west end of the south docks provides toilet facilities for the brokers.

The Docks are configured in a pinwheel, with nearly identical sections. Each section has approximately 22-23 dock spaces. A wide ramp abutting the adjacent dock section allows access for vehicles and forklifts. Three separate stairs are placed along the face of each dock section. All of the docks are covered, but not enclosed, climate-controlled, or secure. The total number of dock spaces is reduced by the storage trailers and portable buildings.

#### **2.4.2.4 *X-ray and Vehicle and Cargo Inspection System (VACIS) Facilities***

A truck X-ray and fixed VACIS are both utilized for non-intrusive inspections (NII) of commercial vehicles. These facilities are located adjacent to each other on the northern edge of the site. The truck X-ray facility consists of three separate structures. The first building houses the X-ray machine for the trucks. The second building houses the inspector's workroom, X-ray control equipment, computer equipment, lockers, supervisor's office, rail office, break room, staff toilets, and driver waiting room. The third building is used for hazardous material storage. The fixed VACIS has a small equipment and inspector room for operating the VACIS.

#### **2.4.2.5 *ADOT Inspection Building***

This facility is operated by ADOT and is responsible for inspecting the safety and loading of the commercial traffic. ADOT, Arizona Department of Public Safety, and the FMCSA operate safety inspection and permitting facilities at all commercial crossings in Arizona. The ADOT facility is linked to the federal Port through the Expedited Processing at International Crossings (EPIC) system to track the inspections. In addition to supervisory offices for ADOT, the facility houses the supervisory and staff offices for the FMCSA. A separate facility houses the office functions for ADOT.

#### **2.4.2.6 *ADOT Permit Building***

A large portable building is located adjacent to the Commercial Exit Booths. This building is used to issue ADOT permits for those required to go through Secondary Inspection. Permits may be acquired at the Primary Inspection Booths if the vehicle does not have to go to Secondary Inspection. This building has the supervisors' offices and workstations for the ADOT officers who work the Commercial Primary Booths and the ADOT Inspection Building. In addition, an auto theft specialist works from this facility.

#### **2.4.2.7 *Exit Booths***

Two exit booths and lanes separate the commercial yard from access to SR 189. The booths are approximately 43 GSF each, are not elevated to truck heights and do not have a shade canopy.

#### **2.4.2.8 *Outbound Inspection Facility***

The facility supports CSB outbound vehicle inspections and the repatriation of Mexican nationals delivered to the site by the DRO division of ICE. The current Outbound Inspection Station is located on the southbound lanes of SR 189. Export inspections are provided for commercial vehicles exiting the US. These inspections are often for vehicles transporting goods through the US (but not necessarily originating in the US), and high-technology goods.

#### **2.4.3 *Other Buildings***

##### **2.4.3.1 *Kennel Building***

A Kennel is located adjacent to SR 189. This Kennel houses dogs 24-hours a day. The building has a food prep kitchen, offices, laundry, dog wash, and drug training storage area. The building is designed as a day kennel; it does not provide exterior access for the dogs. Forty stalls and two exercise yards are provided. They are covered gravel surfaces surrounded by chain link fencing.

##### **2.4.3.2 *Seized Property Vault***

There is a 3,146 GSF seized property area. It contains a 2,294 square foot vault. The remainder of the space is used for processing and corridor access. The building has a dock for semi-trailer unloading. A ramp is provided for unloading smaller vehicles.

#### **2.5 Conformance with Regulations, Land Use Plans, and Other Plans**

During the planning process and development of associated environmental documentation for new construction and renovation projects, the GSA considers all requirements (other than procedural requirements) of zoning laws, design guidelines, and other similar laws of the state and/or local government. This includes, but is not limited to, laws relating to landscaping, open space, building setbacks, maximum height of the building, historic preservation, and aesthetic qualities of a building. The project design team has fully considered such laws and requirements in their planning and design documents, and the GSA design standards meet or exceed these local requirements.

Local officials would be provided 30 days for their review and comment in writing for each proposed design submission, with no time extensions. If comments are not received after the

commenting period is over, it would be assumed that the agency agrees with the design and the GSA project manager would proceed with project execution (GSA, 2003).

The City of Nogales General Plan Update indicates the LPOE is located in an area whose land use is designated as a transportation corridor. The current zoning for the LPOE is undefined. The parcels surrounding the LPOE are zoned for light industrial and general commercial use.

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### 3.0 Alternatives

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The various alternatives plus the No Action Alternative are discussed below. In discussions with Customs and Border Protection, the Arizona Department of Transportation, the City of Nogales, the Mexican Government, and the Greater Nogales Santa Cruz County Port Authority, the need for an alternative to the existing site for a commercial port was never established. The existing site can be adequately reconstructed to handle projected future capacity needs and be expanded for even more capacity. Discussions of constructing a new POV/pedestrian facility were conducted by the project team in the development of the Feasibility Study. The duration of time needed to locate, permit, and construct a new separate facility was undesirable as it would not alleviate current problems of capacity at the LPOE in a reasonable time period.

Several options were developed in the 2005 GSA Feasibility Study for consideration. These were based on the functional requirements, a 15-year planning horizon, the physical limitations of the site, and cost.

#### Option 1

Option 1 explored how much traffic capacity could be added without significant changes to the site or buildings. This strategy included expanding the current building and leaving much of the traffic circulation pattern largely untouched. This alternative was the least costly and it is complementary to the site development master plan for either Option 2 or 3.

#### Option 2

Option 2 would reconstruct the LPOE to meet the projected traffic, the *US Land Port of Entry Design Guide* guidelines, and current practice at similar ports. The improvements to the LPOE would remain within the existing GSA property boundaries. By the end of construction all existing buildings, roads, pavement, and utilities would be demolished and replaced.

#### Option 3

Option 3 is essentially the same as Option 2 except it would improve LPOE circulation including distances and clearances for commercial vehicles beyond what is suggested in the *US Land Port of Entry Design Guide*.

### **3.1 Alternatives Considered and Eliminated From Further Consideration**

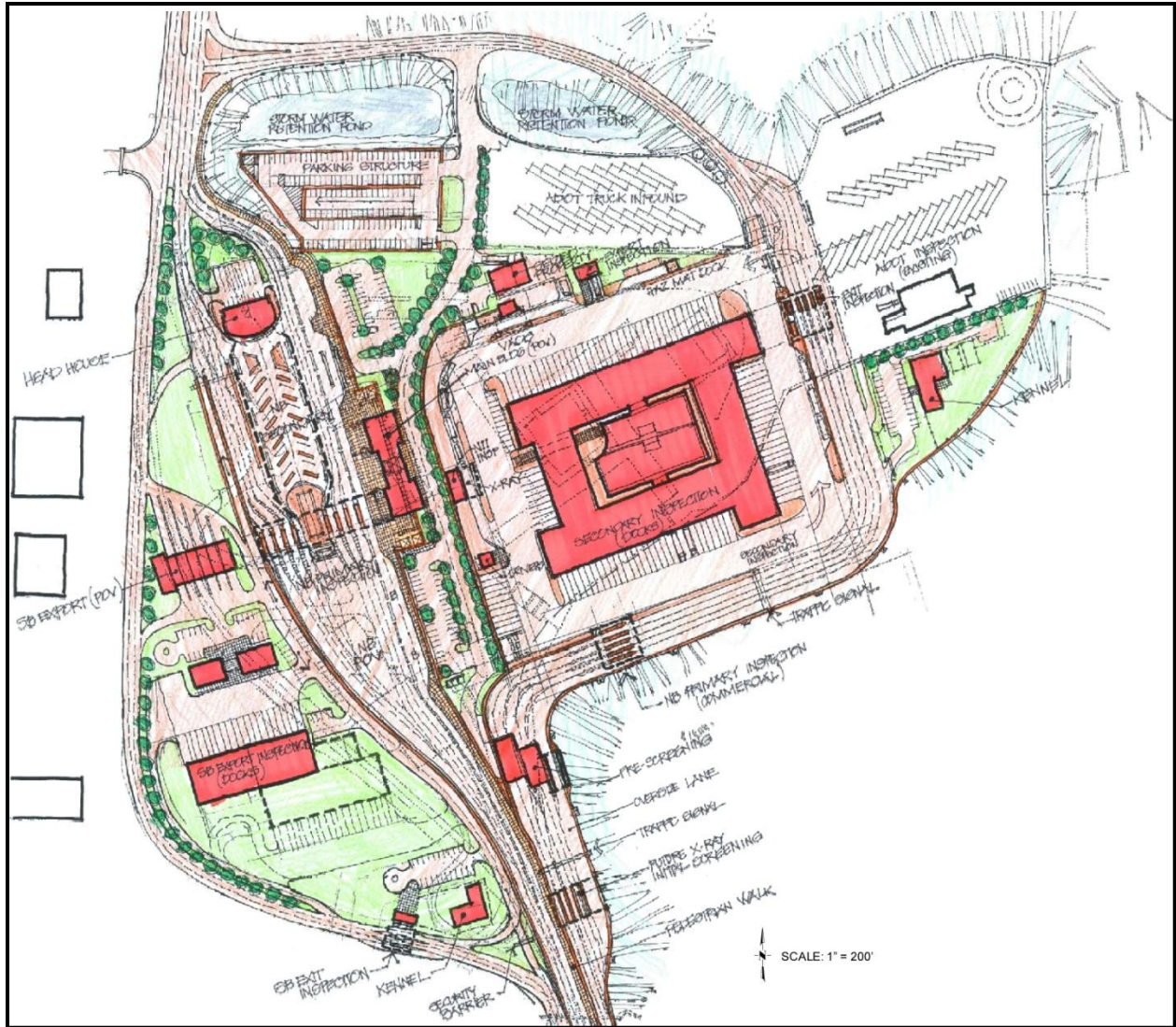
Options 1 and 2 were eliminated from further consideration because they did not provide enough space to accommodate the clearances necessary for inspecting an increasing number of commercial vehicles. The additional room required for turning movements, however, would necessitate encroachment upon the ADOT land to the north.

Building at another location (other than the existing site) was also eliminated from further consideration. Because a port of entry must be located on the international border at a site mutually acceptable to the US and the Republic of Mexico, it was not reasonable to consider other alternative locations.

Three alternative means for achieving Option 3 were developed in the 2008 GSA Program Development Study. Although Alternatives 1 and 2 would meet capacity needs, they were both eliminated from further consideration as described below.

#### **3.1.1 Alternative 1**

Alternative 1 would include reconstructing the entire LPOE (Figure 5). This alternative attempted to address a major construction cost issue associated with burying an existing utility corridor and importing fill for the slope stabilization required to install a loop road around the adjacent ADOT facility. The LPOE is situated on a man-made terrace with perimeter edges that drop approximately 50 feet to the south, east, and north of the site. Alternative 1 eliminated the need and expense of the majority of the loop road and also avoided burying the existing utility corridor. However, it was determined later that the internal traffic flow between the commercial inspection docks and the ADOT facility as proposed in Alternative 1 would create traffic problems and limit future expansion possibilities. Alternative 1 does not provide both primary inspection booths and booths at the exit of the LPOE. Additionally commercial inspection booths would house both ADOT and CBP inspectors. CBP has indicated that ADOT inspections should occur in a separate location for site security; therefore, Alternative 1 was eliminated from further consideration.



**Figure 5. Alternative 1.**





Because the LPOE's current location is on a terrace approximately 50 feet above the surrounding ground level, the construction of a loop road around the LPOE would involve substantial amounts of fill material. The amount of fill material and earthwork required would substantially increase the cost of the project (an additional \$15 million) and increase the footprint of disturbance into natural areas. Alternative 2 does not provide both primary inspection booths and booths at the exit of the LPOE. In addition, commercial inspection booths would house both ADOT and CBP inspectors. CBP has indicated that ADOT inspections should occur in a separate location for site security; therefore, Alternative 2 was eliminated from further consideration.

### **3.2 Alternatives Considered in Detail**

Two alternatives were considered in further detail, the Preferred Alternative (Alternative 3) and the No Action Alternative. The Preferred Alternative is based on previously described functional requirements and a 15-year planning horizon. Because a port of entry must be located on the international border at a location mutually acceptable to the Republic of Mexico, and the duration of permitting, design, and construction on a new site would extend 15-20 years, it was not reasonable to consider other alternatives.

#### **3.2.1 No Action Alternative**

The No Action Alternative would leave the existing facility "as-is." This alternative proposes no major improvements to the LPOE. No major capacity increases would be associated with this alternative. Improvements that would occur under this alternative would include maintenance activities and minor operational improvements. This alternative would not meet the purpose of this project and congestion would continue to worsen. The No Action Alternative is the baseline condition used for comparison to the Proposed Action to determine the magnitude of impacts.

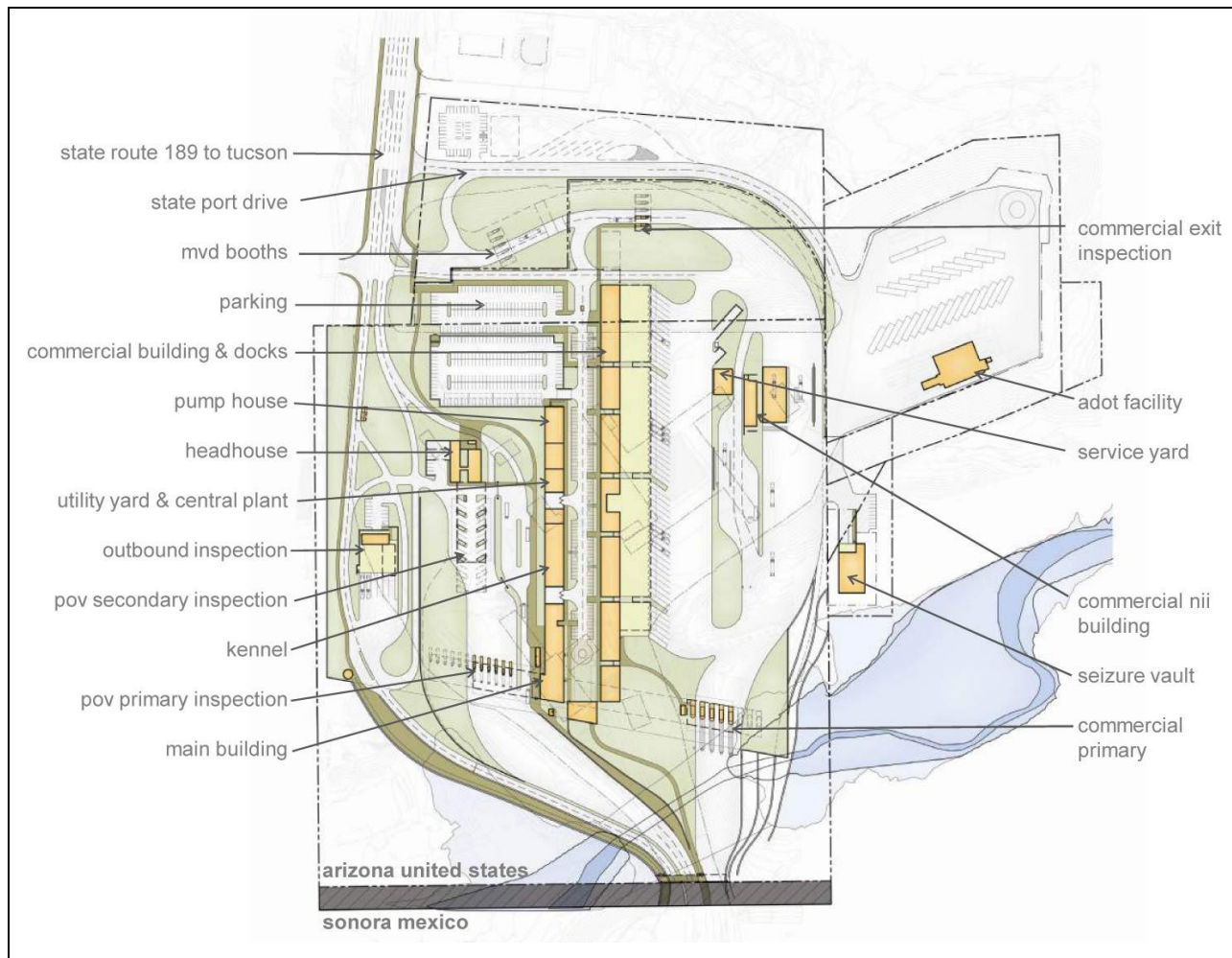
#### **3.2.2 Preferred Alternative (Alternative 3 – Proposed Action)**

Alternative 3 is a complete redesign and reconstruction of the site. It would be a new facility including site utilities. The design incorporates the need to meet capacity until the year 2025 and is expandable for future growth beyond 2025. It also provides access to the ADOT facility without creating the traffic pattern problems described in Alternative 1 or the necessity for the loop road described in Alternative 2.

The elements of Alternative 3 (Figure 7) would include:

- Demolition of all of the existing LPOE buildings
- Placement and grading of approximately 700,000 cubic yards of earthen fill material around the LPOE in order to provide room to construct the new LPOE
- Construction of a new and expanded main building
- Construction of 7 POV primary inspection booths that could be expanded to 12
- Construction of 12 POV secondary inspection stations that could be expanded to 24
- Construction of a bus passenger processing area
- Construction of a bus inspection area
- Construction of a commercial primary canopy and catwalk with 5 lanes, of which 1 of the lanes is to be used for oversized/wide-load vehicles
- Construction of 5 commercial primary inspection super booths
- Construction of a new and expanded commercial building
- Construction of 56 new commercial docks of which 6 would be screened and comfort conditioned for the benefit of the agents inspecting commercial vehicles. The commercial docks will be expandable to 100 docks should traffic volumes warrant expansion
- Construction of an area for x-ray, and VACIS locations
- Construction of a pump house building and installation of an underground storage tank for storage of water to be used for fire extinguishing/fire sprinkler operation.
- Construction of a new seized property vault
- Construction of a relocated and expanded kennel
- Installation of a power generator for 100 percent back-up capacity plus future expansion capabilities which brings the power requirements to 125 percent

- Construction of an outbound facility for ICE and DRO including an area for bus disembarking, a secure kiosk for officers, a secure pedestrian walkway, and a bus return lane
- Construction of a hazardous materials dock and hazardous materials drive-in pit
- Construction of a new export dock including auto export facilities
- Construction of a 2-level parking garage
- Construction of new exit booths located at the existing State Port Drive
- Installation of perimeter fencing and electronic surveillance



**Figure 7. Preferred Alternative.**

### **3.2.2.1 *POV Main Building, Primary and Secondary Inspections***

The main building would be approximately 16,042 GSF in area and would house CBP and GSA. These tenants would have a combination of shared and private spaces. The building would accommodate the pedestrian and administrative functions of the LPOE. Spaces would be separated into areas for administration, public waiting, document processing, pedestrian inspection (primary and secondary), bus passenger inspection (primary and secondary), enforcement/detainment, staff services, and building services.

Seven primary inspection booths for northbound vehicle traffic would be covered by a canopy. The easternmost lane would be dedicated as a bus lane that would continue along the western edge of the main building for disembarking/embarking of passengers. The remaining six lanes would be enhanced with the Secure Electronic Network for Travelers Rapid Inspection (SENTRI) system, an automated commuter lane system, with the intent to start SENTRI use with the westernmost lane and then expand to the easterly lanes as needed.

Twelve secondary lanes (24 POV capacity) and two stations would be placed under a canopy for northbound POV secondary inspection. The secondary inspections performed at the stations would be located behind the head house and separate from the other secondary inspection lanes. These inspection stations are not intended for public view and therefore would be shielded and/or screened. These secondary inspection stations and are referred to as a “hard” secondary.

### **3.2.2.2 *Seized Property Building***

The seized property vault and offices would be approximately 7,216 GSF and would house only CBP functions. The building would provide separate spaces for the secure storage of contraband, drugs, administration, and processing.

### **3.2.2.3 *Commercial Inspection***

Commercial inspection would be comprised of four major facilities: The commercial outbound inspection building, the commercial primary building, the commercial main building, and the commercial docks. Each is discussed below:

The outbound inspection building is approximately 1,900 GSF and will house CBP and USDA functions. The square footage includes area for six canopied, raised docks. The outbound

inspection building would be separated into spaces for administration, laboratories, public waiting, document processing, support, staff services, and building services.

The commercial primary building would be approximately 6,960 GSF and would house CBP functions. The building would be separated into spaces for staff services, four inspection lanes, an overhead catwalk and a small office space. Five Primary booths would be situated under the building canopy along the north section of the structures. The booths would be elevated to facilitate communications with the truck drivers. Four weigh-in-motion scales would be located just south of the present pre-screening building along with the automatic vehicle identification system.

The commercial main building would be approximately 47,472 GSF. It would house CBP, the USDA, and FDA agencies. The building would be separated into spaces for administration, public waiting, document processing, enforcement and detention, support, staff services, and building services. Specialty areas are also provided for agricultural quarantine inspections.

The reconfiguration plan includes a total of 56 docks. Of these 56 docks, 6 will be screened to allow for inspection of suspicious containers out of the traveling public's view. These docks will be conditioned for the comfort of the inspecting agents and are not intended to refrigerate the shipments. The remainder of the docks would be covered with a canopy. The structure is approximately 61,954 GSF in area and would house CBP, FDA and USDA-Animal and Plant Health Inspection Service agencies. Spaces would be separated into raised docks, contractor administration, equipment storage, public waiting and personnel protective shelters.

#### **3.2.2.4 *Non-Intrusive Inspection Building***

The NII building would be 3,391 GSF in area and would house only CBP staff. The building would provide spaces for both X-ray and VACIS control rooms, administration, document processing, support, staff services, and building services. A hazmat storage facility with a dock would be placed near the NII Building.

#### **3.2.2.5 *kennel***

The proposed kennel would hold 45 kennels. The building would include spaces for food storage and preparation, CBP offices, dog washing, laundry facilities and separated areas for the various

training supplies. Adequate outdoor runs and shaded break areas for the dogs would be placed adjacent to the kennel.

## **4.0 Affected Environment and Environmental Consequences**

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The following information describes the affected environment within the project area and presents the potential effects of the Proposed Action. Measures to avoid or minimize impacts have been identified and are summarized in the Best Management Practices (see Section 6.2).

### **4.1 Ownership, Jurisdiction, and Land Use**

For the purpose of this EA, land ownership is identified in terms of public or private. Jurisdiction implies the authority to regulate land use. Land adjacent to the project area within the US is under the jurisdiction of the City of Nogales. Land ownership consists of the GSA, ADOT, City of Nogales, and privately owned parcels.

The LPOE's site is a 43-acre parcel owned by GSA. A parcel owned by ADOT abuts the GSA property to the north and east. The ADOT property is a developed site that supports the state's vehicle inspection activities and includes access roads to and from the facility. A 60-foot-wide strip of land along the international border is maintained by the Department of the Interior with guidance from the International Boundary and Water Commission. In addition, there is an international cattle crossing located to the west of the LPOE site.

Property to the west of SR 189 is privately owned and developed as commercial/industrial property. Property immediately east of the LPOE is privately owned and undeveloped. The Carondelet Holy Cross Hospital is located at 1171 W. Target Range Road approximately 1,000 feet northeast of the project area.

The City of Nogales zoning map indicates that land to the west of SR 189 is zoned for light industrial use. Land adjacent to the east portion of the LPOE is zoned for general commercial and light industrial uses. Farther east of the area zoned for general commercial property is an area zoned for single-family residences on minimum-sized lots of 18,000 square feet.

The City of Nogales General Plan Update 2002 displays planned land use in the vicinity of the LPOE as a transportation corridor, industrial and business uses, commercial uses, and a hotel/regional shopping mall. The City of Nogales is currently preparing an update to the



General Plan which has not yet been approved. This plan is currently anticipated to be presented to the public for comment in 2011.

