Final
Environmental Assessment
Area Lighting, Fencing, and Roadways
at International Border
San Diego, California

Technical Support by:

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Agoura Hills, California

August 1997

FINDING OF NO SIGNIFICANT IMPACT
for
IMMIGRATION AND NATURALIZATION SERVICE (INS)
LIGHTING, FENCING, AND ROADS PROJECT
AT THE INTERNATIONAL BORDER
SAN DIEGO, CALIFORNIA

I have reviewed the attached Environmental Assessment (EA) prepared by the U.S. Army Corps of Engineers (Corps), Los Angeles District, for the Immigration and Naturalization Service (INS) Lighting, Fencing and Roads Project at the International Border, San Diego, California.

The INS proposes to implement a system of lighting, fencing, and roadways to prevent the entry of illegal immigrants and drugs into the United States along the U.S. Mexico border. Existing conditions pose significant operational challenges to the Border Patrol and require concentrated agent deployment throughout the area. The Proposed Action would greatly reduce the flow of illegal drugs and entry in the San Diego region of the Border.

The project consists of parallel construction of lighting, fencing, and roadways (total length about 7.3 miles) up to approximately 150 feet north of the existing Border fence, originating at Arnies Point (approximately seven miles east of the Pacific Ocean) and terminating at the San Ysidro Mountain foothills to the east. Construction of project components (lighting, fencing, and roadways) would likely be staggered between June 1997 and May 1999. In the event of delay, resource agencies and concerned individuals will be notified in writing.

The analysis of project-related potential environmental impacts is documented in the Environmental Assessment prepared for the project. Biological and cultural resource surveys were conducted by Corps staff to identify any sensitive resources potentially affected by the project. Findings were coordinated with the appropriate resource agencies and the areas containing sensitive resources were identified for avoidance during project construction. These resources include: potential habitat for both the San Diego and Riverside Fairy Shrimp, burrowing owls, and numerous cultural resource sites.

The Proposed Action is not anticipated to have any adverse impacts to the physical setting, climate, water quality, air quality, fish and wildlife habitat, threatened and endangered species, land use, aesthetics, noise, socioeconomics, traffic and communication, public safety, and cultural resources. However, construction of the proposed project would not occur in the area of Prehistoric Archeological Site (IBWC-4, CA-SDI-8076/8079, CA-SDI-8652, Border-2, Border-3,Border-4 and CA-SDI-8653) until Section 106 of the National Historic Preservation Act is completed (36 CFR 800). Environmental commitments have been developed to avoid and/or minimize impacts to the environment particularly air quality, and biological and cultural resources.

In addition, the Proposed Action is not anticipated to have any long-term adverse impacts to the environment. The current high disturbance levels to natural habitats in the vicinity of the project area would be expected to subside as a result of project implementation.

A review of the project EA and coordination with the appropriate agencies indicate that the actions, as proposed by the INS, will not have any significant impacts on the quality of the physical and biological environment. All requirements of the National Environment Policy Act (NEPA) and the California Environmental Quality Act (CEQA) have been satisfied. Therefore, preparation of an Environmental Impact Statement (EIS) is not required.

AUG 27 1997
Date

Rufus F. Johnson, Acting Director
Facilities and Engineering Division

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1. SUMMARY/LOCATION OF PROJECT

1.1 SUMMARY

The Immigration and Naturalization Service (INS) proposes to implement a combined lighting, fencing, and roadway system along the U.S. border from Arnie's Point (approximately seven miles east of the Pacific Ocean) to the inland San Ysidro Mountains (see Figure 1-1). This Environmental Assessment (EA) was prepared by the U.S. Army Corps of Engineers (Corps) in accordance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA).

The Proposed Action would consist of the installation of the following components approximately 150 feet north of the Border: (1) 45-foot high concrete light poles, spaced on average every.400 feet; (2) approximate 15-foot high security style fencing; and (3) 30-foot wide all-weather roadways parallel and adjacent to the fence both on the north and south sides. These project components (lighting, fencing, and roadways) would be installed in the following locations just north of the international border with Mexico:

- Section 1 - This Section originates at the foothills of the San Ysidro Mountains and travels approximately 3.0 miles west to its termination point to the east of the Otay Mesa Port of Entry (POE) (see Figure 1-2).

- Section 2 - Section 2 originates to the east of the Otay Mesa POE, at the terminus of Section 1, and travels 2.1 miles west to La Media Road (see Figure 1-3). The March 1997 Revised Draft EA for the INS Multi-Tiered Pilot Fence Project addresses project fencing within Section 2[1]. The August 1993 Final EA for the Joint Task Force Six Operation JT 032-94 San Diego Area Lighting System Project addresses project lighting within Section 2[1].

- Section 3 - This section originates at La Media Road, at the terminus of Section 2, and travels 2.25 miles west to Arnie's Point (see Figure 1-4). The August 1993 Final EA for the Joint Task Force Six Operation JT 032-94 San Diego Area Lighting System Project addresses project lighting within Section 3[1].

Construction of all project components would be accomplished by military personnel, as part of their annual training, or by a selected contractor. The time frame for construction of all the project components is 12 to 24 months. The estimated start date for construction is May 1997[2]; however, due to funding, availability of construction crew/equipment, material, and weather conditions, construction of project

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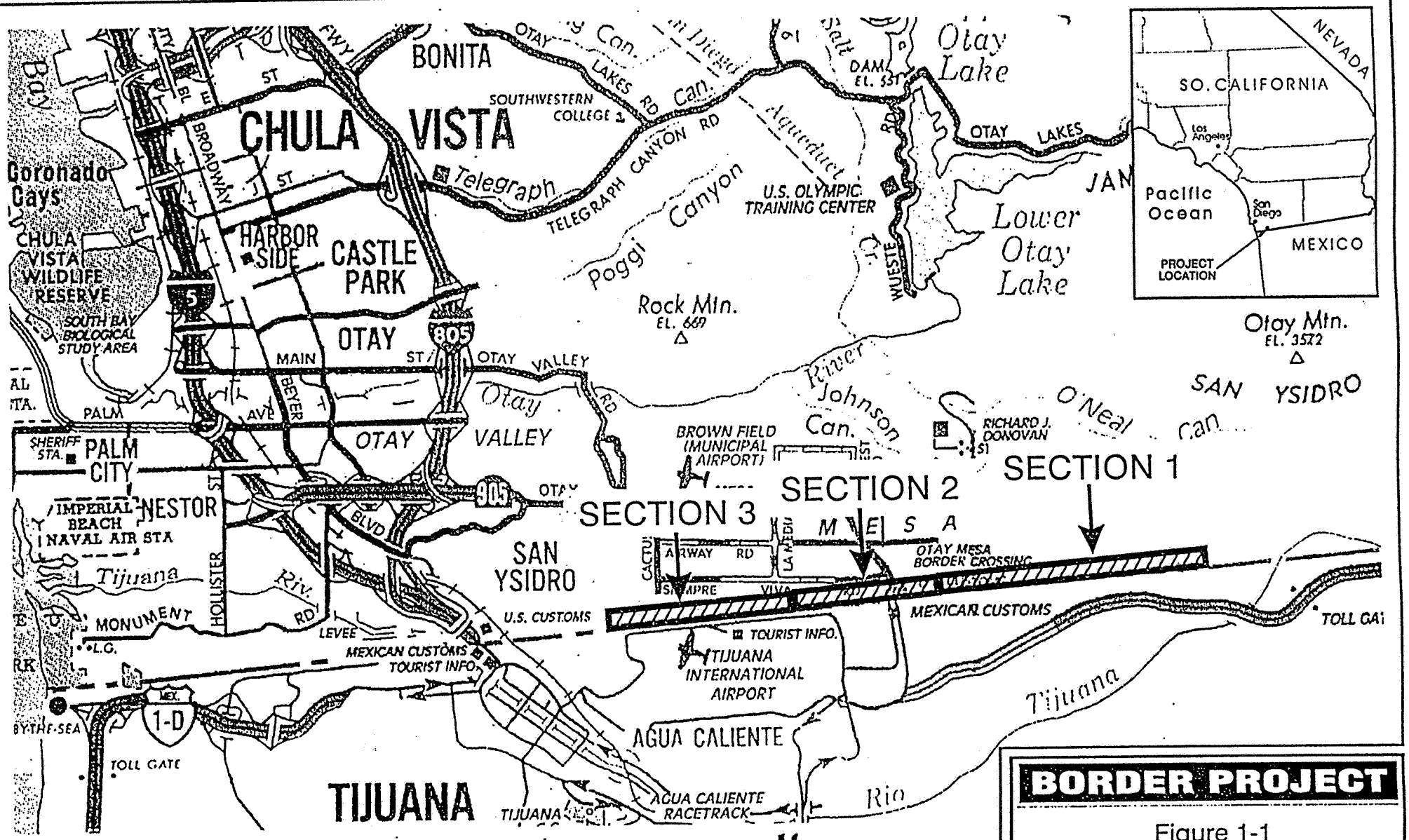
1 The environmental analysis presented in the subject EA is summarized in this document so that a comprehensive cumulative analysis could be provided.

2 Since environmental review for fencing and lighting within Section 2, and lighting within Section 3 has been previously completed, construction of these project components can proceed in May 1997. Construction of other project components shall not proceed until this EA is finalized and a FONSI is completed.



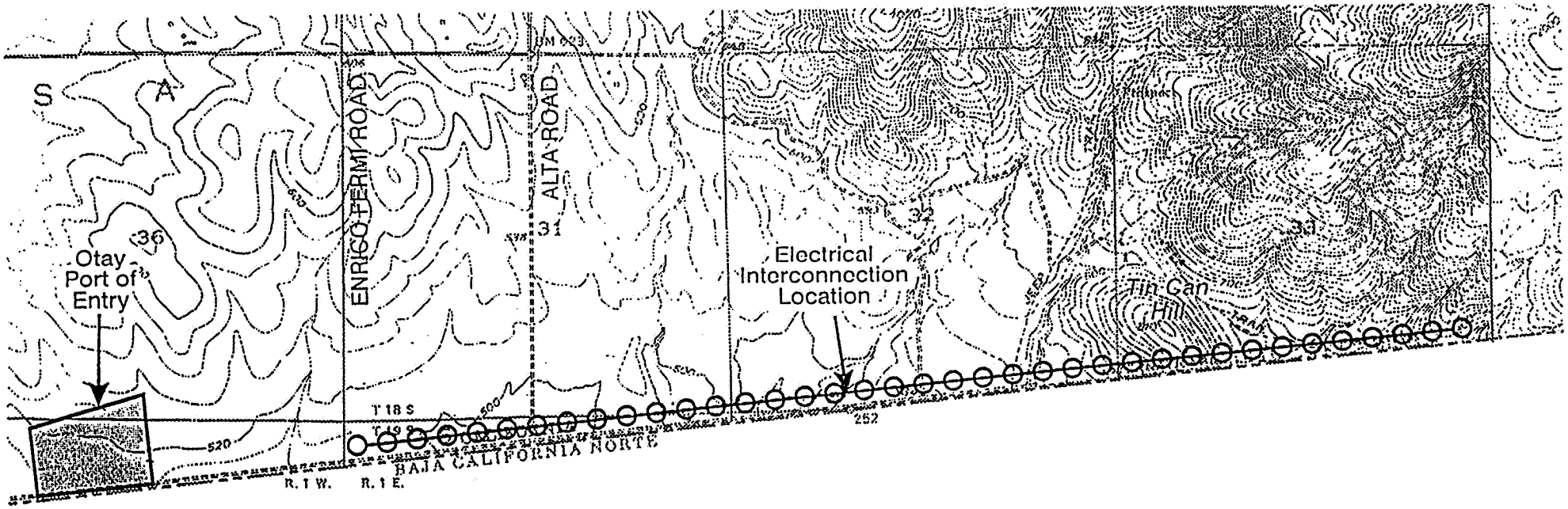
Basemap: AAA San Diego County, 1993.

BORDER PROJECT

Figure 1-1

Regional and Vicinity Map

Prepared by
Aspen Environmental Group



Light Pole Location and Underground Cable

0 ¼ ½ 1

Scale in Miles

Basemap: USGS 1:24,000: Otay Mesa, 1971; Otay Mt., 1972.

N

BORDER PROJECT

Figure 1-2

Section 1 - San Ysidro Mts. to East of Otay Mesa POE (3 miles)

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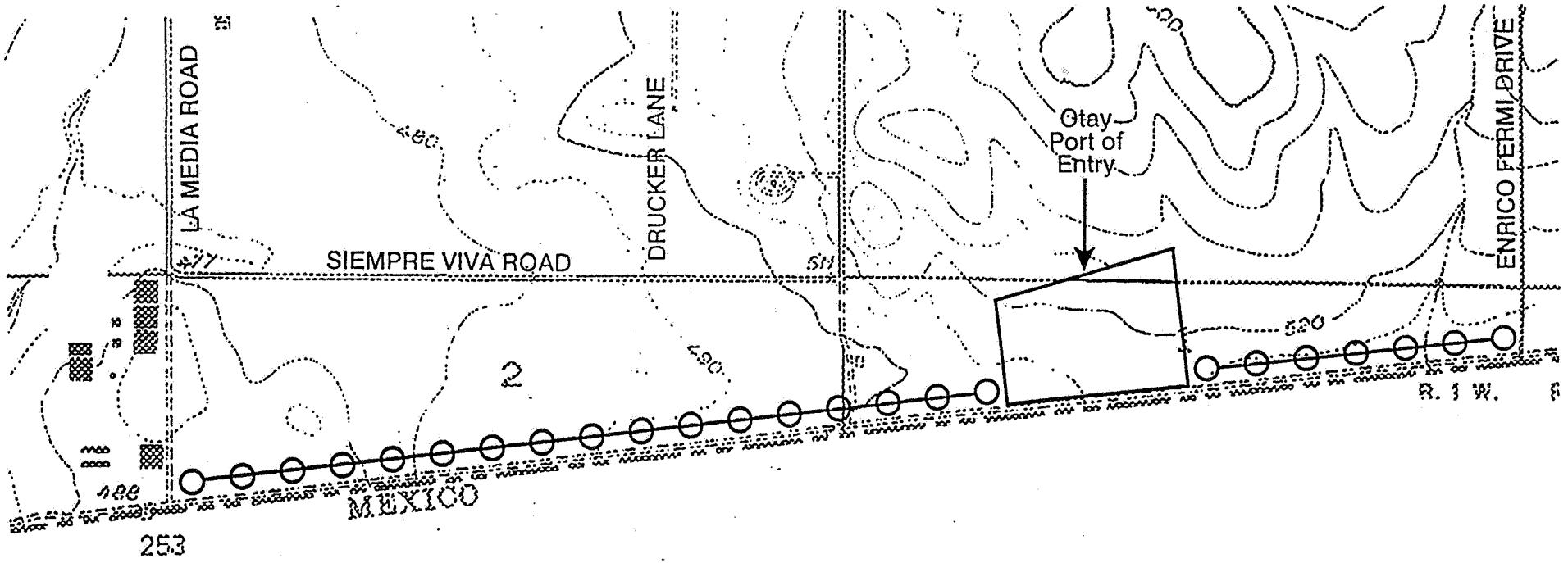

O-O Light Pole Location and Underground Cable

0 ¼ ½ 1

Scale in Miles

Basemap: USGS 1:24,000: Otay Mesa, 1971..

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BORDER PROJECT

Figure 1-3

Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

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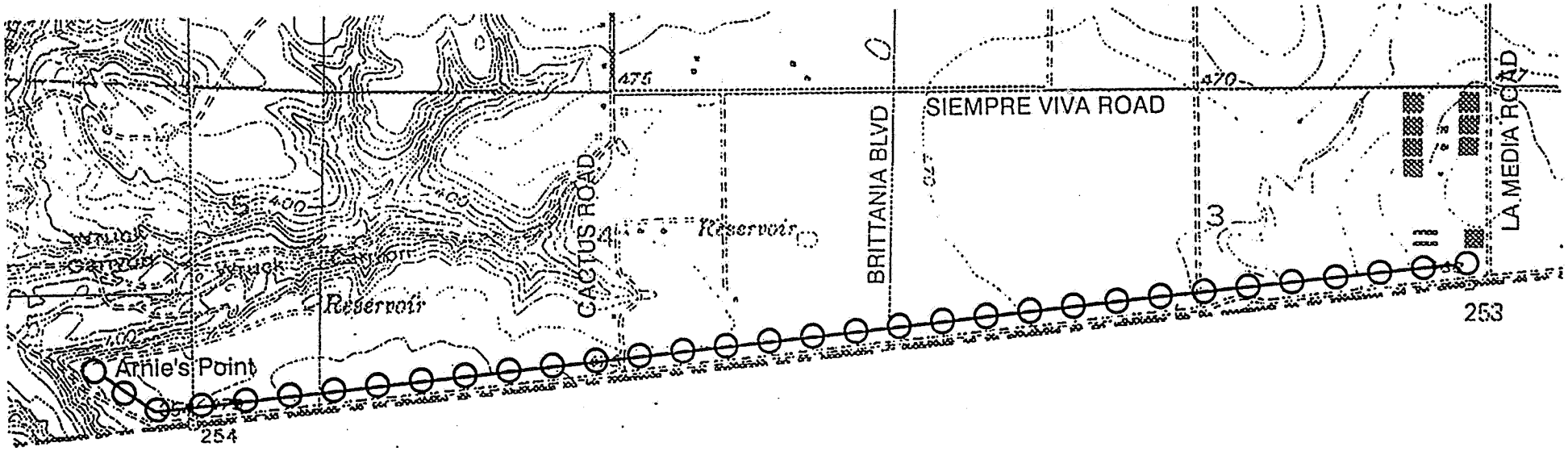

Light Pole Location and Underground Cable

0 ¼ ½ 1

Scale in Miles

Basemap: USGS 1:24,000: Otay Mesa, 1971; Imperial Beach., 1975.

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BORDER PROJECT

Figure 1-4

Section 3 - La Media Road to Arnie's Point (2.25 miles)

Prepared by Aspen Environmental Group

components (lights, fencing, and roadways) at each location (Section 1 through 3) may be staggered, but would be accomplished by May 1999. Since construction of the Proposed Action could be staggered over time through May 1999, this EA presents the environmental analysis for construction, operation, and maintenance of each individual project component (lighting, fencing, and roadways) at each location (Section 1 through 3), thus allowing for the commencement of construction of any of the individual project components at any location. A cumulative analysis by issue area is also provided in this EA in the event that concurrent construction of all project components proceeds at all three locations.

1.2 PREVIOUSLY PREPARED DOCUMENTS

The Proposed Action is a continuation of measures being implemented along the international border since 1989 to minimize the influx of illegal contraband (drugs, people, vehicles, etc.) into the United States. As part of this effort, the following environmental documents have been prepared:

- A Programmatic Environmental Impact Statement (PEIS) was prepared by the Fort Worth District, Corps in response to a request from the INS and U.S. Joint Task Force-Six (JTF-6), with the INS serving as lead agency. This PEIS addresses various measures to minimize illegal entries along the international border including: 1) Operational Support (observation posts, ground patrols, ground sensors, etc.), 2) Engineering Support (roadways, helipads, communication towers, fencing, lighting, etc.), and 3) General Support (transportation, training, aerial photography, etc.). As specific measures are developed for exact locations, EA's have been prepared, tiered off the PEIS, to address specific environmental constraints, including cumulative impacts of past, present, and foreseeable projects.

- The Final EA for the JTF-6 San Diego Area Lighting System Project was prepared in 1993 to address the installation of lighting along the international border, traversing the Imperial Beach, Chula Vista, and Brown Field U.S. Border Patrol Stations. Construction of lighting within the Imperial Beach Station has been completed and is currently in use, while construction within the Chula Vista and Brown Field Stations has not proceeded, to date. This EA summarizes the environmental analysis presented in the 1993 EA so that a comprehensive cumulative analysis could be provided.

- The April 1997 Final EA for the INS Multi-Tiered Pilot Fencing Project addresses the installation of fencing within the Imperial Beach and Chula Vista Stations. This EA summarized the environmental analysis presented in the Revised Draft EA so that a comprehensive cumulative analysis could be provided.

- The February 1993 Final EA for the JTF 6 Border Fence Construction Project, San Diego, California, addresses the installation of fencing along the International Boundary west of the San Ysidro POE (approximately four miles west of the Proposed Action). Construction of this fencing has been completed.

1.3 PROJECT LOCATION

The 7.35-mile long Proposed Action originates about seven miles east of the Pacific Ocean, immediately north of the International Boundary between the United States and Mexico and terminates at the San Ysidro Mountain foothills (see Figures 1-1, 1-2, 1-3, and 1-4) The Proposed Action would traverse both the City of San Diego and San Diego County, California.

1.4 SUMMARY OF IMPACTS (SHORT- AND LONG-TERM)

The resources that could be affected by the Proposed Action are summarized in Table 1-1. Proposed construction measures and environmental commitments to minimize any impacts to environmental resources are also summarized in Table 1-1. Section 5, Environmental Impacts, presents a complete discussion of potential project impacts. Measures recommended to mitigate impacts are presented in their entirety in Section 8, Environmental Commitments.

Table 1-1 Resource Location and Environmental Measures

Affected Resources	Proposed Project Construction Measures & Environmental Commitments	Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)			Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)			Section 3 - La Media Road to Arnie's Point (2.25 miles)		
	Description	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway
Short-Term - Related to Project Construction										
Potential habitat for fairy shrimp, Quino checkerspot butterfly and vernal pools exists north of and within the Proposed Action right-of-way-(ROW).	8-1 Prior to construction, a qualified ecologist shall be on site to define the alignment and location of light poles, fencing, and roadways. See 8-8 below.	×	×	×				×	×	×
Coastal sage scrub exists within the Section 1 ROW.	8-2 Loss of coastal sage scrub habitat will be mitigated by measures deemed appropriate upon consultation with resource agencies.	× (1.5 acre)	× (.5 acre)	× (8 acres)						
Fugitive dust from construction may reduce photosynthesis and overall health of nearby plant communities and degrade local air quality.	8-3 A water truck program shall be applied to all disturbed active construction areas.	×	×	×	×	×	×	×	×	×
Construction may result in erosion in the hilly areas of the project site.	8-4 Standard and appropriate erosion control methods should be employed.	×	×	×						
Weed species may be inadvertently spread to nearby communities during clearing.	8-5 All weed species removed shall either be mixed with backfill or disposed of offsite.	×	×	×	×	×	×	×	×	×
Wildlife and plant resources exist within the Proposed Action ROW.	8-6 All construction and maintenance fluids (oils, anti-freeze, fuels) shall be stored in closed containers and shall be disposed of properly.	×	×	×	×	×	×	×	×	×
Off road driving by construction vehicles may damage plant communities and wildlife habitat.	8-7 Construction traffic shall be limited to existing roads and the ROW, and cross country travel shall be prohibited.	×	×	×	×	×	×	×	×	×

Affected Resources	Proposed Project Construction Measures & Environmental Commitments		Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)			Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)			Section 3 - La Media Road to Arnie's Point (2.25 miles)		
		Description	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway
Twelve areas identified as potential fairy shrimp habitat exist north of and within the Proposed Action ROW (see Figures 4-1 and 4-2 in Section 4.6).	8-8	Areas containing the Federally endangered San Diego and Riverside fairy shrimp would be identified, flagged, and fenced as necessary prior to construction. A 5 foot wide buffer zone shall be observed between any fairy shrimp habitat. Other suitable mitigation may be formulated upon consultation with USFWS. Backlight falling on potential fairy shrimp habitat shall be minimized.	×	×	×				×	×	×
Two areas containing burrowing owls exist north of the Proposed Action ROW (see Figures 4-1 and 4-2 in Section 4.6).	8-9	Where possible, construction shall be avoided during the burrowing owl reproductive season (February 1 to August 31) in areas of burrowing owl habitat. Prior to construction a qualified biologist shall survey the area of construction to ascertain the presence of burrowing owls and relocate individuals, if necessary.	×	×	×				×	×	×
A population of San Diego marsh-elder exist north of and within the Section 1 ROW (see Figure 4-1 in Section 4.6).	8-10	All construction shall be directed to avoid the population of San Diego marsh-elder if possible.	×	×	×						
Endangered San Diego button-celery exist north of and within the Section 3 ROW (see Figure 4-2 in Section 4.6)	8-11	Federally endangered San Diego button-celery shall be avoided by directing all construction away from this population.							×	×	×
Construction activities could alter existing drainage patterns.	8-12	The Proposed Action shall not disturb or alter existing drainage patterns and flow rates.	×	×	×	×	×	×	×	×	×
Construction vehicles could degrade local air quality.	8-13	Construction equipment shall be utilized efficiently to minimize the amount of time engines are left idling.	×	×	×	×	×	×	×	×	×
Subsurface soil contamination or hazardous waste may be identified during construction.	8-14	Clean-up shall occur in accordance with Federal and State regulations.	×	×	×	×	×	×	×	×	×
Underground utilities could be damaged by construction activities.	8-15	Underground Service Alert shall be notified prior to construction activities.	×	×	×	×	×	×	×	×	×

Affected Resources	Proposed Project Construction Measures & Environmental Commitments	Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)			Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)			Section 3 - La Media Road to Arnie's Point (2.25 miles)		
	Description	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway
Cultural resources exist within the Proposed Action ROW.	**8-16** Known archaeological sites shall be marked prior to construction. If buried archaeological deposits are encountered during ground disturbing activities, a Corps archaeologist shall be notified and the provisions of 36 CFR 800.11—*Properties discovered during implementation of an undertaking*—shall be implemented in consultation with the INS.	×	×	×	×	×	×	×	×	×
Long-Term - Related to Project Operation										
The Proposed Action would minimize the influx of illegal contraband (drugs, people, vehicles, etc.) and associated crime and violence.	Beneficial Impact	×	×	×	×	×	×	×	×	×
Residential areas exist to the south of the border.	**8-17** To the extent practical, given the Purpose and Need of the project, lights shall not be pointed skyward or directed on a horizontal plane parallel to the ground.	×						×		

2. PROPOSED ACTION

2.1 PURPOSE AND NEED

The purpose of the Proposed Action is to minimize the influx of illegal contraband (drugs, people, vehicles, etc.) from entering the United States and to reduce crime along the boundary area through the use of deterrent measures and maximizing the effectiveness of the U.S. Border Patrol. The San Diego Sector of the U.S. Border Patrol is the most active area along the United States/Mexico border. According to Border Patrol statistics, in fiscal year 1996 (October 1, 1995 through September 30, 1996), 483,815 illegal entrants were apprehended while attempting to cross the international boundary between the Pacific Ocean and the foothills of the San Ysidro Mountains located approximately 15 miles inland. These half million illegal entries were processed through the Border Patrol stations and returned to Mexico. In addition, drug seizures by the San Diego Sector Border Patrol during fiscal year 1996 included 347 pounds of cocaine valued at approximately $11 million, and 48,500 pounds of marijuana valued at just under $39 million.

The Proposed Action components (lighting, fencing, and roadways) would serve to minimize the influx of illegal contraband as follows:

- Installation of lighting would allow for the illumination of the immediate border area, thus maximizing the Border Patrol's ability to identify illegal entries during night time hours, the period of greatest activity. The Border Patrol has stated that use of such lighting along the border has proven very effective west of the project area between Goat Canyon and one half mile east of Old Dairy Mart Road (Provencio, 1996).

- Construction of the security style fence 95 to 150 feet north of the existing border fence will slow the progress of illegal entries by providing an additional obstacle to scale (which will be difficult given its approximate 15-foot height) or tunnel under (also difficult given the planned installation of a concrete or steel footing).

- Installation of an all-weather roadway is needed to maximize the effectiveness of Border Patrol activities during periods of inclement weather. According to the Border Patrol, Border Patrol activities often cease during rainy conditions because the existing dirt roads become impassable (Birdsong, 1996).

The San Ysidro Mountain foothills, with rugged topography starting at the eastern terminus of Section 1, are expected to serve as a natural deterrent to illegal contraband traffic. As noted above, use of lighting to the west of the project area has been effective in minimizing illegal entries along this portion of the border.

The INS has used a number of tactics in the past to discourage smuggling and increase visibility at night to support the Border Patrol against border crimes and violence directed against agents, civilians, and aliens in the area. The Proposed Action should significantly decrease violent criminal activity along the border and deter illegal entry of contraband into the United States.

2.2 PROJECT DESCRIPTION

2.2.1 Project Overview

Tables 2-1, 2-2, and 2-3 present detailed descriptions of each of the Proposed Action components (lighting, fencing, and roadways) within each of the project sections (Sections 1, 2, and 3), respectively. In addition, construction requirements for each project component within each section is presented (area of disturbance, number of construction personnel, schedule, and staging areas). Finally, project component operation is provided (e.g., how lights will be operated on an ongoing basis).

2.2.2 Staging Areas

As presented in Tables 2-1, 2-2, and 2-3, six staging areas could be used during project construction. Figure 2-1 illustrates the location of each potential staging area. The use of individual staging areas will be contingent on the type and number of project components (lighting, fencing, and/or roadways) to be constructed at a given time and at which location(s) (Section 1, 2, and/or 3). Prior to use of any staging area, Right-of-Entry would be secured. Each of these staging areas has been surveyed for environmental resources and land use constraints. They are typically disturbed, of low habitat value, do not contain any cultural resources, and do not present any ingress/egress or land use constraints. If additional sites are deemed necessary, they would be surveyed prior to utilization and Right-of-Entry would be secured.

2.2.3 Project Construction

Tables 2-1, 2-2, and 2-3 present the construction requirements for each project component within each section (area of disturbance, number of construction personnel, and schedule). Construction of the Proposed Action would be accomplished by military personnel as part of their annual training or a selected contractor. The equipment to install the project components would be provided by the California National Guard and the Border Patrol maintenance department (auger truck, backhoe, crane, trench digger, flat-bed truck, pole-setter, cement-truck, cherry-picker, water truck, etc.). Any other equipment required to perform the installation would be rented through a Contractor. Construction equipment would be stored at the staging areas when not in use and travel to the immediate project areas would be via a system of existing dirt roadways.

For project lighting installation, coordination with San Diego Gas & Electric will be conducted throughout construction.

Table 2-1 Project Description: Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)

Project Characteristics		Description
Lighting	Length and Location (see Figure 1-2)	Originating at the San Ysidro Mountain foothills, 150 feet north of the international border with Mexico, and traveling 3.0 miles west, paralleling the border, to the east of Otay Mesa POE (at eastern terminus of Section 2).
	Number and Type of Lights	Number: 38 Height: 45' Type: Concrete Poles Spacing: Approximately 400' Illumination: Two 1000 watt (W) and two 400W high pressure sodium floodlights Power: Extension of underground cable from power transformer at 1.2 miles east of Alta Road Other: Armor, Back/Side Light Shields
	Area of Disturbance	Poles: 20' x 20' temporary disturbance Underground Cable: 10' wide right-of-way, 4' deep
	# of Construction Personnel	60 to 75 military personnel
	Construction Schedule	12 - 22 months, starting August 1997. Completion by May 1999.
	Construction Staging Areas[1] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 2: Corner of Alta Road and Otay Mesa Road
	Operation	Dusk to dawn, 365 days of the year.
Fencing	Length and Location (see Figure 1-2)	Originating at the San Ysidro Mountain foothills, 120 to 150 feet north of the international border with Mexico, and traveling 3.0 miles west, paralleling the border, to the east of Otay Mesa POE (at eastern terminus of Section 2).
	Type and Height of Fence	Approximate 15-foot high security style of fencing. Concrete or steel footings would be installed to discourage tunneling.
	Area of Disturbance	10' wide right-of-way.
	# of Construction Personnel	7 to 8 selected contractor or military personnel.
	Construction Schedule	8 - 10 months. Completion by December 1998.
	Construction Staging Areas[1] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 2: Corner of Alta Road and Otay Mesa Road
	Operation	Permanent fixture to be patrolled 24-hours a day, 365 days of the year by the U.S. Border Patrol.
Roadways	Length, Width, and Location (see Figure 1-2)	30' wide roadway originating at the San Ysidro Mountain foothills, 120 to 150 feet north of the international border with Mexico, and traveling 3.0 miles east to the east of Otay Mesa POE (at eastern terminus of Section 2), parallel to the security style fence both on north and south.
	Type of Roadways	All-weather roadways to be constructed or existing dirt roadways improved to all-weather condition.
	Area of Disturbance	30' right-of-way
	# of Construction Personnel	10 to 15 selected contractor or military personnel.
	Construction Schedule	2 months. Completion by December 1998.
	Construction Staging Areas[1] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 2: Corner of Alta Road and Otay Mesa Road
	Operation	To be utilized by U.S. Border Patrol 24-hours a day, 365 days of the year for patrol activities.

[1] Potential staging areas only; Staging Areas 3, 4, 5, and/or 6 may also be utilized.