#### **4.1.1 Proposed Action**

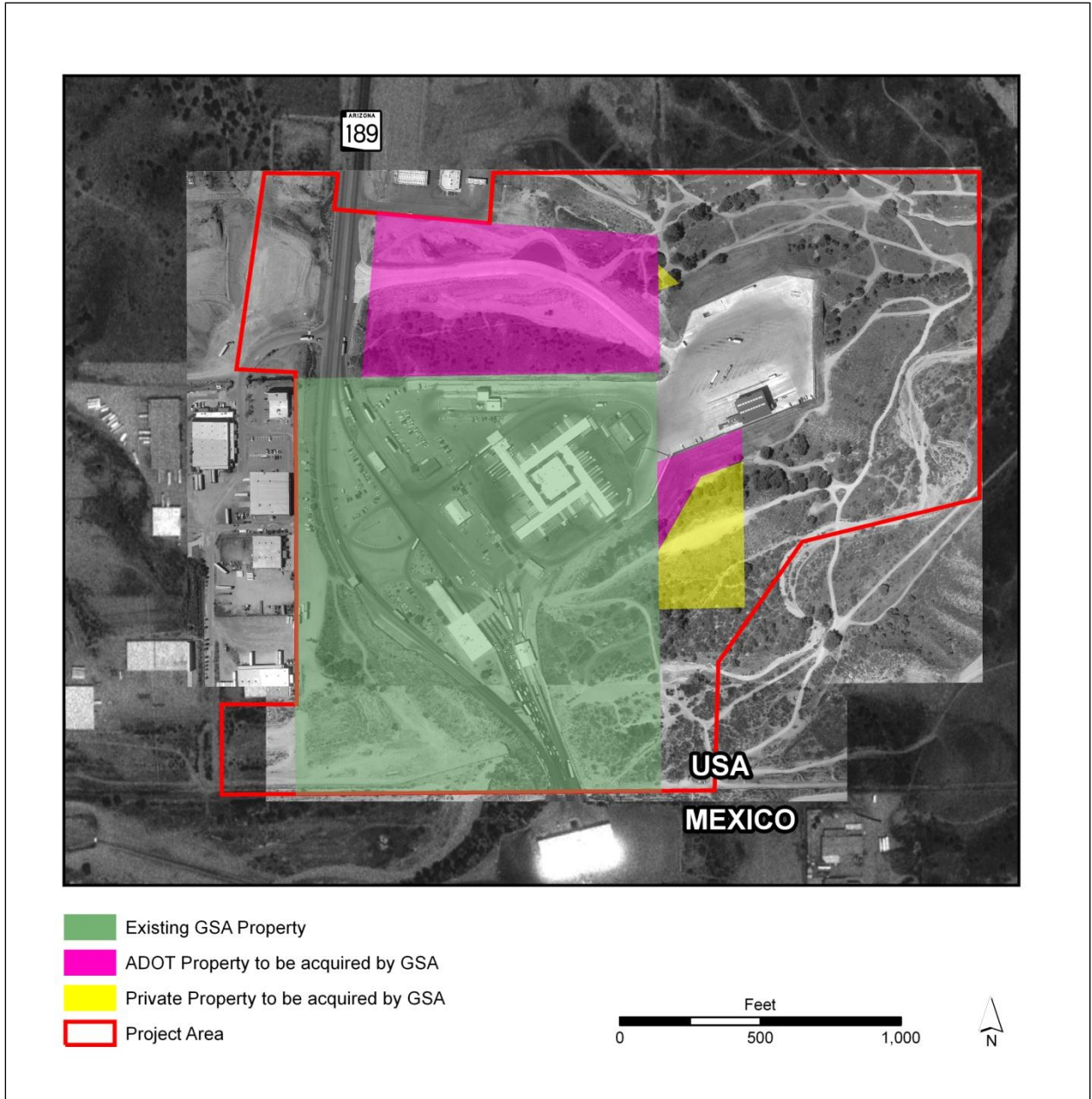
The Proposed Action would require the acquisition of approximately 14 acres (Figure 8). This property would be acquired from two entities, ADOT, which has undeveloped land that is zoned for light industrial and general commercial use, and Carondolet Holy Cross Hospital.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act), passed by Congress in 1970, is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. The undeveloped portions of the Carondolet Holy Cross Hospital property that would be required by the Proposed Action would be acquired through GSA's Portfolio Management Division in accordance with the Uniform Act and 49 CFR Part 24.

The acquisition of these parcels would not require the relocation of any residents or businesses. The area zoned for single-family residences is approximately 160 feet east of the project area and approximately 500 feet east of the proposed improvements. Therefore, there would be no significant changes in land use or land jurisdiction.

#### **4.1.2 No Action**

The No Action Alternative would have no change on land ownership, land use, or jurisdiction.



**Figure 8. Property Acquisition**

#### **4.2 Social and Economic Resources**

The project is located within Nogales, Arizona, which has a population of approximately 21,830. Nogales is the county seat of Santa Cruz County, which has a population of 44,055 (US Census Bureau, 2000). Nogales, Arizona borders the city of Nogales, Sonora, Mexico and is Arizona's

largest international border town. Table 3 shows that Santa Cruz County has experienced population growth at a faster rate than the city of Nogales, Arizona. The total change for Nogales' population over the five-year period was just under 1,000 persons.

<b>Table 3. Population Growth Trends.</b>						
<b>Area</b>	<b>Annual Population Estimates from 2000 and 2005</b>					
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Santa Cruz County	38,381	39,325	39,840	40,800	42,410	44,055
% change		2.5%	1.3%	2.4%	3.9%	3.9%
% change 00-05						14.8%
Nogales, Arizona	20,856	20,990	21,110	21,190	21,590	21,830
% change		0.6%	0.6%	0.4%	1.9%	1.1%
% change 00-05						4.7%
Sources: July 1 Population Estimates for 2001–2005, prepared by Population Statistics Unit, Research Administration, Department of Economic Security; 2000 Census; McClure Consulting LLC.						

#### **4.2.1 Economic Structure**

Employment patterns for Santa Cruz County for 2001 to 2005 are shown on Table 4. The table shows that the estimated employed labor force has increased by 900 workers since 2001, or 6.6 percent in 2005. The largest percentage gains occurred in other private-service providing industries and trade, transportation and utilities, in that order. Compared to the entire state, Santa Cruz County has a disproportionate number of workers in the trade, transportation, and utilities industries, which is to be expected in a border-crossing hub. The disparity has increased somewhat over the four-year period. As an illustration of the strength of the transportation sector, there are 30 customs brokers listed in Nogales, Arizona directories in 2006, and approximately 25 other warehouse operations.

<b>Table 4. Employment Trends.</b>					
<b>Santa Cruz County</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Total Civilian Labor Force	14,975	15,150	15,500	15,475	15,975
Total Employment	13,650	13,600	13,975	13,975	14,550
Unemployment Rate	8.8%	10.2%	9.8%	9.7%	8.9%
Total Non-Farm	12,175	12,000	12,225	12,275	13,100
Total Private	9,050	8,775	8,950	8,950	9,800
Trade, Transportation and Utilities	4,525	4,525	4,750	4,775	5,325
Other Private Service	2,925	2,900	2,950	3,225	3,550
Federal Government	1,100	1,125	1,125	1,150	1,200
State and Local Government	2,025	2,100	2,175	2,150	2,100
<b>Santa Cruz County</b>	<b>% of Total Non-Farm</b>				
Total Non-Farm	100%	100%	100%	100%	100%
Total Private	74%	73%	73%	73%	75%
Trade, Transportation and Utilities	37%	38%	39%	39%	41%
Other Private Service	24%	24%	24%	26%	27%
Federal Government	9%	9%	9%	9%	9%
State and Local Government	17%	18%	18%	18%	16%
<b>Arizona</b>	<b>% of Total Non-Farm</b>				
Total Non-Farm	100.0%	100.0%	100.0%	100.0%	100.0%
Total Private	83.3%	82.8%	82.9%	83.2%	83.9%
Trade, Transportation and Utilities	19.5%	19.5%	19.4%	19.4%	19.4%
Other Private Service	46.9%	47.2%	47.8%	48.0%	48.2%
Federal Government	2.1%	2.2%	2.2%	2.1%	2.1%
State and Local Government	14.5%	15.1%	14.9%	14.6%	14.0%
Source: AZ Workforce Informer; McClure Consulting, LLC					

#### **4.2.2 Discussions with Industry Representatives**

According to local industry representatives, the ports are the “economic engine” of Nogales, and are a defining element of the community’s competitiveness and overall economic well-being. (Bracker 2007, Frankel 2006, Shannon 2006). The events of September 11, 2001, further constrained already overburdened existing port facilities, especially at the LPOE during periods of peak produce shipment, so the expansion becomes even more critical to accommodating the high demand for border crossings. The community has already lost some competitive position, due to other ports expanding and/or shippers looking for alternative routes that are less congested. During the peak season, customs brokerage businesses experience “on a daily basis” the frustration of knowing there are trucks that could and need to be accommodated at their place of business, yet they cannot make the crossing in a timely fashion due to the constraints at the LPOE.

Among all US-Mexico ports, four have experienced greater increases in crossings by loaded truck containers than Nogales: Laredo, Otay Mesa, El Paso, and Hidalgo (in order of largest to smallest number of crossings), as illustrated on Figure 8. This figure indicates that Nogales has been competitively disadvantaged, compared to most other ports, for at least the last 10 years.

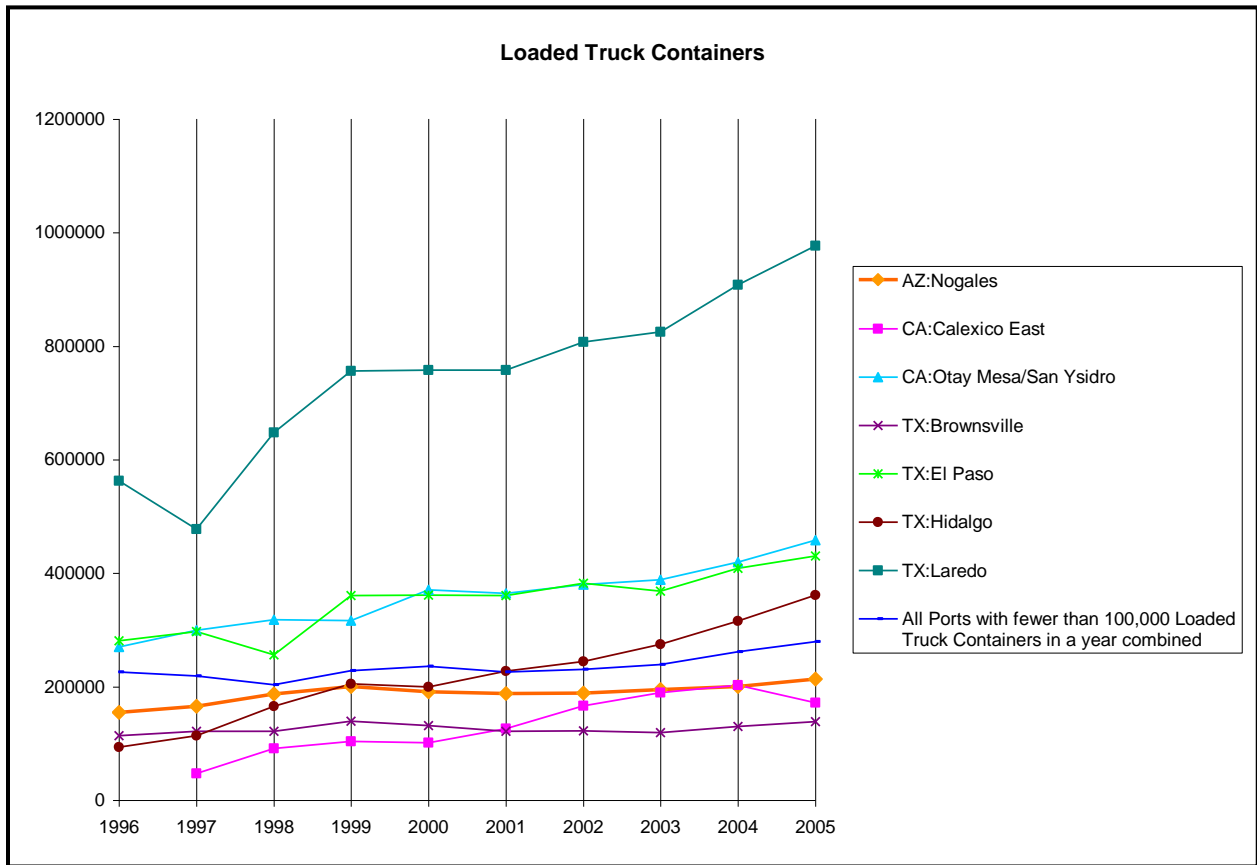
#### **4.2.3 Proposed Action**

The Proposed Action is anticipated to cost \$213,000,000 to construct, which will employ numerous workers for the anticipated five years of construction. Construction jobs, materials purchases, equipment rental, and construction employee expenditures (housing, meals) will create economic multiplier effects and add money to the local economy.

An additional 182 jobs are anticipated to be added to the existing staff of 277 employees at the LPOE. These additional jobs would add additional income to the local economy.

The Proposed Action would improve the flow of commercial vehicles through the LPOE facility. This would allow more produce and other products to cross the border and reach brokerages quicker. Area businesses associated with trade and transportation would benefit from the increased capacity at the LPOE.

Therefore, the Proposed Action would have a beneficial impact to social and economic resources.



**Figure 9. Crossings of Loaded Truck Containers, US-Mexico Ports.**

#### 4.2.4 No Action

The Nogales area would continue to experience economic disadvantages when compared to other ports of entry. Wait times for produce-carrying vehicles to cross the border would increase, reducing the quality of the goods being transported. Transporters would continue to route trucks to other ports to avoid the delays at the LPOE.

### **4.3 Title VI/Environmental Justice**

*Title VI of the Civil Rights Act of 1964* and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898 on environmental justice, dated February 11, 1994, directs that programs, policies, and activities not have a disproportionately high and adverse human health or environmental effect on minority and low-income populations.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed on February 11, 1994, reinforces the provisions set forth from Title VI of the Civil Rights Act of 1964 and provides additional guidance on identifying and addressing disproportionately high or adverse effects on minority and low-income populations as well as disabled individuals, women as head of household, and elderly populations. Specifically, those programs, policies, or benefits should ensure that they prevent discriminatory effects including: discriminating against or excluding individuals or populations from participation, denying benefits of a Proposed Action/activity, or otherwise adversely affecting the human health or environment of these populations.

A minority person can be defined as an individual who is racially classified as African American, Asian American, Native American or Alaskan Native, or anyone who classifies himself or herself as “other” race. Hispanics are also considered minorities regardless of their racial affiliation. Elderly refers to individuals who are older than 60 years of age. Low-income is defined as a person 18 years or older whose income is below the poverty level estimated from the current census. Disabled individuals are persons aged greater than 16 who are non-institutionalized and have a work disability, mobility disability or self-care disability. “Female Head of Household” is a family household where there is a female with no spouse present, regardless of whether she has any children less than 18 years of age and/or living alone or not living alone. The study area data are compared and contrasted with the data for all of Santa Cruz County and the local municipalities in order to assess whether minority, elderly, low-income, disabled, or female head of households populations are disproportionately represented in or near the study area.

The demographic composition of the study area was calculated using the *US Department of Commerce, Bureau of the Census 2000, Census of Population and Housing Statistics*. Census tracts are small, relatively permanent statistical subdivisions of a county for tallying census information and do not cross county boundaries. They are delineated with the intention of being maintained over a long period to allow statistical comparisons from census to census. The size of census tracts varies depending on the population density of the area. Census tracts are comprised of smaller geographic subdivisions, called block groups, which aid in increasing the resolution of demographic information. Each census tract contains a minimum of one block group and may have a maximum of nine block groups. Although the use of block group information improves the resolution of the demographic information, the block groups comprise a much larger geographic area than the project area; therefore, the block group information represents a larger population than the population of the project area. The study area traverses the following Census Tract, Block Groups (Figure 9):

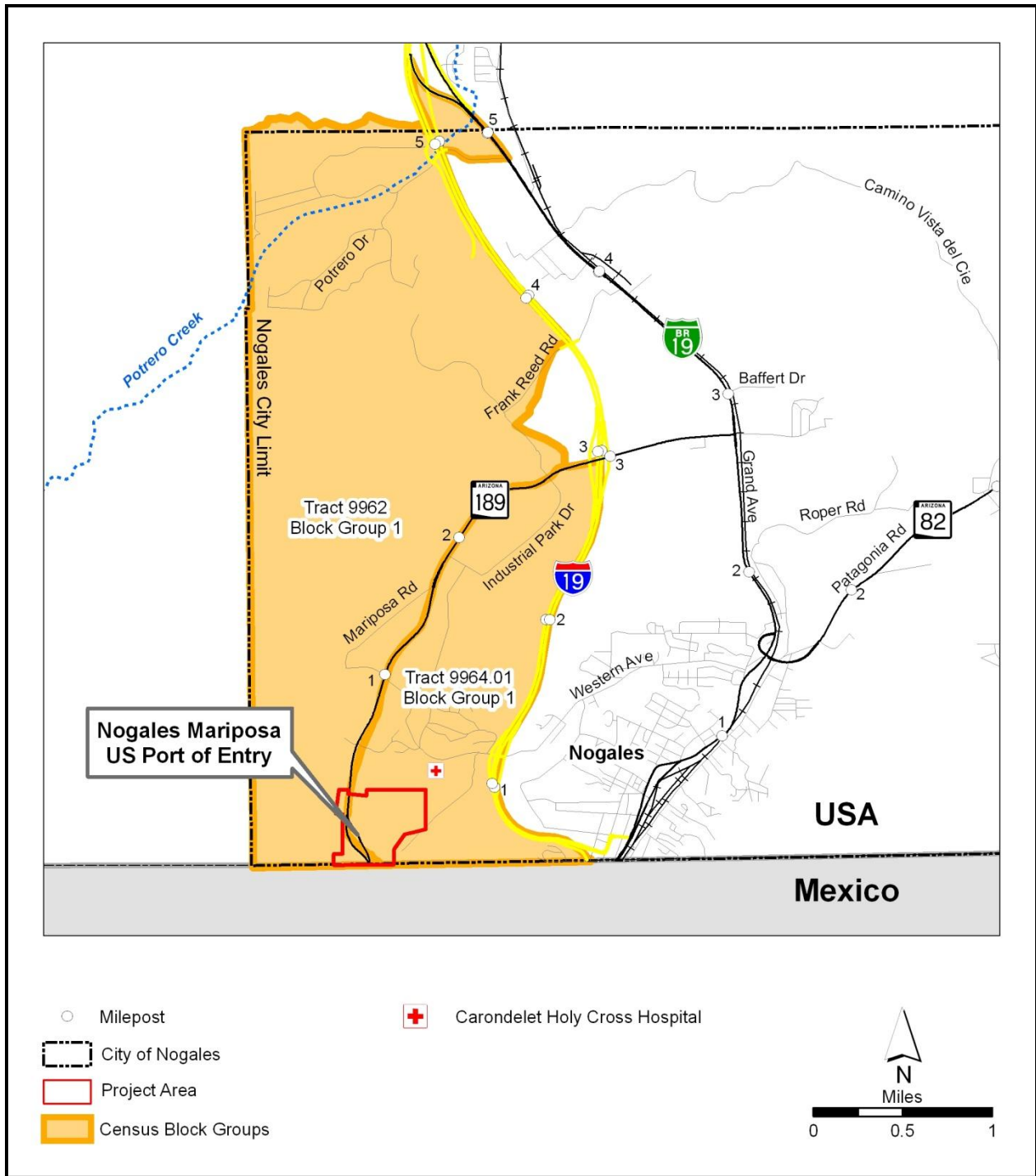
- 9962, Block Group 1
- 9964.01, Block Group 1

#### **4.3.1 Race and Ethnicity Populations**

According to the US Bureau of Census 2000 data, the combined block groups have high population percentages identified as Hispanic, which represents approximately 89 percent of the 3,049 individuals recorded within the two block groups. This percentage is consistent with the census data recorded for Santa Cruz County (80.9%) and the city of Nogales (93.6%) (Table 5).

The next highest population in the combined block groups is identified as “white,” which represents 81.6 percent of the 3,049 individuals recorded within the two block groups. No other substantial populations, meaning those populations greater than 50 percent of a population, are located within the combined block groups (Table 5). *The summation between percentages of the racial categories and the Hispanic or Latino category may equal more than 100 percent of the total population. This is due to the fact that Hispanic and Latino is an ethnicity (not a race) and some respondents that identify themselves in a racial category may also be of Hispanic decent and consider themselves under both criteria.*





**Figure 10. Census Block Group Location Map.**

**Table 5. 2000 Population and Racial Demographics.**

Area	Total Population	White Alone		Black or African American Alone		American Indian and Alaska Native Alone		Asian Alone		Native Hawaiian and Other Pacific Islander Alone		Some Other Race Alone		Two or More Races		Hispanic or Latino	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Block Group 1, Census Tract 9962	1,520	1,239	81.5	0	0.0	0	0.0	0	0.0	0	0.0	270	17.8	11	0.7	1,291	84.9
Block Group 1, Census Tract 9964.01	1,529	1,249	81.7	0	0.0	0	0.0	0	0.0	0	0.0	149	9.7	131	8.6	1,426	93.3
All Block Groups	3,049	2,488	81.6	0	0.0	0	0.0	0	0.0	0	0.0	419	13.7	142	4.7	2,717	89.1
Santa Cruz County	38,381	28,990	75.5	122	0.3	248	0.6	311	0.8	8	0.0	7,751	20.2	951	2.5	31,041	80.9
Nogales	20,856	13,036	62.5	34	0.2	144	0.7	83	0.4	0	0.0	4,078	19.6	481	2.3	19,522	93.6

Source: US Census Bureau, 2000.

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### 4.3.2 Environmental Justice Populations

The elderly population, age 60 years and over, in the block groups varies from 9.9 percent to 11.8 percent. The percentage of elderly for the combined block groups is 10.9 percent, which is consistent with the surrounding community of Santa Cruz County (14.7%) and the city of Nogales (14.1%) (Table 6).

Area	Total Population	Age 60 Years and Over		Below Poverty Level		Disabled		Female head of Household	
		#	%	#	%	#	%	#	%
Block Group 1, Census Tract 9962	1,520	151	9.9	144	9.5	167	11.0	98	6.4
Block Group 1, Census Tract 9964.01	1,529	181	11.8	225	14.7	553	36.2	113	7.4
All Block Groups	3,049	332	10.9	369	12.1	720	23.6	211	6.9
Santa Cruz County	38,381	5,633	14.7	5,523	14.4	6,270	16.3	3,518	9.2
Nogales	20,856	2,946	14.1	4,049	19.4	3,643	17.5	2,122	10.2

Source: US Census Bureau, 2000.

The low-income population, identified as a person 18 years or older whose income is below the poverty level from the current census varies from 9.5 percent to 14.7 percent. The percentage of low-income persons for the combined block groups is approximately 12.1 percent (Table 6). The percentage of low-income persons is consistent with the surrounding community of Santa Cruz County (14.4%) and the city of Nogales (19.4%)

The disabled population, characterized as individuals over the age of 16 who are non-institutionalized and have a work disability, mobility disability or self-care disability, varies from 11.0 percent to 36.2 percent; the percentage of disabled for the combined block groups is approximately 23.6 percent. This percentage is higher than the percentage of Santa Cruz County (16.3%) and the city of Nogales (17.5%). There are portions of the project area (Census Tract

9964.01, Block Group 1) that suggest a distinct population of disabled persons may exist within the study vicinity (Table 6).

The percentage of households with a female head of household, a family household where there is a female with no spouse present regardless of whether she has any children less than 18 years of age and living alone or not living alone, varies from 6.4 percent to 7.4 percent. The percentage of female heads of households for the combined block groups is approximately 6.9 percent. This percentage is lower than Santa Cruz County (9.2%) and the city of Nogales (10.2%) (Table 6).

### **4.3.3 Proposed Action**

There are no isolated tract/block groups within or near to the LPOE that contain populations of the above protected populations that are substantially greater than the overall community. The populations of all border cities/census blocks along the US - Mexico border have high Hispanic proportions, including the City of Nogales and the area surrounding the LPOE. Thus, any crossing would impact a Hispanic (minority) population who along the border are the *de facto* majority population.