Table 2-2 Project Description: Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

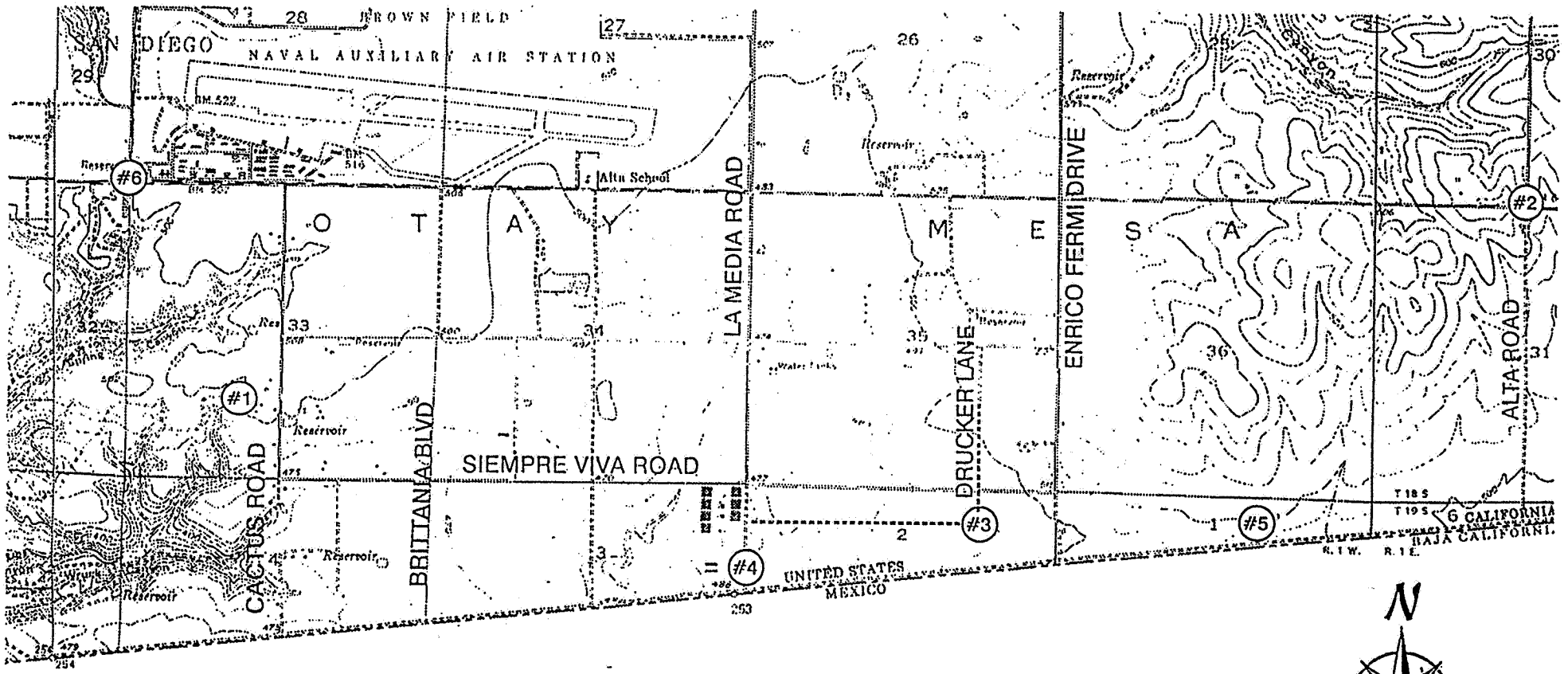
Project Characteristics		Description
Lighting	Length and Location (see Figure 1-3)	Originating east of the Otay Mesa POE (at western terminus of Section 1), 150 feet north of the international border with Mexico, and traveling 2.1 miles west, to La Media Road (at eastern terminus of Section 3), paralleling the border, with a gap at the Otay Mesa POE. (1993 Final EA for the San Diego Area Lighting System also addresses this project component.)
	Number and Type of Lights	Number: 24 Height: 45' Type: Concrete Poles Spacing: Approximately 400' Illumination: Two 1000 watt (W) and two 400W high pressure sodium floodlights Power: Extension of underground cable. Other: Armor, Back/Side Light Shields
	Area of Disturbance	Poles: 20' x 20' temporary disturbance Underground Cable: 10' wide right-of-way, 4' deep
	# of Construction Personnel	60 to 75 military personnel
	Construction Schedule	12 - 22 months, starting August 1997. Completion by May 1999.
	Construction Staging Areas[2] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 3: Bend in Ducker's Lane Staging Area 4: Vicinity of La Media Road and the existing border fence Staging Area 5: East of Otay Mesa POE adjacent to existing dirt access road
	Operation	Dusk to dawn, 365 days of the year.
Fencing	Length and Location (see Figure 1-3)	Originating east of the Otay Mesa POE (at western terminus of Section 1), 95 to 120 feet north of the international border with Mexico, and traveling 2.1 miles west to La Media Road (at eastern terminus of Section 3), paralleling the border with gaps in the fencing at the Otay Mesa POE and Drucker Lane. (1997 Final EA for the INS Multi-Tiered Pilot Fence Project also addresses this project component.)
	Type and Height of Fence (see Figure 2-1)	Approximate 15-foot high security style of fencing. Concrete or steel footings would be installed to discourage tunneling.
	Area of Disturbance	10' wide right-of-way
	# of Construction Personnel	7 to 8 selected contractor or military personnel.
	Construction Schedule	8 months, starting late-April 1997. Completion by September 1998.
	Construction Staging Areas[2] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 3: Bend in Ducker's Lane Staging Area 4: Vicinity of La Media Road and the existing border fence Staging Area 5: East of Otay Mesa POE adjacent to existing dirt access road
	Operation	Permanent fixture to be patrolled 24-hours a day, 365 days of the year by the Border Patrol.
Roadways	Length, Width, and Location (see Figure 1-3)	30' wide roadway originating east of the Otay Mesa POE (at western terminus of Section 1), 95 to 120 feet north of the international border with Mexico, and traveling 2.1 miles west to La Media Road (at eastern terminus of Section 3), parallel to the security style fence both on north and south, with a gap at the Otay Mesa POE.
	Type of Roadways	All-weather roadways to be constructed or existing dirt roadways improved to all-weather condition.
	Area of Disturbance	30' right-of-way
	# of Construction Personnel	10 to 15 selected contractor or military personnel
	Construction Schedule	2 months. Completion by December 1998.
	Construction Staging Areas[2] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 3: Bend in Ducker's Lane Staging Area 4: Vicinity of La Media Road and the existing border fence Staging Area 5: East of Otay Mesa POE adjacent to existing dirt access road
	Operation	To be utilized by Border Patrol 24-hours a day, 365 days of the year for patrolling activities.

[2] Potential staging areas only; Staging Areas 2 and/or 6 may also be utilized.

Table 2-3 Project Description: Section 3 - La Media Road to Arnie's Point (2.25 miles)

Project Characteristics		Description
Lighting	Length and Location (see Figure 1-4)	Originating at La Media Road (at western terminus of Section 2), 150 feet north of the international border with Mexico, and traveling 2.25 miles west, parallel the border to Arnie's Point. (1993 Final EA for the San Diego Area Lighting System also addresses this project component.)
	Number and Type of Lights	Number: 33 Height: 45' Type: Concrete Poles Spacing: Approximately 400' Illumination: Two 1000 watt (W) and two 400W high pressure sodium floodlights Power: Extension of underground cable Other: Aviation Obstruction Lights (26 western poles only), Armor, Back/Side Light Shielding
	Area of Disturbance	Poles: 20' x 20' temporary disturbance Underground Cable: 10' wide right-of-way, 4' deep
	# of Construction Personnel	60 to 75 military personnel
	Construction Schedule	12 - 22 months, starting early August 1997. Completion by May 1999.
	Construction Staging Areas[3] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 6: Dillon Trail Staging Area, Otay Mesa Road and the 905 Freeway
	Operation	Dusk to dawn, 365 days of the year.
Fencing	Length and Location (see Figure 1-4)	Originating at La Media Road (at western terminus of Section 2), 120 to 150 feet north of the international border with Mexico, and traveling 2.25 miles west, parallel the border to Arnie's Point.
	Type and Height of Fence	Approximate 15-foot high security style of fencing. Concrete or steel footings would be installed to discourage tunneling.
	Area of Disturbance	10' wide right-of-way
	# of Construction Personnel	7 to 8 selected contractor or military personnel.
	Construction Schedule	8 months. Completion by December 1998.
	Construction Staging Areas[3] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 6: Dillon Trail Staging Area, Otay Mesa Road and the 905 Freeway
	Operation	Permanent fixture to be patrolled 24-hours a day, 365 days of the year by the Border Patrol.
Roadways	Length, Width, and Location (see Figure 1-4)	30' wide roadway originating at La Media Road (at western terminus of Section 2), 120 to 150 feet north of the international border with Mexico, and traveling 2.25 miles west, parallel to the security style fence both on north and south, to Arnie's Point.
	Type of Roadways	All-weather roadways to be constructed or existing dirt roadways improved to all-weather condition.
	Area of Disturbance	30' right-of-way
	# of Construction Personnel	10 to 15 selected contractor or military personnel
	Construction Schedule	2 months. Completion by December 1998.
	Construction Staging Areas[3] (see Figure 2-1)	Staging Area 1: 2160 Cactus Road Staging Area 6: Dillon Trail Staging Area, Otay Mesa Road and the 905 Freeway
	Operation	To be utilized by U.S. Border Patrol 24-hours a day, 365 days of the year for patrolling activities.

[3] Potential staging areas only; staging Areas 2, 3, 4, and/or 5 may also be utilized.



Staging Area #1: 2160 Cactus Road
Staging Area #2: Corner of Alta Road and Otay Mesa Road
Staging Area #3: Bend in Drucker Lane
Staging Area #4: Vicinity of La Media Road and Existing Border Fence
Staging Area #5: East of Otay Mesa POE, Adjacent to Existing Dirt Access Road
Staging Area #6: Dillon Trail Staging Area, Otay Mesa Road and the 905

0 ¼ ½ 1
Scale in Miles

Basemap: USGS 1:24,000: Otay Mt., 1972;Otay Mesa, 1971; Imperial Beach., 1975.

BORDER PROJECT

Figure 2-1

Staging Areas

Prepared by
Aspen
Environmental Group

3. ALTERNATIVES

3.1 NO ACTION ALTERNATIVE

The "No Action Alternative" means that construction of the Proposed Action would not occur, resulting in continued illegal entry of contraband, persons, and vehicles into the United States and associated violent activities along the project alignment. Current levels of habitat disturbances in the vicinities of the proposed project areas would also persist. In light of these considerations, the No Action Alternative is deemed to be neither prudent nor in the best interest of the public or the INS.

3.2 INCREASED USE OF PORTABLE LIGHTING SYSTEM

An alternative considered, but rejected was the increased use of portable lights. Currently, 30-foot light poles connected to portable generators for power are positioned along the project alignment to illuminate areas of popular entry. According to the Border Patrol, the use of these portable lights has been ineffective. In comparison to the Proposed Action, an increased portable lighting system would require additional manpower and the potential for vandalism would increase, while not being as effective as a deterrent to the illegal influx of contraband. Power outages with a portable system would also be more frequent and diesel generators required for this system would increase pollution in the project area. The portable lighting system was not considered as nearly as effective as the Proposed Action (lighting, fencing, and roadway) and was therefore eliminated from further consideration.

3.3 ENHANCED ELECTRONIC SURVEILLANCE

An alternative implementing state-of-the-art electronic surveillance equipment would improve the detection and tracking of illegal entries; the desired benefit of preventing illegal entries and reduced policing efforts by the Border Patrol; however, would not be attained by this alternative. In addition, significant levels of habitat disturbance in the vicinities of the proposed project areas would continue. Therefore, no further consideration is given to this alternative.

3.4 LIGHTING, FENCING, AND ROADWAYS (PREFERRED ALTERNATIVE)

Evaluation of the other alternatives indicates the implementation of the Proposed Action (lighting, fencing, and roadway) to be the superior alternative for meeting the project Purpose and Need. This alternative would significantly reduce the number of illegal entries in the project areas and reduce the disturbance of natural habitats in the vicinity of the proposed alignments. Construction would occur mostly in areas that are already developed or disturbed. Project environmental impacts would be nominal and short-term.

4. ENVIRONMENTAL SETTING

4.1 PHYSICAL SETTING

4.1.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

The western portion of southern San Diego County slopes gently towards the Pacific Ocean and is divided into two general zones: a coastal plain and inland mountain zone. From the Pacific Ocean to approximately seven miles inland, the terrain elevation gradually increases to 450 feet until it reaches the Otay Mesa which extends to the San Ysidro Mountains. Elevations along Otay Mesa gently increase from 450 to 550 feet over an approximate distance of seven miles. On the eastern boundary of Otay Mesa, the foothills to the San Ysidro Mountains begin.

4.1.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.1.1 above for a description of the physical setting within the project area.

4.1.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.1.1 above for a description of the physical setting within the project area.

4.2 CLIMATE

4.2.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

The San Diego Air Basin (SDAB), in which the Proposed Action would be located, has a Mediterranean climate characterized by mild winters, when most rainfall occurs, and warm, dry summers. The most important climatic and meteorological characteristics influencing air quality in the study area are the persistent temperature inversions, predominance of onshore winds, mountain ridge and valley topography, and prevalent sunlight. Average summer temperatures near Otay range from a high of 22°C (72°F) to a low of 17°C (62°F), while average winter temperatures range from a high of 18°C (64°F) to a low of 7°C (45°F). The annual average precipitation in the San Diego area is 9 inches and usually occurs between December and April. Snowfall is limited to the higher summits in the area (Strahler and Strahler, 1981).

4.2.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.2.1 above for a description of the local climatology near the Proposed Action area.

4.2.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.2.1 above for a description of the local climatology near the Proposed Action area.

4.3 WATER QUALITY

4.3.1 Section 1 - San Ysidro Mountains to Otay Mesa POE (3 miles)

Although no perennial creeks or streams flow through Section 1, several shallow surface drainages traverse the project alignment, as indicated by topography and vegetation communities. In addition, several topographic depressions were observed. These surface drainages and topographic depressions appear to remain dry during the year except following storm events that generate significant surface flow; no permanent water resources occur within this section. The principal drainages in the project area between San Ysidro Mountains and the Otay Mesa POE flow southward across the international boundary from the United States into Mexico. Sources of contamination in this section of the project area include scattered refuse disposal (glass, aluminum, and plastic containers; metal; concrete; clothes; tires; and gasoline canisters) and primitive sewage disposal in the residential areas immediately south of the border. Because of high chlorine and sodium levels, regional ground water quality is low (USACE, 1997).

4.3.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

No perennial creeks, streams, or shallow surface drainages traverse Section 2 of the project area. Water quality within this section is generally considered poor due to urban run-off and sewage flows from the City of Tijuana and its suburbs. Because of high chlorine and sodium levels, regional ground water quality is low (USACE, 1997).

4.3.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

No perennial creeks or streams occur within Section 3 of the project area. One drainage does transverse the section at the eastern end of the alignment. Water from this drainage forms a shallow, stagnant puddle at the base of the existing fence, supporting a small community of sedges and other wetland elements. Several vernal swales occur just west of the drainage but have been damaged and drained from partial excavation. As with Section 2, high chlorine and sodium levels result in regional ground water of low quality (USACE, 1993).

4.4 AIR QUALITY

4.4.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

The quality of surface air (air quality) is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects. The degree of air quality degradation is then compared to *ambient air quality standards* (AAQS), such as the California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). Pollutant concentrations in the San Diego Air Basin (SDAB) regularly exceeds the CAAQS and NAAQS for ozone (O_3). In addition, the SDAB also exceeds the CAAQS for PM_{10} a number of times a year. As a result, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have classified the SDAB as non-attainment of the CAAQS and NAAQS for O_3, and the CAAQS for PM_{10}. Table 4-1 lists the current CAAQS and NAAQS for each pollutant, and provides

the maximum concentrations recorded for each pollutant at the Otay Mesa monitoring station (a monitoring station located in the vicinity of the proposed project) for the period of 1993 through 1995.

Table 4-1 Air Quality Summary[a]

Standards	Otay Mesa			Basinwide		
	1993	1994	1995	1993	1994	1995
O_3 (1-Hour) STANDARD						
Maximum Concentration Recorded (ppm)	0.12	0.12	0.16	0.19	0.15	0.16
Days Greater than CAAQS (0.09 ppm)	10	9	17	89	79	46
Days Greater than NAAQS (0.12 ppm)	1	0	1	14	9	12
NO_2 (1-Hour) STANDARD						
Maximum Concentration Recorded (ppm)	0.08	0.13	0.11	0.13	0.16	0.14
Days Greater than CAAQS (0.25 ppm)	0	0	0	0	0	0
PM_{10} (24-Hour) STANDARD						
Maximum Concentration Recorded ($\mu g/m^3$)	127.0	129.0[b]	121.0	127.0	129.0	121.0
Days Greater than CAAQS (50 $\mu g/m^3$)	9/31	24/65	20/59	14/76	25/87	23/88
Days Greater than NAAQS (150 $\mu g/m^3$)	0/31	0/65	0/59	0/76	0/87	0/88
CO (8-Hour) STANDARD						
Maximum Concentration Recorded (ppm)	4.0	4.8	6.3	7.5	7.6	6.3
Days Greater than or Equal to the CAAQS (9.0 ppm)	0	0	0	0	0	0
Days Greater than or Equal to the NAAQS (9.5 ppm)	0	0	0	0	0	0

Notes: ppm=parts per million; $\mu g/m^3$=micrograms per cubic meter

[a] Source: CARB, *Summary of 1993, 1994, 1995 Air Quality Data, Gaseous and Particulate Pollutants.*

[b] "Days" for PM_{10} are given as exceedances/number of annual measurements.

Emissions that would result from the construction of the Proposed Action are subject to the rules and regulations of the San Diego County Air Pollution Control District (SDCAPCD). Rules and regulations of this agency are designed to achieve defined air quality standards that are protective of public health. To that purpose they limit the emissions and the permissible impacts of emissions from projects, and specify emission controls and control technologies for each type of emitting source in order to ultimately achieve the air quality standards.

4.4.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.4.1 above for a description of the air quality baseline near the Proposed Action area.

4.4.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.4.1 above for a description of the air quality baseline near the Proposed Action area.

4.5 Hazardous and Toxic Waste

4.5.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Hazardous materials/waste include substances that pose a potential hazard to human health or the environment. The U.S. Environmental Protection Agency (USEPA) classifies a material as a hazardous waste if it has one or more of the following properties: ignitability (including oxidizers, compressed gases, and extremely flammable liquids and solids), corrosivity (including strong acids and bases), reactivity (including materials

that are explosive or generate toxic fumes when exposed to air or water), or toxicity (including materials listed by USEPA as capable of inducing systematic damage in humans or animals).

Site Investigation. No known hazardous or toxic material storage or disposal sites were located within the project area. Waste observed on the ground during a site investigation of the project area was limited to household garbage, several small empty fuel containers (propane, gasoline), one empty 55 gallon drum (where methyl alcohol was once stored), several small empty motor-oil cans, small empty paint cans (spray and non-spray cans), abandoned car parts (e.g.,air filters), and abandoned tires.

Regulations. The Federal Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the"cradle to grave" system of regulating hazardous wastes. USWA also specifies the appropriate techniques for the disposal of hazardous wastes.

With regard to worker safety, the Occupational Safety and Health Act (OSH Act) was enacted by Congress in 1970 in order to assure that every working man and woman in the Nation had safe and healthy working conditions. Currently, numerous states, such as California have developed workplace health and safety programs that have been approved by Occupational Safety and Health Administration. In California, the California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warning.

4.5.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.5.1 above for a description of the waste observed during the preliminary site investigation of the project area.

4.5.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.5.1 above for a description of the waste observed during the preliminary site investigation of the project area.

4.6 BIOLOGICAL RESOURCES

Biological resources for Sections 1 and 3 were characterized using information gathered during the November 6, 1996 survey and the March 26 and 27, 1997 surveys respectively, findings of which are detailed in the Biological Technical Report (Appendix B). Biological resources for Section 2 were characterized using

information from the Revised Environmental Assessment for the Immigration and Naturalization Service Multi-tiered Pilot Fence Project (USACE, 1997).

4.6.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Vegetation. The section east of the Otay Mesa POE segment consists of disturbed habitat occupying the low hills and fields west of the southeastern foothills of the San Ysidro Mountains and just north of the U.S./Mexican border fencing. Plant communities found within the project right-of-way ROW include disturbed coastal sage scrub and non-native grasslands, with several small shallow drainages scattered along the alignment. No permanent water resources occur within the Section 1 ROW.

The eastern portion of the Section 1 ROW (approximately 1.2 miles), occurs on two low hills that range from 700 to 800 feet in elevation. The proposed alignment occurs on the south facing slope of the easternmost hill, then bisects the next hill (Tin Can Hill) in an east/west direction, crossing on the hill's summit and east and west facing slopes. These hills are vegetated with a sparse, very disturbed coastal sage scrub community, dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), saw-toothed goldenbush (*Hazardia squarrosa*), and California scale broom (*Lepidospartum squamatum*). Weedy non-native species including Russian thistle (*Salsola tragus*), black mustard (*Brassica nigra*), red brome grass (*Bromus madritensis* ssp. *rubens*), foxtail fescue (*Vulpia myuros* var. *hirsuta*), wild oats (*Avena fatua*), clover seedlings (*Trifolium sp.*), and long-beaked filaree (*Erodium botrys*) are abundant in this community. Rocky outcrops surrounded by Bigelow's mossfern (*Selaginella bigelovii*) occur on the hill slopes. The substrate ranges from gravely to rocky. Litter in the form of broken glass, discarded bottles, cans, and paper and plastic debris is intermittently scattered along this potion of the alignment. Vehicle tracks and roads used by various law enforcement vehicles, maintenance vehicles, and dirt bikes periodically traverse or parallel the ROW area.

The western portion of the Section 1 ROW (approximately 1.8 miles) consists of a low diversity, weedy, disturbed field sloping slightly southward. Mediterranean schismus (*Schismus barbatus*), foxtail fescue, red brome grass, wild oats, Russian thistle, black mustard, star thistle (*Centaurea melitensis*), doveweed (*Emerocarpus setigerus*), and clover, with an understory of abundant long-beaked filaree dominate this habitat. Scattered areas within the non-native grassland from the western toe of Tin Can Hill to the east of Otay Mesa POE have been recently disced (a light tilling of the soil) for weed abatement purposes. This area occurs approximately 2,000 feet west of Tin Can Hill. Old shallow furrows are distinguishable throughout most of the 1.8 mile area, indicating that the entire area had been previously disced at one time. The substrate consists of hard clayey soil, with scattered rock.

Several shallow drainages occur on the proposed ROW, at the toe of the hills in the eastern portion of the alignment, and in the disturbed grassland of the western portion of the segment. These drainages, though not densely vegetated, are dominated by broom baccharis (*Baccharis sarothroides*), bladderpod (*Isomeris arborea*), laurel sumac (*Malosma laurina*), jojoba (*Simmondsia chinensis*), San Diego marsh elder (*Iva hayesiana*) and non-native weedy species including Russian thistle, black mustard, curly dock (*Rumex crispus*), and a variety of non-native grasses.

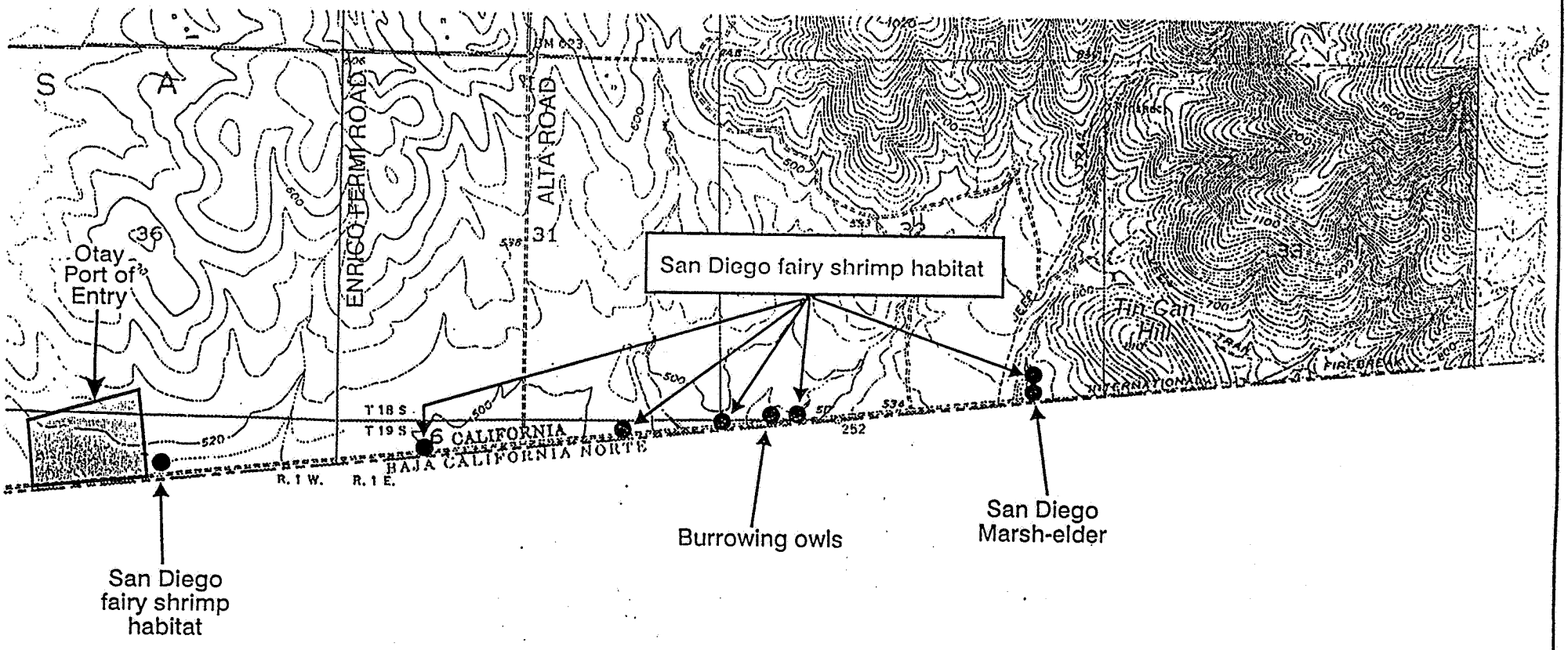
The habitat to the north of Section 1 is similar to that found in the ROW with weed-dominated grasslands extending several miles north of the western portion of the alignment and thin, but less disturbed coastal sage scrub covering the rocky slopes of the hills and mountains north and east of the eastern portion of the alignment. The area south of Section 1, between the proposed ROW and the existing border fencing, is occupied by weedy non-native vegetation and disturbance in the form of a dirt road that parallels the fence for most of the alignment. The area immediately south of the existing border fencing (within Mexico territory) is highly developed with dense residential and industrial development.

Fish and Wildlife. North of the proposed ROW of Section 1, three burrowing owls (*Athene cunicularia*) were flushed from a burrow 3,500 feet west of Tin Can Hill (see Figure 4-1). Although the burrow complex for the owls was intact, the area surrounding the burrows had been recently disced. Burrowing owls are considered a California Department of Fish and Game Species of Special Concern. Wash and burrowing owl feathers were also found at the mouth of two California ground squirrel (*Spermophilus beecheyi*) holes in complexes in the berm at the western end of Section 1. Nine California ground squirrel complexes were either in or adjacent to the proposed ROW.

Ravens (*Corvus corax*), a red-tailed hawk (*Buteo jamaicensis*), and rock doves (*Columba livia*) flew over the eastern portion of the proposed ROW. Dark-eyed juncos (*Junco hyemalis*) and an American kestrel were flushed from the rocks and bushes within the coastal sage scrub in the hills at the eastern end of the segment. A snowy egret (*Egretta thula*) flew above the barrier fence before turning south into Mexico. A northern harrier (*Circus cyaneus*) and a western meadowlark (*Sturnella neglecta*) were observed in the non-native grassland at the western portion of the proposed ROW.

Domestic dogs (*Canis familiaris*) and a horse (*Equus caballus*) were observed, separately, running past survey stakes on their way into Mexico. Scat and skulls from cows (*Bos bovis*) were found in the eastern portion of the segment.

Wildlife utilized man-made structures adjacent to the proposed ROW of Section 1. Yellow-rumped warblers (*Dendroica coronata*) perched on the barrier fence before flying into Mexico. Starlings (*Sturnus vulgaris*) sat on the Mexican utility lines that run parallel and adjacent to the barrier fence before flying over the proposed ROW and returning to Mexico. Golden eagles (*Aquila chrysaetos*) were observed at separate locations during separate site surveys; one at the eastern most end of Section 1 and the other on a transmission tower in the eastern portion of the grassland habitat and an American kestrel (*Falco sparverius*) perch-hunted from the portable light unit in the western portion of the grassland habitat. A trash pile was a launching point for a foraging Say's phoebe (*Sayornis saya*).



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Scale in Miles

Basemap: USGS 1:24,000: Otay Mesa, 1971; Otay Mt., 1972.

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BORDER PROJECT

Figure 4-1

Section 1 - Sensitive Biological Resources

Prepared by
Aspen Environmental Group

According to the California Natural Diversity Database (CNDDB), a population of Otay Tarplant (*Hemizonia conjugens*) has been recorded in the immediate vicinity of the surveyed area. This annual in the sunflower family is currently a state-listed endangered species and is proposed for federal listing. This species was not observed within the surveyed area. A dried specimen of the genus *Hemizonia* was observed on the alignment, but was identified to be the common fascicled leaved tarplant (*Hemizonia fasciculata*).

4.6.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Biological resources for this section were characterized during surveys conducted in October of 1996 and January of 1997 for the Revised Draft Environmental Assessment for the Immigration and Naturalization Service Multi-Tiered Pilot Fence Project, Phases IA & II, San Diego County, California (USACE, 1997).

Vegetation. Section 2 is comprised of heavily disturbed and degraded habitat. The poor quality topsoil supports weedy non-native species typical of highly disturbed areas. The eastern most end of the section (just west of the Otay Mesa POE) consisted of a wild oat-dominated disturbed non-native grassland with an understory of long-beaked filaree.

Fish and Wildlife. The common wildlife species expected to occupy the habitat within Section 2 would be consistent with species identified in the highly disturbed non-native grasslands of Section 1. Species expected include ravens, a red-tailed hawk, rock doves, dark-eyed juncos, American kestrel, northern harrier, western meadowlark, starlings, California ground squirrel, domestic dogs, coyote, black-tailed jackrabbit, gray fox, western fence lizard, side-blotched lizard, and snakes.

Endangered, Threatened, and Candidate Species. No state or Federally-listed endangered, threatened, or candidate plant or wildlife species were observed within the ROW and no suitable habitat for San Diego or Riverside fairy shrimp was identified in Section 2 (USACE, 1997).

4.6.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Vegetation. Section 3 consists entirely of highly disturbed non-native grassland with intermittent patches of weedy species at the eastern end. Wild oats, red brome grass, foxtail barley, and Italian ryegrass (*Lolium multiflorum*) are the dominant species in this section and are abundant, with an understory of long-beaked filaree and pygmy weed (*Crassula connata*). Shrub and herbaceous perennial species were very limited to infrequent scattered patches of Russian thistle, cheeseweed (*Malva parviflora*), iceplant (*Mesembryanthemum nodiflorum*), Australian saltbush (*Atriplex semibaccata*), and black mustard (*Brassica nigra*). As with the non-native grassland in Section 1, the presence of old and recent furrows indicated that this area had been disced at some time in the past. The eastern most end of Section 3 narrows down and occurs between the existing border fence and the fenced lots of private industry complexes. Vegetation consists of large patches of black mustard with a scattering of wetland species (mulefat and a few cattails) along the base of the border fence where waste water has puddled.

In the vegetation on either side of a small gully to the north of the eastern portion of the proposed ROW, four bird species were recorded: California towhee (*Pipilo crissalis*); rufous-crowned sparrow (*Aimophila ruficeps*); a wren called once, but could not be identified; and an unidentifiable ground dove. An expert on birds of Mexico suggested that the ground dove was an escaped exotic (Howell, 1996).

Signs of four other species were observed. A white-crowned sparrow (*Zonotrichia leucophrys*) was heard singing, but could not be visually located. Tracks and scat of a coyote (*Canis latrans*) were found. Black-tailed jackrabbit (*Lepus californicus*) scat was abundant at the eastern portion of Section 1, but was not observed elsewhere along the proposed ROW. An inactive den complex possibly of a gray fox (*Urocyon cinereoargenteus*) was found in the western portion of the grassland habitat. Scat, probably from gray fox, was also recorded.

Only two reptiles, western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*) were observed. However, the thin coastal sage brush habitat could support other species, including snakes.

Endangered, Threatened, and Candidate Species. No federal or state-listed rare, endangered, proposed for listing or candidate species were observed within Section 1 ROW.

However, potential habitat for San Diego fairy shrimp (*Branchinecta sandiegonesis*), a Federally-listed endangered species, does occur at several places north of and within the proposed ROW of Section 1 (see Figure 4-1). Six shallow depressions or basins were identified as having recently retained enough standing puddled water to support the San Diego fairy shrimp (i.e., moist or well-cracked soil) west of Tin Can Hill, within the disturbed fields. The approximate locations of these areas are 1,000 feet east of Otay Mesa POE; 4,000 feet east of Otay Mesa POE; between 6,500 feet east of Otay Mesa POE and 5,500 feet west of Tin Can Hill; 4,500 feet west of Tin Can Hill; 3,000 feet west of Tin Can Hill; and at the western toe of Tin Can Hill.

A native plantain (*Plantago erecta*) that serves as a possible food source for the Federally-listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*) occurs throughout the non-native grassland habitat of Section 1, most notably along dirt roads within the ROW. A very sparse stand of owl's clover (*Orthocarpus* sp.) also believed to be a food source, grows in the coastal sage scrub at the east end of Section 1.

The San Diego marsh elder (*Iva hayesiana)* is a perennial in the sunflower family. Approximately 20 plants were located in the drainage at the western most edge of the foothills within Section 1. This species has no state or Federal status, but is on the California Native Plant Society's (CNPS) list 2 (plants considered by CNPS to be rare or endangered in California, but more common elsewhere).

The coastal cactus wren (*Campylorhynchus brunneicapillus sandiegoense*), a California Department of Fish and Game Species of Special Concern, has the potential for occurring in the vicinity of the surveyed area based on CNDDB map overlays. The wren call heard during the survey could not be identified as belonging to a coastal cactus wren [the call sounded more like that of a Bewick's wren (*Thyromanes bewickii*)]. However, there was no visual observation and the call was not clear. The call originated an area about 75 feet north of the proposed ROW in the Tin Can Hill area.

Fish and Wildlife. As with Section 2, common wildlife species expected in this section would be consistent with the general wildlife observed in the highly disturbed non-native grassland portions of Section 1. Species expected include reptiles (such as western fence lizard, side-blotched lizard, and snakes), suite of avian species (ravens, a red-tailed hawk, rock doves, dark-eyed juncos, American kestrel, northern harrier, western meadowlarks, warblers, and starlings), small rodents (California ground squirrel, field mice), and small and large urban and semi-urbanized mammals (such as domestic dogs, cats, coyote, black-tailed jackrabbit, and gray fox).

Endangered, Threatened, and Candidate Species. San Diego button-celery (*Eryngium aristulatum* var. *parishii*) is a perennial herb in the carrot family (*Apiaceae*). This species is currently a state and Federally-listed endangered species. A population of 19 plants occurs within the Italian ryegrass and wild oats of the non-native grassland north of and within the ROW of Section 3, approximately 1,000 feet east of the western end of the section (see Figure 4-2).

Potential habitat where both species of fairy shrimp could occur is also present north of and within the ROW of Section 3, at the western and eastern ends of the section (see Figure 4-2). Very shallow basins with distinctively cracked, dried mud substrates and which hold water only for two to three weeks greatly outnumber deeper basins within the ROW. The shallower and more ephemeral basins support only San Diego fairy shrimp. Both species could inhabit the deeper, more persistent ones.

Burrowing owls and habitat have also been identified in the eastern end, north of the section's ROW (USACE, 1997).

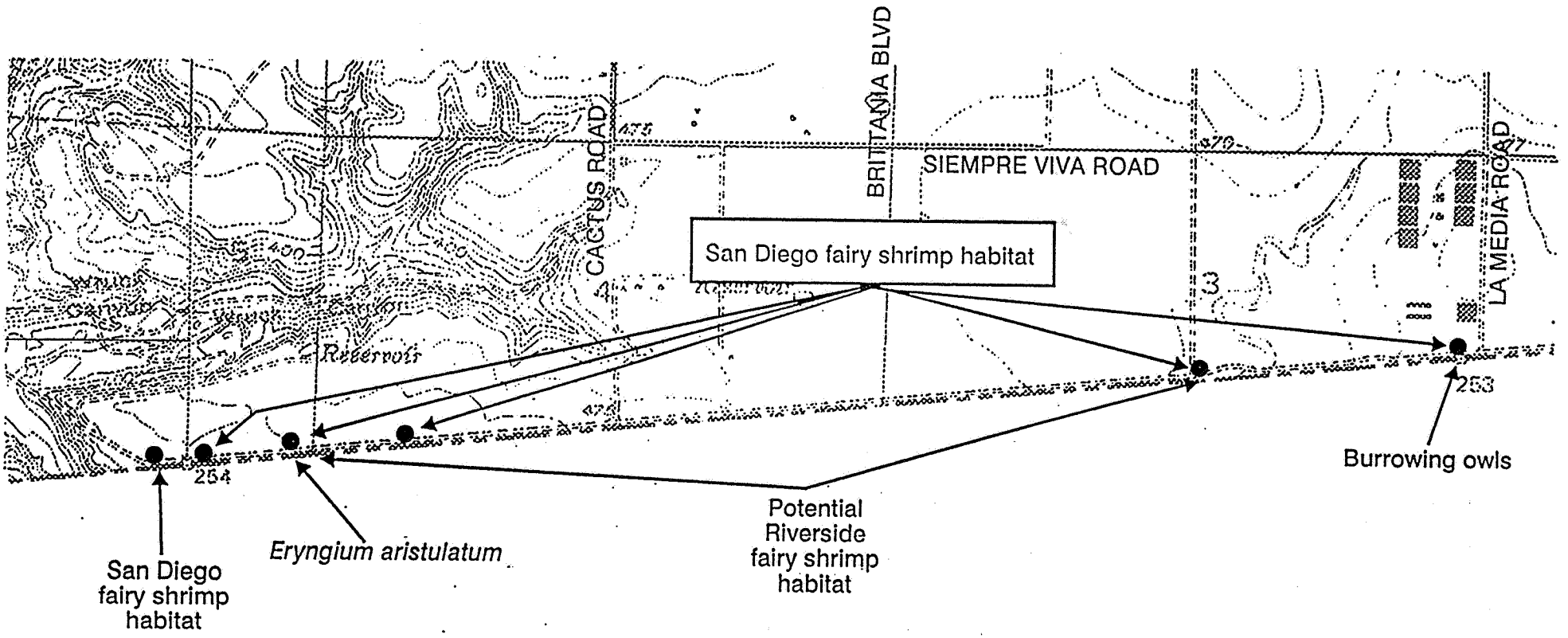
Staging Areas

Six areas have been identified as possible staging areas for the Proposed Action. These areas are highly disturbed by either pavement, gravel cover, or grading. No vegetation occurs on these sites with the exception of occasional weedy species. No wildlife, with the possible exception of common urban species, are expected to occupy the sites.

4.7 LAND USE

4.7.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Section 1 of the Proposed Action would originate on the west side of the San Ysidro Mountain foothills, approximately 150 feet north of the international border with Mexico, and would proceed 3 miles west, paralleling the border, where it would terminate on the east side of the Otay Mesa POE. The project site lies within rural lands located within San Diego County and owned by private property owners. However portions of these lands are currently leased by the INS for Border Patrol activities. According to the County of San Diego, the Section 1 land use designation is Mixed Industrial and the zoning designations are Commercial and Light Industrial.



0 ¼ ½ 1

Scale in Miles

Basemap: USGS 1:24,000: Otay Mesa, 1971; Imperial Beach., 1975.

N

BORDER PROJECT

Figure 4-2

Section 3 - Sensitive Biological Resources

Prepared by
Aspen
Environmental Group

Section 1 is surrounded by rural undeveloped lands to the east, west, and north. To the south of the project area, and immediately adjacent to the southern side of the Mexico/U.S. border, lies a densely populated residential area to the west and industrial area to the east. Current uses of the project area include Border Patrol activities, military parachute training (approximately one half mile north of the project alignment), and limited recreational activities such as dirt biking.

4.7.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Section 2 of the Proposed Action is a 2.1 mile segment that originates at the western terminus of Section 1 and proceeds west to La Media Road. Land uses immediately north and adjacent to this area include light industrial and limited agricultural uses. There are a number of light industrial buildings located to the east and west of the POE. These buildings currently experience damage to their property fences (wire mesh with barb wire on top) and encroachment on their properties due to illegal entries. The surrounding land character of this section is a mix of light industrial, commercial, and agricultural uses. The densely urbanized areas of Tijuana lie immediately south of the Mexico/U.S. Border. Use of the immediate project area is limited primarily to Border Patrol and limited agricultural activities. Section 2 traverses the City of San Diego. Under the City of San Diego Otay Mesa Plan, the land use and zoning designation for this area is Industrial Subdistrict (Peterson, 1997).

4.7.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Section 3 of the Proposed Action includes a 2.25 mile long segment to the west of La Media Road. Land uses to the north and adjacent to the immediate project area include light industrial (2-3 truck yards and storage facilities), and agriculture (row crops, turf farms, and greenhouses). Section 3 and lands surrounding it include light industrial and agricultural to the northeast and open space to the west and northwest. Immediately south of the Mexico/U.S. border, is a densely populated residential area to the west, some light industrial uses, and the Tijuana Airport to the east. The immediate project area is utilized primarily for border patrol and agricultural activities. Section 3 traverses the City of San Diego. Under the City of San Diego Otay Mesa Plan, the land use and zoning designation for this area is Industrial Subdistrict (Peterson, 1997).

4.8 AESTHETICS

The study area boundary for aesthetic considerations includes Sections 1 through 3 of the Proposed Action and surrounding land uses. For locations and description of these land uses see Section 4.7 above (Land Use). In general, the project region can be characterized as a mix of light industrial, agricultural, and rural uses, with residential and light industrial uses, including the Tijuana Airport, lying directly south of the project area in Mexico.

4.8.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Long range views (one or more miles) from the Section 1 area include: light industrial uses to the west; open space to the north; the San Ysidro Mountains to the east; and residential and light industrial uses to the south

in Mexico (viewing to the south is restricted by current border fencing along the western half of the project alignment). It should be noted that the entirety of Section 1 and surrounding lands lie within privately-owned lands and are therefore restricted from public viewing due to limitations of access to the area.

The western half of Section 1 is topographically level, whereas the eastern half is topographically variable, including an isolated hill (Tin Can Hill - 810 foot peak) located approximately 1.8 miles east of Alta Road (see Figure 1-2).

4.8.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Section 2 is characterized by a mix of light industrial, commercial, and agricultural uses. Long range views are composed of mountains and valleys east; open space (such as agricultural uses) and light industrial uses to the east, north, and west. These buildings currently experience damage to their property fences (wire mesh with barb wire on top) and encroachment on their properties due to illegal entries. In general, Section 2 is of a degraded aesthetic quality. The densely urban areas of Tijuana lie directly south of the Border. In general, the existing Border fence maintains a physical barrier to this view.

4.8.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Long range views (one or more miles) from the Section 3 area include: open space and light industrial uses to the west, north, and east. The San Ysidro Mountains and its foothills are also visible in the background to the east. Views to the south in Mexico include residential and light industrial uses, including the Tijuana Airport. Viewing to the south is restricted by current border fencing except at the western end of the section alignment.

4.9 NOISE

4.9.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

A noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is usually the sound from individual local sources. The principal sources of noise in the general vicinity of the Proposed Action is from Border Patrol motor vehicle traffic along dirt roads parallel to the border, noise from off-road recreational vehicles, and departures and arrivals of aircraft at local airports (i.e. Brown Field Airport and Tijuana International Airport). However, based on information in the Final Environmental Assessment (EA) prepared for the San Diego Area Lighting System Project and a site visit, it was determined that the ambient noise levels are very low within the project area.

4.9.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.9.1 above for a description of the general ambient noise levels within the project area. However, given its closer proximity to the Tijuana Airport, located southwest of the border in Mexico, the ambient noise level along Section 2, especially the western portion, is greater than Section 1.

4.9.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.9.1 above for a description of the general ambient noise levels within the project area. However, Section 3 is adjacent to the Tijuana Airport located immediately south of the existing border fence. Flight departures and arrivals contribute greatly to the ambient noise level along this section.

4.10 SOCIOECONOMICS

The study area for the socioeconomics analysis includes the City and County of San Diego.

On February 11, 1994, President Clinton issued an "Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Order is designed to focus Federal attention on environmental and human health conditions in minority communities and low-income communities. The Order is further intended to promote non-discrimination in Federal Programs substantially affecting human health and the environment and to provide for information access and public participation relating to such matters. Executive Order 12898 on environmental justice will be considered to determine any potential for disproportionate impacts on minority populations and low-income populations within Sections 1, 2, and 3 of the Proposed Action (see Section 5.10).

4.10.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Section 1 is located within an unincorporated portion of San Diego County. In 1990, San Diego County's total population was 2,601,055 (Census, 1994). As of January 1, 1995, the total population had risen to 2,705,800, representing a 4% increase (CDOF, 1995). The 1990 and 1995 County unemployment rates were 6.1% and 7.2%, respectively. The 1990 housing vacancy rate for the County was 6.2% (Census, 1994). Temporary housing, such as hotels and motels, is available throughout the San Diego County area.

Section 1 lies directly to the east of the City of San Diego. The City of San Diego, located on the west coast just north of the International Boundary separating the U.S. and Mexico, is the nation's sixth largest city. The San Diego area has had one of the largest increases in population in the nation over the last two decades. The City's total 1990 population was 1,148,851 (Census, 1994). As of January 1, 1995, the total population had risen to 1,197,700, representing a 4.25% increase (CDOF, 1995). According to the 1990 Census, the City unemployment rate was 6.2% and the housing vacancy rate was 5.9%.

4.10.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Portions of Section 2 lie within unincorporated San Diego County, and other portions lie within the City of San Diego. Environmental setting information for the County and City of San Diego are provided in Section 4.10.1 (above) and 4.10.3 (below), respectively.

4.10.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Section 3 of the Proposed Action is located within the City of San Diego. See Section 4.10.1 above for discussion of environmental setting information.

4.11 TRANSPORTATION AND COMMUNICATION

4.11.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Access to the project area would be via a system of dirt roadways that run in the vicinity of the U.S. International Border. Alta Road, a dirt roadway, provides access to the project area, and is accessible from Otay Mesa Road. Otay Mesa Road, a two lane paved road, intersects with Harvest Road and La Media Road to the north of the Otay Mesa Point of Entry (POE). Traffic flow along Otay Mesa Road was recorded in 1995 as 28,400 Average Daily Trips (ADT) at the intersection of La Media Road. The high traffic volume along Otay Mesa Road, west of the Otay Mesa POE, is a result of traffic flow across the U.S. International Border. The traffic volume on Otay Mesa Road, east of the Otay Mesa POE, is significantly lower (100 ADT, east of the Harvest Road intersection).

The California Department of Transportation plans to construct a commercial vehicle bypass road which will channel commercial traffic from the Federal port of entry, along a new proposed 2-lane road that will parallel the border. This new facility will relieve traffic on Via de la Amistad by providing a direct link from the Federal port to the State inspection facility. Caltrans and the Army Corps of Engineers have coordinated the construction plans in this area to minimize any conflicts between the proposed bypass road and the access fence and lighting. Construction of the bypass road is planned to begin February 1998.

With regard to communications, there are no above ground telecommunication lines located within the proposed project area. However, any underground telecommunication lines located near the proposed excavation areas would be identified through Underground Service Alert, which maintains a computer database system of companies with buried utilities. Anyone about to begin excavation of a project can call the Underground Service Alert (known as Dig Alert) toll-free hotline, which will notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the telecommunication lines are then expected to go to the excavation site within two days and mark the exact locations of their lines.

4.11.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.11.1 for a description of the local transportation and communication aspects of the project area.

4.11.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

The baseline information for this segment would be similar to the information presented in Section 4.11.1. However, three other roadways could be used during the construction and operation of the proposed lighting, fencing, and all-weather roadway between La Media Road and Arnie's Point. Airway and Siempre Roads run parallel to Otay Mesa Road, while Cactus Road runs perpendicular. Traffic flow along Airway Road was recorded in 1995 as approximate 900 ADT (east and westbound between Brittania and Cactus, while Siempre Road traffic flow was 1000 ADT westbound/1500 ADT eastbound between Brittania Blvd. and Lahinch Road. In addition, traffic flow along Cactus Road was 1200 ADT north bound/1400 ADT southbound between Airway Road and Siempre Road.

With regard to communications, there are no above ground telecommunication lines located within the proposed project area. Refer to Section 4.11.1 for a description of the underground telecommunication lines.

4.12 SAFETY

4.12.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety. Cal/OSHA specifies requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warning. As described in Section 4.5, no hazardous or toxic material storage or disposal sites are located within the proposed project area. Waste observed on the ground during a site investigation in the project area was limited to household garbage, several fuel container, and abandoned tires.

The California Department of Forestry (CDF) is responsible for responding to fires within the San Ysidro Mountains and foothills, which are areas that the illegal aliens travel across on their journey to the north. Small fires often set by the illegal aliens in order to keep warm at night sometimes turn into larger brush fires. Based on information from the CDF, it usually takes fire crews approximately 45 minutes to one hour to respond to the fires that are set in the San Ysidro Mountains (CDF, 1996).

4.12.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 4.12.1 above.

4.12.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 4.12.1 above.

4.13 CULTURAL RESOURCES

4.13.1 Section 1 - San Ysidro Mountains East of Otay Mesa POE (3 miles)

A records and literature search was conducted through the South Coastal Information Center, Historical Resources Information System, at California State University, San Diego, to identify all recorded investigations and archaeological sites within 0.5 miles of the project area. This search indicated that there have been many previous investigations of the project study area. Of the numerous prehistoric archaeological and isolated artifact sites previously recorded, four sites could be affected by construction of the Proposed Action.

Field surveys of the project study area were conducted on November 6 and 7, 1996, by Corps representatives. Three new archaeological sites were recorded that could be affected by project construction. In addition, the four previously recorded sites were relocated and site boundaries were further defined.

A test excavation and National Register evaluation is being undertaken to determine the significance of the six sites that would be affected by the Proposed Action, and if they are determined significant, they will either be avoided or mitigated (e.g., covering or capping of site).

4.13.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

The area of potential effects (APE) for the proposed fence project was surveyed by a Corps of Engineers staff archeologist on January 7, 1997. Prior to commencing with the fieldwork, existing reports were consulted for the possibility of known cultural resources within the APE. None were noted. The physical survey was negative as well. If any cultural resources existed within the APE, they were likely destroyed by vehicular traffic, human foot traffic, and extensive grading/borrow activities (USACE, 1997).

4.13.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

The area of potential effects has been completely surveyed. Based on previous studies there are four prehistoric archeological sites within the APE. These sites have been designated CA-SDI-10621F, CA-SDI-7208E, CA-SDI-12258, and IBWC-4. A subsequent test excavation and National Register evaluation was conducted for the first three of these sites in 1994. Based on this study, three sites were evaluated and determined to not be NRHP eligible. The fourth site, IBWC-4 was not evaluated at that time because of a problem with obtaining a right-of-entry.

A field examination of IBWC-4 was conducted by the Corps archeological staff in march of 1997. IBWC-4 has been subjected to some disturbance from road, and other ground disturbance activities, however, it still appears to retains sufficient integrity. Surface indications revealed the presence of a significant amount of lithic debris from the manufacture of stone tools. The site is potentially eligible for the NRHP. In order to confirm, or deny this preliminary evaluation, a test excavation, and NRHP evaluation needs to be conducted.

5. ENVIRONMENTAL IMPACTS

Environmental impacts resulting from implementation of the Proposed Action are summarized in this section. As discussed in Section 1.1, since construction of the Proposed Action could be staggered over time through December 1998, this Environmental Assessment (EA) analyzes the environmental impacts associated with the construction, operation, and maintenance of each individual project component (lighting, fencing, and roadways) at each location (Section 1 through 3), thus allowing for the commencement of construction of any of the individual project components at any location. A cumulative analysis by issue area is also provided in this EA in the event that concurrent construction of all project components proceeds at all three locations. Proposed construction measures and environmental commitments to minimize any impacts to environmental resources are presented in Section 8, Environmental Commitments.

Impacts related to the Increased Use of Portable Lighting System and Enhanced Electronic Surveillance Alternatives were not addressed in this section because these alternatives are not considered viable, since neither alternative would achieve the desired benefit of preventing illegal entries and reducing policing efforts by the Border Patrol (see Section 3).

In general, impacts of the No Action Alternative would be related to the continuous narcotics flow and other illegal activities at the United States border area. Without the installation of a permanent lighting, fencing, roadway system in the project area, implementation of the No Action Alternative over the short-term would result in no changes to the existing affected environmental components described in Section 4. However, without the Proposed Action, the effectiveness of the U.S. Border Patrol agents would not be improved and influx of illegal contraband and associated violence would continue. The long-term impacts of the No Action Alternative would lead to a continuing deterioration of the project area.

5.1 PHYSICAL SETTING

5.1.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Any project-related impacts on the physical environment are anticipated to be minor considering the ongoing disturbance caused by the illegal entry of drugs, people, vehicles, and associated criminal and violent activity. Installation of lighting would require the disturbance of 400 feet^2 at each pole location. In addition, the installation of underground cable would require a disturbance of a 10 foot wide ROW. With the exception of the physical pole locations, other areas disturbed by construction activities would return to their original state over time. In addition, grading would be scheduled during the dry season and erosion control practices would be implemented.

Project lighting would illuminate a large area that would otherwise be dark; however, less disturbance of the area is anticipated after the lighting system is installed because illegal contraband activity would be under direct surveillance of the Border Patrol.

Fencing

Similar to lighting installation, only minor physical setting impacts would result from fence construction since with the exception of the actual fence, those areas disturbed during construction would return to their original state over time.

Roadway

Roadway construction within Section 1 would require approximately 11 acres of grading for the placement of an all-weather roadway base. Given the numerous existing dirt roadways that already traverse the project area, no significant physical setting impacts would result from roadway installation. The implementation of erosion control measures will minimize any impact to the eastern portion of Section 1, with its topographic variability; the western portion of Section 1 is essentially level.

5.1.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Refer to Section 5.1.1 above for a description of the physical setting impacts within the project area.

Fencing

Refer to Section 5.1.1 above for a description of the physical setting impacts within the project area.

Roadway

Roadway construction within Section 2 would require 7.6 acres of grading for the placement of an all-weather roadway base. Given that the topographic character of the project area is essentially level and that numerous existing dirt roadways traverse the project area, no significant physical setting impacts would result from roadway installation.

5.1.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Refer to Section 5.1.1 above for a description of the physical setting impacts within the project area.

Fencing

Refer to Section 5.1.1 above for a description of the physical setting impacts within the project area.

Roadway

Roadway construction within Section 3 would require 8.2 acres of grading for the placement of an all-weather roadway base. Given that the topographic character of the project area is essentially level and that numerous existing dirt roadways traverse the project area, no significant physical setting impact would result from roadway installation.

5.1.4 Cumulative Impacts

No cumulative impacts to physical settings are expected to result from the simultaneous construction and operation of the border lights, fencing, and roadway.

5.2 CLIMATE

5.2.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

No climatological impacts (i.e., change in temperature, precipitation, etc.) would result from the construction and operation of the lights, fence and roadway along the 3 mile segment between the San Ysidro Mountains and the east side of Otay Mesa POE. Refer to Section 5.4 for a discussion of the potential impacts from dust particles released during the construction of the lights, fence and roadway.

5.2.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

No climatological impacts (i.e., change in temperature, precipitation, etc.) would result from the construction and operation of the lights, fence and roadway along the 2.1 mile segment between Otay Mesa Road and La Media Road.

5.2.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

No climatological impacts (i.e., change in temperature, precipitation, etc.) would result from the construction and operation of the lights, fence and roadway along the 2.25 mile segment between La Media Road and Arnie's Point.

5.2.4 Cumulative Impacts

No cumulative climatological impacts would result from the concurrent construction or operation of all of the proposed project components (i.e., lighting, fencing, and roadways) at all of the proposed locations (Sections 1, 2, and 3).

5.3 WATER QUALITY

The following table presents the acres expected to be disturbed by grading activities for the construction of the lighting, fencing and the roadway, and may therefore impact water quality.

Table 5-1 Areas of Disturbance from Grading

Construction Element	Approximate Acres to be Graded
Section 1 - San Ysidro Mountains to Otay Mesa POE: 3 miles	
Lighting (38 lights)	3.6
Fence	3.6
Roadway	10.9
Section 2 - Otay Mesa POE to La Media Road: 2.1 miles	
Lighting (24 lights)	2.3
Fence	2.5
Roadway	7.6
Section 3 - La Media Road to Arnie's Point : 2.25 miles	
Lighting (33 lights)	3.2
Fence	2.7
Roadway	8.2

5.3.1 San Ysidro Mountains to Otay Mesa POE (3 miles)

Lighting

Potential short-term impacts to water quality could arise from the removal of vegetation, compaction of surface soils, and disruption of established drainage courses during the construction phase. Standard construction procedures that minimize erosion or excessive runoff during construction if rainfall occurs would be followed. In addition, construction would not resume until surface conditions returned to states not encouraging erosion or excessive runoff. Rapid reseeding of disturbed areas not in roadways would hasten the reestablishment of vegetation and stability of slopes.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from project implementation within Section 1. The well-drained nature of the soils, together with construction proposed for level to moderate terrain, in a relatively narrow impact zone, would eliminate any wide-scale or long term adverse impacts to water quality. However, project construction through the natural drainages would require a Nationwide Permit No. 26 (projects involving disturbance to less than 0.3 acres of aquatic habitat) and therefore does not require an individual Section 404 (6)(1) permit (Dean, 1997). Once in place, the proposed lighting project would not adversely affect surface or ground water quality.

Fencing

As with lighting construction, potential short-term impacts to water quality could arise from the removal of vegetation, compaction of surface soils, and disruption of established drainage courses during the construction

phase. Standard construction procedures that minimize erosion or excessive runoff during construction if rainfall occurs would be followed and construction would not resume until surface conditions returned to states not encouraging erosion or excessive runoff.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from fence construction within Section 1. Footing excavations and concrete pouring would result in only minor disturbances to the surface soil. However, similar to lighting, a Nationwide Permit No. 26 would be required. Once in place, the proposed fence would not adversely affect surface or ground water quality.

Roadway

Construction of the roadway would require the disturbance and compaction of approximately 10.9 acres of land. Under Section 402 of the Clean Water Act, any project-related grading of 5 acres or more requires the creation of a Storm Water Pollution Plan. In addition, similar to lighting, a Nationwide Permit No. 26 would be required.

5.3.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Potential short-term impacts are the same as those identified in Section 5.4.1.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from project implementation within Section 2 and once in place, the proposed lighting project would not adversely affect surface or ground water quality. However, as for Section 1 construction, a Nationwide Permit No. 26 would be required.

Fencing

Potential short-term impacts to water quality from fence construction are the same as those identified in Section 5.4.1.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from fence construction within Section 2 and once in place, the proposed fence would not adversely affect surface or ground water quality. However, as for Section 1 construction, a Nationwide Permit No. 26 would be required.

Roadway

Construction of the roadway would require the disturbance and compaction of approximately 7.6 acres of land. Under Section 402 of the Clean Water Act, grading for the proposed roadway would require the creation of a Storm Water Pollution Plan. In addition, similar to lighting, a Nationwide Permit No. 26 would be required.

5.3.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Potential short-term impacts are the same as those identified in Section 5.4.1.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from project implementation within Section 3 and once in place, the proposed lighting project would not adversely affect surface or ground water quality.

Fencing

Potential short-term impacts to water quality from fence construction are the same as those identified in Section 5.4.1.

No deterioration of natural drainages, disruption of drainage patterns, nor degradation of existing groundwater quality is expected from fence construction within Section 3 and once in place, the proposed fence would not adversely affect surface or ground water quality.

Roadway

Construction of the roadway would require the disturbance and compaction of approximately 8.2 acres of land. Under Section 402 of the Clean Water Act, grading for the proposed roadway would require the creation of a Storm Water Pollution Plan.

5.3.4 Cumulative Impacts

No cumulative impacts are expected to result from the simultaneous construction and operation of the proposed border lighting, fencing and roadway.

5.4 AIR QUALITY

Each Air Quality Management District (AQMD) in California establishes its own significance criteria for environmental review of projects based on the specific conditions within each air basin. The San Diego Air Pollution Control District (SDAPCD) is responsible for establishing significance criteria for construction and operational activities within the San Diego Air Basin (SDAB). At this time, the SDAPCD has not established

significance criteria for such projects. However, the SDAPCD uses the General Conformity "de minimis" thresholds to identify the significance of a Proposed Action within the SDAB (Rob Rider, 1997). Under Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, an Applicant must make a determination of whether the Proposed Action "conforms" with the State Implementation Plan (SIP). Conformity is defined in Section 176(c) of the CAAA as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards. However, if the total direct and indirect emissions from the Proposed Action are below the General Conformity Rule "de minimis" emission thresholds, the Proposed Action would be exempt from performing an Air Quality Conformity Analysis, and would be considered to be in conformity with the SIP. Therefore, the project would be considered to have a significant adverse impact on the environment if it would exceed the thresholds listed in Table 5-2.

Table 5-2 General Conformity "De Minimis" Thresholds

Pollutant	Threshold (tons/yr)
VOCs	50
NOx	50
CO	100

5.4.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Air quality impacts can result from the construction and operation of a proposed project or action. Construction emissions can be distinguished as either onsite or offsite. Onsite air pollutant emissions during construction would principally consist of exhaust emissions from heavy-duty diesel- and gasoline-powered construction equipment (e.g., dozers, backhoes, augers, hydraulic cranes), as well as fugitive particulate matter from soil disturbed during grading and trenching operations. Offsite exhaust emissions would result from workers commuting to and from the job site, as well as from trucks delivering material (e.g., poles, lights, wire, concrete) and equipment to the staging areas.

Lighting

Construction. As presented in Table 2-1, in Section 2.2 (Project Description), 38 high pressure sodium floodlight poles would be installed along a 3 mile segment between the San Ysidro Mountains foothills and east of the Otay Mesa Port of Entry (POE). The concrete light poles would be located approximately 150 feet north of the existing steel border fence (international border with Mexico). In addition, approximately 15,500 feet of underground cable would be installed to power the high pressure sodium lights.

In the air quality calculations, it was assumed that a 400 foot^2 of area would be disturbed at each pole location (20 feet x 20 feet). This resulted in approximately 15,200 feet^2 of disturbed surface area (400 ft^2 x 38 floodlights). It was also assumed that the installation of the underground cable would require disturbance of a 10 foot wide ROW.

Based on information from the Immigration and Naturalization Service (INS), approximately 60-75 people would be needed to install the 38 floodlights. In the air quality calculations, it was assumed that 60 people would commute to and from the job site for an average period of 45 days. Tables 5-3 and 5-4 list the maximum daily and annual emission levels associated with the installation of the 38 light poles and the 15,500 feet of underground cable. The assumptions used in quantifying the total emissions are provided in Appendix A.

As listed in Table 5-4, the Proposed Action is well below the General Conformity "de minimis" thresholds, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of 38 poles would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Table 5-3 Section 1 Lighting - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	5.4	50.7	4.8	42.7	3.6
Fugitive Dust Emissions	—	—	—	—	156.0
Offsite Construction Emissions	3.6	9.3	0.7	48.9	1.5
Maximum Daily Construction Emissions (lbs)	9.0	60.0	5.5	91.6	161.1

Source: USEPA, 1985. Compilation of Air Pollutant Emission Factors, Volume II (Mobile Sources).
CARB, 1991. Identification of Volatile Organic Compound Species Profile.
CARB, 1988. Method Used to Develop a Size-Segregated Particulate Matter Inventory (Draft).

Table 5-4 Section 1 Lighting - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.11	0.91	1.21
Offsite Construction Emissions	0.08	0.21	1.12
Total Construction Emissions	0.19	1.12	2.33
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

Source: USEPA, 1985. Compilation of Air Pollutant Emission Factors, Volume II (Mobile Sources).
USEPA, 1994. General Conformity Guidance: Questions and Answers
CARB, 1991. Identification of Volatile Organic Compound Species Profile.
CARB, 1988. Method Used to Develop a Size-Segregated Particulate Matter Inventory (Draft).

Operations. The required power for this project would be provided principally by a network of power plants located throughout the utility power network (co-generation, nuclear, hydroelectric) in the region. Consequently, electrical power generation emissions would not occur at any single location. Therefore, no significant impacts would result from the operation of the 38 high pressure sodium floodlights. No mitigation is required.

Fencing

Construction. Under this Proposed Action, the INS would construct a security style fence that would extend from the San Ysidro Mountain foothills to east of the Otay Mesa Port of Entry. The fence would be located approximately 120 to 150 ft north of the existing border fence (international border with Mexico).

It was assumed that support poles for the 15 foot high fence would be located every 20 feet along the 3 mile fence segment. The footings for the support poles were assumed to be 1.5 feet by 1.5 feet in area and 7 feet deep (16 feet^3 of concrete). In addition to the fence, a continuous concrete footing would run along the bottom of the fence to discourage tunneling (alternatively, a steel footing would be installed). It was assumed that the continuous footing would be approximately 1 feet wide and 4.5 feet deep. As presented in Table 2-1, in Section 2.2, approximately 7 to 8 military personnel would be required to construct the 3 mile fence over a period of 8 to 10 months. Tables 5-5 and 5-6 list the maximum daily and annual emission levels associated with the construction of the 3 mile fence. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-5 Section 1 Fencing - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.8	45.9	4.7	42.8	3.2
Fugitive Dust Emissions	—	—	—	—	144.0
Offsite Construction Emissions	1.1	5.6	0.1	13.3	0.6
Maximum Daily Construction Emissions (lbs)	5.9	51.5	4.8	56.1	147.8

Table 5-6 Section 1 Fencing - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.19	1.61	2.32
Offsite Construction Emissions	0.08	0.36	0.96
Total Construction Emissions	0.27	1.97	3.28
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-6, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 3 mile fence would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the security style fence. No mitigation is required.

Roadways

Construction. Under this Proposed Action, the INS is proposing to construct a roadway in a 30 foot wide ROW located approximately 120 to 150 feet north of the existing steel border fence (international border with Mexico). The 30 foot wide ROW would originate at the San Ysidro Mountain foothills and travel 3 miles west to the east of Otay Mesa POE, parallel to the proposed security style fence on both the north and south. After the roadway has been graded, all-weather material would be placed on top of the newly constructed road in order to make the roadway passable during periods of precipitation (existing dirt roadways become impassable).

Approximately 10 to 15 military personnel would be required to construct the 3 mile all-weather roadway; construction would take 2 months to complete. Tables 5-7 and 5-8 list the maximum daily and annual emission levels associated with the construction of the 3 mile all-weather roadway. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-7 Section 1 Roadway - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.1	40.5	4.4	40.6	2.7
Fugitive Dust Emissions	—	—	—	—	436.0
Offsite Construction Emissions	0.6	2.9	0.1	7.4	0.3
Maximum Daily Construction Emissions (lbs)	4.7	43.4	4.5	48.0	439.0

Table 5-8 Section 1 Roadway - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.19	1.88	1.70
Offsite Construction Emissions	0.01	0.03	0.20
Total Construction Emissions	0.20	1.91	1.90
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-8, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 3 mile all-weather roadway would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 3 mile all-weather roadway. No mitigation is required.

5.4.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Construction. This Proposed Action would be similar to what is described for the proposed lighting segment in Section 5.4.1 (San Ysidro Mountains to East of Otay Mesa POE). However, the emissions associated with this segment would be slightly less than what would occur for the San Ysidro Mountains to East of Otay Mesa POE segment because the number of lights (24 versus 38) is less for this section. However, the same type of construction equipment and assumptions would be utilized under this Proposed Action. Tables 5-9 and 5-10 list the maximum daily and annual emission levels associated with the installation of 24 light poles and approximately 12,000 feet of underground cable. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-9 Section 2 Lighting - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	5.4	50.7	4.8	42.7	3.6
Fugitive Dust Emissions	—	—	—	—	132.0
Offsite Construction Emissions	2.5	4.9	0.3	30.1	0.8
Maximum Daily Construction Emissions (lbs)	7.9	55.6	5.1	72.8	136.4

Table 5-10 Section 2 Lighting - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.07	0.62	0.78
Offsite Construction Emissions	0.05	0.13	0.71
Total Construction Emissions	0.12	0.75	1.49
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-10, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of 24 floodlights would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. The required power for this project would be provided principally by a network of power plants located throughout the utility power network (co-generation, nuclear, hydroelectric) in the region. Consequently, electrical power generation emissions would not occur at any single location. Therefore, no significant impacts would result from the operation of the 24 high pressure sodium floodlights. No mitigation is required.

Fencing

Construction. This Proposed Action is similar to the proposed fencing segment described in Section 5.4.1 (San Ysidro Mountains to East of Otay Mesa POE). For this section, a security style fence would be installed between La Media Road and the east side of Otay Mesa POE with gaps at the Otay Mesa POE and Drucker Lane. The fence would be located 120 to 150 ft north of the existing steel border fence (international border with Mexico). The same type of construction equipment and assumptions would be utilized under this Proposed Action, as was described for the fencing segment in Section 5.4.1. Tables 5-11 and 5-12 list the maximum daily and annual emission levels associated with the installation of the security style fence along Section 2. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-11 Section 2 Fencing - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.8	45.9	4.7	42.8	3.2
Fugitive Dust Emissions	—	—	—	—	72.0
Offsite Construction Emissions	1.1	5.6	0.1	13.3	0.6
Maximum Daily Construction Emissions (lbs)	5.9	51.5	4.8	56.1	75.8

Table 5-12 Section 2 Fencing - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.09	0.80	1.16
Offsite Construction Emissions	0.04	0.18	0.48
Total Construction Emissions	0.13	0.98	1.64
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-12, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the security style fence would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the security style fence along Section 2. No mitigation is required.

Roadways

Construction. Under this Proposed Action, an all-weather roadway would be constructed within a 30 ft ROW between La Media Road and the east side of Otay Mesa POE, approximately 2.1 miles in length, with a gap at the Otay Mesa POE. The all-weather roadway would be located 95 to 120 feet north of the international border with Mexico, and is proposed to be located both on the north and south of the proposed security style fence. After the roadway has been graded, all-weather material would be placed on top of the newly constructed road in order to make the roadway passable during periods of precipitation. Tables 5-13 and 5-14 list the maximum daily and annual emission levels associated with the construction of the 2.1 mile all-weather roadway. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-13 Section 2 Roadway - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.1	40.5	4.4	40.6	2.7
Fugitive Dust Emissions	—	—	—	—	304.0
Offsite Construction Emissions	0.6	2.9	0.1	7.4	0.3
Maximum Daily Construction Emissions (lbs)	4.7	43.4	4.5	48.0	307.0

Table 5-14 Section 2 Roadway - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.13	1.32	1.19
Offsite Construction Emissions	0.01	0.02	0.12
Total Construction Emissions	0.14	1.34	1.31
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-14, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 2.1 mile all-weather roadway would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operations of the Proposed Action. No mitigation is required.