There would be no residential or business displacements as a result of the implementation of the proposed project. The proposed improvements would not restrict access to any existing public or community services, businesses, commercial areas or employment centers. There may be a short-term, localized affect in the immediate area adjacent to the project during construction; however, these affects would only be temporary and would not be selectively limited to minority and low-income communities, but would potentially affect all residential and business communities located in the immediate areas adjacent to the project. Other short-term, localized effects also include air quality (e.g., increase in dust) and noise levels (e.g. generated by construction equipment and activities) in the immediate area during construction; however, these effects would be temporary.

Long-term effects from the Proposed Action would benefit the entire community. The proposed benefits include:

- Enhanced safety, efficiency, and operations at the LPOE;
- Improved regional air quality by decreasing truck idling

- Potential for employment opportunities as businesses develop in the surrounding community. These additional jobs could be occupied by Title VI or minority populations.

The proposed project area includes minority populations; however, the project would not result in disproportionate adverse impact as the project would provide more beneficial impacts than negative. It is foreseeable that the proposed project would be a temporary boom to the local economy as spending would have a ripple effect on other local businesses that supply goods to the project and their workers. Therefore, there would be no significant impacts to protected populations as a result of the Proposed Action.

Because of the high percentage of Hispanic residents, all notifications used in the Public Involvement process were published in both English and Spanish. Additionally, a translator was present at the public hearing. All signage within the future LPOE would be in both English and Spanish. A majority of CBP employees at the LPOE are bilingual.

#### **4.3.4 No Action**

The No Action Alternative would have no direct impact on any protected minority or Title VI population. However, if commercial traffic due to inefficient operations at the LPOE would utilize alternate ports to enter the US, some losses of brokerage jobs could occur. It is possible this loss of jobs could impact employees belonging to Title VI populations or minority populations. Additionally, inefficient operations at the LPOE would result in decreased local and regional air quality which could impact protected populations. Long queue lengths at the LPOE would impact all users of the LPOE including protected populations.

#### **4.4 Executive Order 13045, Protection of Children**

Executive Order 13045 requires each federal agency to “identify and assess environmental health risks and safety risks that may disproportionately affect children” and “shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” Environmental health risks or safety risks refer to risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to).

#### **4.4.1 Proposed Action**

There are no schools, daycare facilities, parks, or residences in the project vicinity. There are no areas or features that would typically attract children. The proposed improvements would provide improved facilities and access control for pedestrians and bus occupants. These improvements would decrease the potential for vehicle-pedestrian conflicts which could include children. The on-site project manager would ensure that access to the construction site is controlled and that children would not be admitted to this area. The area currently zoned for single-family residential use to the east of the project area is undeveloped. If this area develops in the future with residences, the potential for children to recreate in and around the LPOE could be a concern. The Proposed Action would fully secure the LPOE through perimeter fencing and electronic surveillance, which would prevent children from accessing the LPOE facility. The open space within the current LPOE fencing is inaccessible to children. Open space outside of the existing LPOE fencing is dangerous, due to lack of sight lines for supervisors, and topography.

The project would result in the reduction of air contaminants both locally and within the region (see Section 4.6.9) and the project would not cause a reduction in the quality of drinking water (see Section 4.10). The improved efficiency of the reconstructed LPOE would allow agencies to more efficiently inspect food products entering the US, which could possibly improve the quality of food products available for children.

The Proposed Action would have no impact on environmental health risks to children. Therefore, there would be no impacts to children as a result of the Proposed Action.

#### **4.4.2 No Action**

Because there would be no improvements to the pedestrian environment at the LPOE under the No Action Alternative, the potential for vehicle-pedestrian conflicts would remain. Currently, there is no perimeter fencing surrounding the entire existing GSA property. However, there is fencing around developed inspection areas. If the area to the east develops with residences, excluding children from the GSA property outside of the LPOE fencing would be a concern. Air quality locally and regionally would continue to worsen as traffic backups at the LPOE increase the number of idling vehicles (see Section 4.6.10). No impacts to water or food quality would

occur under the No Action Alternative. The No Action Alternative would have minor impacts on environmental health risks to children.

#### **4.5 Transportation and Circulation**

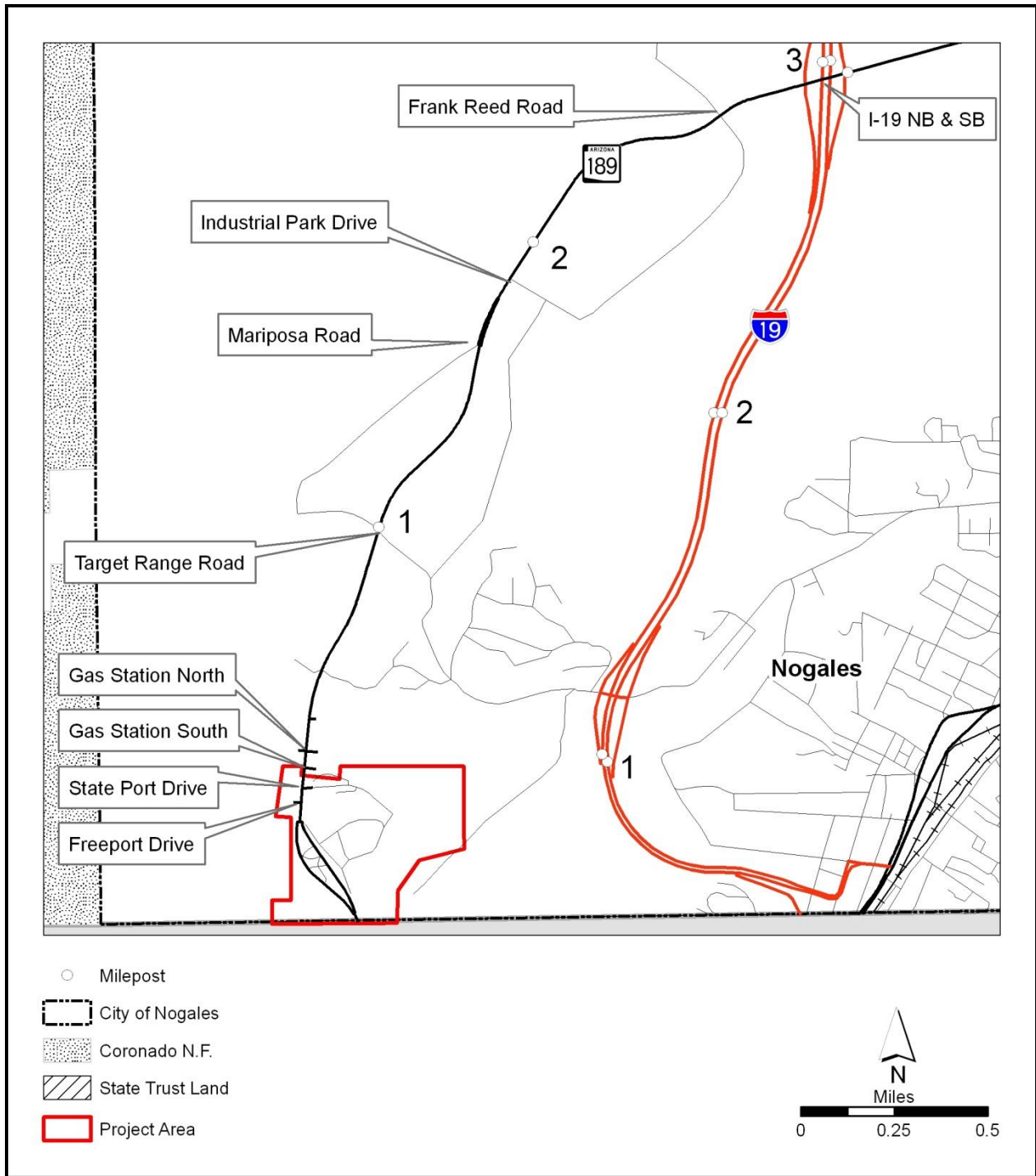
Mexican Federal Highway 15 and SR 189 provide regional access to the existing port. State Route 189 is a five-lane undivided highway, locally signed as Mariposa Road. It has posted speed limits varying between 40 and 50 mph and connects with I-19 approximately 4 miles north of the international border. In the vicinity of the study area, I-19 is a four-lane divided highway with a posted speed limit of 75 mph. This north-south freeway connects the cities of Nogales and Tucson, and serves as one of the three truck routes of the CANAMEX corridor in Arizona.

There are four existing signalized intersections on SR 189 between the border and the I-19 traffic interchange including Mariposa Ranch Road at milepost (MP) 1.73, Industrial Park Drive at MP 2.67, and the traffic interchange with I-19 (southbound ramps at MP 2.92 and northbound ramps at MP 3.03). Additionally, there are several paved and unpaved stop-sign-controlled intersections on SR 189. The major intersections are Target Range Road at MP 1.13 and Industrial Park Drive at MP 1.92.



#### **4.5.1 Traffic Impact Analysis**

A Traffic Impact Analysis conducted by Stantec for GSA in September 2008 evaluated the potential impacts of both the No Action Alternative and the Proposed Action Alternative to the traffic along SR 189 at the four intersections at and immediately north of the LPOE including the intersections of SR 189 with Freeport Drive, Stateport Drive, Gas Station Driveway (north), and Gas Station Driveway (south) were analyzed (Figure 10). Currently these intersections operate with acceptable level of service (LOS). The Traffic Impact Analysis concluded that queuing backups currently occur on the eastbound leg of Freeport Drive, as vehicles wait to make a left turn onto northbound SR 189.



**Figure 11. Traffic Intersection Locations.**

#### **4.5.2 Other Studies**

Two additional traffic studies investigating the existing conditions of the area surrounding the LPOE, potential future traffic impacts of the LPOE improvements, and also potential improvements that are both currently needed and improvements that will be needed in the future as traffic numbers increase in the area in general, were completed (see Section 4.13.1). These studies were completed for ADOT and include: The Mariposa/I-19 Connector Route Study by Wilbur Smith and Associates and the Mariposa Bottleneck Study prepared by the University of Arizona.

In summary, the estimated current 2008 traffic on SR 189 during the peak season is approximately 30,300 vehicles per day for the segment from Frank Reed Road to I-19. For this volume of traffic, the current number of travel lanes along SR 189 is adequate. However, it was also noted that five additional intersections other than those mentioned above in Section 4.4.1 (Target Range Road, Industrial Park Drive, Frank Reed Road/Industrial Park Drive, and the two intersections at I-19) are currently operating at a LOS of D or F.

#### **4.5.3 Proposed Action**

Under the Proposed Action, improvements at the LPOE would include measures to increase traffic capacity by adding through lanes, improving the efficiency of inspection facilities, and routing trucks and/or POV's to these inspection facilities to minimize conflicts or additional traffic backups within the LPOE.

During construction, operations at the LPOE could be temporarily impacted if appropriate construction sequencing or other mitigation measures were not taken. Construction sequencing plans would separate roadway improvement activities into as many stages as necessary to continue smooth border operations and maintain pedestrian, commercial and non-commercial traffic flow within the project area. Traffic control plans should include temporary signing and marking plans to warn drivers and pedestrians of the construction activities and to ensure safe travel through the area.

Upon implementation of the Proposed Action, traffic delays within the LPOE and the potential for pedestrian and vehicle conflicts would be reduced, and the flow of traffic through the LPOE

would be improved. Therefore, the Proposed Action would improve the circulation within the LPOE.

As part of the LPOE improvements, a new entrance/exit would be constructed at the SR 189 and Freeport Drive intersection. This entrance provides one inbound lane and two outbound lanes. Back-ups would continue to occur on eastbound Freeport Drive from the industrial area to the west of SR 189 as vehicles wait to turn onto northbound SR 189, but the entire queue is maintained on the side street without impacting operations on SR 189. A traffic signal may be warranted by the year 2025, but it is not recommended due to the primary north-south traffic movement on SR 189 that should be kept free flowing. The three other intersections investigated in the traffic impact analysis (State Port Drive, Gas Station Driveway north, and Gas Station Driveway south) would operate at sufficient LOS and no further improvements would be warranted.

Other intersections between the LPOE and I-19 (Target Range Road, Industrial Park Drive, Frank Reed Road/Industrial Park Drive, and the two intersections at I-19) evaluated in the other two studies would experience continued and increased congestion over the next 20 years without improvement. ADOT, the City of Nogales, and Santa Cruz County are currently studying improvements that would alleviate this congestion as part of the ongoing Unified Nogales/Santa Cruz County Transportation 2010 Plan which is a regional transportation plan (RTP).

As part of ADOT's I-19 Connector Study, several phased improvements have been identified to address existing and future traffic congestion along SR 189. A high percentage of traffic congestion along segments of SR 189 is unrelated to the LPOE. However, some improvements identified by ADOT such as the need to construct a second left-turn lane by 2012 could be more directly related to truck traffic due to length of vehicles and likely increases in vehicles due to increased processing efficiencies of the new LPOE. ADOT, in cooperation with the City of Nogales, would plan, design, and construct these necessary improvements, but would phase these as the future needs arise and RTP funds become available. ADOT is planning to begin a Design Concept Report study for improvements to SR 189 from the LPOE through the I-19 traffic interchange to Business 19 (Grand Avenue) in the summer of 2010.

The following are component projects that ADOT and partner agencies have identified to be included in the RTP that can be implemented separately, or in various combinations, as traffic conditions warrant:

- Construct a second left-turn lane for eastbound SR 189 to northbound I-19 traffic
- Upgrade the Mariposa Road TI
- Improve the Frank Reed Road intersection area by the year 2020 (or sooner if traffic conditions warrant)
- Improve the intersections at Target Range Road and Industrial Park Road by the year 2020 (or sooner traffic conditions warrant)
- Target Range Road is a candidate for signalization concurrent with the opening of the new LPOE facility
- Widen SR189 Mariposa Road from four through lanes to six through lanes
  - Needed by the year 2020 in the Frank Reed Road intersection area
  - Needed by the year 2030 in the southern portion of SR189 Mariposa Road

Implementation of these improvements by ADOT, local agencies, and other partner agencies would reduce the impacts of additional traffic coming from the LPOE to a less than significant level.

#### **4.5.4 No Action**

Under the No Action Alternative, the traffic within the LPOE would continue to experience traffic delays caused by inspection facilities being located too close together, poor traffic flow between inspection facilities, and pedestrian conflicts. These conditions would worsen with time if no improvements are made and commercial traffic continues to increase. Continued traffic congestion and/or overall operational deficiencies could jeopardize the future of the LPOE making it undesirable for commercial truck use and tourists. A 2003 Study by the University of Arizona Office of Economic Development indicated that due to long wait times at the Nogales-Mariposa LPOE, some truck shipments from Mexico travel as far west as ports in California to avoid congestion at the Mariposa-Nogales LPOE (University of Arizona, 2003).

Similar to the Proposed Action, the eastbound approach on Freeport Drive turning northbound onto SR 189 would operate at LOS F in the future under the No Action Alternative. All other intersections evaluated in the traffic impact analysis would operate with acceptable LOS.

Other intersections between the LPOE and I-19 (Target Range Road, Industrial Park Drive, Frank Reed Road/Industrial Park Drive, and the two intersections at I-19) evaluated in the ADOT Working Paper #1 would experience increased congestion over the next 20 years without improvements identified in the regional transportation planning studies.

#### **4.4 Biological Resources**

The biological resources study area consists of the current LPOE facilities, a portion of SR 189, and the adjacent undeveloped lands. Biological resources information was collected during a pedestrian survey of the entire estimated project area on November 9, 2006. During the pedestrian survey, photographs were taken, vegetation was recorded, and the likelihood for special status species occurrence was assessed based on habitat characteristics. Additional background information on the project area was obtained from aerial photographs, topographic maps, Geographic Information System data, various natural history/biological texts, unpublished technical documents, *Federal Register* documents, and state and federal agency coordination and websites.

The LPOE is located within the Ephraim Canyon Drainage Basin in an area that is transitional between the Semi-desert Grassland and Madrean Evergreen Woodland Biotic Communities. Terrain in the project vicinity consists of rolling hills, with elevations ranging from approximately 3,950 to 4,050 feet above mean sea level. Geologic formations consist of Tertiary sedimentary rock, and soils that are thermic semiarid soils of the Caralampi-Hathaway Association. These soils are very gravelly soils formed in old alluvium derived from igneous and sedimentary rock. There are no perennial sources of water within or near the project limits; however, several ephemeral drainages dissect the project area. Aside from some commercial development adjacent to the western boundary of the project limits, lands in the project vicinity to the west within the Coronado National Forest and to the southwest in Mexico are mostly undeveloped natural open space. Lands to the north, east, and southeast consist of commercial and residential development, with some parcels of natural undeveloped open space.

Of the 43-acre LPOE property, approximately 35.3 acres are currently developed. The original topography of the LPOE site was rolling hills and arroyos; however, construction of the existing LPOE required cut and fill of approximately 50 percent of the total developed area to level terrain for structures. The remaining areas are undeveloped, though they have been disturbed by construction of the current LPOE facilities and numerous roads and trails.

#### **4.5.5 Vegetation**

Vegetation in developed areas of the site consists mostly of various landscaping ornamentals, including fan palm and bougainvillea. Vegetation in the surrounding undeveloped areas includes a ground cover of various grasses; weedy species such as amaranth, Russian thistle, and devil's claw; shrubs such as desertbroom, canyon ragweed, seepwillow, and catclaw acacia; trees such as mesquite and oak; succulents such as sotol and Palmer agave; and some cacti, including Mammillaria, prickly pear, beehive, and compass barrel.

#### **4.5.6 Wildlife**

No mammals or reptiles were observed during the November 9, 2006 survey. Mammals and reptiles that may be present include, but are not limited to; pocket mice, squirrels, woodrats, coyotes, whiptail lizards, skinks, and spiny lizards. Birds commonly seen in the area include jays, ravens, acorn woodpeckers, western bluebirds, various sparrows, Hutton's vireos, red-tailed hawks, and turkey vultures. No bird nests, or signs of nesting activity, were observed during the site visit.

#### **4.5.7 Special Status Species**

Table 7 is the special status species list for the project area, and includes the US Fish and Wildlife Service (USFWS) list of federally threatened, endangered, proposed, candidate, and conservation agreement species potentially occurring in Santa Cruz County, Arizona; as well as other special status species identified by the Arizona Game and Fish Department as occurring within 3 miles of the project vicinity. Table 7 also includes a brief assessment of each species' likelihood of occurrence in the project area based on the species' range/distribution and habitat requirements. Only the shaded species are reasonably expected to occur in the project area.

Table 7. Special Status Species List for Project Area.

Species Name	Status <sup>1</sup>	Habitat Requirements/Range	Possibility of Occurrence in the Project Area
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	ESA LT	Large trees or cliffs near reservoirs, rivers, and streams with abundant prey at various elevations.	Very low. No suitable habitat. No large trees or cliffs near a water source.
California Brown pelican ( <i>Pelecanus occidentalis californicus</i> )	ESA LE	Transient to lower Colorado River and large open bodies of water at various elevations.	Very low. No suitable habitat. No water sources.
Canelo Hills ladies-tresses ( <i>Spiranthes delitescens</i> )	ESA LE	Finely grained, highly organic, saturated soils of cienegas at approximately 5,000 feet.	None. No suitable habitat. No cienegas with saturated soil.
Chiricahua leopard frog ( <i>Rana chiricahuensis</i> )	ESA LT	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs from 3,300 to 8,900 feet.	None. No suitable habitat. No water sources.
Desert pupfish ( <i>Cyprinodon macularius</i> )	ESA LE	Shallow springs, small streams, and marshes below 5,000 feet. Tolerates saline and warm water.	None. No suitable habitat. No water sources.
Gila chub ( <i>Gila intermedia</i> )	ESA LE	Pools, springs, cienegas, and streams from 2,000 to 3,500 feet.	None. No suitable habitat. No water sources.
Gila topminnow ( <i>poeciliopsis occidentalis occidentalis</i> )	ESA LE	Vegetated shallows of small streams, springs, and cienegas below 4,500 feet	None. No suitable habitat. No water sources.
Huachuca water umbel ( <i>Lilaeopsis schaffneriana</i> ssp <i>recurva</i> )	ESA LE	Cienegas, perennial low gradient streams, and wetlands from 3,500 to 6,500 feet.	None. No suitable habitat. No water sources.
Jaguar ( <i>Panthera onca</i> )	ESA LE	From Sonoran Desertscrub to Subalpine Conifer Forest between 1,600 and 9,800 feet. Individual jaguars occasionally range into Arizona from Mexico.	Very low. No suitable habitat due to development and high levels of human activity in project area.
Lesser long-nosed	ESA	From Desertscrub to oak	Medium. Suitable habitat



Table 7. Special Status Species List for Project Area.

Species Name	Status <sup>1</sup>	Habitat Requirements/Range	Possibility of Occurrence in the Project Area
bat ( <i>Leptonycteris curasoae yerbabuena</i> )	LE	transition areas with agave and columnar cacti below 8,000 feet.	within the species range occurs within the project area. However the project area does not contain potential day roost sites, but does contain agave, a known lesser long-nosed bat food plant.
Mexican spotted owl ( <i>Strix occidentalis lucida</i> )	ESA LT	Canyons and dense forests with multi-layered foliage structure statewide from 4,100 to 9,000 feet.	Very low. No suitable habitat. No canyons or dense forests. Out of elevation range.
Northern aplomado falcon ( <i>Falco femoralis septentrionalis</i> )	ESA LE	Open grassland and savannahs from 3,500-9,000 feet in Cochise, Graham, and Greenlee Counties and extreme eastern Santa Cruz County.	Very low. No suitable habitat. No open grasslands or savannahs. Out of species range (project occurs in western Santa Cruz County).
Ocelot ( <i>Leopardus [=felis] pardalis</i> )	ESA LE	Humid tropical and sub-tropical forests, savannahs, and semi-arid thornscrub below 8,000 feet. Individual ocelots are thought to occasionally range into Arizona from Mexico.	Very low. No suitable habitat due to development and high levels of human activity in project area.
Pima pineapple cactus ( <i>Coryphantha scheeri</i> var. <i>robustispina</i> )	ESA LE	Sonoran Desertscrub or Semi-desert Grassland in alluvial valleys or on hillsides with <10% slope in rocky to sandy or silty soils from 2,300 to 5,000 feet.	Medium. Suitable habitat within the species range occurs within the project limits; however, much of the project area is previously disturbed or on slopes > 10%.
Sonora chub ( <i>Gila ditaenia</i> )	ESA LT	Perennial and intermittent small to moderate streams with boulders and cliffs at approximately 3,900 feet.	None. No suitable habitat. No water sources.
Sonora tiger salamander ( <i>Ambystoma tigrinum</i> )	ESA LE	Stock tanks and impounded cienegas in San Rafael Valley	None. No suitable habitat. No water sources.

Table 7. Special Status Species List for Project Area.

Species Name	Status <sup>1</sup>	Habitat Requirements/Range	Possibility of Occurrence in the Project Area
<i>stebbinsi</i> )		and Huachuca Mountains from 4,000 to 6,300 feet.	
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	ESA LE	Dense riparian vegetation near a permanent or semi permanent source of water or saturated soil below 8,500 feet.	Very low. No suitable habitat. No dense riparian vegetation.
Huachuca springsnail ( <i>Pyrgulopsis thompsoni</i> )	ESA C	Aquatic areas, small springs with vegetation and slow to moderate flow from 4,500 to 7,200 feet.	None. No suitable habitat No water sources.
Stephan's riffle beetle ( <i>Heterelmis stephani</i> )	ESA C	Free-flowing springs and seeps, commonly referred to as rheocrenes from 5,100 to 6,600 feet.	None. No suitable habitat. No water sources. Out of elevation range.
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	ESA C	Large blocks of dense riparian vegetation (Cottonwood, willow, or tamarisk galleries) below 6,500 feet.	Very low. No suitable habitat. No dense riparian vegetation
Santa Cruz Beehive Cactus ( <i>Coryphantha recurvata</i> )	USFS S HS	Alluvial soils of valleys and foothills in desert grassland and oak woodland from 3,500 and 5,500 feet.	Medium. Suitable habitat within the species range occurs within the project limits.
Yellow-nosed Cotton Rat ( <i>Sigmodon ochrognathus</i> )	ESA SC	Grassy, dry, rocky slopes often up to 40% in Madrean Evergreen Woodland and Semi-desert Grassland with grasses, beargrass, agave, or yuccas, and montane meadows within ponderosa pine and Douglas fir forests from 3,000 to 8,500 feet.	Medium. Suitable habitat within the species range occurs within the project limits.
Various plant species, including, mesquite ( <i>Prosopis</i> spp.), sotol ( <i>Dasyllirion wheeleri</i> ), Palmer agave ( <i>Agave palmeri</i> ), Mammillaria cactus ( <i>Mammillaria heyderi</i> ), prickly pear ( <i>Opuntia</i> spp.), beehive cactus ( <i>Coryphantha vivipara</i> ), and barrel cactus ( <i>Ferocactus</i> )	APNPL	Various	Present. All of these plant species found in the project limits are afforded some protected under the Arizona Protected Native Plant Law.

Table 7. Special Status Species List for Project Area.

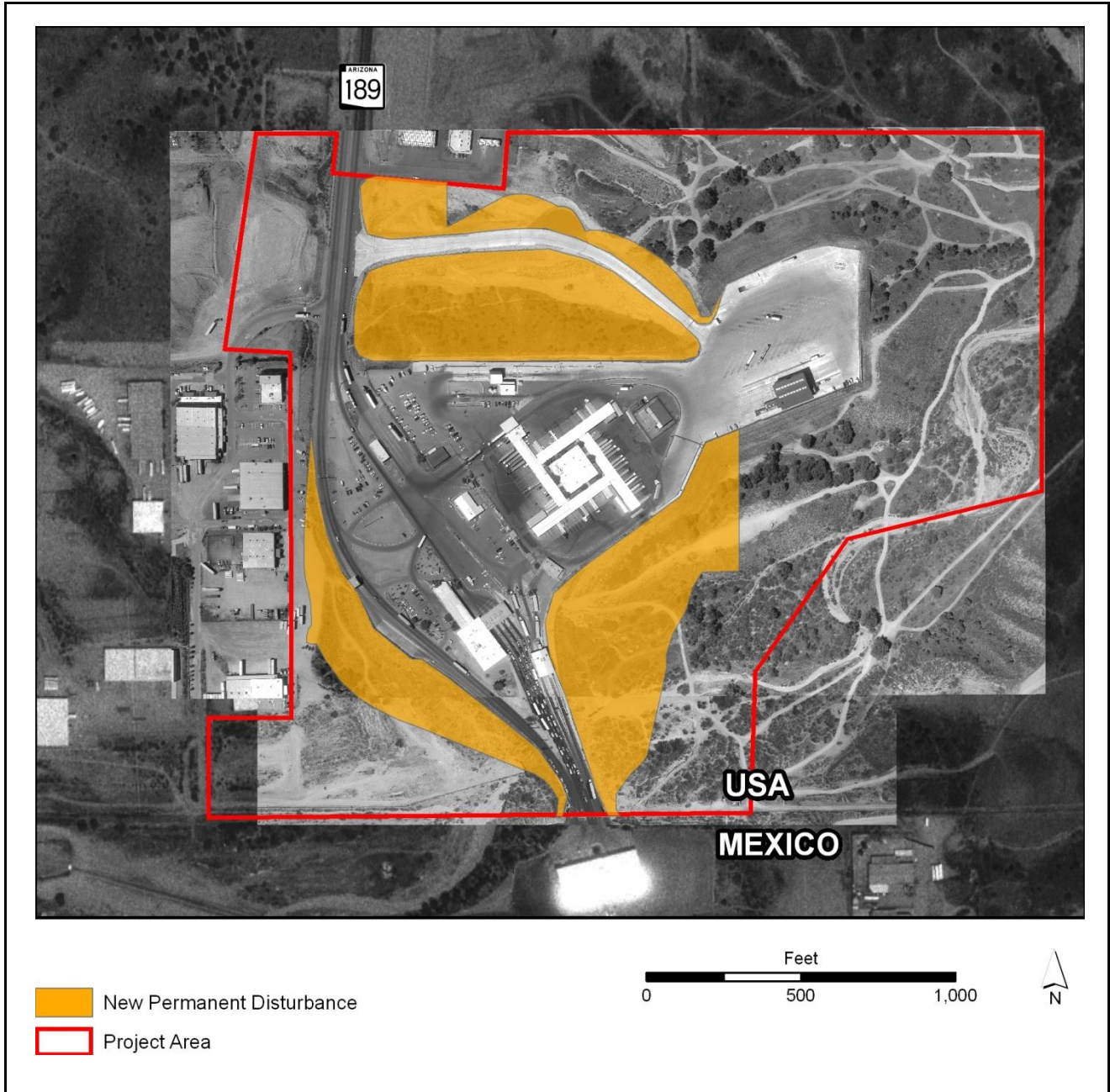
Species Name	Status <sup>1</sup>	Habitat Requirements/Range	Possibility of Occurrence in the Project Area
Various bird species	MBTA	Various	Present. Most bird species occurring in the project limits are protected under the Migratory Bird Treaty Act.

<sup>1</sup> Status Definitions: ESA=Endangered Species Act, LE=Listed Endangered, LT=Listed Threatened, C=Candidate (Source: US Fish and Wildlife Service list of threatened, endangered, proposed, candidate, and conservation agreement species for Santa Cruz County, AZ. List Date: May 17, 2006 [<http://www.fws.gov/arizonaes/>]). USFS S=US Forest Service Sensitive Species. HS=Arizona Native Plant Law Highly Safeguarded Species. ESA SC=Endangered Species Act Species of Concern (Does not receive protection under the Endangered Species Act). APNPL=Arizona Protected Native Plant Law. MBTA=Migratory Bird Treaty Act.

#### 4.5.8 Proposed Action

Table 8 includes existing conditions and estimates of ground disturbance based on Alternative 3 plans (Figure 11).

<b>Table 8. Existing Ground Conditions and Estimated Ground Disturbance.</b>	
Description	Approximate Area (Acres)
Project area	108.4
Developed ground within project limits (existing structures, pavement, etc.)	33.4
Undeveloped ground within project limits	75.0
Undeveloped ground permanently lost to new facilities (structures, pavement, etc.)	13.3
Undeveloped ground temporarily disturbed during construction (maximum)	61.7
<b>Total estimated ground disturbance to currently undeveloped ground surfaces</b>	75.0



**Figure 12. Estimated Ground Disturbance.**

**4.5.8.1 Vegetation**

The project could result in clearing and grubbing a maximum of 75 acres of vegetation. However, removal of vegetation would be minimized to the extent practicable.

#### **4.5.8.2 Wildlife**

Clearing and grading are likely to result in some displacement of small reptiles, mammals, and birds, and could injure or kill small reptiles and mammals if present during these activities. Species likely to be displaced, injured, or killed, such as pocket mice, spiny lizards, and jays are common and widely distributed, and as a result, construction of this project would not appreciably impact the size or future viability of their populations. Because the project is non-linear, future facilities expansion is unlikely to alter existing wildlife movement patterns or result in substantial fragmentation of habitat.

#### **4.5.8.3 Special Status Species**

Pursuant to Section 7 of the Endangered Species Act (ESA), GSA, as the lead federal agency, determined that the Proposed Action would not affect any proposed or designated critical habitat, though the project limits do contain suitable habitat for two species listed as endangered under the ESA—the lesser long-nosed bat (LLNB) and the Pima pineapple cactus. While no roost sites are present in the project area for LLNB, foraging habitat is present in the form of flowering agaves, which the LLNB feeds upon. Approximately 20 of these agave would be removed in the course of the LPOE facilities expansion. While this action does constitute a reduction in food supply for the LLNB, the decrease is so small in relation to the remaining available foraging habitat in the greater project vicinity that the bat is not likely to be adversely affected. Both the Semi-desert Grassland and Madrean Evergreen Woodland Biotic Communities support species of agave known to be used by the LLNB, and the 75 acres of vegetation that could be cleared as a result of the project constitutes just 0.4 % of the approximately 19,491 acres of undeveloped Semi-desert Grassland and Madrean Evergreen Woodland vegetation that currently occurs on the US side of the border within 5 miles of the project area. Therefore, the Proposed Action may affect, but is not likely to adversely affect the LLNB.

Habitat for the Pima pineapple cactus is also present in the project limits; however, most of the land has been disturbed in the past and has slopes greater than 10 percent, where the cactus typically does not grow. In addition, no Pima pineapple cacti were found during the pedestrian survey of the project limits. Therefore, the Proposed Action would not affect the Pima pineapple cactus. In a letter dated February 20, 2007, GSA has requested concurrence with these

determinations through informal consultation procedures with the USFWS pursuant to Section 7 of the ESA. The USFWS concurred with these determinations on March 16, 2007.

Suitable habitat for two additional federally-listed special-status species is present. The Yellow-nosed cotton rat is a USFWS Species of Concern, a status designation that does not receive protection under the ESA. Construction activities would result in ground disturbance to as much as 75 acres of currently undeveloped land in the project limits, and any Yellow-nosed cotton rats present during construction activities could be displaced, injured, or killed. However, the Yellow-nosed cotton rat is widely distributed over southeastern Arizona, and the project area is unlikely to support a substantial population. Therefore, the project may impact individual Yellow-nosed cotton rats, but is unlikely to result in a loss of viability for the species as a whole.

The Santa Cruz beehive cactus is listed as Highly Safeguarded under the Arizona Protected Native Plant Law (APNPL), and is a US Forest Service Species of Concern. Because the project does not occur on US Forest Service lands, the US Forest Service designation does not apply to the project limits. Additionally during pedestrian surveys of the project limits, no Santa Cruz beehive cacti were found. Therefore, the project would not impact the Santa Cruz beehive cactus.

Various other plants protected by APNPL also occur within the project limits, including mesquite, sotol, Palmer agave, Mammillaria, beehive cactus, prickly pear, and barrel cactus. Because construction activities would result in ground disturbance to as much as 75 acres of currently undeveloped land, impacts to protected native plants are likely.

Several bird species protected by the Migratory Bird Treaty Act (MBTA) were observed during the pedestrian survey of the project limits, and many more are likely to utilize the habitat within the project limits at different times throughout the year. While no bird nests or signs of nesting activity were observed during the survey, suitable nesting habitat for some species protected by MBTA is present. If actively nesting birds are disturbed by construction activities, the project could result in “take” of migratory birds.

## **4.5.9 No Action**

### **4.5.9.1 *Vegetation***

The No Action Alternative would not have any direct impact on vegetation because it would not involve any ground-disturbing activities beyond those that have already occurred. However, under the No Action Alternative, the average idling delay time for vehicles waiting to cross the border would increase, which would further contribute to the amount of emissions from vehicles idling and moving slowly in stop-and-go traffic. These increased emissions could indirectly impact vegetation by increasing pollutants in the surrounding area air, water, and soil to levels that may be intolerable to some plant species.

### **4.5.9.2 *Wildlife***

The No Action Alternative would not have any direct impact on wildlife because it would not involve any ground-disturbing activities beyond those that have already occurred. However, increases in vehicle idling time predicted under the No Action Alternative would contribute to increased emissions that could indirectly impact wildlife by raising pollutants in the surrounding area air, water, and soil to levels that may be intolerable to some of wildlife species.

### **4.5.9.3 *Special Status Species***

The No Action Alternative would not have any direct impact on Special Status Species because it would not involve any ground-disturbing activities beyond those that have already occurred. However, increases in vehicle idling time predicted under the No Action Alternative would contribute to increased emissions that could indirectly impact Special Status Species by raising pollutants in the surrounding area air, water, and soil to levels that may be intolerable to some of those species.

## **4.6 Cultural Resources**

Section 106 of the National Historic Preservation Act (NHPA) and NEPA require federal agencies to take into account the effects of their undertakings on historic properties and afford the State Historic Preservation Office (SHPO) and other interested parties opportunity to

comment on such undertakings. To comply with these laws, an assessment of cultural resources was completed for this EA.

Historic properties include prehistoric and historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register. Historic properties may be eligible for nomination to the National Register if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following criteria:

- Criterion A – be associated with events that have made a significant contribution to the broad patterns of our history
- Criterion B – be associated with the lives of persons significant in our past
- Criterion C – embody the distinctive characteristics of a type, period, or method of construction; or represent the work of a master; or possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction
- Criterion D – have yielded, or may be likely to yield, information important in prehistory or history

A cultural resources assessment was based on records searches and field investigations. Database searches were conducted in the Arizona State Museum's records site and survey database (AZSITE) and the National Register of Historic Places (National Register) on-line records. In addition, record checks were conducted at the SHPO, Arizona State University, ASLD, and ADOT Historic Preservation portal.

Surveys for sixteen projects have been conducted in the vicinity of the study area. Many of these surveys were performed for ADOT along SR 189. Portions of the LPOE have been surveyed several times. In 1999, Logan Simpson Design, Inc., (LSD) conducted a survey, on behalf of ADOT, for their facility at the LPOE (Schaafsma 1999). In 2004, LSD surveyed the land currently occupied by the POE on behalf of the Department of Homeland Security (Breen 2004). In 2005, LSD surveyed a 0.5-acre parcel just east of the current ADOT facility (Stone and Lonardo 2006).

Of the four sites located within one mile of the area of potential effect (APE), only one, AZ EE:9:81(ASM), was actually located within the APE. However, this site was determined



ineligible by ADOT in consultation with the State Historic Preservation Office (SHPO). This site was razed, as it was located within the footprint of previous construction by ADOT. The remaining cultural resources are historic houses located outside the APE.

On November 9 and 10, 2006, working under Arizona Antiquities Act Blanket Permit 2006-018bl and GSA contract GS-09P-06-KNC-3010, the APE was surveyed by AZTEC for isolated artifacts, artifact scatters, trash dumps, rock features, ash, stained soil, or other indication of cultural activity (Gordon, 2006). The intensive survey of the study area located no historic properties or cultural resources. No historic properties were discovered.

#### **4.6.1 Cultural History**

According to the archaeological record, southern Arizona is one of the longest inhabited regions in Arizona. The Prehistoric occupation is divided into three periods: Paleoindian, Archaic, and Ceramic. The Paleoindian period (ca. 12,000–8000 B.C.) was characterized by small bands of nomadic hunter-gatherers pursuing large game such as mammoth, bison, and horse. In southern Arizona, this tradition manifests itself as large projectile points (Clovis points) and “kill sites.” A substantial number of Paleoindian sites are found within the region, many occurring 45–75 miles from the LPOE, particularly along the San Pedro River.

The Archaic period (ca. 8000 B.C.–A.D. 200) was born from a change in subsistence strategy. The nomadic groups began hunting smaller game, such as deer and rabbit, and began to rely more heavily on wild plant foods. This change is represented by small, stemmed and notched, projectile points and an increased number of ground stone artifacts. Throughout the progression of the Archaic period, the dependence on plant food gradually increased.

With the dawn of agriculture came the Ceramic period (ca. A.D. 200–1500). In southern Arizona, two cultures, the Hohokam and the Trincheras, existed contemporarily. The Hohokam were sedentary agriculturalists best known for their extensive canal systems, pottery, and architecture. The Hohokam sequence is divided into four periods: Pioneer, Colonial, Sedentary, and Classic. During the Pioneer period (ca. A.D. 200–750), the Hohokam lived in pithouses in small agricultural villages or hamlets in central and southern Arizona. Through time, the villages grew and architecture improved. It was during this Colonial period (ca. A.D. 750–900) that

ceremonial ballcourts first appeared. During the Sedentary period (ca. A.D. 900–1150), the population increased, canal systems grew and became more complex, and platform mounds appeared. With the Classic period (A.D. 1150–1500) came a change in community structure and design. Compound walls were constructed around aboveground residential structures, and the ballcourt system was abandoned. Along with a decline in population, outside trade decreased. About A.D. 1450, the Hohokam culture collapsed.

Existing contemporarily to the Hohokam in northern Mexico and extreme southern Arizona was the Trincheras culture. Unfortunately, little is known about this culture. It is known that the Trincheras occupying the lowlands lived in pithouses similar to those of the Hohokam and lived on the terraced slopes of volcanic hillsides. The terraces likely served several purposes: platforms for small structures, agricultural features for small gardens, and defensive structures. Sites, especially those of the late Prehistoric period, along the modern international border are characterized by elements of both Hohokam and Trincheras traditions.

The Historic period can be divided into three parts: Spanish, Mexican, and American. The Spanish period (A.D. 1539–1821) began when Fray Marcos de Niza passed through southern Arizona on his way to New Mexico and the fabled Seven Cities of Cibola. In 1540, Coronado likely passed through southeastern Arizona, although the exact route is still under debate. It was not until the 1690s that the Spanish began to systematically explore southern Arizona.

When the Spanish first entered southern Arizona, they encountered two groups: the Sobaipuri living along the San Pedro River and the Pima living along the Santa Cruz and Gila rivers. The Spanish military and clergy quickly began establishing a presence in the new territory. In 1687, Father Kino began establishing missions in northern Sonora and southern Arizona. By using presidios and missions to reorganize populations, the Spanish strengthened their hold on the indigenous populations. At the same time, the indigenous people were introduced to new crops and livestock and were afforded protection from the Apache. Two missions, Guevavi and Tumacacori, were established in 1691 close to present-day Nogales. The Spanish clergy continued to convert indigenous populations to Christianity and exploit their labor for mining, agriculture, and ranching in the area. This led to the Pima Revolt of 1751, which was eventually suppressed.

The Mexican War of Independence ended with the establishment of a republic in 1821. The Mexican period (A.D. 1821–1854) was established and Spanish soldiers abandoned the presidios and the number of Apache raids increased. In 1827, all foreign missionaries were expunged from Mexico, and most of the missions were abandoned. The Apache continued to control the area, forcing people into concentrated central communities like Tucson and Nogales and isolating southern Arizona population, which began aligning itself with the expanding interests of the US. Despite Mexico's retention of southern Arizona after the Mexican-American War (1845–1848), the US acquired the region in the 1854 Gadsden Purchase.

Because of the Gadsden Purchase, southern Arizona was incorporated into the Territory of New Mexico and the American period (1854–present) began. The US viewed the area as key in the establishment of a transcontinental railroad, linking California with the rest of the country. In 1861, with the onset of the Civil War, the military essentially vacated the area. Apache raids dramatically increased during this time. Many of the ranches and mining claims were abandoned as people sought safety in Tucson and Mexico. The fortified ranch of Pete Kitchen, located just north of Nogales, was the only civilian establishment to remain occupied during this time. In 1863, Arizona was established as a Territory. At the close of the Civil War, US forces returned to the region and began a new campaign against the Apache. With the introduction of the railroad in the 1880s, the population of Arizona rapidly grew and included Mormon, Mexican, African-American, and Asian settlers as well as European immigrants. Gradually, the Apache threat diminished and finally ended in 1886, when Geronimo surrendered to General Nelson Miles. Following the conclusion of the Apache Wars, many of the military posts in Arizona were closed.

However, in 1910, a new threat emerged as the result of a Mexican rebellion. As a response to this threat, soldiers were garrisoned in communities along the border, especially around Nogales. In 1912, Arizona was granted statehood. On March 9, 1916, Pancho Villa and others raided Columbus, New Mexico. This provoked an immediate response from the US. With the onset of World War I, many of the troops were recalled and sent to Europe and Villa was never captured. No further attacks were made against the US.

#### **4.6.2 Proposed Action**

Because there are no historic properties within the APE of the Proposed Action, the project would have no impact on historic properties. Pursuant to Section 106 of the National Historic Preservation Act, on March 1, 2007 GSA consulted with the Arizona State Historic Preservation Office, the Tohono O'odham Nation, and the Hopi Tribe. The Arizona State Historic Preservation Office and the Hopi Tribe concurred with this finding on April 4, 2007 and March 6, 2007 respectively (consultation letters attached in Appendix 10.1). No response was received from the Tohono O'odham Nation.

#### **4.6.3 No Action**

The No Action Alternative would have no impact on historic properties.

#### **4.7 Air Quality Analysis**

The Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS), for specific pollutants determined to be of concern with respect to the health and welfare of the general public. The EPA defines ambient air quality in 40 Code of Federal Regulations (CFR) 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” Ambient air quality standards are intended to protect public health and welfare and are classified as either “primary” or “secondary” standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The major pollutants of concern, or criteria pollutants, are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, suspended particulate matter less than 10 microns, and lead. The NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Short-term standards (1-, 8-, and 24-hour averaging periods) are established for pollutants contributing to acute health effects, while long-term standards (annual averages) are established for pollutants contributing to long-term health effects. The NAAQS are included in Table 9. The state of Arizona has adopted the NAAQS. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards

are known as attainment areas. The Clean Air Act (CAA) Amendments of 1990 established new deadlines for the achievement of NAAQS, depending on the severity of non-attainment.

The EPA requires each state to develop a State Implementation Plan (SIP) that sets forth how the CAA provisions would be implemented within that state to obtain the NAAQS. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA and EPA, approval of the SIP must be made by the EPA. The purpose of the SIP is two-fold. First, it must provide a strategy that would result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

<b>Table 9. National Ambient Air Quality Standards.</b>		
<b>Pollutant</b>	<b>Standard Value*</b>	<b>Standard Type</b>
<b>Carbon Monoxide (CO)</b>		
8-hour average	9ppm (10mg/m <sup>3</sup> )	P
1-hour average	35ppm (40mg/m <sup>3</sup> )	P
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>		
Annual arithmetic mean	0.053ppm (100µ/m <sup>3</sup> )	P and S
<b>Ozone (O<sub>3</sub>)</b>		
1-hour average	0.12ppm (235µ/m <sup>3</sup> )	P and S
8-hour average	0.08ppm (157µ/m <sup>3</sup> )	P and S
<b>Lead (Pb)</b>		
Quarterly average	1.5µg/m <sup>3</sup>	P and S
<b>Particulate&lt;10 micrometers (PM<sub>10</sub>)</b>		
Annual arithmetic mean	50µg/m <sup>3</sup>	P and S
24-hour average	150µg/m <sup>3</sup>	P and S
<b>Particulate&lt;2.5 micrometers (PM<sub>2.5</sub>)</b>		
Annual arithmetic mean	15µg/m <sup>3</sup>	P and S
24-hour Average	65µg/m <sup>3</sup>	P and S
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>		
Annual arithmetic mean	0.03ppm (80µg/m <sup>3</sup> )	P
24-hour average	0.14ppm (365µg/m <sup>3</sup> )	P
3-hour average	0.50ppm (1300µg/m <sup>3</sup> )	S
Source: USEPA 2001. Legend: P=Primary; ppm=parts per million; µg/m <sup>3</sup> =micrograms per cubic meter; S=Secondary; mg/m <sup>3</sup> =milligrams per cubic meter.		

#### **4.7.1 Criteria Pollutants and Effects**

Pollutants that have established national standards are referred to as “criteria pollutants.” The sources of these pollutants, their effects on human health and the nation’s welfare, and their final deposition in the atmosphere vary considerably. A brief description of each pollutant is described as follows.

##### **4.7.1.1 Carbon Monoxide (CO)**

Carbon Monoxide is a colorless, odorless, poisonous gas that primarily affects the cardiovascular system. In urban areas, motor vehicles are the source of over 90 percent of the CO emissions that cause ambient levels to exceed the NAAQS. Areas of high CO concentrations are usually localized. The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level. These conditions typically occur in or near congested roadways and intersections in fall and winter months.

##### **4.7.1.2 Nitrogen Dioxide (NO<sub>2</sub>)**

Nitrogen dioxide is a brownish gas. NO<sub>2</sub> is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO<sub>2</sub> are collectively referred to as nitrogen oxides (NO<sub>x</sub>) and are major contributors to ozone formation. NO<sub>2</sub> is only potentially irritating at atmospheric concentrations. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. According to the study of *Freight Activity and Air Quality Impacts in Selected NAFTA Trade Corridors*, cross-border freight is found to be responsible for 3 percent to 11 percent of all mobile source NO<sub>x</sub>, and total trade-related emissions of NO<sub>x</sub> will decline or remain constant compared to current levels, despite trade volumes that grow by two to four times due to vehicle emission controls.