5.4.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Construction. Under this Proposed Action, 33 high pressure sodium floodlights would be installed between La Media Road and Arnie's Point (approximately 2.25 miles in length). The lights would be constructed approximately 150 feet north of the existing international border with Mexico. A 400 foot^2 (20 feet x 20 feet) area would be temporarily disturbed at each pole location, which would result in 13,200 feet^2 (0.30 acres) of disturbance area during construction. Approximately 14,600 feet of cable would be installed within a 10 foot wide ROW in order to power the floodlights. Based on information from the INS, 60 to 75 military personnel would be needed to construct the lighting segment. The construction and installation of the floodlights and the underground cables would occur over a 12 to 24 month period.

Tables 5-15 and 5-16 list the maximum daily and annual emission levels associated with the installation of the 33 floodlight poles and approximately 14,600 feet of underground cable. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-15 Section 3 Lighting - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	5.4	50.7	4.8	42.7	3.6
Fugitive Dust Emissions	—	—	—	—	148.0
Offsite Construction Emissions	3.6	9.3	0.7	48.9	1.5
Maximum Daily Construction Emissions (lbs)	9.0	60.0	5.5	91.6	153.1

Table 5-16 Section 3 Lighting - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.09	0.81	1.06
Offsite Construction Emissions	0.07	0.18	0.97
Total Construction Emissions	0.16	0.99	2.03
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-16, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 33 high pressure sodium floodlights would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. The required power for this project would be provided principally by a network of power plants located throughout the utility power network (co-generation, nuclear, hydroelectric) in the region. Consequently, electrical power generation emissions would not occur at any single location. Therefore, no

significant impacts would result from the operation of the 33 high pressure sodium floodlights. No mitigation is required.

Fencing

Construction. This Proposed Action would consist of constructing a security style fence from La Media Road to Arnie's Point (2.25 miles in length). The fence would be located approximately 120 to 150 feet north of the international border with Mexico. In addition, a continuous concrete or steel footing would be installed at the base of the fence to discourage tunneling. Approximately 7 to 8 military personnel would be needed to construct this fence segment over a period of about 8 months.

In the air quality calculations, it was assumed that a 10 foot wide disturbance area would occur for the length of the fence segment. Tables 5-17 and 5-18 list the maximum daily and annual emission levels associated with the installation of the 2.25 mile fence segment. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-17 Section 3 Fencing - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.8	45.9	4.7	42.8	3.2
Fugitive Dust Emissions	—	—	—	—	108.0
Offsite Construction Emissions	1.1	5.6	0.1	13.3	0.6
Maximum Daily Construction Emissions (lbs)	5.9	51.5	4.8	56.1	111.8

Table 5-18 Section 3 Fencing - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.14	1.21	1.74
Offsite Construction Emissions	0.10	0.28	0.73
Total Construction Emissions	0.24	1.49	2.47
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-18, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 2.25 mile fence would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operations of the Proposed Action. No mitigation is required.

Roadways

Under this Proposed Action, a 2.25 mile all-weather roadway would be constructed between La Media Road and Arnie's Point. The all-weather roadway would be located adjacent to the proposed security style fence, approximately 120 to 150 feet north of the international border with Mexico. The roadway would be constructed by 10 to 15 military personnel over a 2 month period. Tables 5-19 and 5-20 list the maximum daily and annual emission levels associated with the construction of the 2.25 mile all-weather roadway. The assumptions used in quantifying the total emissions are provided in Appendix A.

Table 5-19 Section 3 Roadway - Maximum Daily Construction Emissions (lbs/day)

Construction Activity	VOC	NO_x	SO_x	CO	PM_{10}
Onsite Construction Emissions	4.1	40.5	4.4	40.6	2.7
Fugitive Dust Emissions	—	—	—	—	328.0
Offsite Construction Emissions	0.6	2.9	0.1	7.4	0.3
Maximum Daily Construction Emissions (lbs)	4.7	43.4	4.5	48.0	331.0

Table 5-20 Section 3 Roadway - Comparison of Annual Construction Emissions with the General Conformity De Minimis Thresholds (tons/yr)

Annual Emission Level	VOC	NOx	CO
Onsite Construction Emissions	0.14	1.41	1.27
Offsite Construction Emissions	0.01	0.02	0.12
Total Construction Emissions	0.15	1.43	1.39
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

As listed in Table 5-20, the Proposed Action is well below the General Conformity "de minimis" threshold, and therefore, is exempt from conducting a comprehensive Air Quality Conformity Analysis. In addition, the construction of the 2.25 mile all-weather roadway would not contribute to any significant air quality impacts. Therefore, no mitigation is required.

Operations. There would be no increase in the number of border patrol agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operations of the Proposed Action. No mitigation is required.

5.4.4 Cumulative Impacts

As presented in Table 5-21, no cumulative air quality impacts would result from the concurrent construction of all project components (lighting, fencing and roadways) at all of the proposed locations (Sections 1, 2, and 3). In addition, no cumulative operation impacts would occur since there would not be an increase in the number of Border Patrol agents or vehicles as a result of the Proposed Action.

Table 5-21 Comparison of Potential Cumulative Emission Levels with the General Conformity De Minimis Thresholds (tons/yr)

Proposed Construction Action Per Segment	VOC	NOx	CO
Segment 1 - Lighting	0.19	1.21	2.33
Segment 1 - Fencing	0.27	1.97	3.28
Segment 1 - Roadway	0.20	1.91	1.90
Segment 2 - Lighting	0.12	0.75	1.49
Segment 2 - Fencing	0.13	0.98	1.64
Segment 2 - Roadway	0.14	1.34	1.31
Segment 3 - Lighting	0.16	0.99	2.03
Segment 3 - Fencing	0.24	1.49	2.47
Segment 3 - Roadway	0.15	1.43	1.39
Total Construction Emissions	1.60	11.98	17.84
De Minimis Threshold	50	50	100
Exceedance of the De Minimis Threshold	NO	NO	NO

5.5 HAZARDOUS AND TOXIC WASTE

5.5.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

As described in Section 4.5, waste observed on the ground during a site investigation was limited to household garbage, several small empty fuel containers, one empty 55 gallon drum, several empty oil cans, paint cans, car parts, and abandoned tires. There was no evidence of suspected areas of uncontrolled chemical releases or environmental contamination. However, should pre-existing hazardous materials be encountered during the construction of the floodlights, fence, and roadway, hazardous materials exceeding regulatory limits would require onsite treatment or transport to offsite processing facilities. The contaminated soil would be transported according to State and Federal regulations and be replaced by approved import soil.

Another source of contamination is if a spill would occur due to a leakage of fuel from a construction or maintenance vehicle. Such a spill would be cleaned up in conformity with established regulations. As a result, the potential impacts from hazardous and toxic waste would not be significant.

5.5.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Similar to Section 1, potential environmental contamination impacts would not be significant as a result of the construction and operation of the proposed high pressure sodium floodlights, the security style fence, and the all-weather roadway between Otay Mesa POE and La Media Road.

5.5.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Similar to Section 1, potential environmental contamination impacts would not be significant as a result of the construction and operation of the proposed high pressure sodium floodlights, the security style fence, and the all-weather roadway between La Media Road and Arnie's Point.

5.5.4 Cumulative Impacts

No cumulative impacts would result from the concurrent construction or operation of all of the proposed project components (i.e., lighting, fencing, and roadways) at all of the proposed locations (Sections 1, 2 and 3). Therefore, no mitigation is required.

5.6 BIOLOGICAL RESOURCES

Impacts from the Proposed Action are assessed with regards to expected impacts on biological resources resulting from the installation and operation of high intensity area lights spaced on average 400 feet apart, from the construction of an additional fence to run parallel to the existing border fence, and from the construction of a 30 foot wide all-weather roadway to be constructed on both the north and south side of, and run parallel to, the new fence. Because the timing of the surveys was not optimal for determining the presence of fairy shrimp, Quino checkerspot butterfly, and vernal pool species in potential habitat, preconstruction siting of project components on all the sections shall be implemented in accordance with Environmental Commitment 8-1.

5.6.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Vegetation. In the eastern portion of the project site, an estimated 63,000 square feet (approximately 1.5 acres) of sparse, disturbed, California buckwheat dominated coastal sage scrub exists. Coastal sage scrub is considered a plant community that is on the decline throughout California and is therefore a community of concern to the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). Loss of coastal sage scrub, whether in poor or pristine condition, is considered an adverse impact by the resource agencies. Loss or damage of this coastal sage scrub shall be offset by the implementation of Environmental Commitment 8-2.

Fugitive dust resulting from construction and trenching activities can potentially effect the long term health of nearby plant communities if large amounts of dust settles on leaves and stems and impedes the normal photosynthetic efficiency of the plants. Large amounts of dusts allowed to settle on nearby habitat, in particular, the coastal sage scrub north and east of the project, could result in a potential impact. However, the implementation of a dust control program (see Environmental Commitment 8-3) would minimize the generation of dust.

Trenching and pole setting activities on the slopes of the hills within the ROW could result in increased water runoff and slope erosion. Erosion could cause slope instability and topsoil loss in the hilly areas adjacent to the construction activities. Implementation of erosion control measures (see Environmental Commitment 8-4) would reduce any construction related erosion.

The clearing of vegetation during construction and trenching could potentially cause the further dispersal and establishment of weedy species already problematic within the area. Weed infestation in the scrub communities in the surrounding hills could cause the degradation of this native community by loss of native plants that may be out competed by establishing aggressive weeds, thus resulting in a potentially significant impact. Weed infestation shall be reduced by the implementation of Environmental Commitment 8-5.

The long term effect of around the clock lighting on plant communities is still being investigated. Evidence does exists that shows lights emitting energy over the 300 to 800 nanometer spectral range are effective in influencing the photosynthesis and photoresponses of plants. However, the amount of energy produced by project lighting is not anticipated to be enough to produce any measurable effects on the plant communities present.

Fish and Wildlife. Construction and maintenance fluids (oils, anti-freeze, fuels) stored in open containers (i.e., buckets or pans) and not disposed of properly could be encountered by wildlife. Implementation of Environmental Commitment 8-6 shall reduce the hazards associated with construction and maintenance fluids.

Construction traffic driving on undisturbed habitat could degrade or damage habitat and potential nest/burrow sites and increase the potential for erosion. In accordance with Environmental Commitment 8-7, no offroad construction traffic shall be allowed.

Endangered, Threatened, and Candidate Species. Six areas north of and within the ROW identified as potential habitat identified for the San Diego fairy shrimp, a Federally-listed endangered species, exists along Section 1 (see Figure 4-1). By avoiding these areas (see Environmental Commitment 8-8), no impact to this species would result.

A population of burrowing owl has been identified north of the ROW (see Figure 4-1). This species is not protected under the Endangered Species Act, but does have Federal protection under the Migratory Bird Treaty Act (MBTA), state status as a California Species of Special Concern (CSC), and is protected as raptors under policies adopted by the CDFG Commission (p. 583 Fish and Game Code, 1993). By implementing Environmental Commitment 8-9, no impact to this species would result.

A population of San Diego marsh-elder has also been identified in the ROW (see Figure 4-1). Until 1996, the San Diego marsh-elder was considered a Federal candidate category 2 species (i.e., a species monitored by the USFWS, but lacking sufficient data to support listing). In 1996 this category was eliminated. However, while this species has no formal protection afforded by Federal or state listing, the USFWS still considers it a sensitive species and requests that impacts to this species be avoided if possible (Marsden, 1997). By avoiding this population (see Environmental Commitment 8-10), no impact to this species would result.

Although populations of Quino checkerspot butterfly could not be identified due to the timing of the surveys, a possible source food plant (*Plantago erecta*) for the species was identified within the grasslands of the ROW. However, as previously noted, the vegetation in the project area, including this possible source food plant, is highly disturbed. Loss of individuals of this plant species is not considered significant because the plant is

common within the disturbed grassland and is abundant the immediate area offsite of the ROW. In addition, the Quino checkerspot butterfly is sensitive to habitat disturbance and therefore resides in areas of more pristine habitat. As a result, this species is not expected to be found in the project area (Mattoni, 1997).

The long-term effect of an increased photoperiod on mobile wildlife species is not expected to result in a potentially significant impact. Animals can relocate to undisturbed areas adjacent to the project site. In addition, the "internal clocks" of many species maintain the species' daily rhythms regardless of the extended presence of daylight or nighttime conditions.

Fencing

Vegetation. Impacts may be incurred from the removal of 0.5 acre of disturbed coastal sage scrub in the hills at the eastern end of the section. Loss or damage of this coastal sage scrub shall be offset by the implementation of Environmental Commitment 8-2.

Impacts from the clearing of vegetation for construction of the additional fence within the rest of the alignment in this section would be adverse, but not significant (USACE, 1997). With exception of the disturbed coastal sage scrub in the eastern end of the section, the majority of the one foot wide fence would be placed in highly disturbed grassland.

Increased fugitive dust from fence construction would be as described construction of light towers and cable trenching (Section 5.6.1).

No impact to the vegetation occupying the strip of land remaining between the two fences after the installation of the additional fence is expected. The pervious mesh of the fence and the spacing between the fence columns will allow the passage of wind, small pollinators, airborne seed, and seed-dispersing wildlife species in and out of the community, thus helping to maintain the natural gene flow in and out of the plant communities remaining between the two fences.

Fish and Wildlife. Effects on wildlife from fence construction are the same as identified for construction of light towers and trench excavation for electrical cable in Section 5.6.1.

No impacts to general wildlife are expected after the installation of the additional fence. The security style fence design would likely allow for the passage and view of small mammals. Larger mammals will have passage through the fence at the vehicle gateways spaced periodically along the length of the fence (USACE, 1997).

Endangered, Threatened, and Candidate Species. See lighting discussion above.

Roadway

Vegetation. Impacts to general vegetation from the construction of an all-weather road to run parallel to the additional fence would be the same as those impacts identified from light tower placement and trench excavation for electrical cable. Even though construction of the road would eliminate more vegetation, most of the vegetation affected would be disturbed grassland. Due to the width of the roadway proposed, up to 8 acres of already highly disturbed coastal sage scrub may be lost due road construction. Impacts to coastal sage scrub shall be reduced by the implementation of Environmental Commitment 8-2.

Fish and Wildlife. Impacts to general wildlife from the construction of the roadway are the same as identified for the construction of light towers and trench excavation for electrical cable (Section 5.6.1).

Endangered, Threatened, and Candidate Species. See lighting discussion above.

5.6.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Vegetation. Plants within this area will be subject to light pollution. As stated in section 5.6.1 the long term effect of around the clock lighting on plant communities is still being investigated, but evidence does exists that shows that lights planned for this area are effective in influencing the photosynthesis and photoresponses of plants. However, impacts are not considered significant because the community within Section 2 consists of weedy grasses and fallow agricultural fields, with little botanical value (USACE, 1993).

Impacts from fugitive dust resulting from construction and trenching activities are as described in Section 5.6.1.

Fish and Wildlife. As stated in Section 5.6.1 the long-term effect of an increased photoperiod (daylight conditions) on mobile wildlife species is not expected to result in a potentially significant impact. All other impacts to general wildlife are the same as identified in Section 5.6.1.

Endangered, Threatened, and Candidate Species. No impacts to endangered, threatened, or candidate species are expected from lighting construction within Section 2.

Fencing

Vegetation. Impacts from the clearing of vegetation for the construction of the additional fence would be adverse, but not significant (USACE, 1997). The one foot wide fence would be placed in highly disturbed grassland and fallow agricultural fields with little botanical value.

Short term impacts from fence construction due to fugitive dust are as described in Section 5.6.1.

As stated in Section 5.6.1, no significant impacts to the vegetation occupying the strip of land remaining between the two fences after the installation of the additional fence are expected.

Fish and Wildlife. Impacts to wildlife from fence construction are the same as identified for construction of light towers and trench excavation for electrical cable in Section 5-6-1.

Endangered, Threatened, and Candidate Species. No impacts to endangered, threatened, or candidate species are expected from fencing construction within Section 2.

Roadway

Vegetation. No significant impacts are expected from the removal of vegetation for the construction of the all-weather road. Even though construction of the road would eliminate more vegetation, the vegetation affected would be disturbed grassland and fallow agricultural fields.

Fish and Wildlife. Impacts to general wildlife from the construction of the roadway are the same as identified for the construction of construction of light towers and trench excavation for electrical cable in Section 5.6.1.

Endangered, Threatened, and Candidate Species. No impacts to endangered, threatened, or candidate species are expected from roadway construction within Section 2.

5.6.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Vegetation. As stated in Section 5.6.1, general vegetation within this area will be subject to light pollution. However, this effect is not considered significant because the community within Section 3 consists of weedy grasslands and fallow agricultural fields, with little botanical value (USACE, 1993).

Impacts from fugitive dust resulting from construction and trenching activities are as described in Section 5.6.1.

Fish and Wildlife. As stated in Section 5.6.1 the long-term effect of an increased photoperiod (daylight conditions) on mobile wildlife species is not expected to result in a potentially significant impact. All other impacts to general wildlife are the same as identified in Section 5.6.1.

Endangered, Threatened, and Candidate Species. Six areas north of and within the ROW have been identified as habitat for the San Diego and Riverside fairy shrimp both Federally endangered species (see Figure 4-2). Avoidance of these habitat areas in accordance with Environmental Commitment 8-8 would eliminate any impact to these species.

One population of San Diego button-celery, a Federally-listed endangered species, occurs north of and within the western end of Section 3 (see Figure 4-2). This species shall be avoided in accordance with Environmental Commitment 8-11.

A population of burrowing owl has been identified north of the eastern end of Section 3 (see Figure 4-2). Impacts to the burrowing owl can be reduced by the implementation of Environmental Commitment 8-9.

Although the presence of the Quino checkerspot butterfly could not be determined due to the timing of the surveys, a possible source food plant (*Plantago erecta*) for the species was identified within the grasslands of the ROW. However, as discussed for Section 1 Lighting, this species is not expected to be found in the project area.

Fencing

Vegetation. Impacts from the construction of the additional fence would be adverse, but not significant (USACE, 1997). The one foot wide fence would be placed in highly disturbed grassland and fallow agricultural fields with little botanical value.

Short term impacts from fence construction due to increased fugitive dust are as described in Section 5.6.1.

As stated in Section 5.6.1 no significant impacts to the vegetation occupying the strip of land remaining between the two fences after the installation of the additional fence are expected.

Fish and Wildlife. Impacts to wildlife from fence construction are the same as those identified for construction of light towers and trench excavation for electrical cable in Section 5.6.1.

Endangered, Threatened, and Candidate Species. Impacts to endangered, threatened, and candidate species from fence construction are the same as those identified for lighting installation within Section 3 (see above discussion).

Roadway

Vegetation. Impacts from the clearing of vegetation for the construction of a 30 foot wide all-weather road to run parallel to the additional fence would be the same as those impacts identified from light tower placement and trench excavation for electrical cable in Section 5.6.1. Even though construction of the road would eliminate more vegetation, the vegetation affected would be disturbed grassland and fallow agricultural fields.

Fish and Wildlife. Impacts to wildlife from roadway construction are the same as those identified for construction of light towers and trench excavation for electrical cable in Section 5.6.1.

Endangered, Threatened, and Candidate Species. Impacts to endangered, threatened, and candidate species from roadway construction are the same as those identified for lighting installation within Section 3 (see above discussion).

5.6.4 Cumulative Impacts

Aside from the completion of the proposed lighting, fencing and roadway additions as described in this EA, no other large scale public or private development projects have been identified for this region. Because no large scale loss of habitat is anticipated for this area, the loss of up to approximately 10 acres of highly disturbed, coastal sage scrub would not significantly effect this plant community for the overall area.

Implementation of the proposed border improvements may result in an overall reduction of disturbance to vegetation and habitat immediately north of the fenced portion of the border. The proposed measures may reduce the necessity for law enforcement officials to drive off road through habitat north of the fence to apprehend suspects. However, further loss of habitat east of the fenced border may occur as a direct result of the effectiveness of the proposed border improvements. By reducing the illegal activity within the project area, the operation of the proposed border improvements may force the flow of illegal activity into the hills east of the project site (USBP, 1997). Increased human activity (by trampling, setting of illegal camp fires, etc.) could have a detrimental impact in these hills where vegetation and wildlife are less disturbed. This potential impact is limited however by the general inaccessibility of the hills due to the steepness and ruggedness of the terrain.

Two cumulative impacts to wildlife are expected from operation of the lighting aspect of the project. The number of bats and other animals in the area that forage on insects at night may increase because of the development of localized food sources (insects drawn to each of the lights). Consistently abundant food resources often result in greater breeding productivity. The resultant increase in nocturnal foraging by bats, nightjars (Caprimulgidae), and other animals on insects at the lights may result in a local decrease of insects.

The light poles will increase the number of perch sites for raptors and other large birds. This could result in a decrease in prey species (beetles, rodents, and small birds) in the project vicinity.

5.7 LAND USE

The Proposed Action and the surrounding lands are disturbed due to littering and unplanned trails resulting from illegal activities at the U.S./Mexico border. Project construction equipment would be stored at staging areas when not in use and travel to the immediate project areas would be via a system of existing dirt roadways. The INS plans to lease and/or purchase private properties that would be affected by the Proposed Action. A Right of Entry would be obtained for all leased parcels, including project right-of-ways and staging areas.

5.7.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Construction of the lighting system would occur over a 12-24 month time period. However, per County ordinance, since construction activities would be required to occur during daylight hours (7:00 a.m. to 7:00 p.m.), Monday through Saturday, there would be no significant impacts on the residential and limited recreational uses (cross country motor cycling) in the area. In addition, public access to the area would also not be impacted given the numerous dirt roadways traversing the project area and region.

Operation of the lighting system would illuminate a large area that would otherwise be dark. The illumination of the project area, coupled with the existence of the San Ysidro Mountains as a natural barrier, is expected to reduce disturbance in the area, because illegal entries of drugs, people, vehicles, and criminal/violent activity would be under the direct surveillance of the U.S. Border Patrol. Therefore, the Proposed Action would result in a beneficial impact to the project area since illegal contraband activities and associated violence would be greatly reduced. However, the lighting system could have a potentially significant impact on residential uses across the border in Mexico due to the night time illumination of the border area. It should be noted that these uses are not under the jurisdiction of any U.S. agency and there are no requirements for mitigation of impacts. However, the Corps will attempt to reduce the impacts of illumination to residential uses to the extent practical (given the Purpose and Need of the project), by not pointing lights skyward or in a horizontal plane (Environmental Commitment 8-17).

Fencing

Fencing in Section 1 generally would not change land uses of the project site. Since the proposed fence would be in close proximity (120-150 feet) to the existing Border fence, open-space and rural characteristic of the study area would not be adversely affected. Disturbed lands in this area are expected to revert back to their original condition rapidly after the completion of construction. The impacts are expected to be negligible due to the temporary nature of construction activities, given the extent of open areas, and the disturbed nature of the overall study area. There would be a beneficial impact to the land uses within Section 1, because the security style fence being constructed by the INS would minimize encroachment upon private properties due to illegal entry.

Roadways

Land use in Section 1 is not expected to experience impacts as a result of roadway construction. The Proposed Action includes construction of an all-weather roadway, or the improvement of existing dirt roadways to all-weather condition. The roadway system for the Proposed Action would be approximately 120 to 150 feet north of the border, within a 30-foot right-of-way and would not be inconsistent or incompatible with current uses in the border area. It should be noted, that the INS currently uses a system of existing roadways immediately adjacent to the Mexico/U.S. border. The roadway system would result in a beneficial impact by

providing access for INS vehicles to effectively patrol the Mexico/U.S. border and maintain the fencing, lights, and roads that help minimize illegal immigration of people and drugs.

5.7.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Installation of lighting in Section 2 generally would not change land uses within the project site. Approximately a 400 square foot wide area for light pole installation and a ten-foot wide right-of way for underground cable installation would be disturbed. The land in this disturbed area is expected to revert back to its original condition rapidly after the construction has been completed. The impacts are expected to be negligible due to the temporary nature of construction activities, given the disturbed nature of the overall study area. There would be a partial, yet small, loss of agricultural lands due to the permanent concrete light poles. However, installation of lights would have a beneficial impact to land uses by minimizing encroachment upon properties due to illegal entry.

Fencing

Fencing in Section 2 generally would not have any significant impacts on the light industrial land uses of the project site. The majority of these light industrial buildings currently have property fences to help alleviate the problem of trespassing. Limited loss of agricultural land would occur in those areas where the fencing would prohibit the use of agricultural land between the fence and the border. In general, light industrial uses and other land uses in this area would benefit from the Proposed Action, because the security style fence being constructed by the INS would alleviate the problem of damage to property fences along the border and help minimize encroachment upon these properties due to illegal entry.

Roadways

The roadway in this section would be anywhere from 95 to 360 feet north of the border, within a 30-foot right-of-way. Limited loss of agricultural land would occur due to the conversion of these lands to an all-weather roadway. Given the highly disturbed nature of the overall study area, such as existing roadways and fencing adjacent to the border, impacts resulting from the placement of roads in Section 2 are expected to be minimal. The roadway system would allow the INS to more effectively patrol the Mexico/U.S. border, and generally would be beneficial to the land uses in the area by helping minimize the illegal entry of people and drugs into the U.S.

5.7.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Installation of lighting in Section 3 generally would not significantly impact land uses. There would be a disturbance of areas where light poles and underground cables would be installed and a resultant, yet small,

loss of agricultural lands (at light pole locations). Disturbed lands are expected to revert back to their original condition rapidly after construction has been completed. The impacts are expected to be negligible due to the temporary nature of construction activities, given the extent of open areas, and the disturbed nature of the overall study area and surrounding lands (i.e., Tijuana Airport and densely populated residential areas to the south in Mexico). However, installation of lights would have a beneficial impact to the land uses within Section 3, since illegal contraband activities and associated violence would be greatly reduced. Similar to Section 1, illumination of lights on the western portion of Section 3 could impact residential uses to the south of the border.

Fencing

Fencing in Section 3 is not expected to have any significant impacts on land use. Loss of agricultural land would occur in those areas where the fencing would prohibit the use of agricultural lands between the fence and the border. In general, however, land uses this area would benefit from the security style fence being constructed by the INS by minimizing illegal entries into the U.S.

Roadways

The roadway in this section would be anywhere from 120 to 150 feet north of the border, within a 30-foot right-of-way. Loss of agricultural land would occur due to the conversion of these lands to an all-weather roadway. Given the highly disturbed nature of the overall study area and existing Border Patrol activities, impacts from placement of roads in Section 3 would be minimal. The three components of the Proposed Action, including the roadway system allow the INS to effectively patrol the Mexico/U.S. border, and generally would be beneficial to the land uses in the area by helping minimize the illegal entry of people and drugs into the U.S.

5.7.4 Cumulative Impacts

The analysis of cumulative impacts includes any potential significant impacts as a result of the simultaneous implementation of all three project components (lighting, fencing, and roadways) at Sections 1 through 3. Land use disturbance along all three Sections of the Proposed Action resulting from lighting, fencing, and the roadways would encompass a 30-foot right-of-way where all three components would occur. It should be noted that the proposed project area is currently a disturbed area due to illegal entries, drug traffic, and existing portable lighting, fencing, and dirt roads used by the U.S. Border Patrol to patrol the area. The implementation of the Proposed Action would result in a minor contribution to the land use impacts within the area due to the small loss of agricultural lands in Sections 2 and 3 and illumination of lighting directed toward residential areas on Sections 1 and 3. However, in general the Proposed Action would result in a beneficial impact on the land uses in the study area by improving the patrolling capabilities of the U.S. Border Patrol. Currently, illegal entries encroach upon the open space and light industrial uses along the border. In addition, these encroachments are coupled with disturbance to land uses such as dirt trails in areas with high illegal foot and vehicle traffic, damage to property fences, and refuse left behind. The implementation of the Proposed Action would help minimize illegal entries, and thereby impacts to land uses, by allowing the Border Patrol

to have superior patrolling capabilities along the Mexico/U.S. Border. Construction related impacts would be temporary in nature and thereby insignificant.

5.8 AESTHETICS

5.8.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

During construction of the Proposed Action there would be two to three vehicles at each pole site. Project construction impacts on aesthetic resources and views in the study area would include the presence of equipment and materials at the project site. However, due to the temporary nature of construction, these impacts would be less than significant.

Lighting in this section includes the installation of thirty-eight, 45-foot high concrete light poles approximately every 400 feet. Each light pole would have two 1,000 watt and two 400 watt high pressure sodium flood lights, providing illumination 300 feet (front and sides) at each light pole. The illumination provided would be brighter than a standard parking lot (USACE, 1993). In view of the disturbed nature of the project area and the current use of portable lights along the project alignment, the installation of lights would not result in any long-term significant impacts on aesthetic resources.

Fencing

The visual quality of the immediate Border area would be impacted by the placement of the proposed fencing. In light of the mostly open space land uses surrounding Section 1, impacts would be minor. It should be noted that the entirety of this Section and surrounding lands lie within privately-owned lands and are therefore restricted from public viewing due to limitations of access to the area. Since the area is of restricted access to the general public and the surrounding areas are largely unpopulated, it is unlikely that views would be compromised. When viewed from a distance, the proposed Border fencing would appear to be transparent and would be indistinguishable from the existing border fence due to its mesh-like nature. (While fence design has not been finalized, the fence itself will be made of mesh-like material so that the Border Patrol agents can see through it [Birdsong, 1997].)

Roadways

There would be potential short-term impacts resulting from roadway construction along Section 1 due to the existence of construction vehicles and equipment that may disrupt the open space views of the area. However, due to the temporary nature of construction, these impacts would be less than significant. Once completed, roadway repairs and maintenance would have minimal long-term impacts to aesthetic resources in the area given the number of existing unpaved roads in the border area (i.e., roadway adjacent to the Mexico/U.S. fence).

5.8.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Similar to Section 1 of the Proposed Action, lighting impacts on the physical environment in Section 2 of the Proposed Action are anticipated to be minor considering the temporary nature of construction activities and the disturbed nature of the area.

Fencing

The visual quality of the immediate Border area would be impacted by the placement of the proposed fencing. In light of the mostly light industrial and agricultural land uses surrounding the project areas, this effect would be minor, especially since most of the light industrial facilities already contain fencing along their southern boundaries to deter illegal entries from traveling across their properties.

Roadways

Similar to Section 1, impacts to aesthetic resources in Section 2 are expected to be short-term and minimal. Construction impacts on aesthetic resources and views would include the presence of equipment and materials at the project site. However, due to the temporary nature of construction, these impacts would be less than significant.

5.8.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Project construction impacts on aesthetic resources and views in the study area would include the presence of equipment and materials at the project site. However, due to the temporary nature of construction activities, these impacts would be less than significant. Similar to Section 1, the illumination provided by the lights in Section 2 would be brighter than a standard parking lot (USACE, 1993). In view of the disturbed nature of the project area and the current use of portable lights along the project alignment, the installation of lights would not result in any long-term significant impacts on aesthetic resources.

Fencing

The visual quality of the immediate Border area would be impacted by the placement of the proposed fencing. However, in light of the mostly light industrial and agricultural land uses surrounding the project areas, this effect would be minor, especially since most of the light industrial facilities already contain fencing along their southern boundaries to deter illegal entries from traveling across their properties. When viewed from a distance, the proposed Border fencing would appear to be transparent and would be indistinguishable from the existing border fence due to its mesh-like nature.

Roadways

Similar to Section 1, impacts to aesthetic resources in Section 3 are expected to be short-term and minimal.

5.8.4 Cumulative Impacts

Lighting, fencing, and the roadway in Sections 1 through 3 would encompass a 30-foot right-of-way where all three components of the Proposed Action would occur. Cumulative impacts to aesthetic resources resulting from the Proposed Action would include the presence of construction vehicles and equipment that may impede views in open space areas. However, due to the temporary nature of construction, the Proposed Action would not result in a significant cumulative impact. In addition, the visual quality of some portions of the border area would be impacted by the Proposed Action. For example, the light poles and the fencing would disrupt views in open space areas. It should be noted that the International border with Mexico is currently a disturbed area due to illegal entries, drug traffic, and existing portable lighting, fencing, and roads used by the INS to patrol the area. Therefore, the Proposed Action would represent a minor, but not significant, impact to the existing aesthetic quality of the area. Further, light poles would be spaced approximately 400 feet apart and the fence would appear transparent against the existing border fence when viewed from a distance, given the proposed use of mesh type material.

5.9 NOISE

5.9.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Construction. Construction noise can be created from onsite and offsite sources. Onsite noise created during construction would occur primarily from heavy-duty diesel- and gasoline-powered construction equipment such as: an auger truck, backhoe, crane, trench digger, flatbed truck, pole setter, cement truck, fuel truck, and water truck. Noise levels from these pieces of construction equipment range from 75 dBA[1] to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters. It should be noted that noise levels are calculated based on the assumption that noise from localized sources typically falls off by 8 dBA with each doubling of distance from the source of noise.

Offsite noise sources would occur from trucks delivering material (e.g., concrete) and equipment to the job site, as well as from vehicles used by workers for commuting purposes. As described in Section 2.2.3 (Project Construction) there would be approximately 60-75 workers required to construct the 38 border lights. Workers are assumed to commute from military stations in the San Diego area. Noise levels from these vehicles are generally low and would not affect any ambient noise levels.

[1] A-weighted decibel logarithmic unit scale (dBA) that conveniently compares the wide range of sound intensities to which the human ear is sensitive.

On the U.S. side of the border, there are no sensitive noise receptors located near the proposed project site. However, there is a densely populated area on Mexico's side of the border, adjacent to the proposed 3 mile construction segment. A steel fence that parallels the border would block the noise from traveling across the border into the densely populated area. As a result, no noise impacts would result from the construction of the high pressure sodium floodlights.

Operations. There would be very few operational noise sources associated with the Proposed Action. On a periodic basis, minor noise levels would result from the inspection and maintenance vehicles along the border lighting right-of-way. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Fencing

Construction. Under this Proposed Action, a security style fence would be constructed approximately 120 to 150 ft north of the existing border fence (international border with Mexico) between the San Ysidro Mountains and the eastside of Otay Mesa Port of Entry (POE). The same type of construction equipment would be used under this Proposed Action, as was described for the lighting segment. Noise levels from the construction equipment would range from 75 dBA to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters.

As described above, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise. Therefore, no noise impacts would result from the construction of a 3 mile security style fence. No mitigation is required.