##### **4.7.1.3 Particulate Matter (PM)**

Particulate matter refers to aerosols that are suspended in the atmosphere and may irritate or damage the respiratory system. For on road mobile source emission, vehicular emissions and the re-suspension of road dust by vehicular activity are sources. PM<sub>10</sub> refers to particulate matter with diameters less than 10 microns; PM<sub>2.5</sub> refers to particulate matter with diameters less than 2.5

microns. Most vehicular emissions are in the PM<sub>2.5</sub>-range, and road and construction dust is often in the PM<sub>10</sub> range.

The formation of PM<sub>10</sub> particulate pollution is dependent upon several factors. Among these factors are stagnant masses, severe temperature inversions in the winter, high winds in the summer, and fine, silty soils characteristic of desert locations. In the Nogales non-attainment area, PM<sub>10</sub> concentrations are elevated during various seasons of the year and under different weather conditions. The variability is due to the diverse composition of PM<sub>10</sub> and the sources contributing to this diversity. Based on the *Plan of Action for Improving Air Quality in Ambos Nogales, 2005*, there are five primary contributors to particulate matter contamination in Ambos Nogales. They are residential emissions, soil erosion, unpaved traffic areas, traffic congestion and vehicle emissions. Unpaved traffic areas are the single largest source of particulate matter contamination in the air of Ambos, Nogales.

According to *Cross Border In-Use Emission Study For Heavy Duty Vehicles, Nogales, AZ*, the Arizona Department of Environmental Quality (ADEQ) and Mexico conducted a study from 1994 to 1998 to address air quality concerns in Nogales, Arizona, and its sister city south of the border, Nogales, Sonora. This study addressed hazardous air pollutants (HAPs) and PM<sub>10</sub>. The study found that the air quality on the southern side of the border was generally more degraded than on the northern side with respect to HAPs and particulates. HAPs emissions in Nogales, Sonora, were higher than in Nogales, Arizona, due to the many industrial sources, higher motor vehicle traffic density, and larger population. Most of the HAPs emissions were from area sources, except for HAPs originating from solvent use and soldering operations at the maquiladoras in Nogales, Sonora. PM<sub>10</sub> emissions were also higher in Nogales, Sonora, than in Nogales, Arizona, due mainly to emissions from entrained paved and unpaved road dust. The PM<sub>10</sub> emissions in Nogales, Sonora, were six times greater than in Nogales, Arizona. Although, Nogales, Sonora, has 66 percent of the vehicle miles traveled compared to Nogales, Arizona, its PM<sub>10</sub> emissions are higher due to a higher percentage of vehicle traffic that occurs on unpaved roads, and, to a lesser extent, a higher percentage of vehicle traffic on dustier paved roads.

Throughout Arizona, PM<sub>10</sub> concentrations have declined since 1985. Road paving and better industrial dust controls are responsible for most of the improvement. According to the study of

*Freight Activity and Air Quality Impacts in Selected NAFTA Trade Corridors*, cross-border freight is found to be responsible for 5 percent to 16 percent of all mobile source PM<sub>10</sub>, and total trade-related emissions of PM<sub>10</sub> will decline or remain constant compared to current levels, despite trade volumes that grow by two to four times due to vehicle emission controls.

#### **4.7.1.4 Sulfur Dioxide (SO<sub>2</sub>)**

Sulfur Dioxide is a product of high-sulfur fuel combustion. The main sources of SO<sub>2</sub> are coal and oil used in power stations, industry and for domestic heating. SO<sub>2</sub> is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children.

#### **4.7.1.5 Ozone (O<sub>3</sub>)**

Ozone is a highly toxic form of oxygen and a major component of the complex chemical mixture that forms photochemical smog. Ozone is the main ingredient of smog and is not produced directly, but is formed by a reaction between sunlight, NO<sub>x</sub> and HC. Substantial Ozone formations generally require a stable atmosphere with strong sunlight, thus high levels of Ozone are generally a concern in the summer. Ozone affects the respiratory system and damages vegetation by inhibiting its growth.

### **4.7.2 Mobile Source Air Toxics (MSAT)**

In addition to the criteria pollutants for which there are NAAQS, EPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries). The CAA identified 188 air toxics – 21 have been identified with mobile sources. Of these 21, EPA has identified six as being priority MSATs.

#### **4.7.2.1 Benzene**

Benzene (C<sub>6</sub>H<sub>6</sub>) is a volatile, colorless and highly flammable liquid that dissolves easily in water. Benzene is found in emissions from burning coal and oil, motor vehicle exhaust, and evaporation from gasoline service stations and in industrial solvents. These sources contribute to elevated levels of benzene in the ambient air, which may subsequently be breathed by the public. Acute



(short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood. Reproductive effects have also been reported for women exposed by inhalation at high levels.

#### **4.7.2.2 *Formaldehyde***

Formaldehyde (CH<sub>2</sub>O) is a colorless gas with a pungent, suffocating odor at room temperature. Formaldehyde has been detected in ambient air; the average concentrations reported in US urban areas were in the range of 11 to 20 parts per billion. The major sources appear to be power plants, manufacturing facilities, incinerators, and automobile exhaust emissions. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer.

#### **4.7.2.3 *Diesel particulate matter/diesel exhaust organic gases (DPM/DEOG)***

Diesel particulate matter/diesel exhaust organic gases are a complex mixture of thousands of gases and fine particles emitted by a diesel-fueled internal combustion engine. One of the main characteristics of diesel exhaust is the release of particles at a relative rate of about 20 times greater than from gasoline-fueled vehicles, on an equivalent fuel energy basis. Almost 94 percent of the mass of these particles are less than 2.5 microns in diameter. These particles are primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances that are mutagenic, cytotoxic, or carcinogenic.

#### **4.7.2.4 *Acetaldehyde***

Acetaldehyde (CH<sub>3</sub>CHO) is a colorless mobile liquid that is flammable and miscible with water. Acetaldehyde is ubiquitous in the ambient environment. It is an intermediate product of higher plant respiration and formed as a product of incomplete wood combustion in fireplaces and woodstoves, coffee roasting, burning of tobacco, vehicle exhaust fumes, and coal refining and waste processing. Acute (short-term) exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic (long-term) intoxication by acetaldehyde resemble those of alcoholism.

#### **4.7.2.5 Acrolein**

Acrolein (C<sub>3</sub>H<sub>4</sub>O) is a water-white or yellow liquid that burns easily and is easily volatilized. Acrolein can be formed from the breakdown of certain pollutants found in outdoor air, from burning tobacco, or from burning gasoline. It is extremely toxic to humans from inhalation and dermal exposure. Acute (short-term) inhalation exposure may result in upper respiratory tract irritation and congestion.

#### **4.7.2.6 1,3-Butadiene**

Butadiene (C<sub>4</sub>H<sub>6</sub>) is a colorless gas with a mild gasoline-like odor. Motor vehicle exhaust is the most common source of 1,3-butadiene. Acute (short-term) exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases.

### **4.7.3 Greenhouse Gases (GHG)**

Gases that trap heat in the atmosphere are often called greenhouse gases. Carbon dioxide (CO<sub>2</sub>) is the most important anthropogenic greenhouse gas and accounts for more than 75 percent of all anthropogenic GHG emissions. Increasing concentrations of CO<sub>2</sub> in the atmosphere are primarily a result of emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes. Other greenhouse gases include methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases. Transportation sources accounted for 29 percent of total US GHG emissions in 2006.

Ambient concentrations of GHGs do not cause direct adverse health effects (such as respiratory or toxic effects), but public health risks and impacts as a result of elevated atmospheric concentrations of GHGs occur via climate change. The effects of climate change include more frequent and intense heat waves, more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, etc.

### **4.7.4 Federal Attainment Status**

The CAA authorized the EPA to designate those geographic regions that have not met the NAAQS as non-attainment and to classify them according to their degree of severity. States that

fail to attain the NAAQS for any of the criteria pollutants are required to submit SIPs that contain procedures to monitor, control, maintain, and enforce compliance with the NAAQS. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA and EPA, approval of the SIP must be made by the EPA.

Arizona is located in the EPA's Region 9. The ADEQ is the state agency responsible for controlling present and future sources of air pollution in Arizona. Nogales is currently in violation of the NAAQS for PM<sub>10</sub>. The emission sources have been identified as unpaved roads, cleared areas, and paved roads. The Nogales PM<sub>10</sub> nonattainment area SIP was submitted to the EPA on June 17, 1993 and demonstrates attainment "but for emissions emanating from outside the United States" (see Section 179B of the CAA). The plan was determined complete by the EPA on November 30, 1993; however, EPA has taken no further action on the plan.

#### **4.7.5 Ambient Levels**

The ADEQ and Pima County maintain a network of air quality monitoring sites throughout Santa Cruz and Pima Counties. Data from three monitoring locations were selected due to the pollutants monitored and/or their relative proximity to the project area. Concentrations obtained at these locations during 2006 are summarized in Table 10.

Monitoring location 1 is located at the Nogales post office, which is approximately 1.8 miles from the project area. Monitoring location 2 is located at the Sonora Nogales Fire Station in Mexico, which is approximately 1.5 miles from the project area. Monitoring location 3 is located in the community of Green Valley in Pima County, which is approximately 38 miles from the project area. During 2006, the maximum concentrations at location 3 comply with the NAAQS for PM<sub>10</sub>, PM<sub>2.5</sub>, and Ozone. The maximum concentrations obtained at location 1 exceeded the 24-hour and Annual PM<sub>10</sub> NAAQS, and 24-hour and Annual PM<sub>2.5</sub> NAAQS. The maximum concentrations obtained at location 2 exceeded the 24-hour and Annual PM<sub>10</sub> NAAQS. Maximum concentration of 24-hour PM<sub>10</sub> in location 1 is 240 µg/m<sup>3</sup> and maximum concentration of 24-hour PM<sub>10</sub> monitored in location 2 is 159 µg/m<sup>3</sup>. The maximum concentration of 24-hour PM<sub>2.5</sub> in location 1 is 79.8 µg/m<sup>3</sup>.



**Table 10. Air Quality Monitoring Data (2006).****Maximum Ambient Concentration of NAAQS Criteria Pollutants**

Location	Pollutant	Average Time	Concentration	No. of Exceedances
1. Nogales Post Office, AZ (300 N. Morley Ave.)	PM <sub>10</sub>	24-hour	240 µg/m <sup>3</sup>	20.4
		Annual	64 µg/m <sup>3</sup>	N/A
	PM <sub>2.5</sub> <sup>(1)</sup>	24-hour	79.8 µg/m <sup>3</sup>	N/A
		Annual	16.19 µg/m <sup>3</sup>	N/A
2. Sonora Nogales Fire Station (Northwest corner of Lopaz and Mantels)	PM <sub>10</sub>	24-hour	159 µg/m <sup>3</sup>	N/A
		Annual	53 µg/m <sup>3</sup>	N/A
3. Green Valley (601 N. La Cañada Dr.)	Ozone	One-hour	0.083 ppm	0
		Eight-hour	0.073 ppm	0
	PM <sub>10</sub>	24-hour	81 µg/m <sup>3</sup>	0
		Annual	17 µg/m <sup>3</sup>	0
	PM <sub>2.5</sub>	24-hour	9 µg/m <sup>3</sup>	0
		Annual	2.79 µg/m <sup>3</sup>	0

µg/m<sup>3</sup> – micrograms per cubic meter  
ppm – parts per million  
Source: ADEQ Air Quality Annual Report 2007

EPA has developed ambient air quality trends for PM<sub>10</sub> using a nationwide network of monitoring sites. Between 1990 and 2006, PM<sub>10</sub> concentrations decreased 30 percent nationwide.

According to the Federal Highway Administration (FHWA), truck and rail transport consume about 35 billion gallons of diesel fuel each year, which produces CO<sub>2</sub>, NO<sub>2</sub>, and PM. Of the nation’s total transportation-related emissions, ground freight contributes 40 percent of NO<sub>2</sub> and 30 percent of PM. Truck idling consumes almost 1 billion gallons of diesel fuel annually and emits an estimated 11 million tons of CO<sub>2</sub>, 180,000 tons of NO<sub>2</sub>, and 5,000 tons of PM.

According to the *Plan of Action for Improving Air Quality in Ambos, Nogales* by the Arizona-Mexico Commission, vehicle emissions are the second most important source of PM contamination in the air of Nogales. The ports are the most important points of traffic congestion in Nogales.

#### **4.7.5.1 *PM<sub>10</sub> and PM<sub>2.5</sub> Impact Assessment***

EPA specifies in 40 CFR 93.123(b)(1) of the final rule that projects of air quality concern are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the PM<sub>2.5</sub> or PM<sub>10</sub> SIP as a localized air quality concern. The final rule (EPA, 2006) defines the projects of air quality concern that require a PM<sub>2.5</sub> or PM<sub>10</sub> hot-spot analysis in 40 CFR 93.123(b)(1) as:

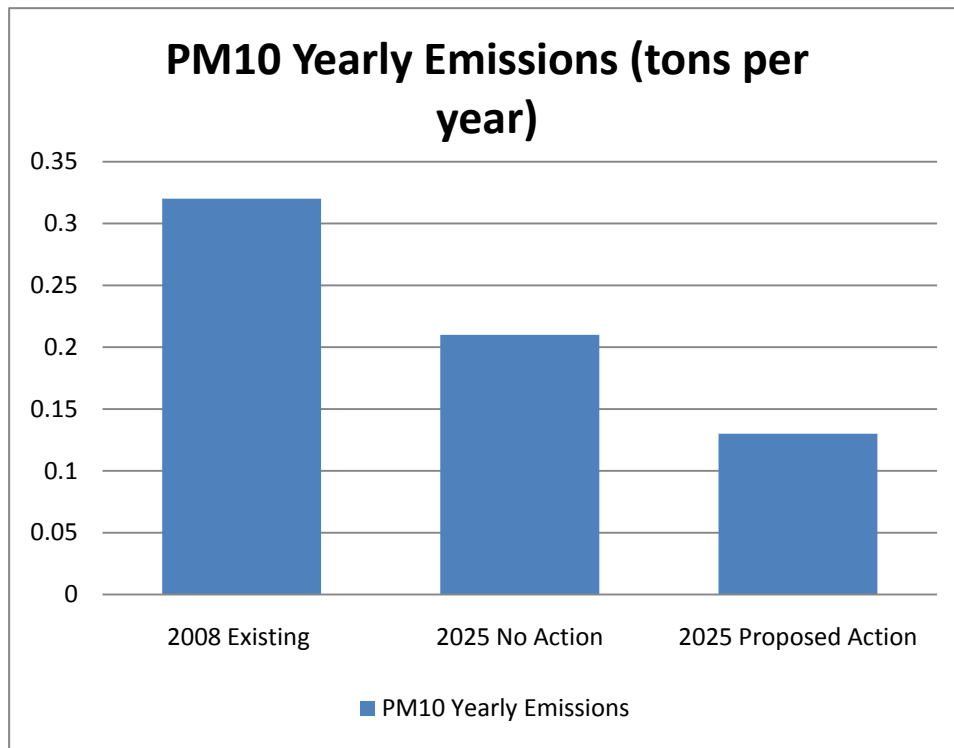
- (i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles, such as a roadway with 125,000 Annual average daily traffic (AADT) and 8 percent diesel traffic.
- (ii) Projects affecting intersections that operate at LOS D, E, or F with a significant number of diesel trucks or that will change to LOS D, E or F as a result of the increased traffic volumes from a significant number of diesel vehicles related to the project.
- (iii) New bus and rail terminals and transfer points with a significant number of diesel vehicles congregating at a single location.
- (iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.
- (v) Projects in or affecting locations which are identified in an applicable PM<sub>2.5</sub> or PM<sub>10</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

For this project, diesel truck traffic has increased steadily since 2002. The diesel truck percentage is approaching 20 percent, which creates delay at the LPOE. As a result, PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot analyses are required for this project since 40 CFR 93.123(b)(1)(iii) applies.

#### 4.7.5.2 *PM<sub>10</sub> Results*

Total PM<sub>10</sub> emissions in tons per year were calculated for the Existing Condition, 2025 No Action and Proposed Action Conditions, as shown in Figure 12.

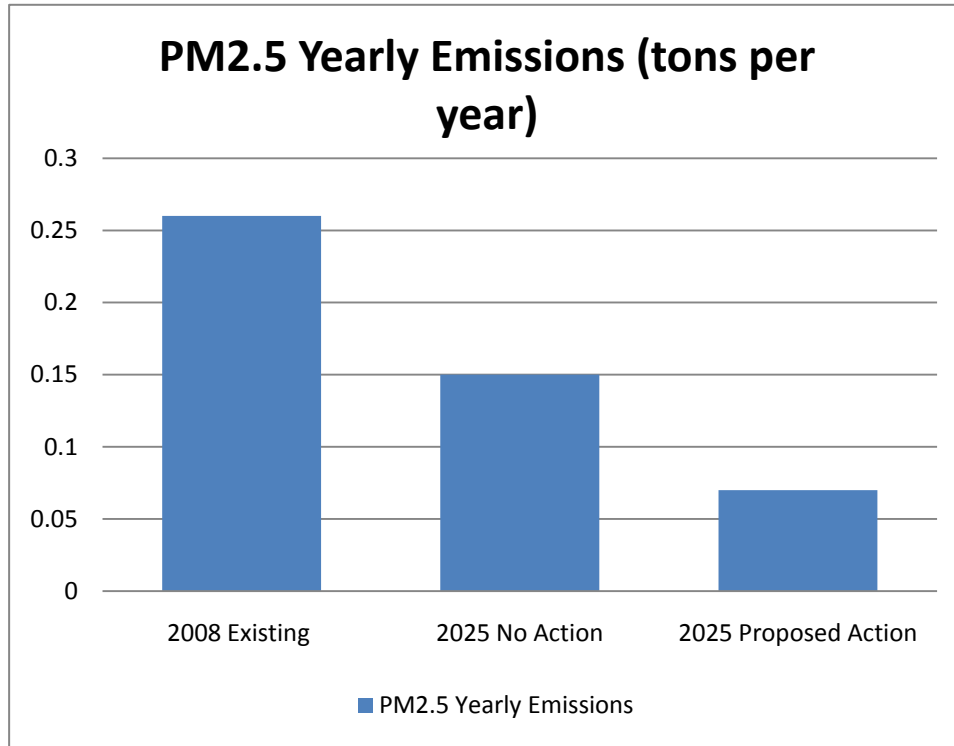
The total PM<sub>10</sub> emissions for the Existing Condition are 0.32 tons per year within the project limits. The total PM<sub>10</sub> emissions for 2025 No Action and Proposed Action Conditions are 0.21 tons per year and 0.13 tons per year, respectively. Compared with 2025 No Action Condition, the PM<sub>10</sub> emissions decrease approximately 38 percent for the 2025 Proposed Action Condition. The decrease in the PM<sub>10</sub> emissions are due to more stringent vehicle and fuel emissions standards, as well as reduced delay time. As a result, the project would have beneficial impacts for PM<sub>10</sub>.



**Figure 13. PM<sub>10</sub> Yearly Emissions (tons per year).**

### 4.7.5.3 *PM<sub>2.5</sub> Results*

Total PM<sub>2.5</sub> emissions in tons per year were calculated for the Existing Condition, 2025 No Action and Proposed Action Conditions, as shown in Figure 13.



**Figure 14. PM<sub>2.5</sub> Yearly Emissions (tons per year).**

The total PM<sub>2.5</sub> emissions for the Existing Condition are 0.26 ton per year within the project limits. The total PM<sub>2.5</sub> emissions for 2025 No Action and Proposed Action Conditions are 0.15 ton per year and 0.07 ton per year, respectively. Compared with 2025 No Action Condition, the PM<sub>2.5</sub> emissions decrease approximately 54 percent for the 2025 Proposed Action Condition. The decrease in the PM<sub>2.5</sub> emissions are due to more stringent vehicle and fuel emissions standards, as well as reduced delay time. As a result, the project would have beneficial impacts for PM<sub>2.5</sub>.



#### 4.7.6 MSAT Impact Assessment

The EPA is the lead Federal Agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of HAPs from Mobile Sources 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the CAA. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in vehicle miles traveled, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in Figure 14 below:

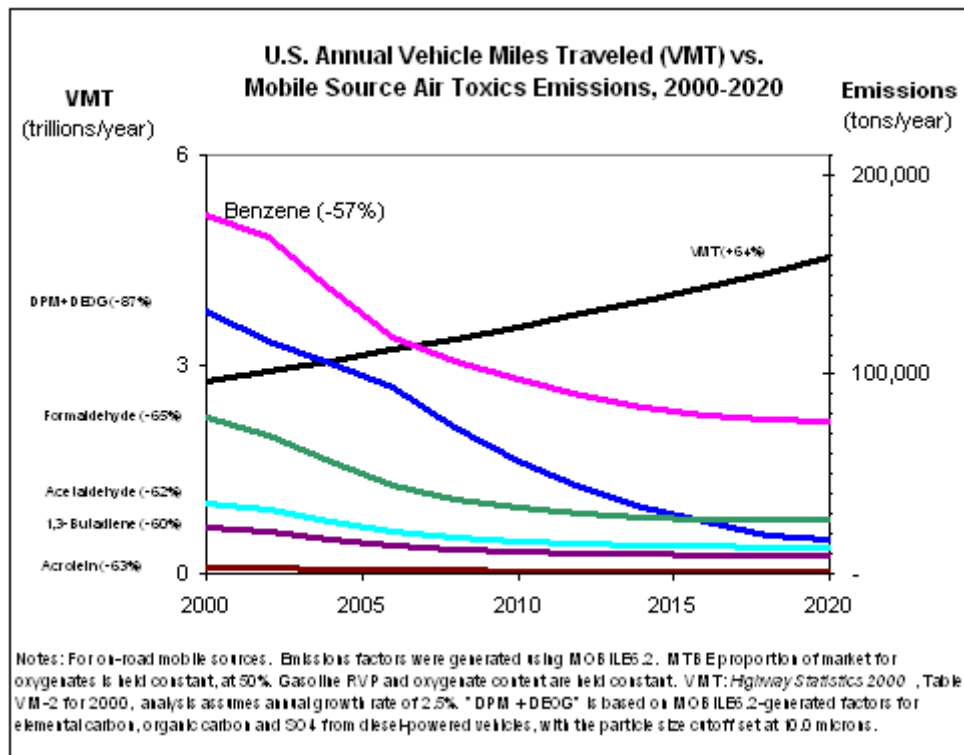


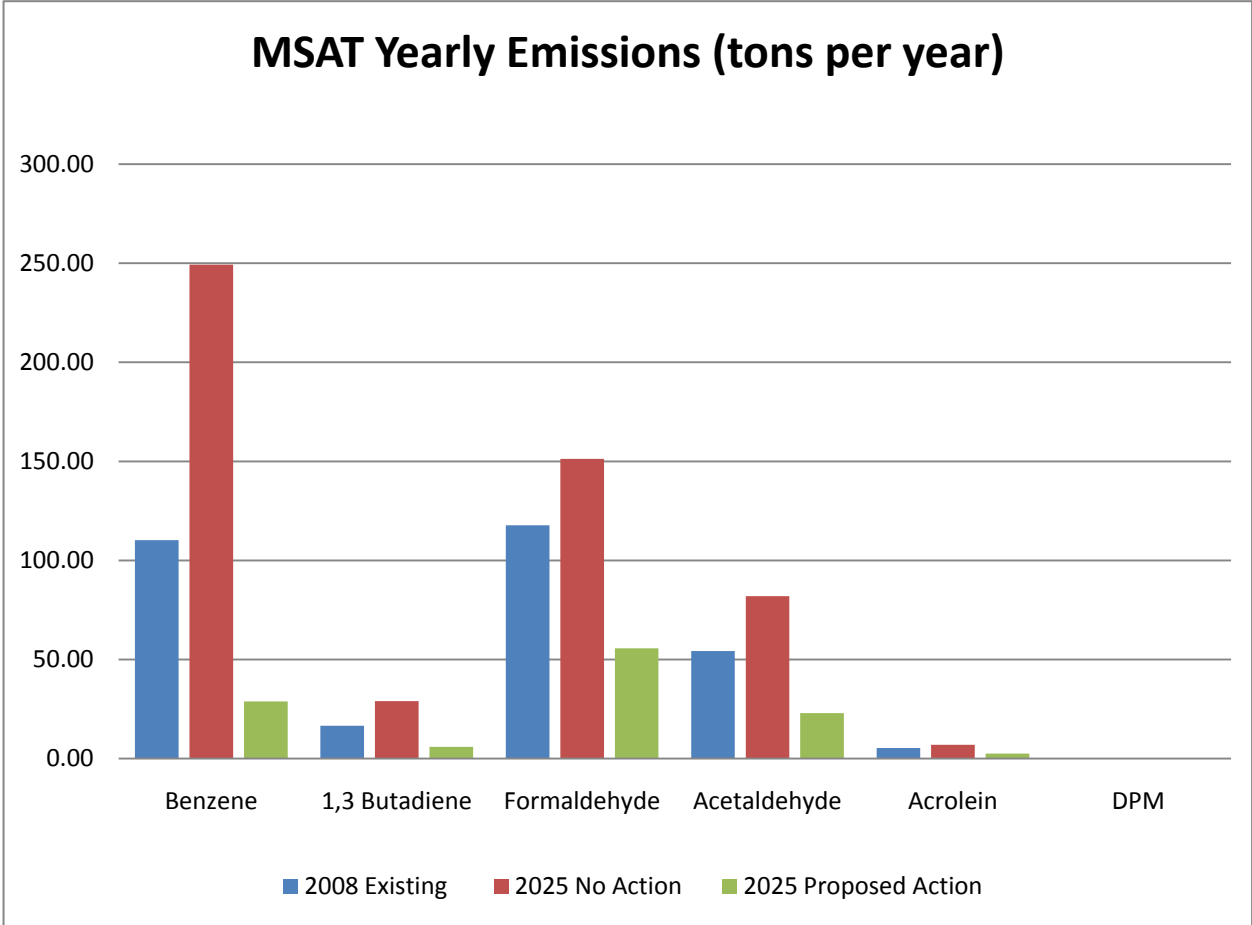
Figure 15. MSAT Emissions 2000–2020.

In February 2007, EPA issued a final rule to reduce HAPs from mobile sources. The final standards will lower emissions of benzene and other air toxics in three ways: (1) by lowering the benzene content in gasoline; (2) by reducing exhaust emissions from passenger vehicles operated at cold temperatures; and,(3) by reducing emissions that evaporate from, and permeate through, portable fuel containers. Under this rule, EPA is requiring that, beginning in 2011, refiners must meet an annual average gasoline benzene content standard of 0.62 percent by volume on all gasoline (the national benzene content of gasoline today is about 1.0 percent by volume). In addition, EPA is adopting new standards to reduce non-methane hydrocarbon exhaust emissions from new gasoline-fueled passenger vehicles at colder temperatures below 75 degrees Fahrenheit. Non-methane hydrocarbons include many MSATs, such as benzene. Finally, the February 2007 rule establishes standards that will limit hydrocarbon emissions that evaporate or permeate through portable fuel containers such as gas cans. EPA expects that the new fuel benzene standard and hydrocarbon standards for vehicles and gas cans will together reduce total emissions of MSATs by 330,000 tons in 2030, including 61,000 tons of benzene. As a result of this rule, new passenger vehicles will emit 45 percent less benzene, gas cans will emit 78 percent less benzene, and gasoline will have 38 percent less benzene overall. In addition, the hydrocarbon reductions from the vehicle and gas can standards will reduce volatile organic compound emissions (which are precursors to ozone and can be precursors to PM<sub>2.5</sub>) by over 1 million tons in 2030. The vehicle standards will reduce direct PM<sub>2.5</sub> emissions by 19,000 tons in 2030 and could also reduce secondary formation of PM<sub>2.5</sub>. Once the regulation is fully implemented, EPA estimates that these PM reductions will prevent nearly 900 premature deaths annually.

Total MSAT emissions in tons per year were calculated for the Existing Condition, 2025 No Action and Proposed Action Conditions, as shown in Table 11.

<b>Table 11. MSAT Yearly Emissions (tons per year).</b>			
<b>MSATs</b>	<b>2008 Existing</b>	<b>2025 No Action</b>	<b>2025 Proposed Action</b>
Benzene	110.23	249.30	28.83
1,3 Butadiene	16.60	28.99	5.93
Formaldehyde	117.80	151.28	55.68
Acetaldehyde	54.33	81.97	22.93
Acrolein	5.36	6.97	2.50
DPM	0.26	0.13	0.05

The total emissions for the six priority MSATs for 2025 Proposed Action Condition would be reduced significantly compared with 2008 Existing Condition and 2025 No Action Condition. The emission reductions in 2025 Proposed Action Condition would range from approximately 53 percent to 82 percent, compared with 2008 Existing Condition, and would range from approximately 63 percent to 88 percent, compared with 2025 No Action Condition (Figure 15).



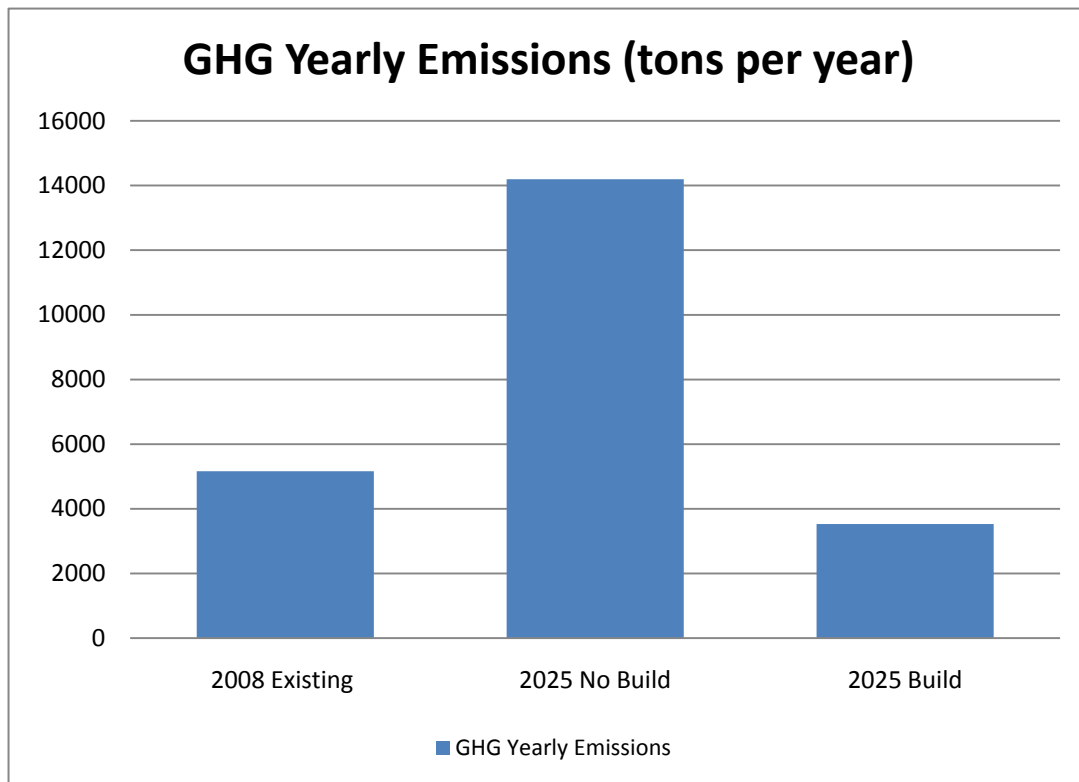
**Figure 16. MSATs Yearly Emissions (tons per year).**

**4.7.7 GHG Impact Assessment**

Total GHG emissions in tons per year were calculated for the Existing Condition, 2025 No Action and Proposed Action Conditions, as shown in Figure 16.

In addition to the reduction of average queuing delay time, the New US CAFÉ (Corporate Average Fuel Economy) standards call for more stringent fuel economy for all new passenger cars and light trucks with an average of 35.5 mpg for 2016 model-year vehicle. As a result, GHG emissions were greatly reduced. The total GHG emissions for the Existing Condition are 5,162 tons per year. The total GHG direct emissions for the 2025 No Action and Proposed Action Conditions are 14,194 and 3,529 tons per year respectively.

The Council on Environmental Quality (CEQ) issued draft guidance on consideration of the effects of climate change and greenhouse gas emissions in February 2010. Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative assessment may be meaningful to decision makers and the public. This project would generate far less GHG emissions than the indicator of 25,000 metric tons.



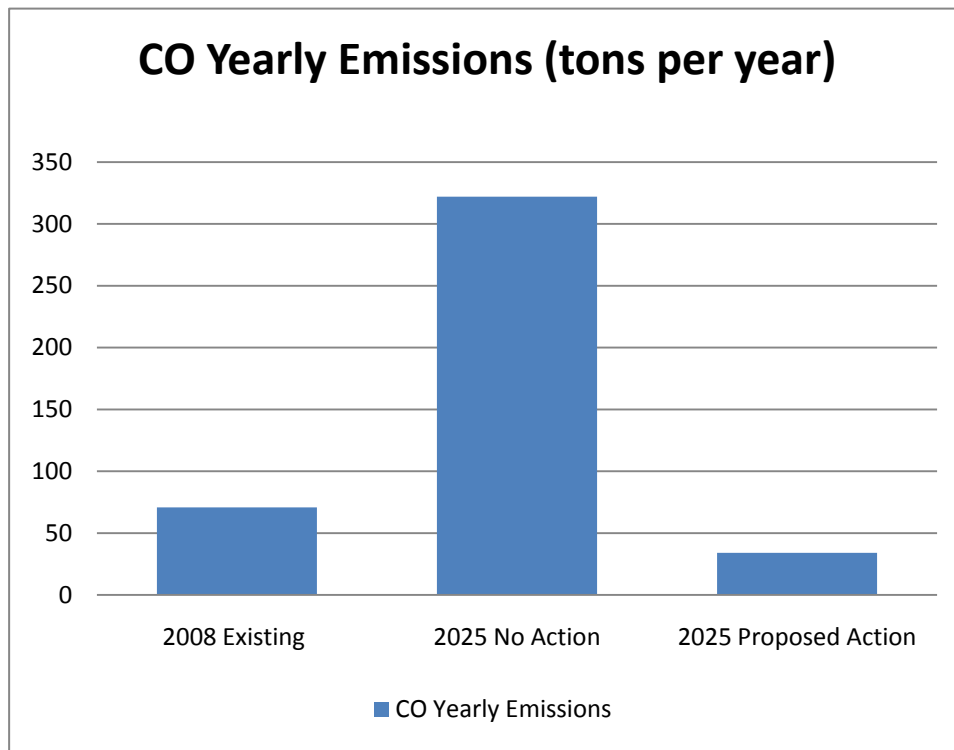
**Figure 17. GHG Yearly Emissions (tons per year).**

#### **4.7.8 CO Impact Assessment**

Total CO emissions in tons per year were calculated for the Existing Condition, 2025 No Action and Proposed Action Conditions, as shown in Figure 17.

Due to the reduction of average queuing delay time, CO emissions were greatly reduced accordingly. The total CO emissions for the Existing Condition are 70.82 tons per year. The total

CO emissions for the 2025 No Action and Proposed Action Conditions are 322 and 34.06 tons per year respectively.



**Figure 18. CO Yearly Emissions (tons per year).**

#### **4.7.9 Proposed Action**

The project would improve the flow of traffic through the LPOE and reduce the length of time trucks and other vehicles are idle or in stop-and-go traffic. The calculated existing average idling delay time for commercial primary inspection is 17 minutes and 39 minutes for primary POV inspection. Under the Proposed Action For 2025 Build Condition, average idling delay time would be reduced to 9 minutes for POV and 5 minutes for commercial vehicles during peak winter season because of increased inspection capacity. By reducing the length of queues and start-and-stop traffic, the amount of emissions from idle vehicles would be reduced.

In order to reduce dust emissions, disturbed areas that are a part of the LPOE property would be landscaped, stabilized with granite, or seeded with species native to the project area. Construction dust emissions would be controlled according to local regulations including Santa Cruz County Ordinance 2001-06 on Excavation and Grading.

The Proposed Action would not contribute to any further violations of NAAQS, and would not interfere with the implementation of the SIP for the Ambos, Nogales non-attainment area. Total emissions in tons per year within the project limits were calculated for the 2008 Existing Condition, 2025 No Action and Proposed Action Conditions. As calculated by MOBILE 6.2, Emissions of PM<sub>10</sub>, PM<sub>2.5</sub>, the priority MSATs, GHG, and CO would be greatly reduced compared with 2025 No Action and Existing Conditions. As a result, the project improvements would have beneficial air quality impacts to the project area. This project is determined to meet project-level conformity.

Table 12 shows a summary for the total emissions for PM, MSATs, GHG and CO in tons per year.

<b>Table 12. Total Emission Summary (tons per year).</b>						
<b>Pollutants</b>	<b>2008 Existing</b>	<b>2025 No Build</b>	<b>2025 Build</b>	<b>2025 Build Reduction Percentage</b>		
				<b>from 2008 Existing</b>	<b>from 2025 No Build</b>	
PM <sub>10</sub>	0.32	0.21	0.13	59%	38%	
PM <sub>2.5</sub>	0.26	0.15	0.07	73%	53%	
MSAT	Benzene	110.23	249.30	28.83	74%	88%
	1,3 Butadiene	16.60	28.99	5.93	64%	80%
	Formaldehyde	117.80	151.28	55.68	53%	63%
	Acetaldehyde	54.33	81.97	22.93	58%	72%
	Acrolein	5.36	6.97	2.50	53%	64%
	DPM	0.26	0.13	0.05	82%	63%
GHG	5,162	14,194	3,529	32%	75%	
CO	70.82	322	34.06	52%	89%	

Construction-related effects of the project would be limited to short-term localized increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls should be followed.

#### **4.7.9.1 Construction Impacts on Air Quality**

Construction-related effects of the project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. Construction dust emissions should be

controlled according to local regulations including Santa Cruz County Ordinance 2006-06 on Excavation and Grading. The following additional measures will be employed to reduce construction impacts on air quality:

Fugitive Dust Source Controls:

- The contractor shall stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- The contractor shall install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, the contractor shall prevent spillage and limit speeds to 15 mph.
- The contractor shall limit the speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Control:

- The contractor shall reduce use, trips and unnecessary idling from heavy equipment.
- The contractor shall maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies.
- GSA shall employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- The contractor shall prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- The contractor shall, if practicable, lease newer and cleaner equipment meeting the most stringent of applicable federal or state Standards.
- The contractor shall utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.



#### Administrative Controls:

- The contractor shall prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- The contractor shall utilize cleanest available fuel engines in construction equipment and identify opportunities for electrification. Use low sulfur fuel (diesel with 15 parts per million or less) in engines where alternative fuels such as biodiesel and natural gas are not possible.
- The contractor shall develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.

#### **4.7.10 No Action**

Without additional inspection lanes or other LPOE improvements, traffic back-ups would continue and could worsen in the future. These conditions would further contribute to the amount of emissions from vehicles idling and moving slowly in stop-and-go traffic. For all pollutants the level of pollutants is higher than the levels under the Proposed Action and higher than existing levels for CO, and a majority of the MSAT pollutants.

#### **4.8 Noise Analysis**

Noise is considered as the unwanted component of sound. Sound level is measured in decibels (dB). The “A”-weighted sound level (dBA) response is similar to the typical human hearing capability. The steady state sound level (Leq) is the metric unit used to describe the calculated average sound energy level over a measurement period. As a point of comparison, ADOT uses the hourly Leq sound level descriptor to determine noise level impacts.

The noise level impact determination used in this analysis is based upon the FHWA Noise Abatement Criteria (NAC) and the ADOT Noise Abatement Policy (NAP). The FHWA NAC

specifies the allowable noise level for different categories of land use and activities, as shown in Table 13. Homes, churches, schools, hospitals, and parks are classified in Category B, and the allowable hourly Leq for this category is 67 dB. The Carondelet Holy Cross Hospital is located approximately 1,000 feet northeast of the LPOE. The closest residences are over 1,300 feet north of the LPOE.

<b>Table 13. FHWA Noise Abatement Criteria.</b>		
<b>Activity Category</b>	<b>Leq</b>	<b>Description of Activity Category</b>
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

Note: Hourly "A"-Weighted Sound Level in Decibels (dBA)

The ADOT NAP determines impact as the noise level approaches the FHWA NAC. ADOT defines "approach" as 3 dBA below the FHWA NAC noise level for each land-use category. Therefore, for Category B, ADOT would consider mitigation for receivers whose predicted project noise level is 64 dBA or higher.

The urban environment of Nogales, Mexico creates common sounds of a city environment and can be heard for more than 1 mile from the LPOE. According to a 1998 Environmental Assessment (JTF-6, 1998) for a project in the Nogales, Arizona area, the ambient noise level within the general area is typical of rural areas, with projected levels ranging from 35 to 55 dBA averaged over a 24-hour period.

In a 2005 Environmental Assessment (US Department of Homeland Security, 2005) the distance to the 64-dBA contour from the LPOE traffic activities during maximum peak hour volumes was estimated to be approximately 105 feet from the center of the roadway.

#### **4.8.1 Proposed Action**

Truck traffic and associated traffic noise would remain more than 1,000 feet from the hospital and farther away from residences, therefore, would not substantially increase noise levels at this receiver. No other sensitive receivers are located in the vicinity of the LPOE.

Construction of the improvements would generate noise; however, this is expected to be temporary and limited to the months during active construction. Construction will be phased with an anticipated completion date of spring 2014. Construction noise is not considered a substantial impact due to the limited period of noise generation during each day combined with the limited period of the construction activity overall. The noise from the construction activity would not create substantial or long-term effects.

#### **4.8.2 No Action**

The No Action Alternative would not change the existing sources or location of noise within the LPOE. Additional traffic congestion may increase traffic noise due to honking horns and increased truck idling.

### **4.9 Visual Resources**

The visual resources consist of the natural and man-made landscape features that give a particular environment its visual characteristics. The LPOE facilities atop a mesa and the deep Ephraim Canyon dominate the current visual characteristics of the project area. Background vistas consist of views of the surrounding hillsides and distant mountains. These visually appealing characteristics of outlying areas of Nogales are what make the city aesthetically attractive. Since most of the project area lies outside the residential areas of Nogales, the aesthetic value lie in undeveloped landforms and native vegetation.

#### **4.9.1 Proposed Action**

The visual impact of the project would occur primarily with the above-ground construction of structures such as new buildings, overhead canopies, and inspection stations. The LPOE canopy

has been designed to be both visually appealing and to create a visually evident border between the US and Mexico. Expansion of the LPOE facilities and the necessary slope stabilization into Ephraim Canyon would require fill slopes that would appear disturbed unless seeded or vegetation establishes itself. Erosion-control measures would help stabilize the slopes until new vegetation becomes established.

Site, building and canopy lighting are International Dark-Sky Association compliant and Illuminating Engineering Society (IES) fully shielded and IES full cut-off designs. These standards ensure that unnecessary light pollution is not emitted while ensuring adequate site lighting.

Therefore, no significant impacts to visual resources would occur.

#### **4.9.2 No Action**

The No Action Alternative would have no impact on visual resources.

### **4.10 Water Resources**

#### **4.10.1 Clean Water Act Section 404/401/402**

##### **4.10.1.1 *Section 404***

The LPOE is located on a small plateau surrounded on three sides by ephemeral dry washes that are the only surface water features within and adjacent to the LPOE. The drainages are dry except during times of heavy rainfall and eventually flow into an unnamed drainage in Ephraim Canyon. This wash is a tributary to the Nogales Wash, which eventually flows into the Santa Cruz River. The river flows south into Mexico, and then turns northward, reentering the US just east of Nogales. The river continues to flow north, past Tucson, to the Santa Cruz Flats, where it joins the Gila River. The Gila River enters the Colorado River just north of Yuma, Arizona. A preliminary jurisdictional delineation of waters of the US (Waters) within the project area was approved by the US Army Corps of Engineers (Corps) in June 2009. Sixteen unnamed drainages flow through the project area. Seven of the drainages were identified as being Waters.

#### **4.10.1.2 Section 401**

While the Corps issues the permit, Section 401(a) of the Clean Water Act (CWA) requires the state to provide certification, including permit conditions that the draft permit is in compliance with effluent limits, the state's water quality standards and any other appropriate requirements of state law. ADEQ has authority under section 401 of the CWA to grant, deny or waive water quality certification for both individual and nationwide permits. The Corps cannot issue a permit where ADEQ hasn't approved or waived certification or where ADEQ has denied certification.

#### **4.10.1.3 Section 402 SWPPP**

On December 5, 2002, Arizona became one of 45 states with authorization from EPA to operate the National Pollutant Discharge Elimination System (NPDES) Permit Program (Section 402 of the CWA) on the state level.

Under the Arizona Pollutant Discharge Elimination System (AZPDES) Permit Program, all facilities that discharge pollutants from any point source into waters of the US (navigable waters) are required to obtain or seek coverage under an AZPDES permit.

Stormwater discharges generated during construction activities can cause an array of physical, chemical and biological water quality impacts. Specifically, the biological, chemical and physical integrity of the waters may become severely compromised. Water quality impairment results, in part, because a number of pollutants are preferentially absorbed onto mineral or organic particles found in fine sediment. The interconnected process of erosion (detachment of the soil particles), sediment transport and delivery is the primary pathway for introducing key pollutants such as nutrients (particularly phosphorus), metals, and organic compounds into aquatic systems.

Stormwater runoff from construction sites can include pollutants other than sediment such as phosphorous and nitrogen, pesticides, petroleum derivatives, construction chemicals and solid wastes that may become mobilized when land surfaces are disturbed. Generally, properly implemented and enforced construction site ordinances effectively reduce these pollutants. In many areas, however, the effectiveness of ordinances in reducing pollutants is limited due to inadequate enforcement or incomplete compliance with local ordinances by construction site operators.

To obtain authorization for discharges of stormwater associated with construction activity, the operator must comply with all the requirements of the general permit and submit a Notice of Intent (NOI) in accordance with Part II of the general permit.

To comply with this permit the operator is required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP is the operator's document that characterizes the construction activity, identifies potential sources of pollutants, and describes how the site will be managed and monitored, and the BMPs that will be implemented to help ensure pollutants do not reach surface waters. Operators are required to prepare a SWPPP that addresses all the requirements of this permit prior to applying for permit coverage.

#### **4.10.1.4 Proposed Action**

Improvements that would impact Waters include structural earthen fill, access roads, parking lots, drainage culverts, and commercial primary inspection lanes. Due to the terrain in the area and the costs associated with filling drainages, the preferred alternative has been designed to reduce impacts to Waters to the greatest extent possible while still constructing a facility that would meet the purpose and need of the project. The proposed action has been designed to minimize impacts in Ephraim Canyon, the area with the highest value for wildlife connectivity and riparian function.

The Proposed Action would involve approximately 0.32 acre of permanent disturbance to Waters. A Corps CWA Nationwide Permit Number 39 for Residential, Commercial, and Institutional Developments authorization was received from the Corps on September 15, 2009. Conditional Water Quality Certification for this project was obtained from ADEQ on June 26, 2009.

The project involves the ground-disturbance of 1 or more acres and a general AZDPDES permit will be required. GSA will prepare a SWPPP during final design and submit a NOI to ADEQ. Additionally because this project is located within a designated municipal separate storm sewer system, the NOI will be submitted to the City of Nogales.

Adherence to the requirements of the Nationwide Permit Number 39, the provisions of the Conditional Water Quality Certification, and the SWPPP will insure that no significant impact to water resources will result from the Proposed Action.