Operation. Similar to the lighting operations, minor noise levels would result from the inspection and maintenance vehicles along the 3 mile security style fence right-of-way. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Roadway

Construction. The construction of the proposed all-weather roadway between the San Ysidro Mountains and the eastside of the Otay Mesa POE would be located adjacent to the proposed fencing, approximately 120 to 150 ft north of the existing border. The roadway would take approximately 2 month to complete using dozers and graders primarily, with fuel and water trucks for support. Approximately 10 to 15 military personnel would commute to and from the job site during the 2 month period. Noise levels from offsite vehicular noise sources are generally low and would not impact any sensitive receptors.

As described above, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise. Therefore, no noise impacts would result from the construction of a 3 mile roadway. No mitigation is required.

Operation. Similar to the lighting operations, minor noise levels would result from the inspection and maintenance vehicles along the 3 mile roadway. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

5.9.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Construction. Under this Proposed Action, 24 high pressure sodium floodlights would be constructed along a 2.1 mile segment between La Media Road and the eastside of Otay Mesa POE. Noise generated from onsite noise sources would be temporary and would result from the operation of heavy-duty diesel- and gasoline-powered construction equipment such as: an auger truck, backhoe, crane, trench digger, flatbed truck, pole setter, cement truck, fuel truck, and water truck. As described previously, noise levels from these pieces of construction equipment range from 75 dBA to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters.

As described above, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction and installation of 24 high pressure sodium floodlights. No mitigation is required.

Operation. As described in Section 5.9.1, minor noise levels would result from the inspection and maintenance vehicles along the 2.1 mile lighting segment. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Fencing

Construction. This Proposed Action is similar to the proposed fencing segment described in Section 5.9.1 (San Ysidro Mountains to East of Otay Mesa POE). Under this Proposed Action, a security style fence would be installed between La Media Road and the eastside of Otay Mesa POE. Noise generated from onsite noise sources would be temporary and would result from the operation of heavy-duty diesel- and gasoline-powered construction equipment such as: an auger truck, backhoe, crane, trench digger, flatbed truck, cement truck, fuel truck, and water truck. Noise levels from these pieces of construction equipment range from 75 dBA to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters.

As described in Section 5.9.1, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction and installation of the security style fencing. No mitigation is required.

Operation. As described in Section 5.9.1, minor noise levels would result from the inspection and maintenance vehicles along the security style fence segment. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Roadway

Construction. The construction of the proposed all-weather roadway between Otay Mesa POE and La Media Road would be located adjacent to the proposed fencing, approximately 120 to 150 ft north of the existing border (international border with Mexico). The 2.1 mile roadway would take approximately 2 month to complete using dozers and graders primarily, with fuel and water truck for support. Approximately 10 to 15 military personnel would commute to and from the job site during the 2 month period. Noise levels from offsite sources are generally low and would not impact and sensitive receptors.
As described in Section 5.9.1, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction of a 2.1 mile roadway. No mitigation is required.

Operation. Similar to the lighting operations, minor noise levels would result from inspection and maintenance vehicles along the 2.1 mile roadway. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

5.9.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Construction. Under this Proposed Action, 33 high pressure sodium floodlights would be installed between La Media Road and Arnie's Point (approximately 2.25 miles in length). The lights would be constructed 150 feet north of the existing international border with Mexico. The same type of heavy construction equipment (e.g., augers, backhoes, dump trucks) would be used on this segment, as was described in the lighting segment in Section 5.9.1. As described previously, noise levels from these pieces of construction equipment range from 75 dBA to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters.

As described in Section 5.9.1, there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the adjacent Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction of 33 high pressure sodium floodlights. No mitigation is required.

Operation. Minor noise levels would result from inspection and maintenance vehicles along the 2.25 mile lighting segment. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Fencing

Construction. The Proposed Action would consist of constructing a security style fence from La Media Road to Arnie's Point (2.25 miles in length). The fence would be located approximately 120 to 150 feet north of the international border with Mexico. The same type of heavy construction equipment (e.g., augers, backhoes, dump trucks) would be used on this segment, as was described in the fencing segment in Section 5.9.1. As described above, noise levels from these pieces of construction equipment range from 75 dBA to 90 dBA at a distance of approximately 15 meters, and 50 dBA to 60 dBA at a distance of approximately 125 meters.

As described in Section 5.9.1 there are no sensitive receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the adjacent Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction of the 2.25 mile fence. No mitigation is required.

Operation. Similar to the lighting operations, minor noise levels would result from inspection and maintenance vehicles along the 2.25 mile fence. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

Roadway

Construction. The construction of the proposed 2.25 mile all-weather roadway between La Media Road and Arnie's Point would be located approximately 120 to 150 ft north of the international border with Mexico. The roadway would take approximately 2 month to complete using primarily dozers and graders. As described above, approximately 10 to 15 military personnel would commute to and from the job site during the 2 month period. Noise levels from offsite vehicular noise sources are generally low and would not impact any sensitive receptors.

As described in Section 5.9.1, there are no sensitive noise receptors near the Proposed Action area that could be affected by the temporary construction noise, especially in consideration of the contribution of the adjacent Tijuana Airport to the existing noise environment. Therefore, no noise impacts would result from the construction of a 2.25 mile all-weather roadway. No mitigation is required.

Operation. As previously stated, minor noise levels would result from inspection and maintenance vehicles traveling along the 2.25 mile roadway. However, noise levels from these vehicles would not create any significant impacts on ambient conditions.

5.9.4 Cumulative Impacts

The concurrent construction or operation of all proposed project components (i.e., lighting, fencing, and roadways) at all locations (Sections 1, 2, and 3) would not create any cumulative noise impacts. Therefore, no mitigation is required.

5.10 SOCIOECONOMICS

It should be noted that the areas covered by Sections 1,2, and 3 at present are predominantly comprised of industrial uses and open space areas and are mainly devoid of residential uses. As a result, the Proposed Action is not expected to disproportionately impact any minority populations and/or low-income populations and is therefore not inconsistent with Executive Order 12898 on Environmental Justice.

5.10.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Installation of the lighting system for Section 1 is anticipated to be completed within 12 to 24 months, and would be accomplished by 60 to 75 military personnel as part of their training. Military personnel would be housed at military facilities in the San Ysidro/San Diego area during the construction period (USACE, 1993). Therefore, due to the use of existing military personnel, the temporary nature of construction activities, and the use of military housing for project construction workers, there would be no significant construction-related population immigration, housing, or employment impacts as a result of installation of the lighting system along Section 1.

The U.S. Border Patrol would be responsible for operating and maintaining the lighting, fencing and roadways along the Mexico/U.S. border. Existing Border Patrol personnel would be used for both operational and maintenance activities along the border. Therefore, no significant socioeconomic impacts are anticipated as a result of the operation and maintenance activities. In fact, the components of the Proposed Action would have a beneficial impact on socioeconomics by helping minimize illegal drug activity in the U.S.

Fencing

Fencing located 150 feet north of the Mexico/U.S. border for Section 1 is anticipated to be completed within eight months, and would be accomplished by seven to eight military personnel as part of their training. Similar to the installation and maintenance of the lighting system, there would be no significant socioeconomic impacts resulting from fencing in Section 1.

Roadways

The all-weather roadway system for Section 1 is anticipated to be completed within two months, and would be accomplished by 10 to 15 military personnel as part of their training. Similar to lighting and fencing

construction and maintenance activities, no significant construction-related population immigration, housing, or employment impacts are expected as a result of building the roadway for Section 1.

5.10.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Lighting

Installation, operation, and maintenance of lighting in Section 2 to of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

Fencing

Installation and maintenance of fencing in Section 2 of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

Roadways

Construction and maintenance of roadways in Section 2 to of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

5.10.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Lighting

Installation, operation, and maintenance of lighting in Section 3 to of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

Fencing

Installation and maintenance of fencing in Section 3 of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

Roadways

Construction and maintenance of roadways in Section 3 to of the Proposed Action would have similar socioeconomic impacts to those of Section 1.

5.10.4 Cumulative Impacts

The Proposed Action would not have any significant cumulative impacts to the socioeconomics of the City and County of San Diego. Since there are no construction- or operation-related population, employment, or housing impacts, the Proposed Action's contribution to cumulative impacts in the area would be negligible.

It should be noted that the implementation of the Proposed Action may have a potentially beneficial socioeconomic impact on the study area as a whole by helping to minimize illegal entries. Illegal entries potentially affect the socioeconomics of the region in the following ways:

- Immigration of large numbers of undocumented illegal entries can result in the reduced effectiveness of public service provision such as public transportation and local law enforcement such as police

- Illegal aliens that seek and obtain employment in the area do not contribute to income taxes, and the number of jobs for U.S. Citizens are potentially reduced.

The actual occurrence of these types of impacts can not be accounted for with certainty and are speculative due to the undocumented nature of illegal entries.

5.11 TRANSPORTATION AND COMMUNICATION

5.11.1 San Ysidro Mountains to East of Otay Mesa POE (3 miles)

Lighting

Construction. The Proposed Action would temporarily increase the number of vehicles that would travel along Alta Road, and Otay Mesa Road. Specifically, approximately 60-75 workers would commute from military stations in the San Diego area each day in military vehicle carpools. Besides the commuter traffic, equipment and material trucks would travel to the job site in support of the construction activities that would be occurring within the construction area.

Access to the project area is from Alta Road, a dirt road that extends from Otay Mesa Road. Very few vehicles travel along Alta Road; only U.S. Border Patrol and limited recreational vehicles utilize this road on a daily basis. Therefore, the minor temporary increase in vehicles related to project construction would not contribute to any significant traffic impacts.

With regard to vehicular parking, there are two staging areas (i.e., Cactus Road staging area, and the corner of Alta Road and Otay Mesa Road) that would provide ample room for commuter and construction vehicles, and material storage. Therefore, no significant vehicular parking impacts would occur from the implementation of the Proposed Action.

As described in Section 4.11, there are no major telecommunication lines within the proposed project area. However, there may be some local lines that pass through the construction zone. Prior to construction, Underground Service Alert would be notified, which would require local utility companies to go out into the field and mark their telecommunication lines. This would limit the potential of a disruption of service during construction of the proposed project. As a result, no significant impacts on communications would result from the implementation of the Proposed Action.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 38 high pressure sodium floodlights. No mitigation measures are required.

Fencing

Construction. Under the Proposed Action, a security style fence would be constructed approximately 120 to 150 feet north of the existing border between the San Ysidro Mountain foothills and the east side of Otay Mesa POE. Seven to eight military personnel would be required to construct the 3 mile fence over an 8 to 10 month period. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts, therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 3 mile fence. No mitigation measures are required.

Roadway

Construction. The Proposed Action would consist of constructing an all-weather roadway along a 30 foot ROW adjacent to the proposed security style fence. Approximately 10 to 15 military personnel would construct the all-weather roadway over a period of 2 months. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 3 mile roadway. No mitigation measures are required.

5.11.2 Section 2 - East of Otay Mesa POE to La Media Road (1.5 miles)

Lighting

Construction. Under the Proposed Action, 24 high pressure sodium floodlights would be constructed approximately 150 feet north of the existing border. The floodlights would be installed between Otay Mesa POE and La Media. Approximately 60 to 75 military personnel would construct the lights over a 12 to 24 month period. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 24 floodlights. No mitigation measures are required.

Fencing

Construction. The Proposed Action would consist of constructing a security style fence between La Media Road and the east side of Otay Mesa POE. The fence would be located approximately 120 to 150 feet north of the existing border fence. Seven to eight military personnel would construct the fence over a period of 8 months. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the fence along Section 2. No mitigation measures are required.

Roadway

Construction. Under the Proposed Action, an all-weather roadway would be constructed within a 30 foot wide ROW adjacent to the proposed security style fencing. The roadway would be constructed by 10 to 15 military personnel over a period of 2 months. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 1.5 mile roadway. No mitigation measures are required.

5.11.3 Section 3 - La Media to Arnie's Point (2.25 miles)

Lighting

Construction. The Proposed Action consists of constructing and installing 33 high pressure sodium floodlights approximately 150 feet north of the border between La Media Road and Arnie's Point. Sixty to seventy-five military personnel would construct the floodlights over a 12 to 24 month period. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. As described above, there would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 33 high pressure sodium floodlights. No mitigation measures are required.

Fencing

Construction. Under the Proposed Action, a security style fence would be constructed between La Media Road and Arnie's Point. The fence would be located approximately 120 to 150 feet north of the existing

border. Approximately 7 to 8 military personnel would construct the fence over a period of 8 months. The temporary increase in vehicles related to the project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 33 high pressure sodium floodlights. No mitigation measures are required.

Roadway

Construction. The Proposed Action would consist of construction of an all-weather roadway within a 30 foot ROW between La Media Road and Arnie's Point. The roadway would be constructed adjacent to the proposed security style fence. Approximately 10 to 15 military personnel would construct the roadway over a 2 month period. The minor temporary increase in vehicles related to project construction would not contribute to any traffic impacts. Therefore, no mitigation measures are required.

Operation. There would be no significant increase in the number of U.S. Border Patrol Agents or vehicles as a result of the implementation of the Proposed Action. Therefore, no significant impacts would result from the operation of the 2.25 mile roadway. No mitigation measures are required.

5.11.4 Cumulative Impacts

No cumulative transportation or utility impacts would result from the concurrent construction or operation of all of the proposed project components (i.e., lighting, fencing, and roadways) at all of the proposed locations (Sections 1, 2, and 3). Therefore no mitigation is required.

5.12 SAFETY

5.12.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

The implementation of the Proposed Action components (lighting, fencing, and roadway) along Section 1 would result in a beneficial impact with regard to safety issues, by reducing the influx of illegal contraband into the United States and decreasing the associated violent criminal activity along the 3 mile segment of the international border. In addition, the Proposed Action would provide the U.S. Border Patrol with adequate lighting, which would enable them to apprehend illegal aliens in a safe and efficient manner.

The proposed lighting and roadway would maximize the Border Patrol's patrolling capabilities in the project area, while the fencing would serve as an additional obstacle to the existing border fence, thus discouraging illegal entries. These measures should directly reduce the number of illegal fires started each year near the border in the San Ysidro Mountains and foothills. The illegal immigrants start the fires at night for warmth after they have illegally entered the United States. These fires have resulted in much larger wild fires that have damaged structures and large areas of land in San Diego County (Provencio, 1996). The use of fire

suppression precautions and equipment would reduce the potential of fire resulting from construction activities to a less than significant level.

5.12.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

Refer to Section 5.12.1 above.

5.12.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Refer to Section 5.12.1 above.

5.12.4 Cumulative Impacts

No cumulative construction impacts are expected from the simultaneous implementation of all project components (lighting, fencing, and roadways) and all three sections (Sections 1, 2, and 3). As discussed in Section 5.12.1, beneficial impacts would result from reduced illegal entries.

5.13 CULTURAL RESOURCES

5.13.1 Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3 miles)

National Register evaluations are not complete; if any sites within the APE are determined to be eligible for the National Register of Historic Places they would be avoided or mitigated. Prior to implementation of the project, the results of these evaluations and the Corps/INS determination of effect would be coordinated with the State Historic Preservation Officer, pursuant to Section 106 of the National Preservation Act (36 CFR 800).

5.13.2 Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)

No impacts to cultural resources are anticipated from the proposed project (USACE, 1997).

5.13.3 Section 3 - La Media Road to Arnie's Point (2.25 miles)

Three of the four prehistoric archeological sites have been evaluated as not NRHP eligible. Therefore, IBWC-4 is the only potentially NRHP site present. Road and/or fence construction within the boundaries of IBWC-4 will not take place until Section 106 consultation is complete. If the site is found to be eligible and if the site cannot be avoided, mitigation in the form of a data recovery or covering/capping of the site would alleviate adverse effects to the point that construction would not be considered an adverse effect.

Compliance

National Historic Preservation Act

The results of National Register of Historic Places (NRHP) evaluations will be coordinated with the California State Historic Preservation Officer (SHPO). subsequent determinations of effect will also be coordinated with the SHPO and the Advisory council on Historic Preservation (ACHP). If NRHP sites will be subject to adverse effects which cannot be avoided, a memorandum of agreement between the INS, Corps, SHPO, and the ACHP would be executed. This document would outline the mitigation measures that will be implemented prior to construction in the areas of these sites. The above activities will be conducted in accordance with Section 106 of the act, as implemented by 36 CFR 800.

6. COORDINATION

6.1 AGENCY COORDINATION

Coordination has been conducted with the Immigration and Naturalization Service (INS); U.S. Border Patrol (USBP), San Diego Section; U.S. Fish and Wildlife Service (USFWS); U.S. Army Corps of Engineers, Regulatory Branch; California Department of Fish and Game (CDFG); State Historic Preservation Office; California Coastal Commission; International Boundary and Water Commission; County of San Diego Planning Department; City of San Diego Development Services Department; California Regional Water Quality Control Board; San Diego Air Pollution Control District; and The Resource Agency of California.

Immigration and Naturalization Service/U.S. Border Patrol. On November 5, 1996 a meeting was held at the San Ysidro Border Patrol Office to discuss the characteristics, construction, and operation of proposed lighting along Section 1. Personnel from the USBP, San Diego Sector, and U.S. Army Corps of Engineers (Corps), Los Angeles District, were in attendance.

In addition to the meeting to discuss light installation along Section 1, on November 6, 1996, personnel from each agency proceeded to the project area to conduct a field survey. The survey (auto/foot) was made to review the planned location for the poles and electrical connection, and to identify sensitive resources in the project area (botany, wildlife, cultural resources, etc.).

U.S. Corps of Engineers, Regulatory Branch. Terry Dean with the Corps Regulatory Branch was contacted regarding appropriate permits required for project construction within the dry washes along the Section 1 ROW and removal of willows within Section 3. Mr. Dean stated that the Proposed Action could qualify for a Nationwide Permit No. 26 (projects involving disturbance to less than 0.3 acres of aquatic habitat), contingent upon his review of the permit application and associated site visit.

U.S. Fish and Wildlife Service. October 1996; COE provided information regarding Section 2 fencing, including: project description, anticipated impacts, and potential species of concern via telephone to Ms. Susan Wynn. Faxed copies of project description and accompanying figures. January, 1997; Corps staff met with FWS representatives to discuss project details as relating to sensitive biological resources. February, 1997; conducted project site visit with FWS staff.

April 1997; personal communication with Kim Marsden, botanist, to discuss the current status of San Diego Marsh-elder and agency's level of concern for this and other non-listed species.

A letter dated April 4, 1997, requesting information on endangered, threatened, and candidate species for the project was sent to the U.S. Fish and Wildlife Service (Appendix C). Letter of response is pending.

California Department of Fish and Game (DFG). February 1997; provided Section 2 fencing project description and nature of anticipated impacts to Ms Terry Dickerson via telephone.

The California Department of Fish and Game (CDFG) Natural Heritage Division was consulted on October 18, 1996 for information regarding known occurrences of sensitive species within the general vicinity of Section 1. The CDFG through the CNDDB provided map overlays depicting known occurrences of sensitive species and habitat.

State Historic Preservation Officer (SHPO). January 1997; project archeologist coordinated with SHPO regarding assessment of Section 2 fencing project-related impacts to cultural resources. A letter summarizing the assessment and coordination was sent to SHPO. Concurrence was received on February 25, 1997.

California Coastal Commission. On April 7, 1997, Mark Delaplain was contacted regarding the Proposed Action. Mr. Delaplain stated that the project area was not within the Coastal Zone. A copy of the Draft EA has been provided for his review.

International Boundary and Water Commission (IBWC). October 1996; Corps environmental and engineering staff attended group meeting with IBWC and project proponents to review Section 2 fencing. Corps staff periodically conducted project site visits with IBWC representatives.

County of San Diego, Department of Planning and Land Use. October and December 1996, April 1997; the County of San Diego Planning Department was contacted via telephone regarding the proposed project description (Sections 1, 2, and 3) and project area land use and zoning designations.

Eric Gibson of the County Department of Planning and Land Use was contacted on April 9, 1997, regarding County concerns related to the Proposed Action. Mr. Gibson stated that there were no concerns at this time, subject to the review of the Draft EA. Per Mr. Gibson's request, Draft EA's were sent to the Chief Administrator Officer, Larry Prior, and Eric Gibson.

City of San Diego, Development Services Department. On April 9, 1997, the City of San Diego was contacted. Mr. Chris Zerkle stated that the project needs to be in compliance with the California Environmental Quality Act (CEQA) due to a portion of the proposed project occurring on property owned by the City of San Diego and applicable project area land use and zoning designations. The City requires legal notice to be published in local newspapers. Draft EA has also been made available to public libraries and interested environmental groups. Mr. Zerkle requested a copy of a preliminary Draft for their review prior to the public review because the proposed project would need ROW from the City of San Diego. Further coordination was conducted with City of San Diego Traffic Engineering Division.

California Regional Water Quality Control Board, San Diego Region. January-February 1997; coordinated Section 2 fencing project application for the waiver of Section 401 Water Quality Certification with Ms. Angie Griffith. Waiver was granted on February 19, 1997.

San Diego Air Pollution Control District. January 1997; provided Section 2 fencing project description and summary of anticipated air quality impacts via telephone to Mr. Ernie Davis. He stated the need for detailed

air quality analysis to determine compliance with *de minimus* air quality standards. Detailed analysis indicated project-related air emissions are estimated to be well below all applicable standards.

Informal coordination with Rob Rider of the San Diego Air Pollution Control District, was conducted April 1997 to discuss the application of the General Conformity "de minimis" thresholds for identifying the significance of the Proposed Action within the San Diego Air Basin.

6.2 DRAFT EA

The Draft EA was circulated for a thirty-day public review period to appropriate resource agencies, local interest groups, and individuals (see Section 6.3 for distribution). To comply with CEQA, legal notices have been published in the local newspapers. The Draft EA has also been placed in a public libraries to make copies available to the interested public (see Section 6.3 for list of libraries). Comments received on Draft EA were incorporated in this Final EA.

6.3 DISTRIBUTION LIST

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PUBLIC LIBRARIES

San Diego Central Library
820 "E" Street
San Diego, CA 92101-6416
(619) 236-5813
Open:

Mon.-Thur.	10:00 AM - 9:00 PM
Fri.-Sat.	9:30 AM - 5:30 PM
Sunday	1:00 PM - 5:00 PM

San Ysidro Public Library
101 W. San Ysidro Blvd.
San Ysidro, CA 92173-2516
(619) 424-0475
Open:

Mon.-Wed.	12:00 PM - 8:00 PM
Tues.-Fri.	9:30 AM - 5:30 PM
Saturday	1:00 PM - 5:00 PM
Sunday	Closed

Chula Vista Public Library
365 "F" Street
Corner of "F" and 4th Streets
Chula Vista, CA 91910
(619) 691-5069
Open:

Mon.-Thur.	10:00 AM - 9:00 PM
Fri.-Sat.	10:00 AM - 6:00 PM
Sunday	1:00 PM - 5:00 PM

National City Public Library
200 East 12th Street
National City, CA 91950
(619) 336-4280

Monday	12:00 PM - 8:00 PM
Tuesday	12:00 PM - 6:00 PM
Wednesday	10:00 AM - 6:00 PM
Thursday-Sunday	Closed

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c/o D. Barry Simons
1330 Neptune Avenue
Encinitas, CA 92024

Mesa 45
c/o Barry Simons
1330 Neptune Ave
Encinitas, CA 92024

Traditional Realty L.L.C.
c/o Robert Dyer
600 West Broadway, # 1400
San Diego, CA 92101-3377

Swallows Holding, Ltd.
P O Box 431568
San Ysidro, CA 92143

Rancho Vista del Mar
1661 Lincoln Blvd, # 100
Santa Monica, CA 90404

6.4 FINAL EA

During the thirty-day public review period for the Draft EA two comment letters were received. The comment letters are presented in their entirety at the end of this section. Letters and comments have been numerically depicted (e.g., 1-1 represents the first comment on letter 1). Responses to each comment are provided below.

COMMENT LETTER 1
CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 11

1-1 Comment noted. Section 4.11.1 on Page 4-15 has been corrected to reflect the text provided in the comment letter.

COMMENT LETTER 2
MICHAEL B. POYNOR, REPRESENTING MESA 45, A CALIFORNIA GENERAL PARTNERSHIP

2-1 Acquisition of private property for the Proposed Action is being conducted through the Corps Real Estate Division. Construction of the project and any additional environmental work on the subject lands would not commence until property acquisition has occurred in accordance with the acquisition terms agreed to by all parties.

STATE OF CALIFORNIA - BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, Governor

DEPARTMENT OF TRANSPORTATION

DISTRICT 11, P.O. BOX 85406, SAN DIEGO, 92186-5406
(619) 688-6424 TDD Number
(619) 688-6002

May 18, 1997

11-SD-905

ATTN Joy Jaiswal

Mr. Chris Belsky
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Dear Mr Belsky:

DEA for Area Lighting, Fencing, and Roadway at International Border San Diego-SCH 97044032

Caltrans District 11 comments are as follows:

See Section 1, Page 4-15 - The California Department of Transportation plans to construct a commercial vehicle bypass road which will channel commercial traffic from the Federal port of entry, along a new proposed 2-lane road that will parallel the border. This new facility will relieve traffic on Via de la Amistad by providing a direct link from the Federal port to the State inspection facility. Caltrans and the Army Corps of Engineers have coordinated the construction plans in this area to minimize any conflicts between the proposed bypass road and the access fence and lighting. Construction of the bypass road is planned to begin February 1998. 1-1

If you require further information or have any questions regarding this matter, please call Ray Traynor, Border Program Manager, at (619) 688- 6738.

Sincerely,

BILL DILLON, Chief
Planning Studies Branch

BD/AC

LAW OFFICES OF
MICHAEL B. POYNOR
A LAW CORPORATION
5080 SHOREHAM PLACE, SUITE 102
SAN DIEGO, CALIFORNIA 92122-5931
FACSIMILE (619) 550-0044

GOVERNOR PARK

TELEPHONE (619) 550-1000

May 21, 1997

U.S. Army Corps of Engineers
ATTN: Ms. Joy Jaiswal (CESPL-PD-RL)
Environmental Design Section
P.O. Box 532711
Los Angeles, CA 90053-2325

RE: COMMENTS ON DRAFT ENVIRONMENTAL ASSESSMENT LETTER 4/22/97
INS PROPOSAL FOR 150 FT. WIDE LIGHTED AREA FROM BORDER

Dear Ms. Jaiswal:

I represent Mesa 45, a California General Partnership. This letter is in reply to the letter dated April 22, 1997 from Mr. Robert S. Joe which requested comments from affected property owners for the creation of a proposed 150 foot wide zone along 7.3 miles of the U.S. and Mexico border, which appears to include Mesa 45's land in the Otay Mesa area of San Diego.

The U.S.A. / INS presently have an easement extending in from the border to an approximately 20 foot width inside Mesa 45's land in Otay Mesa. The proposed widening of any easement access from approximately a 20 foot wide strip to a 150 foot wide strip would be extremely damaging to the "fair market value" of Mesa 45's land.

2-1

Please be advised that Mesa 45 will not consent to any uncompensated entry or trespass by government representatives onto its land for the purpose of National Environmental Policy Act (NEPA) compliance in the form of a Draft Environmental Assessment (EA) or for any other advanced study or other purposes.

Please be further advised that any federal agency must first comply with the U.S. "*Uniform Real Property Acquisition Policy*" (42 USCA §4651, et seq.) if any use of private land is to be acquired to create the 150 foot wide border strip. Please take notice that Mesa 45 insists that it be paid for any exploratory entries onto its land, and expects to be paid "just compensation" and "fair market value" for the taking of any possessory rights of any kind in its land. Such costs should be discussed in your analysis.

Sincerely Yours,

Michael B. Poynor

Michael B. Poynor
A Law Corporation

MBP: sc
cc: Messrs Ronaldo N. Pinedo, D. Barry Simons, Fernando Garcia Granados

7. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

All applicable laws, regulations, and Executive Orders were considered during preparation of this EA. Those pertinent to this action are discussed in the paragraphs below.

7.1 THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) OF 1969 (PUBLIC LAW 91-190)

This EA has been prepared in accordance with the goals and requirements of NEPA. Reasonable alternatives to the Proposed Action have been considered during the planning process. Potential environmental effects have been included in the evaluation of the project. Procedural review requirements have been met as detailed by the Council on Environmental Quality Regulations for implementing the Procedural Provisions of the National Environmental Policy Act.

7.2 FISH AND WILDLIFE COORDINATION ACT (PUBLIC LAW 85-624)

The Proposed Action does not involve the development of water resources; therefore, a Coordination Act report is not required.

7.3 ENDANGERED SPECIES ACT OF 1973, AS AMENDED, 16 U.S.C. 1531 ET SEQ. (PUBLIC LAW 93-205)

Section 7 (c) requires consultation with the U.S. Fish and Wildlife Service (USFWS) to determine if a Federal Action will affect threatened or endangered wildlife species, and to ensure that any action does not jeopardize the continued existence of, or result in the destruction of the habitat of, any endangered or threatened species. A letter dated April 4, requesting information on endangered, threatened, and candidate species for the project was sent to the U.S. Fish and Wildlife Service. Letter of response is pending.

7.4 CLEAN WATER ACT, AS AMENDED (PUBLIC LAW 95-217)

Potential significant impacts affecting water resources of the United States, as defined under the Clean Water Act, have been considered in this EA. The Proposed Action does not entail discharge of dredge or fill material into the waters of the United States. There will be no construction-related activities which would degrade water quality. The Environmental Design Section has coordinated with the Corps Regulatory Branch for necessary permit requirements in compliance with Section 404 of the Clean Water Quality Act. The proposed project construction conforms with Nationwide Permit No. 26A criteria. COE coordinated with Angie Griffith of the San Diego office of the California Regional Water Quality Control Board (CRWQCB) for the State 401 Water Quality Certification. Project-related grading is less than 5 acres; therefore, a Storm Water Pollution Plan would not be required and the project is in compliance with Section 402 of the Clean Water Act.

7.5 CLEAN AIR ACT, AS AMEMDED (PUBLIC LAW 91-204)

Federal agencies must comply with all Federal, State, interstate and local requirements respecting the control and abatement of air pollution, including any permit requirements. The Proposed Action is in compliance.

The U.S. Army Corps of Engineers is coordinating with the San Diego Air Pollution Control District for any necessary permits based on a detailed evaluation of project air quality impacts.

Air quality analyses were performed for the Proposed Action (Appendix A). Total project exhaust emissions are estimated to be well below all applicable standards (see Section 5.4). In view of the determination that total project emissions for each criteria pollutant are estimated to be below *de minimus* levels as prescribed in 40 CFR 93.153(b), the Proposed Action is exempt from demonstrating conformity to state or Federal Implementation Plans. As a result, this project conforms with the Federal Clean Air Act as amended in 1990.

7.6 National Historic Preservation Act (Public Law 94-43)

Efforts to identify National Register Properties in the Area of Potential Effects were conducted by the Corps. National Register evaluations are in process. Once these investigations are complete and prior to initiation of any ground disturbing activities, the results will be coordinated with the California State Historic Preservation Officer pursuant to 36 CFR 800.

7.7 Executive Order 11990, Protection of Wetlands

Wetlands protection includes the avoidance, to the maximum extent possible, of the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid the support of new construction in wetlands. No wetlands will be affected by this Proposed Action; therefore, the project is in compliance.

7.8 Executive Order 11988, Floodplain Management

No flood plains would be affected by the Proposed Action.

7.9 Farmland Protection Policy Act, 1981 (Public Law 97-98)

No prime or unique farmland or farmland of statewide importance would be impacted by the Proposed Action.

7.10 Federal Aviation Administration (FAA)

The Western Pacific Region of the FAA was contacted regarding the original area lighting project and pertinent project information was submitted to the Air Traffic Controller's Office for review. In accordance with FAA direction, avian obstruction lights will be installed on the 26 most western light poles of Section 3, given the immediate proximity to the Tijuana Airport.

7.11 Coastal Zone Management Act, California Coastal Act of 1976

The Proposed Action is not located within the coastal zone.

7.12 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

The alternatives considered for this EA did not discriminate on the basis of race, color, or national origin. Because the project occurs in largely unpopulated areas, no adverse impacts to human or socioeconomic resources were determined to exist.

7.13 California Environmental Quality Act (CEQA)

CEQA is the State level equivalent of NEPA. Local requirements for project compliance with CEQA were coordinated with City of San Diego Development Services Department, San Diego Daily Transcript, and local area public libraries to satisfy the public review requirements of CEQA.

Table 8-1 Proposed Project Construction Measures and Environmental Commitments

Proposed Project Construction Measures & Environmental Commitments		Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)			Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)			Section 3 - La Media Road to Arnie's Point (2.25 miles)		
No.	Description	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway
8-1	Prior to construction a qualified ecologist shall be on site to define the alignment and location of light poles, fencing, and roadways. Identification of fencing alignments shall be made in consideration of adjacent roadway alignments, even if roadway construction could occur at a later date. Monitoring will be evaluated consistent with mission need, and to avoid potential impacts.	X	X	X				X	X	X
8-2	Loss of coastal sage scrub habitat will be mitigated by measures deemed appropriate upon consultation with resource agencies.	X (1.5 acre)	X (.5 acre)	X (8 acres)						
8-3	To minimize dust and particulate matter, water shall be applied to all disturbed active construction areas, including dirt roadways, a minimum of two times per day, except when soil water content exceeds the level recommended by a soils engineer for compaction or when weather conditions warrant a reduction in water application.	X	X	X	X	X	X	X	X	X
8-4	Standard and appropriate erosion control methods (such as water bars, sand bags, etc.) shall be employed.	X	X	X						
8-5	All weed species removed during construction activity shall either be mixed with backfill or disposed of offsite and away from any coastal sage scrub in and near the project area.	X	X	X	X	X	X	X	X	X
8-6	All construction and maintenance fluids (oils, anti-freeze, fuels) shall be stored in closed containers and shall be disposed of properly.	X	X	X	X	X	X	X	X	X
8-7	Construction traffic shall be limited to existing roads and the ROW, and cross country travel shall be prohibited.	X	X	X				X	X	X
8-8	Areas containing the Federally endangered San Diego and Riverside fairy shrimp would be identified, flagged, and fenced as necessary prior to construction to avoid any impact to this species or its habitat. A five foot wide buffer zone shall be observed between any fairy shrimp habitat. Other suitable mitigation may be formulated upon consultation with USFWS. Backlight falling on potential fairy shrimp habitat shall be minimized.	X	X	X				X	X	X
8-9	Where possible, construction shall be avoided during the burrowing owl reproductive season (February 1 to August 31) in areas of burrowing owl habitat. Prior to construction a qualified biologist shall survey the area of construction to ascertain the presence of burrowing owls and relocate individuals. If necessary, owls would be relocated from the project area. Otherwise, construction may be delayed. If necessary, a qualified biologist will be made available to relocate any burrowing owls in the impacted project area.	X	X	X				X	X	X
8-10	All construction shall be directed to avoid the population of San Diego marsh-elder if possible.	X	X	X						

Proposed Project Construction Measures & Environmental Commitments		Section 1 - San Ysidro Mountains to East of Otay Mesa POE (3.0 miles)			Section 2 - East of Otay Mesa POE to La Media Road (2.1 miles)			Section 3 - La Media Road to Arnie's Point (2.25 miles)		
No.	Description	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway	Lighting	Fencing	Roadway
8-11	Federally endangered San Diego button-celery shall be avoided by directing all construction away from this population. A five foot wide buffer shall be observed between any nearby construction activity and this population.	×	×	×						
8-12	The Proposed Action shall not disturb or alter existing drainage patterns and flow rates.	×	×	×	×	×	×	×	×	×
8-13	Construction equipment shall be utilized efficiently to minimize the amount of time engines are left idling. Construction equipment shall be maintained to ensure that engines are properly tuned.	×	×	×	×	×	×	×	×	×
8-14	Clean-up of subsurface contaminated soils or hazardous waste exposed by excavation activities shall occur in accordance with Federal and State regulations.	×	×	×	×	×	×	×	×	×
8-15	Underground Service Alert shall be notified prior to construction activities.	×	×	×	×	×	×	×	×	×
8-16	Known archaeological sites shall be marked prior to construction. If buried archaeological deposits are encountered during ground disturbing activities, a Corps archaeologist shall be notified and the provisions of 36 CFR 800.11—*Properties discovered during implementation of an undertaking*—shall be implemented in consultation with the INS.	×	×	×	×	×	×	×	×	×
8-17	To the extent practical, given the Purpose and Need of the project, lights shall not be pointed skyward or directed on a horizontal plane parallel to the ground.	×						×		

9. LIST OF PREPARERS AND REVIEWERS

PREPARERS:

Corps of Engineers, Los Angeles District, Environmental Resources Branch (COE):

Joy Jaiswal, Project Manager, Environmental Design Section
John Moeur, Ecologist, Environmental Design Section
Steve Dibble, Senior Archaeologist, Environmental Planning Section

Technical Support, Aspen Environmental Group:

Gary Meunier, Program Manager/Quality Assurance
Vida Strong, Delivery Order Manager
Kirstine Thorne, Associate, Biological Resources/Monitoring
Jane Mallory, Associate, Biological Resources
Negar Vahidi, Land Use Planner
Thomas Murphy, Environmental Scientist
Judy Spicer, Document Coordination and Production
Craig Hattori, Graphics Preparation

REVIEWERS, COE:

Ruth Villalobos, Chief, Environmental Resources Branch
Ken Morris, Chief, Environmental Design Section

TECHNICAL REVIEWERS:

Immigration and Naturalization Service (INS), INS Headquarters, Facilities and Engineering Division, Washington, D.C.:

Richard Diefenbeck, Director, Facilities and Engineering Division
Kevin Jackson, Project Manager
Debra Hood, Environmental Manager

Corps of Engineers, Forth Worth District:

Eric Verwers, Environmental Planner

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Note: All references for biological resources are presented in the Biological Technical Report included as Appendix B in this EA.

APPENDIX A

AIR QUALITY IMPACT ANALYSIS

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of 38 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	3.9	3	1.2	0.6	14.04	7.02

Assumptions:

Light Post Footing:
- Disturbed area per pole = 400 ft2
- Number of poles = 38
- Total disturbed area = 15,200 ft
- Total acres = 0.3 acres
- Length of disturbance = 3 months

Underground Cable Trench:
- Width of diturbed area = 10 ft
- Length of disturbed area = 15,500 ft
- Total disturbed area = 155,000 ft2
- Total acres = 3.6 acres

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of 38 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	3.9	0.0333	1.2	0.6	312.00	156.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of a 3.0 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	3.6	4	1.2	0.6	17.28	8.64

Assumptions:

Fence:
- Disturbed area width = 10 ft
- Length = 3.0 miles (15840 ft)
- Total disturbed area = 158400 ft2
- Total acres = 3.6 acres
- Length of disturbance = 4 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of a 3.0 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	3.6	0.0333	1.2	0.6	288.00	144.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of a 3.0 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	10.9	2	1.2	0.6	26.16	13.08

Assumptions:

Roadway:
- Disturbed area width = 30 ft
- Length = 3.0 miles (15840 ft)
- Total disturbed area = 475200 ft2
- Total acres = 10.9 acres
- Length of disturbance = 2 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)
Construction of a 3.0 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	10.9	0.0333	1.2	0.6	872.00	436.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of 38 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	34.5	8.0	552.7	55	304.0	1520.0
Dump Truck (175 hp)	8	2	42.7	8.0	682.7	20	136.5	1092.3
Cement Truck (195 hp)	8	1	4.6	2.0	9.2	40	3.7	29.5
Auger (165 hp)	5	1	12.7	8.0	101.3	55	55.7	278.7
Flat Bed Truck (170 hp)	5	1	11.5	4.0	46.1	20	9.2	46.1
Hydraulic Crane (165 hp)	6	1	46.1	8.0	368.5	55	202.7	1216.0
Fuel Truck (170 hp)	5	1	34.5	8.0	276.4	15	41.5	207.3
Water Truck (195 hp)	8	1	69.1	8.0	552.7	30	165.8	1326.5
Pickup Truck (150 hp)	2	2	69.1	8.0	1105.5	20	221.1	442.2

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	51.41	48.84	433.08	47.27	119.32	38.46	36.92
Dump Truck (175 hp)	22.83	21.69	312.50	34.08	134.89	19.33	18.56
Cement Truck (195 hp)	0.62	0.59	8.43	0.92	3.64	0.52	0.50
Auger (165 hp)	12.41	11.89	130.69	8.69	28.42	9.34	8.87
Flat Bed Truck (170 hp)	0.96	0.91	13.18	1.44	5.69	0.82	0.78
Hydraulic Crane (165 hp)	49.22	46.76	447.50	37.94	186.66	36.60	34.78
Fuel Truck (170 hp)	4.33	4.12	59.30	6.47	25.60	3.67	3.52
Water Truck (195 hp)	27.72	26.34	379.52	41.39	163.83	23.48	22.54
Pickup Truck (150 hp)	59.52	54.16	42.36	2.34	1751.04	2.68	2.66
Total	229.02	215.29	1826.57	180.54	2419.09	134.89	129.13

Total (lbs)	229.02	215.29	1826.57	180.54	2419.09	134.89	129.13
Total (tons)	0.11	0.11	0.91	0.09	1.21	0.07	0.06

Note: Prorated based on number of poles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of 38 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1	8	16	55	8.8	44
Dump Truck (175 hp)	8	2	1	8	16	20	3.2	25.6
Cement Truck (195 hp)	8	1	1	2	2	40	0.8	6.4
Auger (165 hp)	5	1	1	8	8	55	4.4	22
Flat Bed Truck (170 hp)	5	1	1	4	4	20	0.8	4
Hydraulic Crane (165 hp)	6	1	1	8	8	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1	8	8	15	1.2	6
Water Truck (195 hp)	8	1	1	8	8	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1	8	16	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.13	0.13	1.83	0.20	0.79	0.11	0.11
Auger (165 hp)	0.98	0.94	10.32	0.69	2.24	0.74	0.70
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.68	5.37	50.69	4.82	42.65	3.77	3.60

Total (lbs)	5.68	5.37	50.69	4.82	42.65	3.77	3.60
Total (tons)	0.00	0.00	0.03	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	40.0	8.0	640.0	55	352.0	1760.0
Dump Truck (175 hp)	8	2	56.0	8.0	896.0	20	179.2	1433.6
Cement Truck (195 hp)	8	1	298.7	2.0	597.3	40	238.9	1911.5
Flat Bed Truck (170 hp)	5	1	26.7	4.0	106.7	20	21.3	106.7
Hydraulic Crane (165 hp)	6	1	80.0	8.0	640.0	55	352.0	2112.0
Fuel Truck (170 hp)	5	1	80.0	8.0	640.0	15	96.0	480.0
Water Truck (195 hp)	8	1	133.3	8.0	1066.7	30	320.0	2560.0
Pickup Truck (150 hp)	2	2	133.3	8.0	2133.3	20	426.7	853.3

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	59.52	56.55	501.46	54.74	138.16	44.53	42.75
Dump Truck (175 hp)	29.96	28.46	410.15	44.73	177.05	25.37	24.36
Cement Truck (195 hp)	39.95	37.95	546.87	59.64	236.07	33.83	32.48
Flat Bed Truck (170 hp)	2.23	2.12	30.52	3.33	13.17	1.89	1.81
Hydraulic Crane (165 hp)	85.49	81.22	777.24	65.89	324.19	63.57	60.40
Fuel Truck (170 hp)	10.03	9.53	137.33	14.98	59.28	8.50	8.16
Water Truck (195 hp)	53.50	50.83	732.42	79.87	316.16	45.31	43.50
Pickup Truck (150 hp)	114.86	104.52	81.75	4.52	3379.20	5.17	5.14
Total	395.55	371.18	3217.73	327.70	4643.28	228.17	218.60

Total (lbs)	395.55	371.18	3217.73	327.70	4643.28	228.17	218.60
Total (tons)	0.20	0.19	1.61	0.16	2.32	0.11	0.11

Note: Prorated based on number of miles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1.0	8.0	16.0	55	8.8	44.0
Dump Truck (175 hp)	8	2	1.0	8.0	16.0	20	3.2	25.6
Cement Truck (195 hp)	8	4	1.0	2.0	8.0	40	3.2	25.6
Flat Bed Truck (170 hp)	5	1	1.0	4.0	4.0	20	0.8	4.0
Hydraulic Crane (165 hp)	6	1	1.0	8.0	8.0	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1.0	8.0	8.0	15	1.2	6.0
Water Truck (195 hp)	8	1	1.0	8.0	8.0	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1.0	8.0	16.0	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.10	4.81	45.87	4.73	42.78	3.37	3.23

Total (lbs)	5.10	4.81	45.87	4.73	42.78	3.37	3.23
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	10	2	60.0	8.0	960.0	55	528.0	5280.0
Dump Truck (175 hp)	8	2	88.0	8.0	1408.0	55	774.4	6195.2
Fuel Truck (170 hp)	5	1	60.0	8.0	480.0	15	72.0	360.0
Water Truck (195 hp)	8	1	60.0	8.0	480.0	30	144.0	1152.0
Pickup Truck (150 hp)	2	2	80.0	8.0	1280.0	20	256.0	512.0

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	178.57	169.64	1504.38	164.21	414.48	133.58	128.24
Dump Truck (175 hp)	129.48	123.04	1772.45	193.29	765.11	109.66	105.26
Fuel Truck (170 hp)	7.52	7.15	103.00	11.23	44.46	6.37	6.12
Water Truck (195 hp)	24.08	22.87	329.59	35.94	142.27	20.39	19.57
Pickup Truck (150 hp)	68.92	62.71	49.05	2.71	2027.52	3.10	3.08
Total	408.57	385.41	3758.46	407.39	3393.84	273.10	262.27

Total (lbs)	408.57	385.41	3758.46	407.39	3393.84	273.10	262.27
Total (tons)	0.20	0.19	1.88	0.20	1.70	0.14	0.13

Note: Prorated based on number of miles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 1, SAN YSIDRO MOUNTAINS to EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	5	2	1	8	16	55	8.8	44
Dump Truck (175 hp)*	8	2	1	8	16	55	8.8	70.4
Fuel Truck (170 hp)	5	1	1	8	8	15	1.2	6
Water Truck (195 hp)	8	1	1	8	8	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1	8	16	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)*	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)*	1.47	1.40	20.14	2.20	8.69	1.25	1.20
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	4.35	4.10	40.50	4.39	40.60	2.84	2.73

Total (lbs)	4.35	4.10	40.50	4.39	40.60	2.84	2.73
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of 38 - 45' Concrete Light Poles and Underground Cable

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/dny)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	46	40	45	5	95	0.48	2.12	1.16	258.98	3.03	44.33	8.70	1993.57	0.17	4.10	0.52	0.48	0.68	144.65	0.06	29.22	0.11	53.57
Material Delivery	2	16	50	50	5	95	5.52	0.00	0.00	19.60	8.53	0.00	0.00	30.29	0.75	0.00	0.00	0.00	0.00	2.66	0.06	0.21	0.51	1.81
Dump Truck	4	47	50	50	5	95	5.52	0.00	0.00	114.81	8.53	0.00	0.00	177.41	0.75	0.00	0.00	0.00	0.00	15.60	0.06	1.25	0.51	10.61
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
Total Emissions (lbs)										412.84				2231.33						165.55		30.89		67.78
Total Emissions (tons)										0.21				1.12						0.08		0.02		0.03

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of 38 - 45' Concrete Light Poles and Underground Cable

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	1	40	45	5	95	0.48	2.12	1.16	5.62	3.03	44.33	8.70	43.28	0.17	4.10	0.52	0.48	0.68	3.14	0.06	0.63	0.11	1.16
Material Delivery	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Dump Truck	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Equipment Delivery	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Total Emissions (lbs)										9.27				48.92						3.64		0.67		1.50
Total Emissions (tons)										0.00				0.02						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Security Style Fencing (15 feet high)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	173	40	45	5	95	0.48	2.12	1.16	129.94	3.03	44.33	8.70	1000.28	0.17	4.10	0.52	0.48	0.68	72.58	0.06	14.66	0.11	26.88
Cement Delivery	2	300	50	50	5	95	5.52	0.00	0.00	364.76	8.53	0.00	0.00	563.66	0.75	0.00	0.00	0.00	0.00	49.56	0.06	3.96	0.51	33.70
Dump Truck	4	80	50	50	5	95	5.52	0.00	0.00	194.54	8.53	0.00	0.00	300.62	0.75	0.00	0.00	0.00	0.00	26.43	0.06	2.11	0.51	17.97
Material Delivery	2	27	50	50	5	95	5.52	0.00	0.00	32.42	8.53	0.00	0.00	50.10	0.75	0.00	0.00	0.00	0.00	4.41	0.06	0.35	0.51	3.00
Equipment Delivery	4	2	50	50	5	95	5.52	0.00	0.00	4.86	8.53	0.00	0.00	7.52	0.75	0.00	0.00	0.00	0.00	0.66	0.06	0.05	0.51	0.45
Total Emissions (lbs)										726.52				1922.18						153.63		21.15		82.00
Total Emissions (tons)										0.36				0.96						0.08		0.01		0.04

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Security Style Fencing (15 feet high)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	1	40	45	5	95	0.48	2.12	1.16	0.75	3.03	44.33	8.70	5.77	0.17	4.10	0.52	0.48	0.68	0.42	0.06	0.08	0.11	0.16
Cement Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
Dump Truck	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
	Total Emissions (lbs)									5.61				13.29						1.08		0.14		0.60
	Total Emissions (tons)									0.00				0.01						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Road (30 feet wide)

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	80	40	45	5	95	0.48	2.12	1.16	37.48	3.03	44.33	8.70	288.54	0.17	4.10	0.52	0.48	0.68	20.94	0.06	4.23	0.11	7.75
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
Total Emissions (lbs)										56.94				318.61						23.58		4.44		9.55
Total Emissions (tons)										0.03				0.16						0.01		0.00		0.00

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - Section 1, SAN YSIDRO MOUNTAINS TO EAST OF OTAY MESA POE (3.0 miles)

Construction of a 3.0 Mile Road (30 feet wide)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	1	40	45	5	95	0.48	2.12	1.16	0.47	3.03	44.33	8.70	3.61	0.17	4.10	0.52	0.48	0.68	0.26	0.06	0.05	0.11	0.10
Equipment Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
	Total Emissions (lbs)									2.90				7.36						0.59		0.08		0.32
	Total Emissions (tons)									0.00				0.00						0.00		0.00		0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (2.1 miles)
Construction of 24 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	3.3	3	1.2	0.6	11.88	5.94

Assumptions:

Light Post Footing:
- Disturbed area per pole = 400 ft2
- Number of poles = 24
- Total disturbed area = 9,600 ft
- Total acres = 0.2 acres
- Length of disturbance = 3 months

Underground Cable Trench:
- Width of diturbed area = 10 ft
- Length of disturbed area = 13,626 ft
- Total disturbed area = 136,260 ft2
- Total acres = 3.1 acres

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (2.1 miles)
Construction of 24 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	3.3	0.0333	1.2	0.6	264.00	132.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (1.5 miles)
Construction of a 1.5 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	1.8	4	1.2	0.6	8.64	4.32

Assumptions:

Fence:
- Disturbed area width = 10 ft
- Length = 1.5 miles (7920 ft)
- Total disturbed area = 79200 ft2
- Total acres = 1.8 acres
- Length of disturbance = 4 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (1.5 miles)
Construction of a 1.5 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	1.8	0.0333	1.2	0.6	144.00	72.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (2.1 miles)
Construction of a 2.1 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	7.6	2	1.2	0.6	18.24	9.12

Assumptions:

Roadway:
- Disturbed area width = 30 ft
- Length = 2.1 miles (7920 ft)
- Total disturbed area = 332640 ft2
- Total acres = 7.6 acres
- Length of disturbance = 2 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE TO LA MEDIA ROAD (2.1 miles)
Construction of a 2.1 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	7.6	0.0333	1.2	0.6	608.00	304.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1miles)

Construction of 24 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	21.8	8.0	349.1	55	192.0	960.0
Dump Truck (175 hp)	8	2	38.0	8.0	608.0	20	121.6	972.8
Cement Truck (195 hp)	8	1	2.9	2.0	5.8	40	2.3	18.6
Auger (165 hp)	5	1	8.0	8.0	64.0	55	35.2	176.0
Flat Bed Truck (170 hp)	5	1	7.3	4.0	29.1	20	5.8	29.1
Hydraulic Crane (165 hp)	6	1	29.1	8.0	232.7	55	128.0	768.0
Fuel Truck (170 hp)	5	1	21.8	8.0	174.5	15	26.2	130.9
Water Truck (195 hp)	8	1	43.6	8.0	349.1	30	104.7	837.8
Pickup Truck (150 hp)	2	2	43.6	8.0	698.2	20	139.6	279.3

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	32.47	30.84	273.52	29.86	75.36	24.29	23.32
Dump Truck (175 hp)	20.33	19.31	278.32	30.35	120.14	17.22	16.53
Cement Truck (195 hp)	0.39	0.37	5.33	0.58	2.30	0.33	0.32
Auger (165 hp)	7.84	7.51	82.54	5.49	17.95	5.90	5.60
Flat Bed Truck (170 hp)	0.61	0.58	8.32	0.91	3.59	0.51	0.49
Hydraulic Crane (165 hp)	31.09	29.53	282.63	23.96	117.89	23.12	21.96
Fuel Truck (170 hp)	2.74	2.60	37.45	4.08	16.17	2.32	2.22
Water Truck (195 hp)	17.51	16.63	239.70	26.14	103.47	14.83	14.24
Pickup Truck (150 hp)	37.59	34.21	26.75	1.48	1105.92	1.69	1.68
Total	150.56	141.59	1234.57	122.85	1562.79	90.20	86.37

Total (lbs)	150.56	141.59	1234.57	122.85	1562.79	90.20	86.37
Total (tons)	0.08	0.07	0.62	0.06	0.78	0.05	0.04

Note: Prorated based on number of poles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1miles)

Construction of 24 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1.0	8.0	16.0	55	8.8	44.0
Dump Truck (175 hp)	8	2	1.0	8.0	16.0	20	3.2	25.6
Cement Truck (195 hp)	8	1	1.0	2.0	2.0	40	0.8	6.4
Auger (165 hp)	5	1	1.0	8.0	8.0	55	4.4	22.0
Flat Bed Truck (170 hp)	5	1	1.0	4.0	4.0	20	0.8	4.0
Hydraulic Crane (165 hp)	6	1	1.0	8.0	8.0	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1.0	8.0	8.0	15	1.2	6.0
Water Truck (195 hp)	8	1	1.0	8.0	8.0	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1.0	8.0	16.0	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.13	0.13	1.83	0.20	0.79	0.11	0.11
Auger (165 hp)	0.98	0.94	10.32	0.69	2.24	0.74	0.70
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.68	5.37	50.69	4.82	42.65	3.77	3.60

Total (lbs)	5.68	5.37	50.69	4.82	42.65	3.77	3.60
Total (tons)	0.00	0.00	0.03	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (1.5 miles)

Construction of a 1.5 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	20.0	8.0	320.0	55	176.0	880.0
Dump Truck (175 hp)	8	2	28.0	8.0	448.0	20	89.6	716.8
Cement Truck (195 hp)	8	1	149.3	2.0	298.7	40	119.5	955.7
Flat Bed Truck (170 hp)	5	1	13.3	4.0	53.3	20	10.7	53.3
Hydraulic Crane (165 hp)	6	1	40.0	8.0	320.0	55	176.0	1056.0
Fuel Truck (170 hp)	5	1	40.0	8.0	320.0	15	48.0	240.0
Water Truck (195 hp)	8	1	66.7	8.0	533.3	30	160.0	1280.0
Pickup Truck (150 hp)	2	2	66.7	8.0	1066.7	20	213.3	426.7

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	29.76	28.27	250.73	27.37	69.08	22.26	21.37
Dump Truck (175 hp)	14.98	14.23	205.08	22.36	88.52	12.69	12.18
Cement Truck (195 hp)	19.97	18.98	273.44	29.82	118.03	16.92	16.24
Flat Bed Truck (170 hp)	1.11	1.06	15.26	1.66	6.59	0.94	0.91
Hydraulic Crane (165 hp)	42.75	40.61	388.62	32.95	162.10	31.79	30.20
Fuel Truck (170 hp)	5.02	4.77	68.66	7.49	29.64	4.25	4.08
Water Truck (195 hp)	26.75	25.41	366.21	39.94	158.08	22.66	21.75
Pickup Truck (150 hp)	57.43	52.26	40.87	2.26	1689.60	2.59	2.57
Total	197.78	185.59	1608.87	163.85	2321.64	114.09	109.30

Total (lbs)	197.78	185.59	1608.87	163.85	2321.64	114.09	109.30
Total (tons)	0.10	0.09	0.80	0.08	1.16	0.06	0.05

Note: Prorated based on number of miles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (1.5 miles)

Construction of a 1.5 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1.0	8.0	16.0	55	8.8	44.0
Dump Truck (175 hp)	8	2	1.0	8.0	16.0	20	3.2	25.6
Cement Truck (195 hp)	8	4	1.0	2.0	8.0	40	3.2	25.6
Flat Bed Truck (170 hp)	5	1	1.0	4.0	4.0	20	0.8	4.0
Hydraulic Crane (165 hp)	6	1	1.0	8.0	8.0	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1.0	8.0	8.0	15	1.2	6.0
Water Truck (195 hp)	8	1	1.0	8.0	8.0	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1.0	8.0	16.0	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.10	4.81	45.87	4.73	42.78	3.37	3.23

Total (lbs)	5.10	4.81	45.87	4.73	42.78	3.37	3.23
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of a 2.1 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	10	2	42.0	8	672	55	369.6	3696.0
Dump Truck (175 hp)	8	2	61.6	8	986	55	542.1	4336.6
Fuel Truck (170 hp)	5	1	42.0	8	336	15	50.4	252.0
Water Truck (195 hp)	8	1	42.0	8	336	30	100.8	806.4
Pickup Truck (150 hp)	2	2	56.0	8	896	20	179.2	358.4

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	125.00	118.75	1053.06	114.95	290.14	93.51	89.77
Dump Truck (175 hp)	90.64	86.13	1240.71	135.30	535.58	76.76	73.68
Fuel Truck (170 hp)	5.27	5.00	72.10	7.86	31.12	4.46	4.28
Water Truck (195 hp)	16.85	16.01	230.71	25.16	99.59	14.27	13.70
Pickup Truck (150 hp)	48.24	43.90	34.33	1.90	1419.26	2.17	2.16
Total	286.00	269.79	2630.92	285.17	2375.69	191.17	183.59

Total (lbs)	286.00	269.79	2630.92	285.17	2375.69	191.17	183.59
Total (tons)	0.14	0.13	1.32	0.14	1.19	0.10	0.09

Note: Prorated based on number of miles (see Assumptions for Section 3, La Media Road to Arnie's Point).

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of a 2.1 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	5	2	1	8	16	55	8.8	44
Dump Truck (175 hp)*	8	2	1	8	16	55	8.8	70.4
Fuel Truck (170 hp)	5	1	1	8	8	15	1.2	6
Water Truck (195 hp)	8	1	1	8	8	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1	8	16	20	3.2	6.4

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)*	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)*	1.47	1.40	20.14	2.20	8.69	1.25	1.20
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	4.35	4.10	40.50	4.39	40.60	2.84	2.73

Total (lbs)	4.35	4.10	40.50	4.39	40.60	2.84	2.73
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of 24 - 45' Concrete Light Poles and Underground Cable

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	29	40	45	5	95	0.48	2.12	1.16	163.57	3.03	44.33	8.70	1259.10	0.17	4.10	0.52	0.48	0.68	91.36	0.06	18.45	0.11	33.83
Material Delivery	2	10	50	50	5	95	5.52	0.00	0.00	12.38	8.53	0.00	0.00	19.13	0.75	0.00	0.00	0.00	0.00	1.68	0.06	0.13	0.51	1.14
Dump Truck	4	30	50	50	5	95	5.52	0.00	0.00	72.95	8.53	0.00	0.00	112.73	0.75	0.00	0.00	0.00	0.00	9.91	0.06	0.79	0.51	6.74
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
	Total Emissions (lbs)									268.35				1421.02						105.59		19.59		43.51
	Total Emissions (tons)									0.13				0.71						0.05		0.01		0.02

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of 24 - 45' Concrete Light Poles and Underground Cable

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	1	20	45	5	95	0.48	2.12	1.16	3.09	3.03	44.33	8.70	27.26	0.17	4.10	0.52	0.48	0.68	2.24	0.06	0.32	0.11	0.58
Material Delivery	2	1	25	50	5	95	5.52	0.00	0.00	0.61	8.53	0.00	0.00	0.94	0.75	0.00	0.00	0.00	0.00	0.08	0.06	0.01	0.51	0.06
Dump Truck	2	1	25	50	5	95	5.52	0.00	0.00	0.61	8.53	0.00	0.00	0.94	0.75	0.00	0.00	0.00	0.00	0.08	0.06	0.01	0.51	0.06
Equipment Delivery	2	1	25	50	5	95	5.52	0.00	0.00	0.61	8.53	0.00	0.00	0.94	0.75	0.00	0.00	0.00	0.00	0.08	0.06	0.01	0.51	0.06
	Total Emissions (lbs)									4.91				30.08						2.49		0.34		0.75
	Total Emissions (tons)									0.00				0.02						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (1.5 miles)

Construction of a 1.5 Mile Security Style Fencing (15 feet high)

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	87	40	45	5	95	0.48	2.12	1.16	64.97	3.03	44.33	8.70	500.14	0.17	4.10	0.52	0.48	0.68	36.29	0.06	7.33	0.11	13.44
Cement Delivery	10	28	50	50	5	95	5.52	0.00	0.00	170.22	8.53	0.00	0.00	263.04	0.75	0.00	0.00	0.00	0.00	23.13	0.06	1.85	0.51	15.73
Dump Truck	4	40	50	50	5	95	5.52	0.00	0.00	97.27	8.53	0.00	0.00	150.31	0.75	0.00	0.00	0.00	0.00	13.22	0.06	1.06	0.51	8.99
Material Delivery	2	13	50	50	5	95	5.52	0.00	0.00	16.21	8.53	0.00	0.00	25.05	0.75	0.00	0.00	0.00	0.00	2.20	0.06	0.18	0.51	1.50
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
										368.13				968.60						77.48		10.63		41.45
	Total Emissions (lbs)									0.18				0.48						0.04		0.01		0.02
	Total Emissions (tons)																							

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (1.5 miles)

Construction of a 1.5 Mile Security Style Fencing (15 feet high)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	1	40	45	5	95	0.48	2.12	1.16	0.75	3.03	44.33	8.70	5.77	0.17	4.10	0.52	0.48	0.68	0.42	0.06	0.08	0.11	0.16
Cement Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
Dump Truck	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
	Total Emissions (lbs)									5.61				13.29						1.08		0.14		0.60
	Total Emissions (tons)									0.00				0.01						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS -SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of a 2.1 Mile Road (30 feet wide)

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	56	40	45	5	95	0.48	2.12	1.16	26.24	3.03	44.33	8.70	201.98	0.17	4.10	0.52	0.48	0.68	14.65	0.06	2.96	0.11	5.43
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
																				17.30		3.17		7.22
Total Emissions (lbs)										45.69				232.04						0.01		0.00		0.00
Total Emissions (tons)										0.02				0.12										

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 2, EAST OF OTAY MESA POE to LA MEDIA ROAD (2.1 miles)

Construction of a 2.1 Mile Road (30 feet wide)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	1	40	45	5	95	0.48	2.12	1.16	0.47	3.03	44.33	8.70	3.61	0.17	4.10	0.52	0.48	0.68	0.26	0.06	0.05	0.11	0.10
Equipment Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
	Total Emissions (lbs)									2.90				7.36						0.59		0.08		0.32
	Total Emissions (tons)									0.00				0.00						0.00		0.00		0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of 33 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	3.7	3	1.2	0.6	13.32	6.66

Assumptions:

Light Post Footing:
- Disturbed area per pole = 400 ft2
- Number of poles = 33
- Total disturbed area = 13,200 ft
- Total acres = 0.3 acres
- Length of disturbance = 3 months

Underground Cable Trench:
- Width of diturbed area = 10 ft
- Length of disturbed area = 14,600 ft
- Total disturbed area = 146,000 ft2
- Total acres = 3.4 acres

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of 33 - 45' Concrete Light Poles and Underground Cable

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	3.7	0.0333	1.2	0.6	296.00	148.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of a 2.25 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	2.7	4	1.2	0.6	12.96	6.48

Assumptions:

Fence:
- Disturbed area width = 10 ft
- Length = 2.25 miles (11880 ft)
- Total disturbed area = 118800 ft2
- Total acres = 2.7 acres
- Length of disturbance = 4 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of a 2.25 Mile Security Style Fencing (15 feet high)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	2.7	0.0333	1.2	0.6	216.00	108.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of a 2.25 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (tons)	PM10 (tons)
Construction	8.2	2	1.2	0.6	19.68	9.84

Assumptions:

Roadway:
- Disturbed area width = 30 ft
- Length = 2.25 miles (11880 ft)
- Total acres = 8.2 acres
- Length of disturbance = 2 months

Other:
- TSP 1.2 tons per acre per month (2400 lbs)
- PM10 50% of the TSP is PM10

MAX DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)
Construction of a 2.25 Mile Road (30 feet wide)

Fugitive Dust Emissions from Construction

Activity	Disturbed Area (acres)	Time (months)	TSP Emission Factor (tons/acre-month)	PM10 Emission Factor (tons/acre-month)	TSP (lbs)	PM10 (lbs)
Construction	8.2	0.0333	1.2	0.6	656.00	328.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of 33 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days*	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	30.0	8	480	55	264	1320
Dump Truck (175 hp)	8	2	41.0	8	656	20	131.2	1049.6
Cement Truck (195 hp)	8	1	4.0	2	8	40	3.2	25.6
Auger (165 hp)	5	1	11.0	8	88	55	48.4	242
Flat Bed Truck (170 hp)	5	1	10.0	4	40	20	8	40
Hydraulic Crane (165 hp)	6	1	40.0	8	320	55	176	1056
Fuel Truck (170 hp)	5	1	30.0	8	240	15	36	180
Water Truck (195 hp)	8	1	60.0	8	480	30	144	1152
Pickup Truck (150 hp)	2	2	60.0	8	960	20	192	384

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	44.64	42.41	376.09	41.05	103.62	33.40	32.06
Dump Truck (175 hp)	21.94	20.84	300.29	32.75	129.63	18.58	17.83
Cement Truck (195 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Auger (165 hp)	10.78	10.33	113.50	7.55	24.68	8.11	7.70
Flat Bed Truck (170 hp)	0.84	0.79	11.44	1.25	4.94	0.71	0.68
Hydraulic Crane (165 hp)	42.75	40.61	388.62	32.95	162.10	31.79	30.20
Fuel Truck (170 hp)	3.76	3.57	51.50	5.62	22.23	3.19	3.06
Water Truck (195 hp)	24.08	22.87	329.59	35.94	142.27	20.39	19.57
Pickup Truck (150 hp)	51.69	47.03	36.79	2.04	1520.64	2.33	2.31
Total	201.00	188.97	1615.14	159.94	2113.27	118.93	113.86

Total (lbs)	201.00	188.97	1615.14	159.94	2113.27	118.93	113.86
Total (tons)	0.10	0.09	0.81	0.08	1.06	0.06	0.06

Assumptions:

Number of Days for Hoe:
Length = 2.25 miles (11,880 feet)
Installation rate 400 feet a day
Total days = 30 days

Number of Concrete Truck Trips:
9.5 yds per truck trip
33 yd3/9.5 yd3 = 3.5 truck trips

Number of Days for Auger:
Number of lights = 33
Number of holes per day = 3
Number of days = 11

Amount of Concrete Needed for Pole Footing :
Number of lights = 33
Depth of each light pole hole 7 feet
Area = 4 ft (excluding the area displaced by the pole)
7 ft * 4 ft2 = 28 ft3
28 ft3 * 1 yd3/27 ft3 = 1 yd3 per pole
1 yd3 per pole * 33 pole = 33 yd3

* Total number of day usage per equipment within the 12-24 month construction scedule

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of 33 - 45' Concrete Light Poles and Underground Cable

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1	8	16	55	8.8	44
Dump Truck (175 hp)	8	2	1	8	16	20	3.2	25.6
Cement Truck (195 hp)	8	1	1	2	2	40	0.8	6.4
Auger (165 hp)	5	1	1	8	8	55	4.4	22
Flat Bed Truck (170 hp)	5	1	1	4	4	20	0.8	4
Hydraulic Crane (165 hp)	6	1	1	8	8	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1	8	8	15	1.2	6
Water Truck (195 hp)	8	1	1	8	8	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1	8	16	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Auger (165 hp)	44.54	42.67	469.00	31.20	102.00	33.50	31.83
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.13	0.13	1.83	0.20	0.79	0.11	0.11
Auger (165 hp)	0.98	0.94	10.32	0.69	2.24	0.74	0.70
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.68	5.37	50.69	4.82	42.65	3.77	3.60