#### **4.10.1.5 No Action**

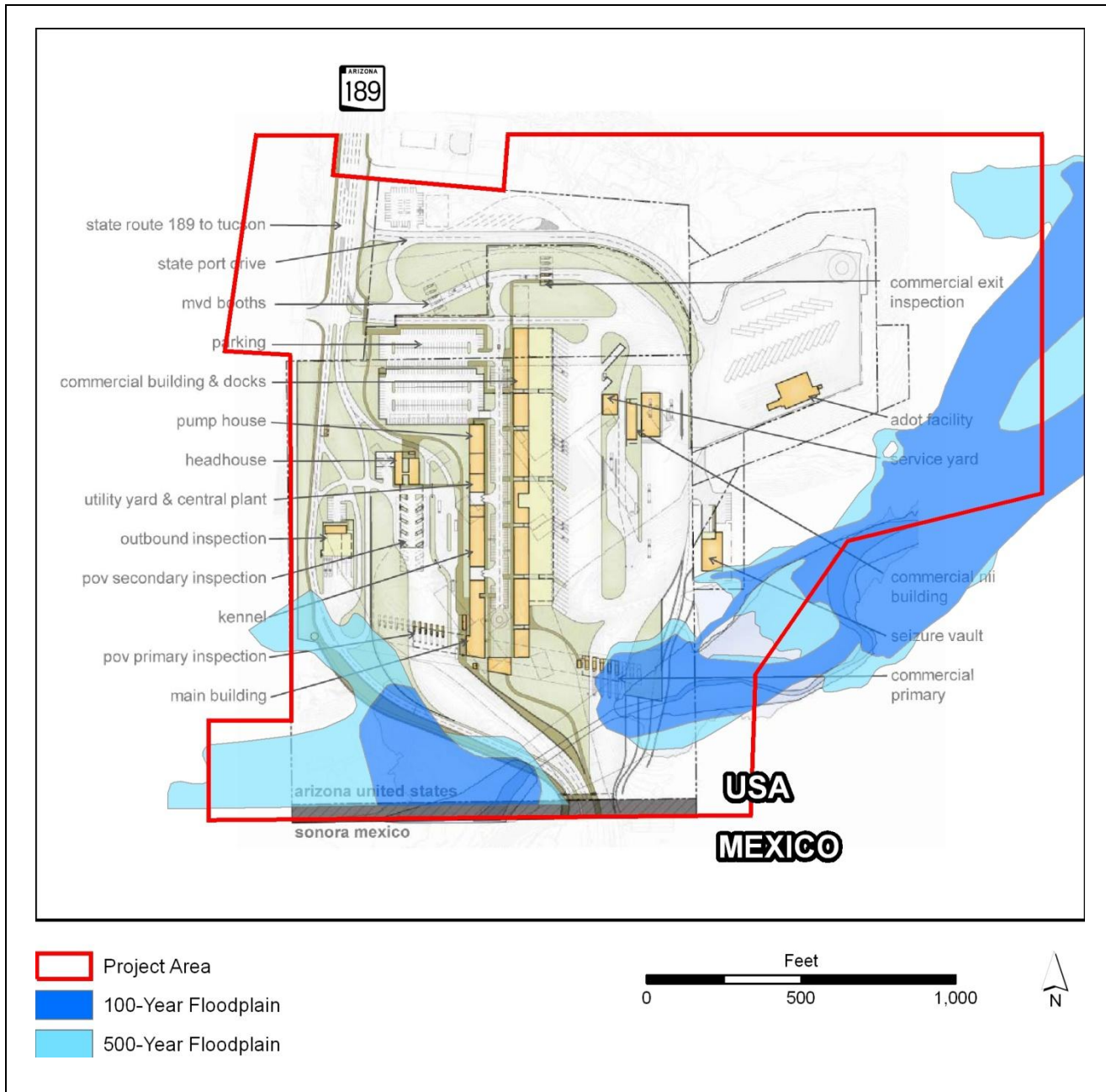
The No Action Alternative would have no impact on Waters.

#### **4.10.2 Floodplains**

Portions of the project area are located within the current Federal Emergency Management Agency (FEMA) designated 100-year floodplain and the 500-year floodplain. The 100-year floodplain is an area that would be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year. The 1 percent annual chance flood is also referred to as the "base flood" (Figure 17).

The Santa Cruz County Flood Control District in coordination with FEMA has embarked on a new Flood Insurance Study that is remapping the floodplain for this watershed. Because of this study, the FEMA floodplain maps for the area may be revised.

The Santa Cruz County Floodplain and Erosion Hazard Management Ordinance #2001-03, Section 5.4, requires all commercial/industrial projects to retain/detain water such that the level of runoff from the site in its developed condition does not exceed the level of runoff in the pre-developed condition. The watershed that the LPOE is within is defined as a Critical Basin, which means that flooding within the watershed is already a problem and developments are required to retain at least an extra 10 percent of the discharge created by the site. Within the study area there are areas that become inundated during times of heavy rain, however these areas are limited to undeveloped drainages.



**Figure 19. FEMA-Designated Floodplain Map.**

*Executive Order 11988: Floodplain Management* directs the GSA to “take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.” This Executive Order also requires GSA to evaluate the potential effects of any actions it may take in a



floodplain, and to ensure that its plans consider flood hazards and floodplain management needs. GSA uses an eight-step process to ensure compliance with Executive Order 11988. This eight-step process is part of the NEPA process, and the results of this process are documented within this Environmental Assessment.

The Water Resources Council document, *Floodplain Management Guidelines for Implementing Executive Order 11988*, defines a critical action as any activity for which even a slight chance of flooding would be too great a risk (and, therefore, should be located outside the 500-year floodplain). Examples include storage of irreplaceable records; storage of volatile, toxic, or water-reactive materials; construction or operation of hospitals and schools; and construction or operation of utilities and emergency services that would be inoperative if flooded.

#### **4.10.2.1 Proposed Action**

Portions of the improvements to the LPOE under the Proposed Action would occur within the existing FEMA-designated 100-year floodplain and FEMA-designated 500-year floodplain. These improvements would be constructed on fill slopes that would elevate them above the base flood elevation. A Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) would need to be submitted and approved by FEMA and the local floodplain administrator. The improvements that would be constructed in the current base flood areas would include new fill slopes and slope stabilization, roadways, inspection lanes, and drainage culverts. The uses of these facilities are not considered critical. Following map revision, these improvements would be located outside the 100 and 500-year floodplains and would be a minimum of one foot above the regulatory 100-year floodplain. Because of the topographical constraints of the site and limitations of available expansion space, any improvements to the LPOE that would satisfy the need would require development in the floodplain. The location of the facility itself was agreed to in diplomatic notes exchanged between the US and Mexico.

A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective base flood elevations. The CLOMR indicates whether the project, if built as proposed, would be recognized by FEMA.

A hydraulic analysis for the Proposed Action was conducted by Stantec. The study results indicate that the 100-year water-surface elevation for Ephraim Canyon would increase by 0.1 ft on the upstream side of the culverted roadway crossing. There would be no change in the base flood elevation downstream of this crossing. A CLOMR is currently under review by the Santa Cruz County Flood Control District. The area of the floodplain that will increase in elevation lies within the limit of the LPOE. No other parcels outside the POE will be impacted by floodplain limit changes. In addition to the hydraulic analysis, a hydrologic analysis was performed that studied the onsite and offsite drainage. This study assisted in the design of features to convey offsite drainage (culverts) and the design of onsite storage to ensure that the Proposed Action is compliant with Santa Cruz County Floodplain and Erosion Hazard Management Ordinance #2001-03, Section 5.4.

Once the project has been completed, GSA would coordinate with Santa Cruz County to request a revision to the Flood Insurance Rate Map (FIRM) to reflect the project. “As-built” certification and other data must be submitted to support the revision request. A LOMR is FEMA’s modification to an effective FIRM, or Flood Boundary and Floodway Map (FBFM), or both. The LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective base flood elevations, or the Special Flood Hazard Area. The LOMR officially revises the FIRM or FBFM, and sometimes the flood insurance study report, and when appropriate, includes a description of the modifications.

All requests for changes to effective maps, other than those initiated by FEMA, must be made in writing by the Chief Executive Officer of the community or an official designated by the Chief Executive Officer. Because a LOMR officially revises the effective National Flood Insurance Program map, it is a public record that the community must maintain. Any LOMR should be noted on the community's master flood map and filed by panel number in an accessible location.

The Proposed Action would not stimulate any growth in floodplains as the only area being raised out of the floodplain would be used for the LPOE construction. Development near the LPOE as a result of expansion of the LPOE would likely occur along SR 189 outside regulated floodplains.

Any of this development that would occur in floodplains would be subject to floodplain regulations and the LOMR/CLOMR process.

#### **4.10.2.2 *No Action***

There are currently no structures or developed features within either the 100-year or 500-year floodplain. The No Action Alternative would have no impact on floodplains.

#### **4.11 Sole Source Aquifer**

EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water. For convenience, all designated sole or principal source aquifers are referred to as "sole source aquifers" (SSAs).

SSA designation is one tool to protect drinking water supplies in areas where there are few or no alternative sources to the ground water resource and where, if contamination occurred, using an alternative source would be extremely expensive. The designation protects an area's ground water resource by requiring EPA to review certain proposed projects within the designated area. All proposed projects receiving federal funds are subject to review to ensure that they do not endanger the water source. The SSA protection program is authorized by section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et seq.)

The project area occurs within the limits of the Upper Santa Cruz and Avra Basin Sole Source Aquifer designated area. The designated area covers a large portion of Santa Cruz County, as well as portions of Pima County and Pinal County. During an August 2007 soil investigation, a soil boring was advanced 200 feet below the ground surface of the LPOE. Groundwater was not detected in this boring. Groundwater levels in the greater Nogales area vary from 7 to 450-feet below the ground surface.

Coordination with the EPA included sending a scoping letter. Per a telephone conversation on November 1, 2006 with the EPA SSA contact for Arizona, the EPA's only concern was whether or not retention or detention basins were to be used in the project's design that would allow

water to percolate into the aquifer below. Further analysis and coordination may be needed once design plans are completed and if on-site retention basins are to be considered.

Water supply for the LPOE comes from the City of Nogales' municipal water supply through two 8-inch lines which are located just north of the site. The two 8-inch lines connect to a 12-inch line on the ADOT site and then the 12-inch line extends under State Port Drive and continues to Mariposa Road within a described utility easement to serve the Port of Entry's water supply system and the industrial park on the western side of Mariposa Road. There is also an 8-inch water meter and backflow preventer which serves the ADOT truck inspection facility. A 6-inch water distribution system loops the cargo inspection building and serves other building on the site.

The sanitary sewer collection system on the site is comprised primarily of 6-inch vitrified clay pipe and originates at the Main Buildings and flows north through the site and then east along the northern GSA property line to a manhole located near the ADOT gate on State Port Drive. Sanitary sewer lines from the site as well as the ADOT truck inspection facility are combined at this manhole. The on-site collection system then conveys sanitary sewage to an 8-inch sanitary sewer line located in the utility easement located in the arroyo adjacent to State Port Drive. The 8-inch sanitary sewer then conveys the sanitary sewage in an easterly direction through the hospital property. The 8-inch sanitary sewer also extends in a western direction in the utility easement located in the arroyo on the ADOT property adjacent to State Port Drive.

Storm water is managed and regulated by the City of Nogales and Santa Cruz County. Storm water runoff generated from the site is collected in a closed drainage system. The drainage system generally slopes in a southerly direction and discharge at various locations to arroyos around the site. No storm water management basins exist on the site. Two large 120-inch diameter culverts cross under Mariposa Road at the southern most end of the site near the US/Mexican border.

#### **4.11.1 Proposed Action**

Because the Santa Cruz County Floodplain and Erosion Hazard Management Ordinance requires on-site retention of runoff, retention/detention basins would be included in the improvements to the LPOE. Drywells would not be constructed as part of the Proposed Action.

All water supplied to the LPOE would be provided by a local municipal water source, the City of Nogales. Currently no water wells provide water supply to the LPOE, and no well would be drilled as part of the Proposed Action.

All waste streams from restrooms, kennel facilities and other drains would be directed into the municipal sanitary-sewer system operated by the City of Nogales.

The Proposed Action would include a Hazardous Material drive-in pit. This pit would enable leaking vehicles or containers to be placed in the pit to contain any runoff. Appropriate response teams could then remove the material. The pit would be constructed of a hardened, impervious surface that would prevent materials from migrating or seeping out of the containment pit.

Automatic sprinkler systems would be installed throughout the buildings at the port in accordance with applicable building codes. In order to supply the sprinkler systems with adequate water supply and pressure, a water tank is proposed to be located underneath the parking lot near the ADOT building. This tank would only contain water or inert fire extinguishing material. No petroleum or regulated materials would be stored in the tank.

Because no direct vector to the aquifer or groundwater would be introduced as part of the Proposed Action, and the project would be designed to eliminate the migration of pollutants off-site, there would be no significant impact to the Upper Santa Cruz and Avra Basin Sole Source Aquifer. Further coordination with the EPA would occur during final design to ensure that the project would not impact the Upper Santa Cruz and Avra Basin Sole Source Aquifer.

#### **4.11.2 No Action**

The No Action Alternative would not alter the existing drainage patterns or construct any retention or detention basins; therefore, the No Action Alternative would have no impact on the Upper Santa Cruz and Avra Basin SSA.

### **4.12 Hazardous Materials**

#### **4.12.1 Database Records Review**

State and federal databases were searched to determine the presence, or former presence on any hazardous waste generating activities on or adjacent to the property. Historical records were also reviewed to determine if there were previous activities that may have released hazardous

materials on or near the subject property. The search provided results on any properties that have had a release of a hazardous substance, as well as any properties with underground storage tanks (USTs) or leaking USTs (LUSTs). No hazardous substances, USTs or LUSTs were shown on the property and no releases have been reported on or near the property. Furthermore, site visits gave no indication to suspect a release had occurred that would negatively impact the property.

However, GSA records maintained by the Safety and Environmental Branch indicate that two USTs, a 1,000 gallon diesel tank and a 1,500 diesel tank, were located on the property. The tanks were located in the vicinity of the Border Station Office building and the Commercial Building and Docks, respectively. Based on information provided by GSA, the steel tanks were installed in 1974/1975 as backups for the emergency generators and to provide heating for the two buildings. The tanks were abandoned in 1992 and removed in 1994.

There was some soil contamination associated with the 1,500 gallon tank that was due to flooding on an unknown date. The contaminated soil was removed and four soil boring logs were taken. On August 25, 2008, ADEQ granted GSA a No Further Action determination for this site because contamination levels in the soil were less than the residential Soil Remediation Levels.

In addition to the two former UST's located on the facility, there are two facilities within ½-mile of the property that are tracked by state and federal agencies: Optimize Manufacturing, Inc., a Resource Conservation and Recovery Act permitted small quantity generator, and the Bordermart Shell, a service station north of the Mariposa LPOE. Neither of these properties has had a reported release of a hazardous material, and neither has an open violation of its waste handling/storage permits. However, since they are both topographically upgradient of the Mariposa LPOE, a future release at either facility could negatively impact the subject property.

No other waste generators or properties regulated by federal, state, and local agencies were found in the immediate vicinity of the property.

#### **4.12.2 Asbestos Containing Materials**

Pursuant to the CAA of 1970, EPA established the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP). It is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos. It specifies work practices to be followed during renovation, demolition, and other abatement activities when friable asbestos is involved.

The ADEQ Asbestos NESHAP coordinator has jurisdiction in Santa Cruz County. Prior to beginning renovation or demolition activities of a facility, a certified Asbestos Hazard Emergency Response Act building inspector must thoroughly inspect the facility or part of the facility where the renovation or demolition operation would occur for the presence of asbestos, including friable and non-friable asbestos-containing materials.

For all demolitions (even when no asbestos is present) and renovations activities involving threshold amounts of regulated asbestos-containing material (RACM), the operator will provide the ADEQ with a NESHAP notification at least 10 working days prior to the demolition or renovation activity.

#### **4.12.3 Proposed Action**

The Proposed Action would include a Hazardous Material drive-in pit. This pit would enable leaking vehicles or containers to be placed in the pit and contain any runoff. Appropriate response teams could then remove the material.

Because the Proposed Action would involve demolition of existing structures, an Asbestos Hazard Emergency Response Act-certified inspector would inspect all structures to be demolished. If RACM are present in the structures, a work plan would be developed to remove, transport, and dispose of these materials. At least 10 days prior to demolition of any structure the GSA would provide the ADEQ NESHAP Coordinator with a NESHAP notification form for each structure to be demolished.

As part of the final design the contractor shall prepared a demolition plan. This plan details the sequencing of demolition and the location of where all debris would be disposed of. The plan shall detail the waste materials from the building demolition and how they would be disposed or recycled in accordance with state and federal regulations. Waste from the removal of existing concrete and bituminous pavement would be crushed and recycled as aggregate for the new construction at the site.

#### **4.12.4 No Action**

An existing Hazardous Material drive-in pit would continue to provide a location to contain leaking vehicles or containers. Because it is unknown if RACM are present in the existing

structures, under the No Action Alternative the presence of RACM may remain a potential hazard.

#### **4.13 Energy Efficiency and Sustainability**

Executive Order (E.O.) 13514; Federal Leadership in Environmental, Energy, and Economic Performance; was signed on October 5, 2009 and sets numerous Federal energy requirements in several areas, including GHG management, sustainable buildings, water efficiency, and pollution prevention. It expanded upon the energy reduction and environmental performance requirements of E.O. 13423.

GSA is committed to incorporating principles of sustainable design and energy efficiency into all of its building projects. The result is an optimal balance of cost, environmental quality, and socioeconomic benefits that meet the mission and function of the intended facility. It is GSA's intent that sustainable design will be integrated as seamlessly as possible into the existing design and construction process. As a means of evaluating and measuring green environmental goals, all GSA new construction projects and substantial renovations must be certified through the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System of the US Green Building Council. Projects are encouraged to exceed basic LEED® green building certification and achieve the LEED® Silver level. LEED® consists of a set of prerequisites and credits with specific requirements for obtaining points in order to become a certified green building.

##### **4.13.1 Proposed Action**

The reconstructed LPOE would be built to achieve LEED® Silver certification for its use of energy-efficient technologies, including a solar panel array, solar-powered domestic hot water and advanced lighting. GSA's goal is to offset 20% of the facility's energy consumption with solar power produced on site.

As shown in Section 4.6.7, 2025 GHG emissions under the Proposed Action would be lower than 2008 levels and substantially lower than 2025 levels under the No Action Alternative.



#### **4.13.2 No Action**

The No Action Alternative would not assist GSA in meeting the specific energy and resource efficiency goals of EO 13514 because the facilities at the existing LPOE would remain as-is.

#### **4.14 Intentional Destructive Acts and Security**

The Interagency Security Committee (ISC) Security Design Criteria for New Federal Office Buildings and Major Modernization Projects and Amendment 1 for land Ports of Entry dated October 7, 2005 provides security criteria for protection of federal property from terrorist and other threats.

Security for a POE depends more on providing a layout that facilitates surveillance (providing ample sightlines, efficient and adequate lighting, and proper location of electronic devices such as CCTV cameras) and prepares adequately for an event through proper structural engineering design (to include strengthening of critical structural building components) to achieve acceptable levels of security.

##### **4.14.1 Proposed Action**

The reconstruction of the LPOE has been designed in accordance with the ISC design criteria. All south-facing windows shall be bullet resistant. All windows facing traffic lanes shall be bullet resistant and all booths and the Headhouse shall have bullet resistant glazing.

The Nogales Mariposa Occupant Emergency Plan, a subsection of the Continuation of Operations Plan (COOP), dated December 2009 contains detailed instructions on what to do for any and all real or natural disasters, including hazardous material spills and terrorist activities. Detailed evacuation plans are included as well as phone trees to contact all parties with a need to know, including Federal, State, and local governments as well as Mexican officials.

#### **4.15 Seismic Activity**

Faults within the Nogales region are not well characterized in regard to the age of most recent movement and rate of activity. More recent studies by the Arizona Earthquake Information Center emphasize the faults located outside of Arizona, such as the system of faults that occur along the boundary between the North American Plate and Pacific Plate, as more likely sources for significant seismic shaking in Arizona. Faults within this boundary zone include the San

Andreas, Imperial, and Cerro Prieto faults. Nogales is within the Basin and Range geologic province, which includes the Pitaycachi fault, located 60 miles southwest of the study area in Sonora, Mexico. This fault was the source of an estimated magnitude 7.2 event on May 3, 1887.

According to the Arizona Earthquake Information Center Nogales is in an area of "low" potential for earthquake ground shaking. Historic seismicity in the Nogales region is relatively low compared with the more active northern portion of Arizona.

In summary, the earthquake hazard for Arizona is strongly affected by seismic sources outside the state including fault zones in southern California, Nevada, and Mexico. Within the state, the Arizona Mountain Zone, the source for the magnitude 4.9 February 4, 1976 Chino Valley earthquake, is the principal seismic source.

#### **4.15.1 Proposed Action**

Although the reconstructed LPOE would be built in an area of low potential for seismic activity, the LPOE would be constructed in accordance with the International Building Code (IBC) chapter 16 Structural Design, including all referenced standards, addenda, and appendices. In addition, FEMA guidelines for seismic design are to be incorporated into the design of all structures.

#### **4.15.2 No Action**

Because the LPOE is in an area of low potential for seismic activity there are no anticipated impacts due to seismic events. However it should be noted that the existing LPOE was constructed in 1973, the existing structures were not constructed in accordance with current seismic codes and standards.

#### **4.16 Secondary Effects**

Secondary effects are broadly defined by the CEQ as those impacts that are caused by an action and occur later in time, or are farther removed in distance but are still reasonably foreseeable after the action has been completed (40 CFR 1508.8). They comprise a wide variety of secondary effects, such as changes in land use, economic vitality, and population density. Secondary impact issues relevant to this project are discussed below.

#### **4.16.1 Transportation Impacts**

Traffic volumes on SR 189 and other local roads are anticipated to increase as the efficiency and capacity of the LPOE improves. These traffic volume increases would occur following completion of the LPOE reconstruction over the next 10-20 years. Improvements to other local infrastructure may be required in the future. These improvements may include signalization at the Target Range Road and Industrial Park Drive intersections with SR 189. Turn lanes at existing signalized intersections may need to be expanded to handle the increased traffic volumes. An increase in length of turn lanes or additional capacity improvements at the SR 189/I-19 traffic interchange may need to be provided to handle the additional traffic.

Due to the growing truck traffic through the LPOE and construction of new distribution centers in the city of Nogales, larger-sized commercial vehicles may be traveling on the streets of Nogales, SR 189, and I-19. It is likely that the turning radius at the major intersections along SR 189 and at the SR 189/I-19 traffic interchange would need to be reevaluated.

Increased traffic on SR 189 could cause local traffic to look for alternative roads to use in their daily commute. If this occurs, additional travel lanes on existing roadways would be required or in some cases new roadways could be required to provide an efficient and safe transportation network in Nogales. Additionally, increased traffic volumes on SR 189 and other area streets may increase noise levels to adjacent parcels.

Several other studies investigating potential future traffic impacts of the LPOE improvements, and also potential improvements that will be needed in the future as traffic numbers increase, have been performed. Improvements would be done through the local or state transportation improvement programs by the City of Nogales, Santa Cruz County, and ADOT.

##### **4.16.1.1 ADOT Mariposa / I-19 Connector Route Study**

ADOT has initiated a study to evaluate improvements needed on SR 189 and other local roads and intersections. This study was conducted outside this environmental assessment and did not evaluate differences between future conditions under the No-Action Alternative and the Proposed Action Alternative. This study evaluated the alternatives for the improvement of SR 189 and the feasibility of a new additional route to I-19.

The Mariposa/I-19 Connector Route Study reviewed key intersections and suggested improvements needed including signalization, increased numbers of turning lanes, acceleration/deceleration lanes, and access control. Additionally the study states that the SR 189/I-19 TI will require major redesign by year 2020. Possible solutions analyzed in the study include a partial cloverleaf design, flyover design, and diverging diamond interchange design. In the interim, a dual left-turn lane is recommended for eastbound traffic.

As part of ADOT's I-19 Connector Study, several phased improvements have been identified. This will enable ADOT, in cooperation with the City of Nogales, to plan, design, and have constructed projects just ahead of when warranted by traffic volumes and to avoid undue congestion. As described above, the Mariposa Road/I-19 TI currently has a LOS of "F" during the peak season peak hour. Upon completion of the construction of the Proposed Action Alternative, the interchange will immediately be severely congested and will negatively impact other roadways in the study area and vicinity.

Implementation of the phased improvements by ADOT, local agencies, and other partner agencies identified in the study would reduce the impacts of additional traffic coming from the LPOE as traffic increases over time. ADOT is planning to begin a Design Concept Report study for improvements to SR 189 from the LPOE through the I-19 traffic interchange to Business 19 (Grand Avenue) in the summer of 2010.

#### **4.16.1.2 Mariposa Port of Entry Bottleneck Study**

ADOT sponsored a study performed by the University of Arizona to identify bottleneck areas to and from the LPOE at Nogales that impact the efficient cross-border movement of goods and recommend low-cost, high-impact solutions.

Major bottlenecks were observed at several intersections/interchanges along the SR 189 corridor. These bottlenecks occur at the intersection of SR 189 (Mariposa Road) and I-19, Grand Avenue, and Frank Reed Road. The study recommended that signals at these intersections be re-timed and coordinated with other signals in the area to better manage peak traffic periods. Additionally the study recommended that an additional left-turn lane be added at the SR 189/I-19 intersection to improve eastbound SR 189 to northbound I-19 movements.

#### **4.16.2 Economic Vitality and Land Use**

It is likely that the expanded LPOE and increased shipping traffic would result in the influx into Nogales of additional businesses related to transportation, such as customs brokerages and truck stops. These developments would most likely occur adjacent to SR 189 or along the I-19 corridor where the City of Nogales has zoned these areas for commercial or light industrial uses.

An increase in produce production in Sonora, Mexico may also occur if the perception that the improved LPOE could handle additional produce traffic. In theory, the potential for producing more leafy vegetables in Sonora exists, which would involve a different growing season from Yuma, thereby complementing that warmer-climate production area. Some production/shipping of produce might increase regardless of other possibilities, because of recent actions by California allowing avocados from Mexico to be imported into that state.

#### **4.17 Cumulative Effects**

Cumulative effects are the combined impacts on the environment that result from the incremental effect of the Proposed Action when added to past, present, and reasonably foreseeable future actions within the immediate vicinity of the project area (40 CFR 1508.7). These impacts are less defined than secondary effects. The cumulative effects of an action may be undetectable when viewed in the context of individual direct or indirect actions but could add to a measurable environmental change. For this assessment, only those at risk critical resources would be evaluated. These include past actions that have occurred since 1990 and foreseeable future actions based on the best available information from the associated planning agencies.

##### **4.17.1 Transportation Facility Development**

The Proposed Action design incorporates the need to meet capacity until the year 2025 and be expandable for growth beyond that projected timeframe. The number of vehicles that are inspected is determined by the procedures and policies of the various inspecting agencies that utilize the LPOE. Future changes in the inspection requirements of these agencies could increase or decrease the number of vehicles that require primary and/or secondary inspection. The CBP is moving towards implementing programs that pre-screen vehicles and improve the efficiency of processing vehicles. In the future if additional processing capacity is needed at the LPOE, the facilities can be incrementally expanded.

Past transportation projects include the construction of State Port Drive ADOT in partnership with local jurisdictions is conducting several studies on the transportation facilities around the LPOE including the preparation of a new RTP to update the previous plan adopted in 2002. This plan titled the Unified Nogales/Santa Cruz County Transportation Plan Update 2010 is anticipated to be finalized in the summer of 2010. Several previously mentioned studies are evaluating alternatives to reduce traffic congestion on SR189, I-19 and surrounding roadways. These studies are in the early planning process. While improvements to SR 189, new alignments, or improvements to existing roadways may occur in the future as traffic congestion increases, the construction of these projects is not currently funded or programmed and cannot be considered reasonably foreseeable. ADOT is planning to begin a Design Concept Report study for improvements to SR 189 from the LPOE through the I-19 traffic interchange to Business 19 (Grand Avenue) in the summer of 2010. Evaluation of the environmental effects of these projects would be performed by the appropriate agency if these projects continue in the project development process.

#### **4.17.2 Natural Environment**

Lands north and east of the project area are primarily private and state lands located within the city boundaries of Nogales. Past and present actions in the area include development on private and state lands. Due to expected growth in the Nogales area, development of these private and state lands is reasonably certain to continue in the future, though development of lands west of the project area would be constrained because lands to the west are primarily National Forest lands. Development typically involves clearing land of vegetation, which eliminates habitat for general wildlife, some of which may be habitat for special status species. The Nogales city limits cover an area approximately 13,000 acres in size, of which approximately 4,362 acres are currently undeveloped but could be developed in the future. The proposed action would result in clearing a maximum of approximately 75 acres of vegetation. The incremental effect of the Proposed Action when added to past, present, and reasonably foreseeable development in the area would not add to a measurable reduction in habitat for Special Status Species in the project vicinity. Furthermore, some actions on private and state lands may require federal permits (such as a Clean Water Act permit), and thus would be subject to consultation with USFWS pursuant to Section 7 of the federal Endangered Species Act and subsequent avoidance, minimization,

and/or mitigation of impacts to threatened or endangered species. In addition, the Arizona Native Plant Law provides some protection for native plants, and would be applicable on some future development projects in the area.

#### **4.17.3 Human Environment**

Official population growth projections in Santa Cruz County, shown on Table 14, follow a pattern similar to that forecast for the state of Arizona as a whole; that is, the population increases, however the rate of growth decreases each year from the starting year. It is reasonable to assume that these projections, for both the state and Santa Cruz County, are conservative at least for the period after 2015. Growth in the interim is subject to a number of factors, but perhaps most importantly to the capacity of the area to absorb population and employment activities at a rate any faster than what is projected.

Although it is likely that the expanded LPOE and increased shipping traffic would result in the influx into Nogales of additional businesses related to transportation, the location of these businesses would be dependent on the location of the major transportation corridors identified in the CANAMEX. Current planning and zoning would permit these types of development in areas surrounding the LPOE and along SR 189; however, there are several clusters of warehousing, distribution, packaging, and other transportation related industries within the greater Nogales area. There are currently no approved, pending, or planned developments in the area surrounding the LPOE.

**Table 14. Population Projections.**

<b>Year</b>	<b>Projected Santa Cruz County Population</b>	<b>Percent Change / Year</b>
2005	44,055	
2006	45,303	2.83%
2007	46,545	2.74%
2008	47,777	2.65%
2009	48,998	2.56%
2010	50,210	2.47%
2011	51,418	2.41%
2012	52,607	2.31%
2013	53,800	2.27%
2014	54,973	2.18%
2015	56,144	2.13%
2016	57,291	2.04%
2017	58,412	1.96%
2018	59,514	1.89%
2019	60,595	1.82%
2020	61,658	1.75%
2021	62,699	1.69%
2022	63,726	1.64%
2023	64,728	1.57%
2024	65,691	1.49%
2025	66,627	1.42%

Source: "Arizona Population Projections 2006 – 2055." Arizona Department of Economic Security, Research Administration, Population Statistics Unit.

#### **4.17.4 Local Projects**

The City of Nogales Planning Department and Public Works Department were contacted in April 2010. Representatives from these departments indicated that there are no current planned, proposed, or permitted developments adjacent to the LPOE. Additionally there are no capital improvement projects identified adjacent to the LPOE. The City of Nogales is currently preparing an update to the General Plan which is anticipated to be adopted in 2011. Additionally the City of Nogales was awarded a Planning Assistance for Rural Areas (PARA) grant to prepare a study which investigates pedestrian facilities and proposes improvements for areas surrounding the both LPOE's within Nogales.



No projects are listed in the CIP budget or planning documents for Santa Cruz County within or adjacent to the study area.

## 5.0 Public Involvement/Project Coordination

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### 5.1 Agency and Stakeholder Coordination

An agency scoping meeting for the project was held at the DeConcini Courthouse, 405 West Congress Street, in Tucson, Arizona on Tuesday, September 12, 2006. Coordination letters requesting comments on the project were sent to public agencies and organizations (Table 15).

<b>Agency</b>	<b>Position</b>
Arizona Department of Transportation	MVD- Nogales
	AZ-Mexico Liaison
	ADOT Traffic Design, Team 2 Manager
	ADOT Regional Traffic
	Tucson District Engineer
	Environmental Planning Group
Arizona Department of Environmental Quality	Border Environment Manager
Arizona Department of Public Safety	Lt. District 8
Arizona Division of Emergency Management	Deputy Director
Arizona Game and Fish Department	Project Evaluation Program Supervisor
	Regional Supervisor
Arizona Homeland Security	Southwest Border Specialist
Bordermart Gas Station	Facilities Manager
CANAMEX Corridor & Cyber Port	Executive Director
City of Nogales	City Manager
	Finance Director
	Mayor
	Parks & Recreation Director
	Public Works Director
	Fire Chief
	Chief of Police
County of Santa Cruz	Supervisor, District 1 Chairman
Federal Highway Administration	Area Engineer

<b>Table 15. Agency Scoping List (continued).</b>	
<b>Agency</b>	<b>Position</b>
Immigration & Customs Enforcement	Detention & Removal Deputy FO Director
Office of the Governor	Arizona-Mexico Commission Member
	Border Coordination Officer
Port Authority	Santa Cruz County Chamber of Commerce
Santa Cruz County	County Floodplain Administrator
	Community Development Director
	County Manager
	Deputy Public Works Director
	Public Works Director
	Superintendent of Schools
	Sheriff
Southeastern Arizona Governments Organization	Director
US Department of Homeland Security	Arizona Homeland Security Director
US Environmental Protection Agency	Hydrogeologist
USFWS Arizona Ecological Services Field Office	Assistant Field Supervisor for Southern Arizona

Responses to the scoping letters were received from the Santa Cruz County Flood Control District, the Greater Nogales Santa Cruz County Port Authority, and the USFWS (attached). Their responses are summarized below:

Santa Cruz County Flood Control District

- The LPOE straddles a watershed that is in a both federally and locally mapped floodplain.
- A Flood Insurance Study is currently underway to remap the floodplain. New mapping data will be available in September, 2007.
- The watershed is defined as a Critical Basin that requires developments to retain at least an extra 10 percent of the discharge created by the site.
- The Santa Cruz County Flood Control District requests to review plans and hydrology report.

- A rainfall and stream level gauge site is located on the west end (inlet) headwall of the culverts in Ephraim Canyon. Modifications to this equipment should be coordinated with the Santa Cruz County Flood Control District.

#### Greater Nogales Santa Cruz County Port Authority

- Ensure the design provides adequate truck maneuverability within the compound.
- Ensure the environmental studies are large enough to encompass the final footprint of the project.
- Keep the LPOE operational during construction.
- Perform demolition and construction during off-peak periods.
- The Port Authority will assist in obtaining any Presidential permits.
- The Border Wizard report should reflect the seasonality of the port.
- The Border Wizard analysis should take into account idle time for refrigerated trucks.
- Adequate dock space available for off-loading perishable cargo should be provided.
- The GSA should coordinate with ADOT to handle traffic congestion in the transportation facilities in the surrounding area.

#### USFWS

- The USFWS recommends comprehensive surveys be performed for Pima pineapple cactus.
- Xeroriparian washes and large trees and shrubs should be avoided.
- Disturbed areas should be reseeded with native species.

<b>Table 16. Permit Requirements and Required Coordination</b>			
<b>Agency</b>	<b>Issue/Regulation</b>	<b>Coordination Details</b>	<b>Additional Coordination Required</b>
Federal Emergency Management Agency (FEMA)	Floodplains	A Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) would need to be submitted and approved by FEMA and the local floodplain administrator.	Yes
U.S. Army Corps of Engineers	Waters of the U.S. Including Wetlands	Nationwide Permit #39 authorization received. In the Special Provisions of this authorization, compensatory mitigation in the form of in-lieu fees are required. These fees have been paid to the indicated recipient.	No
U.S. Department of State	Presidential Permit	A revised Presidential Permit would be required for the Proposed Action Alternative	Yes

<b>Table 16. Permit Requirements and Required Coordination</b>			
<b>Agency</b>	<b>Issue/Regulation</b>	<b>Coordination Details</b>	<b>Additional Coordination Required</b>
Arizona Department of Environmental Quality	Air Quality	A National Emission Standard Hazardous Air Pollutant notification form will be provided to the Arizona Department of Environmental Quality at least 10 days prior to any structure demolition.	Yes
Santa Cruz County	Floodplains	Coordination and drainage plan review required	Yes

### **5.1.1 Community Representative Committee (CRC) Meetings**

The CRC is comprised of community representatives who meet with GSA and the project team throughout the project from initial concept through construction. These meetings serve as a chance for the local and state government agencies as well as local private stake holders to have input on the project. The meetings consist of a project update including any design changes and an update on the environmental process and an open discussion on any issues related to the project such as urban design goals, visions, concerns, opportunities, design concepts, and the construction process, including scheduling and phasing of the construction activities.

CRC meetings for this project were held on April 3, 2008, January 15, 2009, and May 6, 2009. As part of the charter for the CRC, members have agreed to formally report back their constituents and citizens on the progress of the project.

### **5.2 Public Involvement**

The following adjacent businesses were sent scoping letters:

- American Family Insurance
- Amphenol Bco
- FedEx Trade Networks
- Formosa Chinese Restaurant
- Holy Cross Hospital
- Nationwide Vision
- Nogales Office Supplies
- Optimize Manufacturing, Inc.
- UPS Supply Chain Solutions

No responses to these letters were received.

A Notice of Availability for the Draft Environmental Assessment and the public hearing was published in the Federal Register on October 4, 2007. Additionally the Notice of Availability was published in the Nogales International newspaper, in both English and Spanish, on September 28, 2007 and October 16, 2007.

A public hearing was conducted on October 16, 2007 to provide the public the opportunity to comment on the Draft Environmental Assessment. A Spanish speaking translator was present at the meeting, however not only Spanish-speaking persons attended. Fourteen people attended the meeting, of which only two were members of the general public. The remainder was agency representatives or project team members. No comments were received. The public hearing notice and the sign-in sheet are included in Appendix 10.2.

A Notice of Availability for the Final EA and the intent to publish a Finding of No Significant Impact was published in the Federal Register on June 24, 2009. One comment from the public was received that stated that an expanded LPOE was unnecessary and that increased manpower and enforcement was needed.

## **6.0 Conclusion**

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### **6.1 Summary of Impacts**

The potential environmental impacts of the proposed improvements were evaluated based on both the context of the effects on the project area and the intensity or severity of impacts as defined in CEQ's regulations. Table 16 summarizes the potential environmental impacts of the Proposed Action.

<b>Table 17. Results of Environmental Analysis.</b>	
<b>Environmental Consideration</b>	<b>Result of Alternative Evaluation</b>
Ownership, Jurisdiction, and Land Use	No substantial impact
Social and Economic Resources	Beneficial impact
Title VI/Environmental Justice	No substantial impact
Transportation	No substantial impact



Biological Resources	No substantial impact
Cultural Resources	No impact
Air Quality Analysis	Beneficial impact
Noise Analysis	No substantial impact
Visual Resources	No substantial impact
Water Resources	No substantial impact
Sole Source Aquifer	No substantial impact
Hazardous Materials	No substantial impact
Secondary Effects	No substantial impact
Cumulative Effects	No substantial impact

## 6.2 **Best Management Practices**

### Monitoring:

- Upon completion of the ADOT small area transportation study, the GSA will reevaluate the impacts of the preferred alternative on local and regional traffic and provide the Department with supporting information for the Regional Transportation Plan (Section 4.4).
- During final design, GSA will develop traffic control and trailblazing plans would be developed to warn drivers and pedestrians of the construction activities and ensure safe travel through the area (Section 4.4).
- During final design, GSA will develop construction sequencing plans would be developed that break roadway improvement activities into as many stages as necessary to continue smooth border operations and maintain pedestrian, commercial, and non-commercial traffic flow within the project area (Section 4.4).

The following measures would be implemented during construction to minimize air quality impacts (Section 4.6.7):

### Fugitive Dust Source Controls:

- The contractor shall stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.

- The contractor shall install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, the contractor shall prevent spillage and limit speeds to 15 mph.
- The contractor shall limit the speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- The contractor shall reduce use, trips and unnecessary idling from heavy equipment.
- The contractor shall maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies.
- GSA shall employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- The contractor shall prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- The contractor shall, if practicable, lease newer and cleaner equipment meeting the most stringent of applicable federal or state Standards.
- The contractor shall utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative Controls:

- The contractor shall prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction

equipment engine, or whether there may be a significant risk to nearby workers or the public.)

- The contractor shall utilize cleanest available fuel engines in construction equipment and identify opportunities for electrification. Use low sulfur fuel (diesel with 15 parts per million or less) in engines where alternative fuels such as biodiesel and natural gas are not possible.
- The contractor shall develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- The contractor shall not disturb any of the drainages surrounding the project area until a determination has been made by the Corps that the project may proceed under a Nationwide Permit. Additionally an individual Water Quality Certification from the ADEQ would be obtained (CWA, Section 4.9.1).
- GSA shall submit a preliminary set of plans, a hydrology/hydraulics report, and a CLOMR for the project to the Santa Cruz County Flood Control District prior to final design and construction (Sections 4.9.2 and 5.1).
- GSA shall submit preliminary set of plans, a hydrology/hydraulics report, and a CLOMR for the project to the EPA for comment prior to final design and construction (Section 4.10).
- Since the Proposed Action would involve demolition of existing structures, GSA shall engage an Asbestos Hazard Emergency Response Act certified inspector would inspect all structures to be demolished. If Regulated Asbestos Containing Material is present in the structures, GSA shall develop a work plan to remove, transport, and dispose of these materials (Section 4.11).
- At least 10 days prior to demolition of any structure, GSA shall provide the ADEQ National Emission Standard Hazardous Air Pollutant coordinator a National Emission Standard Hazardous Air Pollutant notification form for each structure to be demolished (Section 4.11).

- GSA shall notify the Santa Cruz County Flood Control District and the Arizona Department of Water Resources prior to undertaking any work that would disturb the has a rainfall and stream level gauges on the upstream headwall of the culverts on Ephraim Canyon/Las Canoas Wash(Section 5.1).

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## 9.0 Bibliography

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- Arizona Department of Economic Security. 2009. *Arizona Population Estimate Summary 1980-2009*.
- Arizona Department of Health Services and U.S. Mexico Border Health Commission Report. 2004. [http://www.borderhealth.org/files/res\\_283.pdf](http://www.borderhealth.org/files/res_283.pdf). Accessed November 2006.
- Arizona Department of Transportation. 2005. [http://tpd.azdot.gov//planning/rp\\_southeastaz.php](http://tpd.azdot.gov//planning/rp_southeastaz.php). Accessed September 2006.
- \_\_\_\_\_. 2008. *Mariposa/I-19 Connector Route Study Working Paper #1: Existing & Future Conditions*
- \_\_\_\_\_. 2008. *Mariposa/I-19 Connector Route Study Working Paper #2: Determination of Need and Feasibility*.
- Arizona Earthquake Information Center. <http://www4.nau.edu/geology/aeic/index.html>. Accessed April 28, 2010.
- Arizona-Mexico Commission. 2005. Plan of Action to Improve Air Quality in Ambos Nogales. [http://www.epa.gov/usmexicoborder/pdf/ambos\\_nogales\\_plan\\_0306\\_eng.pdf](http://www.epa.gov/usmexicoborder/pdf/ambos_nogales_plan_0306_eng.pdf). Accessed February 2007.
- Bracker, Bruce. Personal conversation. January 2007.
- Breen, Judith. 2004. *Archaeological Survey of the Mariposa (MAP) Land Port of Entry, Santa Cruz County, Arizona*. Technical Report No. 035212-007. Logan Simpson Design, Inc., Tempe.
- CANAMEX Corridor Coalition. [www.CANAMEX.org](http://www.CANAMEX.org). Accessed January 2007.
- City of Nogales. 2007. *Update of Downtown Nogales Visitor-Destination Development Options*. Special data compilation prepared, op. cit.
- \_\_\_\_\_. <http://nogales.geekdna.com/>. Accessed September 2006.
- Federal Highway Administration. 2005. CMAQ and Idle Reduction Techniques. <http://www.fhwa.dot.gov/environment/cmaqpgs/idlreduct/index.htm>. Accessed February 2007.
- Frankel, Lee. President, Fresh Produce Association of the Americas, in Nogales. Personal communication. December 2006.

- Gordon, Carl J. submitted by Barbara S. Macnider. *A Cultural Resource Survey of the Nogales Mariposa US Port of Entry, Nogales, Santa Cruz County, Arizona*. January 2007.
- JTF-6. 1998. *Final Environmental Assessment for Joint Task Force Six Proposed Lighting and Camera Installation Project, Nogales, Arizona*. Immigration and Naturalization Service, Washington D.C.
- McClure, Joe. *AZDOR Annual Reports*. McClure Consulting, LLC.
- \_\_\_\_\_. *AZ Workforce Informer*. McClure Consulting, LLC.
- \_\_\_\_\_. 2007. *Update of Downtown Nogales Visitor-Destination Development Options*. McClure Consulting, LLC.
- Rumrill, Nancy. November 2006. Environmental Protection Agency. Personal communication.
- Santa Cruz County. 2003. [http://www.co.santa-cruz.az.us/com\\_development/scctf/scctrf.htm](http://www.co.santa-cruz.az.us/com_development/scctf/scctrf.htm)  
Accessed January 2007.
- Schaafsma, Hoski. 1999. Cultural Resources Survey of the SR 189 (Mariposa Road) State Port of Entry Expansion, Santa Cruz County, Arizona. Ms. on file, Logan Simpson Design, Inc., Tempe.
- Secretaría de Economía del Gobierno del Estado. Comisión de Fomento al Turismo; Dirección General de Planeación y Seguimiento; Subdirección de Estadística
- Shannon, Terry. Shannon Brokerage Co. Personal communication. 2006
- Southeastern Arizona Governments Organization. <http://www.seago.org>. Accessed January 2007.
- State of Arizona. 2001. *Department of Economic Security Research Administration, 2000 Census*. McClure Consulting LLC.
- \_\_\_\_\_. 2005. *Data from Arizona Office of Tourism Annual Report for 2004*.
- \_\_\_\_\_. 2006. Arizona Department of Economic Security, Research Administration, Population Statistics Unit. *Arizona Population Projections 2006 – 2055*.

- Stone, Bradford W., and Cara Lonardo. 2006. *A Cultural Resources Survey of 0.5 Acre for a Proposed State Inspection Parking Area Adjacent to the Mariposa Port of Entry, East of SR 189, Nogales, Santa Cruz County, Arizona*. Technical Report No. 045381. Logan Simpson Design, Inc., Tempe.
- Transportation Research Record. *Freight Activity and Air Quality Impacts in Selected NAFTA Trade Corridors*.
- University of Arizona. 2008. Mariposa Port of Entry Bottleneck Study.
- University of Arizona. 2003. Expanding Trade through safe and secure borders, Nogales Cyberport project.
- US Census Bureau, Profile of Selected Economic Characteristics: 2000 Data Set: Census 2000 Summary File 3 (SF 3) Sample Data, <http://www.factfinder.census.gov/>. Accessed January 2007.
- US Department of Agriculture. 2006. *North American Free Trade Agreement (NAFTA)*. <http://www.fas.usda.gov/info/factsheets/NAFTA.asp>. Accessed February 2007.
- US Department of Homeland Security. 2005. *Final Environmental Assessment: US-visit Increment 2c poc at Select Land Ports of Entry*.
- US Environmental Protection Agency. Clean Air Act (CAA), <http://www.epa.gov/air/caa/>. Accessed October 2008.
- \_\_\_\_\_. 2006. Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas.
- \_\_\_\_\_. 2007. Strategy and Recommendations for U.S. – Mexico Border Diesel Emissions Reductions.
- US General Services Administration (GSA). 2003. *Facilities Standards for the Public Buildings Services*.
- \_\_\_\_\_. 2005. *Feasibility Study – Mariposa US Port of Entry*.
- \_\_\_\_\_. 2007. *Program Development Study Mariposa Port of Entry Nogales, AZ*.
- \_\_\_\_\_. 2008. *Traffic Impact Assessment for Mariposa Port of Entry, Nogales, AZ*.

## 10.0 Appendices

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