Total (lbs)	5.68	5.37	50.69	4.82	42.65	3.77	3.60
Total (tons)	0.00	0.00	0.03	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	30.0	8.0	480.0	55	264.0	1320.0
Dump Truck (175 hp)	8	2	42.0	8.0	672.0	20	134.4	1075.2
Cement Truck (195 hp)	8	1	224.0	2.0	448.0	40	179.2	1433.6
Flat Bed Truck (170 hp)	5	1	20.0	4.0	80.0	20	16.0	80.0
Hydraulic Crane (165 hp)	6	1	60.0	8.0	480.0	55	264.0	1584.0
Fuel Truck (170 hp)	5	1	60.0	8.0	480.0	15	72.0	360.0
Water Truck (195 hp)	8	1	100.0	8.0	800.0	30	240.0	1920.0
Pickup Truck (150 hp)	2	2	100.0	8.0	1600.0	20	320.0	640.0

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	44.64	42.41	376.09	41.05	103.62	33.40	32.06
Dump Truck (175 hp)	22.47	21.35	307.61	33.55	132.79	19.03	18.27
Cement Truck (195 hp)	29.96	28.46	410.15	44.73	177.05	25.37	24.36
Flat Bed Truck (170 hp)	1.67	1.59	22.89	2.50	9.88	1.42	1.36
Hydraulic Crane (165 hp)	64.12	60.91	582.93	49.42	243.14	47.68	45.30
Fuel Truck (170 hp)	7.52	7.15	103.00	11.23	44.46	6.37	6.12
Water Truck (195 hp)	40.13	38.12	549.31	59.90	237.12	33.98	32.62
Pickup Truck (150 hp)	86.14	78.39	61.31	3.39	2534.40	3.88	3.86
Total	296.66	278.39	2413.30	245.77	3482.46	171.13	163.95

Total (lbs)	296.66	278.39	2413.30	245.77	3482.46	171.13	163.95
Total (tons)	0.15	0.14	1.21	0.12	1.74	0.09	0.08

Assumptions:

Number of Days for Hoe:
Length = 2.25 miles (11,880 feet)
Installation rate 400 feet a day
Total days = 30 days

Number of Concrete Truck Trips:
9.5 yds per truck trip
2134 yd3/9.5 yd3 = 224 truck trips

Number of Dump Truck Loads:
Dump trucks are doubles capacity of 25 yds3
2134 yds3 / 25 yds3 = 85 truck trips

Amount of Concrete Needed :
Pole footing:
- one pole every 20 feet
- 11,880 ft/20 ft = 594 poles
- area = 1.5 ft x 1.5 ft
- depth = 7 ft
- volume = 16 ft3
- total concrete = 16 ft3 * 594 poles = 9504 ft3 or 352 yds3

Continuous Footing:
- Pole footing area = 594 poles * 2 ft = 1188 ft
- Continuous footing area = 11,880 ft - 1188 ft =10692 ft
- length = 10692 ft
- width = 1 ft
- depth = 4.5 ft
- volume = 48,114 ft3 = 1782 yd3

Total concrete = 2134 yds3

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Security Style Fencing (15 feet high)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Hoe, 710 J. Deere (115 hp)	5	2	1.0	8.0	16.0	55	8.8	44.0
Dump Truck (175 hp)	8	2	1.0	8.0	16.0	20	3.2	25.6
Cement Truck (195 hp)	8	4	1.0	2.0	8.0	40	3.2	25.6
Flat Bed Truck (170 hp)	5	1	1.0	4.0	4.0	20	0.8	4.0
Hydraulic Crane (165 hp)	6	1	1.0	8.0	8.0	55	4.4	26.4
Fuel Truck (170 hp)	5	1	1.0	8.0	8.0	15	1.2	6.0
Water Truck (195 hp)	8	1	1.0	8.0	8.0	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1.0	8.0	16.0	20	3.2	6.4

Emission Factors (lbs/1000)

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Cement Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Flat Bed Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Hydraulic Crane (165 hp)	40.48	38.46	368.01	31.20	153.50	30.10	28.60
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions

	THC	ROC	NOx	SO2	CO	TSP	PM10
Hoe, 710 J. Deere (115 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Cement Truck (195 hp)	0.54	0.51	7.32	0.80	3.16	0.45	0.43
Flat Bed Truck (170 hp)	0.08	0.08	1.14	0.12	0.49	0.07	0.07
Hydraulic Crane (165 hp)	1.07	1.02	9.72	0.82	4.05	0.79	0.76
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	5.10	4.81	45.87	4.73	42.78	3.37	3.23

Total (lbs)	5.10	4.81	45.87	4.73	42.78	3.37	3.23
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	10	2	45	8	720	55	396	3960
Dump Truck (175 hp)*	8	2	66	8	1056	55	580.8	4646.4
Fuel Truck (170 hp)	5	1	45	8	360	15	54	270
Water Truck (195 hp)	8	1	45	8	360	30	108	864
Pickup Truck (150 hp)	2	2	60	8	960	20	192	384

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)*	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	133.93	127.23	1128.28	123.16	310.86	100.19	96.18
Dump Truck (175 hp)*	97.11	92.28	1329.34	144.97	573.83	82.24	78.94
Fuel Truck (170 hp)	5.64	5.36	77.25	8.42	33.35	4.78	4.59
Water Truck (195 hp)	18.06	17.15	247.19	26.96	106.70	15.29	14.68
Pickup Truck (150 hp)	51.69	47.03	36.79	2.04	1520.64	2.33	2.31
Total	306.42	289.06	2818.84	305.54	2545.38	204.83	196.70

Total (lbs)	306.42	289.06	2818.84	305.54	2545.38	204.83	196.70
Total (tons)	0.15	0.14	1.41	0.15	1.27	0.10	0.10

* Material trips for all weather material

Total Material:

2.25 miles (11880 ft) x 30 ft wide x 0.25 ft thick = 89100 ft3 (3300 yds3)

Material Trips:

3300 yds3 / 25 yds per truck load = 132 truck trips

MAX. DAILY ONSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Road (30 feet wide)

Equipment	Fuel Use (gph)	Number	Days	Hours	Total Hours	Usage Factor(%)	Adjusted Hours	Total Fuel Usage
Dozer, D-7 (225 hp)	5	2	1	8	16	55	8.8	44
Dump Truck (175 hp)*	8	2	1	8	16	55	8.8	70.4
Fuel Truck (170 hp)	5	1	1	8	8	15	1.2	6
Water Truck (195 hp)	8	1	1	8	8	30	2.4	19.2
Pickup Truck (150 hp)	2	2	1	8	16	20	3.2	6.4

Emission Factors (lbs/1000)							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	33.82	32.13	284.92	31.10	78.50	25.30	24.29
Dump Truck (175 hp)*	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Fuel Truck (170 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Water Truck (195 hp)	20.90	19.86	286.10	31.20	123.50	17.70	16.99
Pickup Truck (150 hp)	134.60	122.49	95.80	5.30	3960.00	6.06	6.02

Total Emissions							
	THC	ROC	NOx	SO2	CO	TSP	PM10
Dozer, D-7 (225 hp)	1.49	1.41	12.54	1.37	3.45	1.11	1.07
Dump Truck (175 hp)*	1.47	1.40	20.14	2.20	8.69	1.25	1.20
Fuel Truck (170 hp)	0.13	0.12	1.72	0.19	0.74	0.11	0.10
Water Truck (195 hp)	0.40	0.38	5.49	0.60	2.37	0.34	0.33
Pickup Truck (150 hp)	0.86	0.78	0.61	0.03	25.34	0.04	0.04
Total	4.35	4.10	40.50	4.39	40.60	2.84	2.73

Total (lbs)	4.35	4.10	40.50	4.39	40.60	2.84	2.73
Total (tons)	0.00	0.00	0.02	0.00	0.02	0.00	0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of 33 - 45' Concrete Light Poles and Underground Cable

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	40	40	45	5	95	0.48	2.12	1.16	224.90	3.03	44.33	8.70	1731.26	0.17	4.10	0.52	0.48	0.68	125.61	0.06	25.37	0.11	46.52
Material Delivery	2	14	50	50	5	95	5.52	0.00	0.00	17.02	8.53	0.00	0.00	26.30	0.75	0.00	0.00	0.00	0.00	2.31	0.06	0.19	0.51	1.57
Dump Truck	4	41	50	50	5	95	5.52	0.00	0.00	99.70	8.53	0.00	0.00	154.07	0.75	0.00	0.00	0.00	0.00	13.55	0.06	1.08	0.51	9.21
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
	Total Emissions (lbs)									361.08				1941.69						144.12		26.85		59.10
	Total Emissions (tons)									0.18				0.97						0.07		0.01		0.03

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of 33 - 45' Concrete Light Poles and Underground Cable

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	120	1	40	45	5	95	0.48	2.12	1.16	5.62	3.03	44.33	8.70	43.28	0.17	4.10	0.52	0.48	0.68	3.14	0.06	0.63	0.11	1.16
Material Delivery	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Dump Truck	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Equipment Delivery	2	1	50	50	5	95	5.52	0.00	0.00	1.22	8.53	0.00	0.00	1.88	0.75	0.00	0.00	0.00	0.00	0.17	0.06	0.01	0.51	0.11
Total Emissions (lbs)										9.27				48.92						3.64		0.67		1.50
Total Emissions (tons)										0.00				0.02						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Security Style Fencing (15 feet high)

Source	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	130	40	45	5	95	0.48	2.12	1.16	97.73	3.03	44.33	8.70	752.27	0.17	4.10	0.52	0.48	0.68	54.58	0.06	11.03	0.11	20.21
Cement Delivery	2	225	50	50	5	95	5.52	0.00	0.00	273.57	8.53	0.00	0.00	422.74	0.75	0.00	0.00	0.00	0.00	37.17	0.06	2.97	0.51	25.28
Dump Truck	4	60	50	50	5	95	5.52	0.00	0.00	145.90	8.53	0.00	0.00	225.46	0.75	0.00	0.00	0.00	0.00	19.82	0.06	1.59	0.51	13.48
Material Delivery	2	20	50	50	5	95	5.52	0.00	0.00	24.32	8.53	0.00	0.00	37.58	0.75	0.00	0.00	0.00	0.00	3.30	0.06	0.26	0.51	2.25
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
Total Emissions (lbs)										560.97				1468.12						117.52		16.06		63.01
Total Emissions (tons)										0.28				0.73						0.06		0.01		0.03

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Security Style Fencing (15 feet high)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	16	1	40	45	5	95	0.48	2.12	1.16	0.75	3.03	44.33	8.70	5.77	0.17	4.10	0.52	0.48	0.68	0.42	0.06	0.08	0.11	0.16
Cement Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
Dump Truck	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
Total Emissions (lbs)										5.61				13.29						1.08		0.14		0.60
Total Emissions (tons)										0.00				0.01						0.00		0.00		0.00

TOTAL OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Road (30 feet wide)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	60	40	45	5	95	0.48	2.12	1.16	28.11	3.03	44.33	8.70	216.41	0.17	4.10	0.52	0.48	0.68	15.70	0.06	3.17	0.11	5.81
Equipment Delivery	4	8	50	50	5	95	5.52	0.00	0.00	19.45	8.53	0.00	0.00	30.06	0.75	0.00	0.00	0.00	0.00	2.64	0.06	0.21	0.51	1.80
	Total Emissions (lbs)									47.57				246.47						18.34		3.38		7.61
	Total Emissions (tons)									0.02				0.12						0.01		0.00		0.00

MAX. DAILY OFFSITE CONSTRUCTION EMISSIONS - SECTION 3, LA MEDIA ROAD TO ARNIE'S POINT (2.25 miles)

Construction of a 2.25 Mile Road (30 feet wide)

	Parameters						NOx (1997)				CO (1997)				ROC (1997)						SO2		PM10 (1997)	
Source	Daily Trips	Number of Days	Dist. (mi)	Speed (mph)	% Hot Start	% Cold Start	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Total Emission (b) (lbs)	Exhaust Emission Factor (g/mile)	Cold Start Factor (g/trip)	Hot Start Factor (g/trip)	Hot Soak Factor (g/trip)	Diurnal (g/trk/day)	Total Emission (c) (lbs)	Emission Factor (g/mile)	Emission (lbs) (d)	Emission Factor (a) (g/mile)	Emission (lbs) (d)
Workers Commuting	10	1	40	45	5	95	0.48	2.12	1.16	0.47	3.03	44.33	8.70	3.61	0.17	4.10	0.52	0.48	0.68	0.26	0.06	0.05	0.11	0.10
Equipment Delivery	4	1	50	50	5	95	5.52	0.00	0.00	2.43	8.53	0.00	0.00	3.76	0.75	0.00	0.00	0.00	0.00	0.33	0.06	0.03	0.51	0.22
	Total Emissions (lbs)									2.90				7.36						0.59		0.08		0.32
	Total Emissions (tons)									0.00				0.00						0.00		0.00		0.00

References for Emission Factors

1) U.S. EPA. Compilation of Air Pollutant Emission Factors, Volume II: Mobile Sources.

2) U.S. EPA. Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources.

3) California ARB, 1991. Identification of Volatile Organic Compound Species Profiles. Used to define VOC as non-methane portion of THC. Profiles 561 (Diesel - ROC = 0.95*THC) and 502 (Non-catalyst light-duty vehicles - ROC = 0.91*THC)

4) California ARB, 1988. Method Used to Develop a Size-Segregated Particulate Matter Inventory (Draft). PM10 Fractions from Profiles 118 (Diesel - PM10 = 0.96*TSP) and 117 (Gasoline - PM10 = 0.994*TSP)

5) SCAQMD (South Coast Air Quality Management District), 1993. CEQA Air Quality Handbook.

APPENDIX B

BIOLOGICAL TECHNICAL REPORT

APPENDIX B. BIOLOGICAL TECHNICAL REPORT

1. PURPOSE OF SURVEY

In order to further curtail the influx of illegal contraband (aliens, drugs, vehicles, etc.) from Mexico into San Diego County, California, the U. S. Border Patrol is in the process of installing a series of directional flood lights 150 feet north of the existing border fencing. In additon to lighting, a second fence will be placed parallel to the existing border fence, 95 to 150 feet to the north. A 30 foot wide access road will be constructed adjacent to the north and south side of the additional fence. In order to proceed with the planned border improvements, a biological survey of the proposed lighting, fencing and roadways was required to characterize the existing conditions and to identify any potential impacts to sensitive plant and wildlife species and any critical habitat caused by the project construction and operation.

2. SURVEY SITE LOCATION

The survey site consisted of two sections: Section 1- San Ysidro Mountains to Otay Mesa Port of Entry (POE) (approximately 3 miles); and Section 3 - La Media Road to Arnie's Point (approximately 2.25 miles). The Section 1 survey area is located in the Otay Mesa area in the southwestern portion of San Diego County, California, approximately 3 miles southeast of Brown Field Naval Auxiliary Air Station, just west to the San Ysidro Mountain foothills and just north of the U.S./Mexican border (Otay Mesa USGS 7.5 minute topographic quadrangle, Township 18 south, Range 1 west and east, sections 4, 3, 2, 1, 31, 32, and 33). The Section 3 survey area is located approximately 150 feet north of the existing border fence and parallels the fence from La Media Road west to Arnie's Point, approximately 2 miles south of the Brown Field Naval Auxiliary Air Station.

3. SURVEY METHODOLOGY

Prior to the biological reconnaissance survey, all available project related literature was reviewed (USACE, 1993, 1994, & 1995). California Natural Diversity Database (CNDDB) map overlays for the USGS Otay Mesa quadrangle (CNDDB, 1996) depicting known occurrences of sensitive species and habitat were also reviewed.

A reconnaissance level survey of Section 1 from the San Ysidro Mountain foothills to Alta Road (2.4 miles) was conducted by Kirstine Thorne (wildlife biologist) and Jane Mallory (botanist) from Aspen Environmental Group on November 6, 1996. John Moeur, Ph.D., ecologist with U.S. Army Corps of Engineers (Los Angeles District) was also present during the majority of the survey. The proposed location of each of the 32 light towers to be located within this 2.4 mile stretch was staked by Christensen Engineering and Surveying prior to the biological investigation. Pole location stakes were numbered from 6000 (at western end of the alignment) to 6031 (at the eastern end of the alignment) with each pole location stake spaced 400 feet apart and each representing a proposed location for a light pole. The entire length of the proposed lighting alignment (according to the placement of the tower location stakes) was walked by the field investigators in a zig-zag pattern to fully cover (and often exceed) the 10-foot wide corridor required for the cable trench and each of

the tower locations. Notes were made on field data sheets regarding project site conditions, plant communitie present, adjacent habitat, all observed plant species within the ROW, wildlife species (observed or sign suc as burrows, nests, scat, tracks, skeletal remains, fur, feathers, and calls), sensitive species and potential habita for sensitive species, and water resources. Weather conditions and morning and afternoon temperatures als were taken.

The abundance and cover of each plant species observed within the ROW was estimated using the Braun Blanquet scale (Table B-1). The Braun-Blanquet scale is a semiqualitative method allowing the fiel investigator to estimate abundance and cover by assigning a rating to each species observed within a discret area. For the purposes of this survey the area between each pole location stake served as a discrete area.

Table B-1 Braun-Blanquet Scale

Rating	Area Occupied by a Species
⊗	very small, seldom or solitary occurrence
1	Small, < 10 %
2	10-25 %
3	25-50 %
4	50-75 %
5	> 75 %

Source: Bonham, 1989

Copies of all field data sheets are provided in the appendix. Table B-2 lists the sensitive plant and wildlif species that have potential to occur in the project area (located in the southern most end of of the Otay Mes U.S.G.S. 7.5 minute Topographic Quadrangle). Tables B-3 and B-4 lists the species observed during th survey. Botanical nomenclature follows the Jepson Manual (1993).

A second survey was conducted on March 26 and 27, 1997 by Jane Mallory and John Moeur. All botanica information for this survey was collected and reported by J. Mallory. All wildlife observations an information was collected by J. Moeur. The second survey was conducted over both the entire length o Section 1 (3.0 miles) and Section 3 (2.25 miles). Both sections were walked utilizing the same methodolog as employed during the November, 1996 survey. Both Mallory and Moeur made note of general and sensitiv biological resources, with additional emphasis placed on identifying potential habitat for fairy shrimp and foo sources potentially utilized by the Quino checkspot butterfly.

4. SURVEY FINDINGS

NOVEMBER 1996 SURVEY

Section 1 (San Ysidro Mountain Foothills to Alta Road - 2.4 miles)

Vegetation. The eastern portion of the alignment and ROW occurs on two low hills that range from 700 t 800 feet in elevation and occupies the area between pole location stakes 6016 to 6031 (approximately 1.2 mile of the alignment). The proposed alignment occurs on the south facing slope of the easternmost hill, the

bisects the next hill (Tin Can Hill) in a east/west direction so that the impacted area then occurs on the hill's summit and east and west facing slopes. These hills are vegetated with a thin, disturbed coastal sage scrub community, dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), saw-toothed goldenbush (*Hazardia squarrosa*), and California scale broom (*Lepidospartum squamatum*). Weedy non-native species including Russian thistle (*Salsola tragus*), black mustard (*Brassica nigra*), red brome grass (*Bromus madritensis* ssp. *rubens*), wild oats (*Avena fatua*), clover seedlings (*Trifolium sp.*), and filaree seedlings (*Erodium botrys*) were abundant. Rocky outcrops surrounded by Bigelow's mossfern (*Selaginella bigelovii*) occurred on the hill slopes. At the time of the survey the vegetation appeared in poor condition with the majority of the shrub species appearing brittle, with drying or dead leaves. The substrate varied from gravely to rocky. Litter in the form of broken glass, discarded bottles, cans, and paper and plastic debris was intermittently scattered along this portion of the alignment. Vehicle tracks and roads used by various law enforcement vehicles, maintenance vehicles and dirt bikes periodically traversed or paralleled the ROW area.

The western portion of Section 1 surveyed on November 6, 1996 (approximately 1.2 miles, from survey marker 6000 to 6016) consists of a ruderal field sloping slightly southward. Russian thistle, black mustard, star thistle (*Centaurea melitensis*), doveweed (*Emerocarpus setigerus*), Mediterranean schismus (*Schismus barbatus*), foxtail fescue (*Vulpia myuros var. hirsuta*), red brome grass, wild oats, and clover and filaree seedlings dominated this habitat. Old shallow furrows were distinguishable, indicating that the area had been disced at one time and possibly used for agricultural purposes. The substrate consisted of hard clayey soil, with scattered rock.

Several shallow drainages occur on the proposed Section 1 alignment. These drainages occurred between pole location stakes 6024 and 6025, 6017 and 6018 at the toe of the two hills in the eastern portion of the alignment, and between 6008 and 6009 in the disturbed grassland of the western portion of the alignment. These drainages, though not densely vegetated, were dominated by broom baccharis (*Baccharis sarothroides*), bladderpod (*Isomeris arborea*), laurel sumac (*Malosma laurina*), jojoba (*Simmondsia chinensis*), San Diego marsh-elder (*Iva hayesiana*), and non-native ruderal species including Russian thistle, black mustard, curly dock (*Rumex crispus*), and a variety of non-native grasses.

Wildlife. North of the proposed ROW, a burrowing owl (*Athene cunicularia*) was flushed from a burrow 75 feet west of pole location stake 6009. Wash and burrowing owl feathers were also found at the mouth of two California ground squirrel (*Spermophilus beecheyi*) holes in complexes in the berm between pole location stakes 6007 and 6008. Nine California ground squirrel complexes were either in or adjacent to the proposed ROW.

Ravens (*Corvus corax*), a red-tailed hawk (*Buteo jamaicensis*), and rock doves (*Columba livia*) flew over the eastern portion of the proposed Phase III ROW. Dark-eyed juncos (*Junco hyemalis*) and an American kestrel were flushed from the rocks and bushes near pole location stake 6023. Between stakes 6005 and 6006, a snowy egret (*Egretta thula*) flew above the barrier fence before turning south into Mexico. A northern harrier (*Circus cyaneus*) cruised above the ruderal field at the western portion of the proposed ROW. A western meadowlark sat on the ground and called north of survey marker 6010.

Domestic dogs (*Canis familiaris*) and a horse (*Equus caballus*) were observed separately running past pole location stakes on their way into Mexico. Scat and skulls from cows (*Bos bovis*) were found in the eastern portion of the alignment.

Wildlife utilized man-made structures adjacent to the proposed Section 1 alignment. Yellow-rumped warblers (*Dendroica coronata*) perched on the barrier fence before flying into Mexico. Starlings (*Sturnus vulgaris*) sat on the Mexican utility lines that run parallel and adjacent to the barrier fence before flying over the proposed ROW and returning to Mexico. A golden eagle (*Aquila chrysaetos*) sat on the tower between stakes 6014 and 6015 and an American kestrel (*Falco sparverius*) perch-hunted from the portable light unit across from survey stake 6006. A trash pile near survey stake 6004 was a launching point for a foraging Say's phoebe (*Sayornis saya*).

In the vegetation on either side of a small gully to the north of the proposed ROW between survey stakes 6028 and 6029, four bird species were recorded: California towhee (*Pipilo crissalis*); rufous-crowned sparrow (*Aimophila ruficeps*); a wren called once, but could not be identified; and an unidentifiable ground dove. An expert on birds of Mexico suggested that the ground dove was an escaped exotic. (Howell, 1996).

Sign of four other species were observed. A white-crowned sparrow (*Zonotrichia leucophrys*) was heard singing, but could not be visually located. Tracks and scat of a coyote (*Canis latrans*) were found near survey marker 6030 in the proposed ROW. Black-tailed jackrabbit (*Lepus californicus*) scat was abundant between 6030 and 6031, but was not observed elsewhere along the proposed ROW. An inactive den complex possibly of a gray fox (*Urocyon cinereoargenteus*) was found 125 feet west of survey stake 6003. Scat, probably from gray fox, was in the proposed ROW at survey stake 6027.

Only two reptiles, western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*) were observed. However, the thin coastal sage brush habitat could support other species, including snakes.

Habitat Observed in the Immediate Vicinity of Section 1 (San Ysidro Mountains to Alta Road - 2.4 miles). The habitat surrounding the surveyed area is similar to that of the Section 1 area with ruderal-dominated grasslands extending several miles north of the western portion of the alignment and thin but less disturbed coastal sage scrub covering the rocky slopes of the hills and mountains north and east of the eastern portion of the alignment. South of the proposed alignment the area between the proposed alignment and the existing border fence is occupied by ruderal vegetation and disturbance in the form of a dirt road that parallels the fence for most of the alignment. The area immediately south of the fence (within Mexico territory) is highly developed with dense residential development.

Sensitive Species. According to the CNDDB, a population of Otay Tarplant (*Hemizonia conjugens*) has been recorded in the immediate vicinity of the surveyed area. This annual in the sunflower family is currently a state-listed endangered species and is proposed for federal listing. This species was not observed within the surveyed area. A dried specimen of the genus *Hemizonia* was observed on the alignment but was identified to be the common fascicled leaved tarplant (*Hemizonia fasciculata*). This identification was confirmed through

personal consultation with Steven Boyd, Herbarium Director of Rancho Santa Ana Botanic Garden, Claremont, CA. (November 8, 1996).

The San Diego marsh elder (*Iva haysiana)* is a perennial in the sunflower family that also has potential for occurring on the project site. This species has no state or federal status but is on the California Native Plant Society's (CNPS) list 2 (plants considered by CNPS to be rare or endangered in California but more common elsewhere). A population of 20 plants was observed in a drainage between pole location stakes 6016 and 6017 north of and near the margin of the ROW.

A burrowing owl, a California Department of Fish and Game Species of Special Concern, occurs north of the project ROW. An individual with an active burrow is present near light pole stake 6009.

The CNDDB reports that San Diego fairy shrimp (*Branchinecta sandiegoensis*), a federally-proposed endangered species, has occurred in the vicinity of the proposed ROW. Potential fairy shrimp habitat was located north of the ROW between pole location stakes 6017 to 6018, between pole location stakes 6009 and 6010, and in the vicinity of stake 6007. These sites were dry and presence or absence of San Diego fairy shrimp could not be determined.

The coastal cactus wren (*Campylorhynchus brunneicapillus sandiegoense*), a California species of special concern, has the potential for occurring in the vicinity of the surveyed area based on CNDDB map overlays. The wren call heard during the survey could not be identified as belonging to a coastal cactus wren (the call sounded more like that of a Bewick's wren [*Thyromanes bewickii*]). However, there was no visual observation and the call was not clear. The call originated an area about 75 feet north of the proposed ROW and 30 feet east of survey stake 6028 in a shrubby area. The proposed ROW in this area has sparse shrubs.

MARCH 1997 SURVEY

Section 1 (San Ysidro Mountains to East of Otay Mesa POE - 3 miles)

Vegetation. The San Ysidro Mountains to Otay Mesa POE segment consists of disturbed habitat occupying the low hills and fields west of the southeastern foothills of the San Ysidro Mountains and just north of the U.S./Mexican border fencing. Plant communities found within the project right-of-way (ROW) include disturbed coastal sage scrub and non-native grasslands, with several small shallow drainages scattered along the alignment. No permanent water resources occur within the project ROW.

The eastern portion of the project ROW (approximately 1.2 miles), occurs on two low hills that range from 700 to 800 feet in elevation. The proposed alignment occurs on the south facing slope of the easternmost hill, then bisects the next hill (Tin Can Hill) in a east/west direction, crossing on the hill's summit and east and west facing slopes. These hills are vegetated with a sparse, disturbed coastal sage scrub community, dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), saw-toothed goldenbush (*Hazardia squarrosa*), and California scale broom (*Lepidospartum squamatum*). Weedy non-native species including Russian thistle (*Salsola tragus*), black mustard (*Brassica nigra*), red brome grass

(*Bromus madritensis* ssp. *rubens*), foxtail fescue (*Vulpia myuros* var. *hirsuta*), wild oats (*Avena fatua*), clover seedlings (*Trifolium sp.*), and long-beaked filaree (*Erodium botrys*) are abundant in this community. Rocky outcrops surrounded by Bigelow's mossfern (*Selaginella bigelovii*) occur on the hill slopes. The substrate ranges from gravely to rocky. Litter in the form of broken glass, discarded bottles, cans, and paper and plastic debris is intermittently scattered along this potion of the alignment. Vehicle tracks and roads used by various law enforcement vehicles, maintenance vehicles, and dirt bikes periodically traverse or parallel the ROW area.

The western portion of the Section 1 ROW (approximately 1.8 miles) consists of a low diversity, weedy, disturbed field sloping slightly southward. Mediterranean schismus (*Schismus barbatus*), foxtail fescue, red brome grass, wild oats Russian thistle, black mustard, star thistle (*Centaurea melitensis*), doveweed (*Emerocarpus setigerus*), and clover, with an understory of abundant long-beaked filaree dominate this habitat. Scattered areas within the non-native grassland from the western toe of Tin Can Hill to Otay Mesa POE have been recently disced for apparent weed abatement purposed. These areas occur approximately 2,000 feet west of Tin Can Hill, 3,000 feet east of Wruck Canyon. Old shallow furrows are distinguishable throughout most of the area, indicating that the entire area had been previously disced at one time. The substrate consists of hard clayey soil, with scattered rock.

Several shallow drainages occur on the proposed ROW, at the toe of the hills in the eastern portion of the alignment, and in the disturbed grassland of the western portion of the segment. These drainages, though not densely vegetated, are dominated by broom baccharis (*Baccharis sarothroides*), bladderpod (*Isomeris arborea*), laurel sumac (*Malosma laurina*), jojoba (*Simmondsia chinensis*), San Diego marsh elder (*Iva hayesiana*) and non-native weedy species including Russian thistle, black mustard, curly dock (*Rumex crispus*), and a variety of non-native grasses.

Fish and Wildlife. No additional general wildlife observations were made during this survey.

Endangered, Threatened, and Candidate Species. Additional potential habitat for San Diego fairy shrimp (*Branchinecta sandiegoensis*), a Federally-listed endangered species, does occur at several places north of and within the proposed ROW of Section 1. Four additional shallow depressions or basins with evidence of having recently retained enough standing puddled water to support the San Diego fairy shrimp (i.e., moist or well-cracked soil) occur west of Tin Can Hill, within the disturbed fields. The approximate locations of all fairy shrimp habitat in this section are 1,000 feet east of Otay Mesa POE; 4,000 feet east of Otay Mesa POE; between 6,500 feet east of Otay Mesa POE and 5,500 feet west of Tin Can Hill; 4,500 feet west of Tin Can Hill; 3,000 feet west of Tin Can Hill; and at the western toe of Tin Can Hill.

A native plantain (*Plantago erecta*) that serves as a possible food source for the Federally-listed endangered Quino checkerspot butterfly was noted throughout the non-native grassland habitat of Section 1, most notably along dirt roads within the ROW.

Burrowing owls, a California Department of Fish and Game Species of Special Concern, occur north of the project ROW. Active burrows are present approximately 3,500 feet west of the western edge of the Tin Can

Hills. Although the area surrounding the burrow has been recently disced, three owls were noted still occupying the burrow.

Section 3 (La Media Road to Arnie's Point - 2.25 miles)

Vegetation. Section 3 consists entirely of highly disturbed non-native grassland with intermittent patches of weedy species at the eastern end. Wild oats, red brome grass, foxtail barley, and Italian ryegrass (*Lolium multiflorum*) are the dominant species in this section and are abundant, with an understory of long-beaked filaree and pygmy weed (*Crassula connata*). Shrub and herbaceous perennial species were very limited to infrequent scattered patches of Russian thistle, cheeseweed (*Malva parviflora*), iceplant (*Mesembryanthemum nodiflorum*), Australian saltbush (*Atriplex semibaccata*), and black mustard (*Brassica nigra*). As with the non-native grassland in Section 1, the presence of old and recent furrows indicated that this area had been disced at some time in the past. The eastern most end of Section 3 narrows down and occurs between the existing border fence and the fenced lots of private industry complexes. Vegetation consists of large patches of black mustard with a scattering of wetland species (mulefat and a few cattails) along the base of the border fence where waste water has puddled.

Fish and Wildlife. Common wildlife species expected in this section would be consistent with the general wildlife observed in the highly disturbed non-native grassland portions of Section 1. Species expected include a reptiles (such as western fence lizard, side-blotched lizard, and snakes), suite of avian species (ravens, a red-tailed hawk, rock doves, dark-eyed juncos, American kestrel, northern harrier, western meadowlarks ,warblers, and starlings), small rodents (California ground squirrel, field mice), and small and large urban and semi-urbanized mammals (such as domestic dogs, cats, coyote, black-tailed jackrabbit, and gray fox).

Endangered, Threatened, and Candidate Species. San Diego button-celery (*Eryngium aristulatum* var. *parishii*) is a perennial herb in the carrot family (*Apiaceae*). This species is currently a state and Federally-listed endangered species. A population of 19 plants occurs within the Italian ryegrass and wild oats of the non-native grassland north of and within the ROW of Section 3, approximately 1,000 feet east of the western end of the section.

Potential fairy shrimp habitat (in the form of very shallow basins with distinctively cracked, dried mud substrates) is also present north of and within the ROW of Section 3, at the western and eastern ends of the section.

5. CONCLUSIONS AND RECOMMENDATIONS

Vegetation. The area of the proposed border improvements in Sections 1 and 3 consist of habitat that is highly disturbed by the abundance of weedy ruderal species, litter, and vehicle and foot tracks. A population of San Diego button-celery, San Diego marsh elder (a sensitive plant species with no state or Federal status) and *Plantago erecta*, a potential food source for the Quino checkerspot butterfly, constitute the sensitive botanical resources within the two survey sections.

Impacts expected from the construction and operation of the border improvements include: loss of approximately 10 acres of disturbed coastal sage scrub occurring on the hill slopes, the potential adverse effects of fugitive dust on adjacent plant communities, potential soil erosion problems on slopes where construction and trenching occur, the inadvertent dispersal of ruderal seeds during the clearing of vegetation, and the possible deleterious effects of around the clock light exposure to plant communities falling within the lighted area.

To insure that the minimum amount of habitat is disturbed, no new roads will be established during construction within the coastal sage scrub or in the drainage areas identified, and cross country travel shall not be permitted.

Fugitive dust resulting from construction and trenching activities can potentially effect the long-term health of nearby plant communities if large amounts of dust settle on leaves and stems and impede the normal photosynthetic efficiency of the plants. It is recommended that water trucks be used to periodically dampen construction and trenching areas and any haul roads used to transport equipment, labor, and materials to and from the project site.

Construction on the slopes of the hills within the ROW could result in increased water runoff and slope erosion. Standard and appropriate erosion control methods (such as water bars, sand bags, etc) should be employed wherever runoff and erosion become apparent.

The clearing of vegetation during construction and trenching could potentially cause the further dispersal and establishment of weedy species already problematic within the area. To avoid the inadvertent dispersal of weed seed or sprouting vegetative plant matter, all weedy plant debris should be disposed of offsite or added as part of the fill for the cable trenches.

The long-term effect of around-the-clock lighting on plant communities is still being investigated. Evidence does exists that shows lights emitting energy over the 300 to 800 nanometer spectral range are effective in influencing the photosynthesis and photoresponses of plants. However, the amount of energy produced by the project lighting is not anticipated to be enough to produce any measurable effects on the plant communities present.

The sensitive populations of San Diego button-celery and San Diego marsh-elder shall be avoided by directing all construction away from these populations.

Wildlife. Potential impacts from the construction and operation of high intensity border lighting include disturbing habitation sites of burrowing owls, toxic fluids (oils, antifreeze, fuels) poisoning or contaminating wildlife and/or habitat, cross-country travel degrading habitat and potential nest/burrow sites, and increased photoperiod (due to around-the-clock light exposure) affecting circadian rhythms of wildlife within the lighted area.

All areas identified as fairy shrimp habitat will be avoided by directing construction away from these areas and allowing a 5 foot wide buffer between these areas and any construction activity. Backlight falling on potential fairy shrimp habitat identified shall be minimized by the use of directional shielding on the light source when possible.

The only other sensitive wildlife species observed living in the proposed ROW was a burrowing owl. Construction should occur either before or after the reproductive season (February 1 to August 31). Prior to construction, occupied burrowing owl burrows should be excavated by hand to remove animals from harm's way. If disturbed, this diurnal bird could relocate to abandoned ground squirrel complexes in the vicinity of the ROW.

All construction and maintenance fluids (oils, antifreeze, fuels) should be stored in closed containers (no open buckets or pans) and disposed of properly to keep from contaminating soils and to prevent wildlife from ingesting or otherwise coming in contact with potentially toxic substances.

Cross-county travel should be prohibited. Construction traffic should be limited to existing roads and the ROW so habitat and potential nest/burrow sites are not degraded.

The long-term effect of an increased photoperiod on mobile wildlife species is expected to be negligible. Animals can relocate to undisturbed areas adjacent to the project ROWs. Also, many species have an endogenous, self-sustained, chemically-controlled oscillator (an internal 'clock') that mediates circadian (daily) rhythms.

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_____. 1995. *Border Field State Park, Imperial Beach, California Coastal Sage Scrub Mitigation Site Concluding Ecological Assessment.*

Whitson, T. D., (editor). 1992. *Weeds of the West*. Western Society of Weed Science. Newark, CA.

Table B-2 lists the sensitive plant and wildlife species that have potential to occur in the project area (located in the southern most end of of the Otay Mesa U.S.G.S. 7.5 minute Topographic Quadrangle). This list is based on information from the California Natural Diversity Database (CNDDB, 1997), California Native Plant Society's Inventory of Rare and Indangered Vascular Plants of Calidoenia (Skinner and Paclik, 1994), and communications with John Moeur (USACE, Los Angeles District) and Dr. Rudy Mattoni (University of California, Los Angeles).

Table B-2 Sensitive Species Potentially Occuring on the Project Site

SCIENTIFIC NAME	COMMON NAME	STATUS	POTENTIAL TO OCCUR	SURVEY RESULTS
Listed Plant Species				
Acanthomintha ilicifolia	San Diego Thorn Mint	STATE: CE	high	not observed
Brodiaea filifolia	Thread-leaved Brodiaea	FED: PT STATE: CE	high	not observed (habitat present)
Chorizanthe orcuttiana	Orcutt's Spineflower	FED: E	high	not observed (habitat present)
Cordylanthanthus maritimus maritimus	Salt-marsh Bird's Beak	FED: E	low	not observed (habitat present)
Eryngium aristulatum	San Diego Button Celery	FED: E	high	1 population observed in survey area
Hemizonia conjugens	Otay Mesa Tarplant	FED: PE STATE: CE	high	not observed (only *H. fasciculata* observed)
Navarretia fossalis	Spreading Navarretia	FED: PT	high	not observed (population recorded in project site-CNDDB)
Orcuttia californica	Orcutt's Grass	FED: E	high	not observed (population recorded in project site-CNDDB)
Pogoyne nudiscula	Otay Mesa Mint	FED: E	high	not observed (population recorded in project site-CNDDB)
Listed Wildlife Species				
Branchnecta sandiegoensis	San Diego Fairy Shrimp	FED: E	high	habitat observed
Bufo microscaphus californicus	Southwestern Arroyo Toad	FED: E	low	not observed
Charadrius alexandrinus	Wesern snowy plover	FED: T	low	not observed
Empidonax traillii extimus	Southwestern Willow Flycatcher	FED: E	low	not observed
Euphydryas editha quino	Quino Checkerspot Butterfly	FED: E	high	Food source observed
Falco peregrinus	Peregrine Falcon	FED: E	low	not observed
Haliaeetus leucocephalus	Golden Eagle	FED: T	low	not observed
Perognathus longimenbris pacificus	Pacific Pocket Mouse	FED: E	low-moderate	not observed
Polioptila californica californica	California Gnatcatcher	FED: T	high	not observed
Sterna antillarum brownii	Least Terns	FED: E	low	not observed
Streptocephalus wootoni	Riverside Fairy Shrimp	FED: E	high	habitat observed
Vireo belli pusillus	Least Bell's Vireo	FED: E	moderate	not observed
Species of Concern to USFWS and CDFG but with no formal listing to date				
Athene cunicularia	Burrowing Owl	FED: S STATE: SCS	high	2 populations observed in survey area
Ambrosia pumila	San Diego Mugwort	CNPS: 1B	moderate	not observed
Anphanisma blitoides	Aphanisma	CNPS: 1B	low	not observed
Campylorhynchus brunneicapillus sandiegoense	Coastal Cactus Wren	FED: S STATE: SCS	low	not observed (population recorded near project site-CNDDB)
Comarosathylos diversifolia diversifolia	Summer Holly	CNPS: 1B	high	not observed

Scientific Name	Common Name	Status	Potential to Occur	Survey Results
Cnemidophorus hyperythus	Orange-tail whiptail	FED: S STATE: SCS	moderate	not observed
Hemizonia parryi australis	Southern Tarplant	CNPS: 1B	low	not observed
Iva hayesiana	San Diego Marsh-elder	FED: S CNPS: 2	high	1 population observed during survey
Muilla clevelandii	San Diego Goldenstar	CNPS: 1B	high	not observed (population recorded in project site-CNDDB)
Myosurus minimus apus	Little Mousetail	CNPS: 3	low	not observed
Opuntia parryi serpentium	Snake Cholla	CNPS: 1B	moderate	not observed
Quercus dumosa	Nuttal's Scrub Oak	CNPS: 1B	high	not observed
Sensitive Habitats				
Coastal Sage Scrub			high	Present on site, but highly disturbed
San Diego Claypan Vernal Pool			high	dry vernal swales observed (habitat recorded in project site-CNDDB)

Scientific nomenclature follows: Hickman 1993 and CNDDB, 1997.
Sources:
CNDDB, Otay Mesa quadrangle, 1997.
CNPS Inventory, 1994.
John Moeur, USACE, Los Angeles District, 1997.
Rudy Mattoni, UCLA, 1997.

Federal:
E = Federally-listed as Endangered
T = Federally-listed as Threatened
PE = Species proposed for listing as Endangered
PT = Species proposed for listing as Threatened
S = Species considered sensitive by the U.S. Fish and Wildlife Service and for which the service collects data, but a species with no legal or formal designation. Prior to December 1996 these species were designated candidate species under category 2 (candidate for listing but USFWS lacks sufficient data on vulnerability and threats to support listing). Recent revisions of the USFWS listing process and designations resulted in the elimination of designations C2 and 3C.
State:
CE = State-listed Endangered
SCS = California Species of Special Concern

CNPS:
1B = Plants rare, threatened or Endangered in California and elsewhere
2 = Plants Rare, Threatened, or ndangered in California but more common elsewhere
3 = Plants about which more information is required- a review list species

Table B-3 Plant Species Observed During Survey

SCIENTIFIC NAME	COMMON NAME
FERN AND FERN-ALLIES	
SELAGINELLACEAE	SPIKE-MOSS FAMILY
Selaginella bigelovii	Bigelow's Mossfern / Bigelow's Spike-moss
GYMNOSPERMS	
EPHEDRACEAE	EPHEDRA FAMILY
Ephedra sp.	Mormon Tea
ANGIOSPERMS-DICOTS	
ANACARDIACEAE	SUMAC OR CASHEW FAMILY
APIACEAE	CARROT FAMILY
Eryngium aristulatum var. *parishii*	San Diego Button-celery
Malosma laurina	Laurel Sumac
ASTERACEAE	SUNFLOWER FAMILY
Artemisia californica	California Sagebrush
Baccharis sarathroides	Broom Baccharis
*Centaurea melitensis**	Tocalote / Weedy Star Thistle
Chrysothamnus sp.	Rabbit Brush
*Cichorium intybus**	Mediterranean Chicory
Encelia californica	California Encelia/ California Bush Sunflower
Eriophyllum confertiflorum	Golden Yarrow
Hazardia squarrosa	Saw-toothed Goldenbush
Hemizonia fasciculata [dried]	Fascicled Tarweed
Iva hayesiana	San Diego Marsh-elder
Lepidospartum squamatum	California Scale-broom
Stephanomeria diegensis	San Diego Wreath Plant
BRASSICACEAE	MUSTARD FAMILY
*Brassica nigra**	Black Mustard
CACTACEAE	CACTUS FAMILY
Opuntia basilaris var. basilaris	Beavertail Cactus
CAPPARACEAE	CAPER FAMILY
Isomeris arborea	Bladderpod
CHENOPODIACEAE	GOOSEFOOT FAMILY
*Atriplex semibaccata**	Australian Saltbush
*Salsola tragus** (= *S. iberica, S. australis, S. kali*)	Russian Thistle/ Tumbleweed
EUPHORBIACEAE	SPURGE FAMILY
Eremocarpus setigerus	Dove Weed/ Turkey-Mullien
FABACEAE	LEGUME FAMILY
Trifolium sp.	Clover
GERANIACEAE	GERANIUM FAMILY
*Erodium botrys**	Broad-lobed Filaree
POLYGONACEAE	BUCKWHEAT FAMILY
Eriogonum fasciculatum var. fasciculatum	California Flat-top Buckwheat
*Rumex crispus**	Curly Dock
SIMMONDSIACEAE	JOJOBA FAMILY

SCIENTIFIC NAME	COMMON NAME
Simmondsia chinensis	Jojoba / Goat-nut/ Pig-nut
ANGIOSPERMS-MONOCOTS	
IRIDACEAE	IRIS FAMILY
Sisyrinchium bellum	Blue-eyed Grass
LILIACEAE	LILY FAMILY
Agave sp.	Agave
POACEAE	GRASS FAMILY
*Avena fatua**	Wild Oat
Bromus madritensis ssp. rubens (= B. rubens)*	Red Brome/ Foxtail Chess
*Lolium multiflorum**	Italian Ryegrass
*Schismus barbatus**	Mediterranean Schismus
Vulpia myuros var. hirsuta (Vulpia megalura, Festuca m.)*	Foxtail Fescue/ Zoro Fescue

Nomenclature as per Hickman, 1993
* indicates a non-native species

Table B-4 Wildlife Species Observed During Survey

Scientific Name	Common Name	Observed
REPTILES		
IGUANIDAE		
Sceloporus occidentalis	western fence lizard	x
Uta stansburiana	side-blotched lizard	x
BIRDS		
ARDEIDAE		
Egretta thula	snowy egret	x
ACCIPITRIDAE		
Aquila chrysaetos	golden eagle	x
Buteo jamaicensis	red-tailed hawk	x
Circus cyaneus	northern harrier	x
FALCONIDAE		
Falco sparverius	American kestrel	x
COLUMBIDAE		
Columba livia	rock dove	x
unidentified	ground dove	x
STRIGIDAE		
Athene cunicularia	burrowing owl	x
TYRANNIDAE		
Sayornis saya	Say's phoebe	x
CORVIDAE		
Corvus corax	common raven	x
TROGLODYTIDAE		
unidentified	wren	call
STURNIDAE		
Sturnus vulgaris	European starling	x
EMBERIZIDAE		
Aimophila ruficeps	rufous-crowned sparrow	x
Dendroica coronata	yellow-rumped warbler	x
Junco hyemalis	dark-eyed junco	x
Pipilo crissalis	California towhee	x

Scientific Name	Common Name	Observed
Sturnella neglecta	western meadowlark	x
Zonotrichia leucophrys	white-crowned sparrow	song
MAMMALS		
LEPORIDAE		
Lepus californicus	black-tailed jackrabbit	scat
SCIURIDAE		
Spermophilus beecheyi	California ground squirrel	burrows
CANIDAE		
Canis familiaris	domestic dog	tracks, remains
Canis latrans	coyote	tracks, scat
Urocyon cinereoargenteus	gray fox	burrow - ?
EQUIDAE		
Equus caballus	domestic horse	x
BOVIDAE		
Bos bovis	domestic cattle	scat, remains

Key:
X: Species observed during survey
?: Not confirmed identification.

APPENDIX C

CORRESPONDENCE AND LETTERS OF CONTACT

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO ATTENTION OF:

April 4, 1997

Office of the Chief
Environmental Resources Branch

Mr. Gail C. Kobetich
Ecological Services Field Supervisor
U. S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, California 92008

Dear Mr. Kobetich:

The United States Immigration and Naturalization Service intends to construct a second tier of fencing along the international border. This second barrier to illegal border crossings will follow an alignment 150 feet north of and parallel to the existing fence. Service roads 30 feet wide and designed for all-weather use will be constructed immediately adjacent to each side of the fence. Work likely will start west of the Otay Mesa Port of Entry. When complete, multi-tiered fencing and roads in this vicinity will extend approximately seven and a half miles.

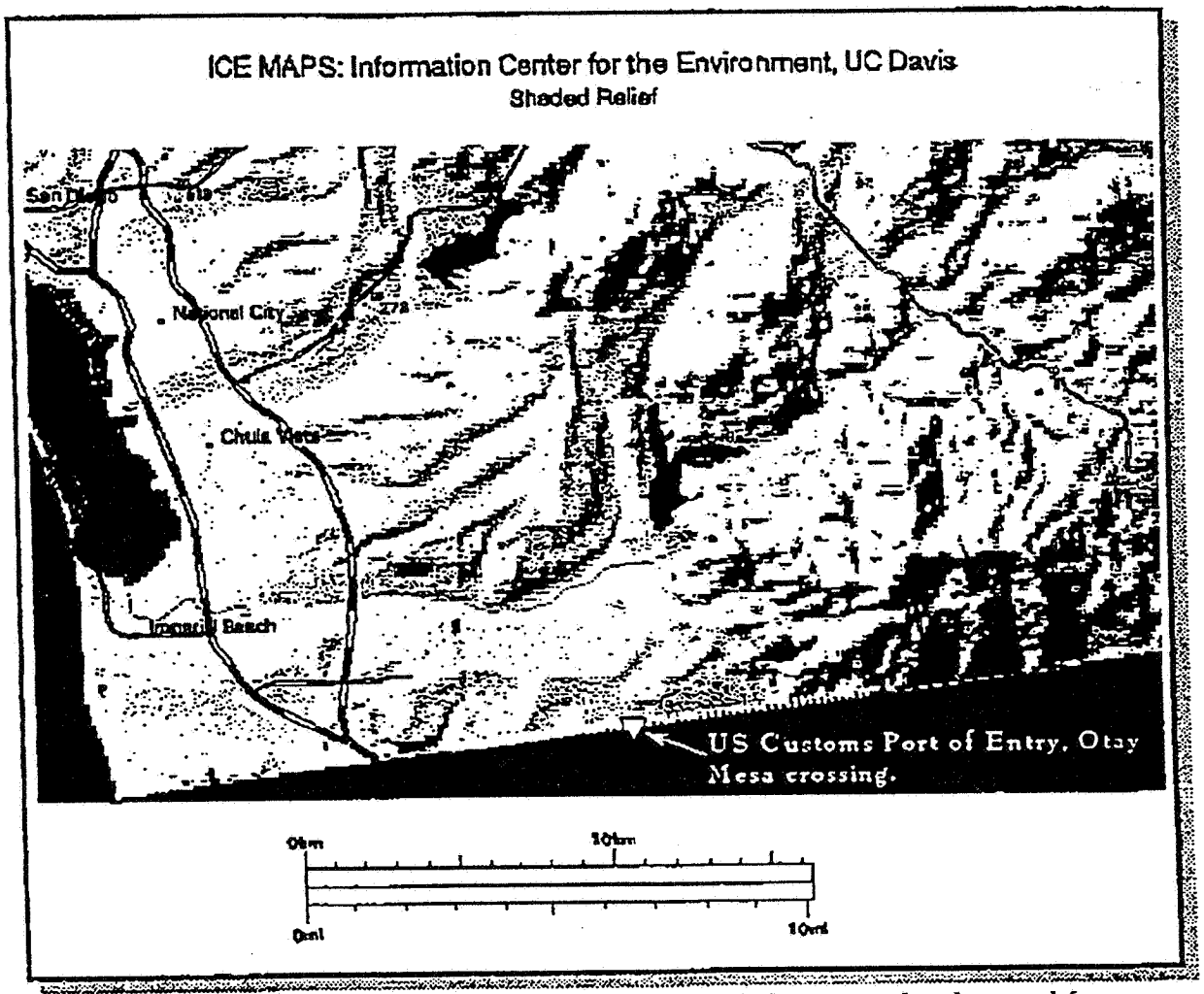
The Corps will prepare appropriate environmental documentation. Through recent requests for Federally listed species, we already have information from the Service about biological concerns eastward from La Media Road to the San Ysidro Mountains (enclosures). The Corps now particularly needs the compilation of listed species likely to occur along the span of border between Artie's point, which overlooks Spring Canyon, and La Media Road. To simplify matters, the current list of endangered, threatened, proposed, and candidate species along the entire seven and a half mile length of the project would be preferable.

We would appreciate your response within 30 days or sooner if possible to meet our schedule. Should questions arise regarding this project or you require additional information about this work, please contact either the Project Manager, Ms. Joy Jaiswal at 213-452-3871, or the ecologist for the project, Dr. John Moeur at 213-452-3874.

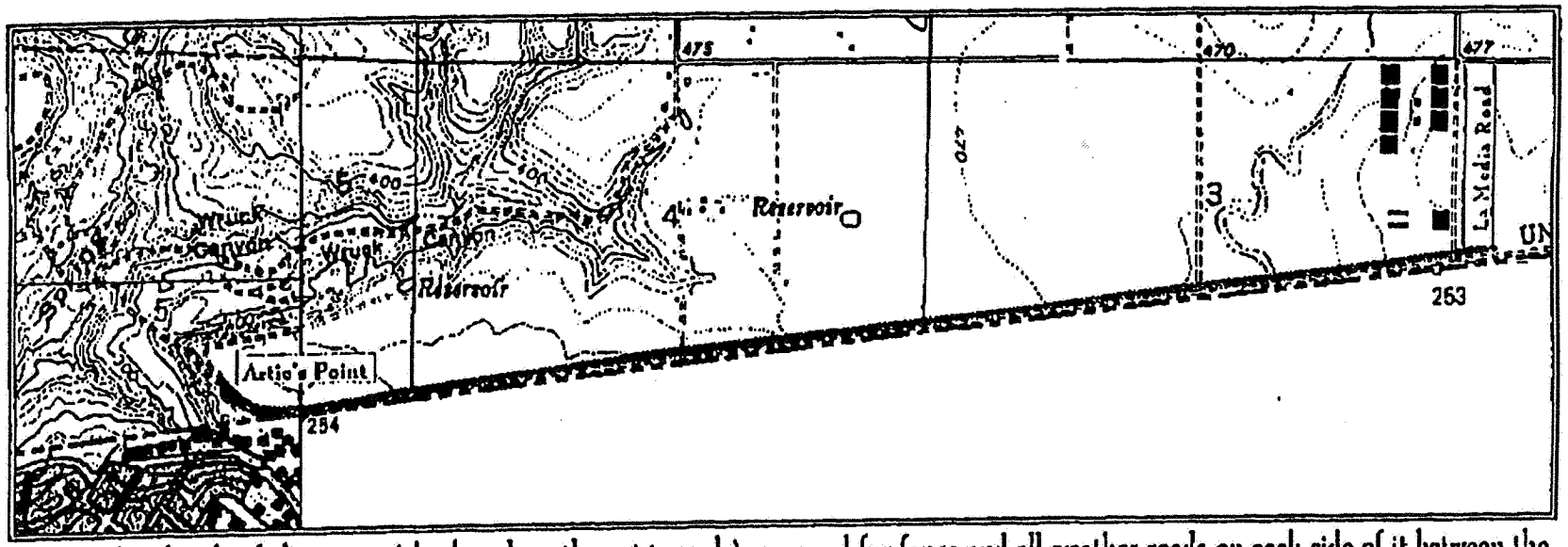
Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosures



Relief map southern San Diego County, depicting proposed alignment of multi-tiered fencing and all-weather service roads parallel and adjacent to it (white lines at the international border). This species request pertains to the segment approximately 2½ miles long between Artie's Point and La Media Road (solid white line). Lists of species have already been provided for the segment between La Media Road and the southwest slopes of Otay Mountain (approximately 5½ miles in length, dashed white line).



Topographic details of alignment (checkered swath, not to scale) proposed for fence and all-weather roads on each side of it between the overlook above Wruck and Spring Canyons (known locally as Artie's point) on the west and La Media Road on the east.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT. CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

November 15, 1996

REPLY TO
ATTENTION OF:

Office of the Chief
Environmental Resources Branch

Mr. Gail C. Kobetich
Ecological Services Field Supervisor
U. S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, California 92008

Dear Mr. Kobetich:

The Immigration and Naturalization Service plans to replace an array of portable and temporary lights with an equivalent system of permanent light standards. The lights illuminate portions of the fence at the international border to deter smugglers and the traffic of illegal drugs into the United States.

The lighting array will be installed east of the U. S. Customs Port of Entry at Otay Mesa (enclosure). Light standards will be constructed at 400 foot intervals following an alignment 143 feet north of the existing fence. The array will start at Alta Road (Section 6, T 19S, R 1E; Otay Mesa, 7½° U. S. G. S. quadrangle), run approximately 2.4 mile east from there, and end at the eastern edge of Section 33. Electric power will be supplied through an underground cable, necessitating excavation of a narrow service trench between the standards and along the entire alignment.

An ecological survey conducted by the Corps of Engineers on November 6, 1996, disclosed no habitat suitable for California gnatcatchers (*Polioptila californica californica*), nor depressions deep enough to hold winter rain water for the two month period that Riverside fairy shrimp (*Streptocephalus woottoni*) requires. Four shallow depressions, which San Diego fairy shrimp (*Branchinecta sandiegonensis*) could inhabit, do occur along the planned route. The alignment does not cross riparian vegetation, hence neither Least Bell's vireo (*Vireo belli pusillus*) nor southwestern willow flycatchers (*Empidonax traillii extimus*) would be of concern at this site. The proposed alignment will pass through a cluster of burrows used by burrowing owls (*Athene cunicularia*). The Otay tarplant (*Hemizonia conjugens*) was not found here.

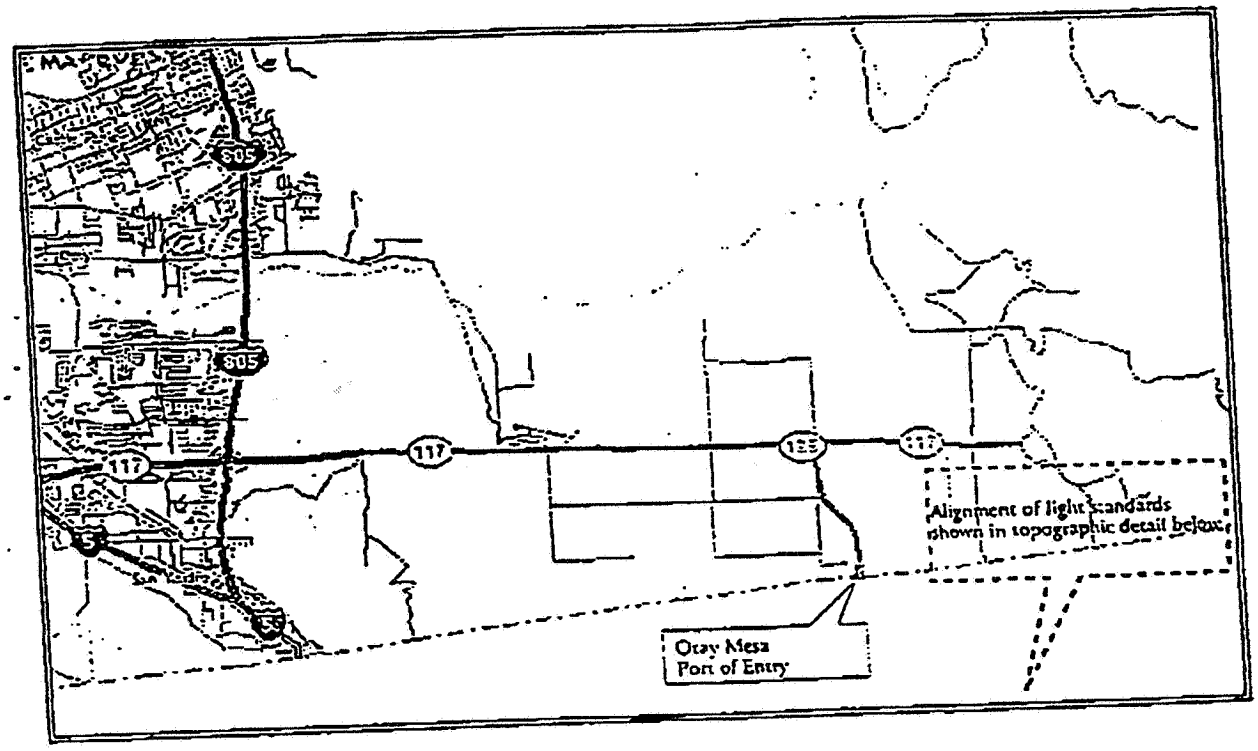
The Corps will prepare environmental documentation for this lighting project in compliance with the National Environmental Policy Act. Please assist us with the most current list of other endangered, threatened, proposed, and candidate species known to occur in this vicinity.

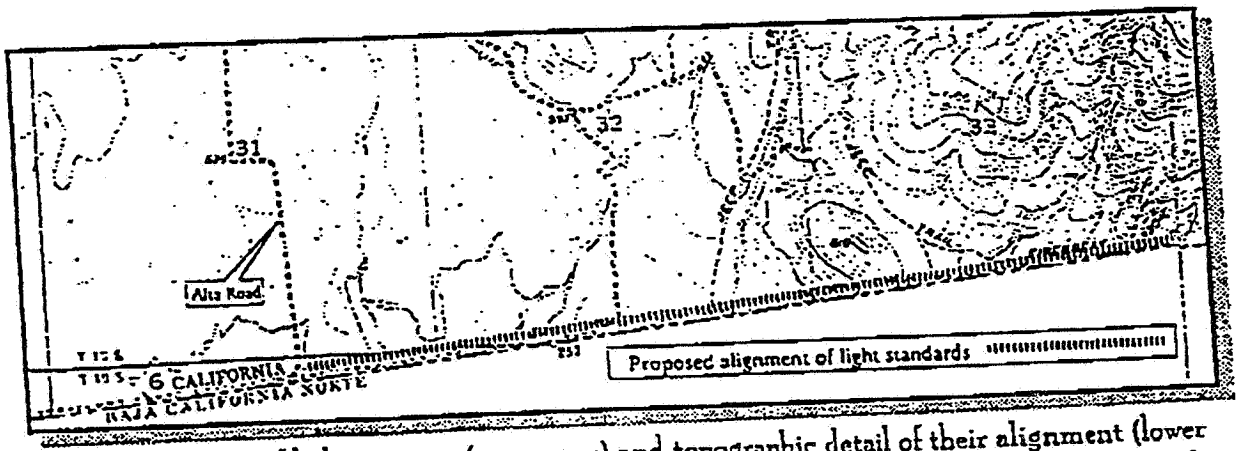
We would appreciate your response within 30 days or sooner if possible to meet our schedule. Should questions arise regarding this project or you want additional information about this work, please contact either the Project Manager, Ms. Joy Jaiswal at 213-452-3870, or the Environmental Coordinator, Dr. John Moeur at 213-452-3874.

Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosure





Regional location of lighting array (upper map) and topographic detail of their alignment (lower map). The proposed route begins at Alta Road and extends 2.4 miles to the east, just north of the international border in San Diego County.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, California 92008

January 10, 1997

Mr. Robert S. Joe
Chief, Planning Division
Department of the Army
Los Angeles District, Corps of Engineers
P.O. Box 2711
Los Angeles, California 90053-2325

Attn: Mr. Charles Rairdan

Re: Request for Proposed, Threatened, or Endangered Species for the Two Proposed Fence Construction Projects, (Bollard and Sandia) in Imperial Beach and the Otay Mesa Port of Entry, California (1-6-97-SP-45)

Dear Mr. Joe:

The Fish and Wildlife Service (Service) has reviewed the information provided in your letter, dated December 18, 1996, in an effort to assess the potential for the occurrence of federally listed threatened or endangered species on the project site. In an effort to assist you in evaluating the potential for conflicts between threatened and/or endangered species and the proposed project, we are providing the following list which contain species that occur in the general area. The enclosed list of species partially fulfills the requirements of the Service under section 7 of the Endangered Species Act of 1973, as amended (Act).

Section 7(a)(2) of the Act requires a Federal agency, in consultation with, and with the assistance of the Service, to insure that any action it authorizes, funds, or carries out, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. To meet this requirement, biological assessments are required under section 7 of the Act if listed species or critical habitat may be present in the area affected by any major construction activity[1]. If a biological assessment is not required, your agency still has the responsibility to review its proposed activities and determine whether listed species will

[1] "Construction Activity" means any Federal action which significantly affects the quality of the human environment designed primarily to result in the building or erection of man-made structures such as dams, buildings, roads, pipelines, channels, and the like. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approvals which may result in construction.

be affected. Moreover, "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies. In addition, "action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

Section 7(d) of the Act prohibits Federal agencies and applicants from making any irreversible or irretrievable commitment of resources which has the effect of foreclosing the formulation or implementation of reasonable and prudent alternatives which would avoid jeopardizing the continued existence of listed species or resulting in the destruction of critical habitat. During the assessment or review process, you may engage in planning efforts, but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act. If a listed species may be adversely affected, agencies should request, in writing through our office, formal consultation pursuant to section 7(a)(2) of the Act. Informal consultation should be used to exchange information and resolve conflicts with respect to listed species prior to a written request for formal consultation.

When it is determined that a proposed action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat, a Federal agency is required to initiate a conference with the Service. Conferences are informal discussions between the Service and the Federal agency, designed to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat at an early point in the decision making process. The Service makes recommendations, if any, on ways to minimize or avoid adverse effects of the action. The conference process fills the need to alert Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

We want to closely coordinate with the Federal agency and applicant during the preparation of the biological assessment. Our goal would be to provide technical assistance that identifies specific features that could be incorporated into the project description to avoid adverse impacts to listed species. Should you have any questions regarding the species listed or your responsibilities under the Act, please contact Ann Kreager of my staff at (619) 431-9440.

Sincerely,

Gail C. Kobetich
Field Supervisor

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

January 28, 1997

Office of the Chief
Environmental Resources Branch

Ms. Cherilyn Widell
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Ms. Widell:

We are writing concerning Section 106 compliance for the proposed phases II and III of the Multi-tiered Pilot Fence Project ((MPF) in San Ysidro, San Diego County. The MPF is a phased project. The international border has already been fenced but a secondary line is being proposed. The phase II and III fence lines will be comprised of two fence types, Bollard and Sandia. The combined length of the two fence lines will be 2.1 miles. The area of potential effects (APE) for the phase II fence includes 0.6 miles of Bollard fencing in the Imperial Beach area south of Monument Road and west of the South Bay Waste Water Treatment Plant. (Enclosure 1, attachments 1 and 2). The APE for the Phase III fence line extends 1.2 miles west and 0.3 miles east of the Otay Mesa Port of Entry (Enclosure 1, attachment 2). A complete project description is enclosed (Enclosure 2). An 100 by 100 ft. Square contractor's staging area is located at the easternmost end of the phase II fenceline. Phase I, the South Levee Fence Project, was recently completed and coordinated for Section 106 compliance with Mr. Steve Grantham of your office (COE961004B).

The APE was surveyed on January 7, 1997 by Richard Perry, Corps of Engineers staff archeologist. Before the survey commenced a search of previous reports was conducted to determine if any cultural resources had been identified. None were reported. The survey revealed a thoroughly disturbed APE. The three project locations have been subjected to heavy foot and vehicle traffic, and extensive grading/borrow activities. The

survey of the APE for both phase II and III project elements was negative. The survey results are in the enclosed memorandum for record (Enclosure 3).

Based on the negative results of a record search and negative field survey, we have determined that the MPF phase II and III project as planned will not involve National Register listed or eligible properties.

Correspondence may be sent to:

Mr. Robert S. Joe
Chief, Planning Division
Attn: Mr. Richard Perry (CESPL-PD-RN)
U.S. Army Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

We request that you review the enclosed information. If you agree with this determination, we would appreciate your concurrence. We understand that you have 30 days in which to respond to this request, otherwise we will proceed according to the provisions stated in 36 CFR 800.4(d) and consider that we have discharged our obligations under Section 106. If you have any questions concerning this project or the determination, please contact project archeologist, Mr. Richard Perry, at (213) 452-3855.

Sincerely,

Robert S. Joe
Chief, Planning Division

Enclosures

Listed Endangered, Threatened,
and Proposed Species that May Occur in the
Imperial Beach and Otay Mesa Port of Entry Areas
January 14, 1997

Common Name	Scientific Name	Status
Listed Species		
AMPHIBIANS southwestern arroyo toad	Bufo microscaphus californicus	E
BIRDS southwestern willow flycatcher	Empidonax traillii extimus	E,PCH
least Bell's vireo	Vireo bellii pusillus	E,CH
coastal California gnatcatcher	Polioptila californica californica	T
CRUSTACEANS Riverside fairy shrimp	Streptocephalus woottoni	E
MAMMALS pacific pocket mouse	Perognathus longimembris pacificus	E
INSECTS Quino checkerspot butterfly	Euphydryas editha quino	E
PLANTS salt marsh bird's-beak	Cordylanthus maritimus ssp. maritimus	E
San Diego button celery	Eryngium aristulatum var. parishii	E
California Orcutt grass	Orcuttia californica	E
Otay mesa mint	Pogogyne nudiuscula	E

Common Name	Scientific Name	Status
Proposed Species		
CRUSTACEANS		
San Diego fairy shrimp	Branchinecta sandiegensis	PE
PLANTS		
thread-leaved brodiaea	Brodiaea filifolia	PT
Otay tarplant	Hemizonia conjugens	PE
spreading navarretia	Navarretia fossalis	PT

E: Endangered
T: Threatened
PE: Proposed Endangered
PT: Proposed Threatened
CH: Critical Habitat Designated
PCH: Critical Habitat Proposed