

SECTION 3.0
AIR QUALITY

3.0 AIR QUALITY

3.1 AFFECTED ENVIRONMENT

Information on air quality within the project corridor was discussed and described in the DHS 2003 EA, and is incorporated herein by reference. San Diego County is classified as a moderate non-attainment area for carbon monoxide (CO) and the 8-hour ozone (O₃) (EPA 2007a). Air emissions from internal combustion engines produce volatile organic compounds and nitrogen oxides, which are precursor molecules that react with oxygen in the atmosphere to create O₃. CO in San Diego County is a result of combustion byproducts of cars, trucks, and industrial operations utilizing petroleum for energy needs. Although San Diego County is in non-attainment for CO and 8-hour O₃, the project area is located outside of the City of San Diego and within remote locations that have good wind dispersal patterns. While issuance of the waiver eliminated the requirement for CBP to comply with the Clean Air Act (CAA), the National Ambient Air Quality Standards (NAAQS) have been used to evaluate the potential impacts to air quality associated with the fencing projects in and to develop BMPs to minimize those impacts.

3.2 ENVIRONMENTAL CONSEQUENCES

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

A minimal increase in local air pollution will be expected from primary pedestrian fence and road construction. Temporary increases in air pollution will result from the use of construction equipment, portable lights, and fugitive dust. Due to the short duration of the individual projects, any impacts on ambient air quality during construction activities are expected to be short-term, and can be reduced through the use of standard dust control techniques, including roadway watering and chemical dust suppressants, such as PennzSuppress® or an equivalent product. During construction, proper and routine maintenance of all vehicles and other construction equipment will ensure that emissions are within the equipment's design standards. Air emissions from the Planned Action will be temporary and will result in negligible to moderate impacts on air quality in the region.

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

each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

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

Furthermore, large amounts of dust (i.e., fugitive dust) can arise from the mechanical disturbance of surface soils, including grading, driving, and road and fence construction. Fugitive dust emissions were calculated using the emission factor of 0.11 ton per acre per month, which is a more current standard than EPA's 1985 *Compilation of Air Pollutant Emission Factors*, also known as AP-42 (EPA 2001). The total air quality emissions were calculated for the construction activities occurring in San Diego County to compare to the General Conformity Rule. Results of these calculations are presented in Table 3-1 and Appendix D.

Table 3-1. Total Air Emissions (tons/year) from Construction Activities vs. *de minimis* Levels

Pollutant	Total (tons/year)	<i>de minimis</i> Thresholds (tons/year)
Carbon Monoxide	43.21	100
Volatile Organic Compounds	9.73	100
Nitrogen Oxides	87.57	100
PM-10	20.35	NA
PM-2.5	9.50	NA
Sulfur Dioxide	10.76	NA

Source: 40 CFR 51.853 and GSRC air emission model projections.

As can be seen from Table 3-1, the construction activities will not exceed *de minimis* thresholds. There will be negligible to moderate impacts on air quality from the implementation of the Planned Action.

Impacts from combustible air emissions from USBP traffic are expected to be the same before and after the construction activities. Construction workers will temporarily increase the combustible emissions in the air shed during their commute to and from the project area.

Dust and small rock fragments will be emitted into the air during blasting detonation; however, these will be expected to immediately settle and fall to the ground, causing no major or long-term negative impacts on air quality. CO will be the most important factor in air quality in the area. This gas will be produced during detonation, depending on the type and amount of explosives used for the activities (MEMCL 1999). Transporting winds will facilitate dispersion and alleviate high concentrations of CO in the project

area. Furthermore, the blasting contractor will be required to use BMPs to ensure minimal fugitive dust and other emission impacts from the blasting.

Diesel generators will be used to power the portable lights, and these generators will cause low amounts of air emissions. Since amounts will be below the *de minimis* threshold (i.e., 100 tons per year), emissions will not violate national or state standards. If a 24-hour work schedule is needed, then the portable lights will operate throughout the night; however, this will be temporary, and as construction activities are completed within a particular area the lights will be relocated to a new area. Furthermore, a 24-hour schedule will only occur due to unforeseen circumstances or if congressionally mandated schedules dictate it to be necessary. Regardless, the impacts from the operation of the light generators will be temporary; thus, they will have negligible effects on air quality in the region.

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

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 4.0
NOISE



4.0 NOISE

4.1 AFFECTED ENVIRONMENT

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

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the EPA (EPA 1972; FICON 1992).

Several examples of noise pressure levels in decibel – A weighted scale (dBA) are listed in Table 4-1. A DNL of 65 dBA is most commonly used for noise planning purposes, and represents a compromise between community impacts and the need for activities like construction, which do cause noise. Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by the EPA as a level below which there is effectively no adverse impact (EPA 1972).

Table 4-1. dBA Sound Levels of Typical Noise Environments

dBA	Overall Level	Noise Environment
120	Uncomfortably Loud (32 times as loud as 70 dBA)	Military jet takeoff at 50 ft
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 ft
80	Loud (2 times as loud as 70 dBA)	Propeller plane flyover at 1,000 ft Diesel truck 40 mph at 50 ft
70	Moderately loud	Freeway at 50 ft from pavement edge Vacuum cleaner (indoor)
60	Relatively quiet (1/2 as loud as 70 dBA)	Air condition unit at 10 ft Dishwasher at 10 ft (indoor)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (indoor)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	Threshold of hearing	

Source: Wyle Research Corporation 1992.

Some noise levels are continuous sounds (e.g., air conditioner, vacuum cleaner) whose levels are constant for some time. Other noise levels, like the automobile or heavy truck, are the maximum sound during a vehicle passby. Noise levels such as urban daytime and urban nighttime are averages over some extended period.

4.2 ENVIRONMENTAL CONSEQUENCES

Noise levels created by the transport of construction vehicles, construction equipment, and construction activities will vary depending on several factors, such as climatic conditions, season, and the condition of the equipment. Construction and transport activities could occur on a 24-basis if needed. However, a 24-hour schedule will be implemented only when additional efforts are needed in order to maintain the work task schedule as mandated by Congress. Noise levels will decrease to an inaudible level as the distance between the construction activities and potential noise receptors increases. Table 4-2 describes noise emission levels for construction equipment which range from 73 dBA to 82 dBA (Federal Highway Administration [FHWA] 2007).

Table 4-2. dBA Sound Levels of Construction Equipment

Type of Construction Equipment	dBA
Backhoe	78
Crane	81
Dump Truck	76
Excavator	81
Front end loader	79
Generator	73
Concrete mixer truck	79
Bull dozer	82

Source: FHWA 2007

No sensitive noise receptors exist within the project corridor. Construction activities will create temporary and minor increases in ambient noise levels. Blasting contractors will be required to establish BMPs that will ensure that any blasting activities will have minimal noise impacts locally and regionally.

Assuming the worst-case scenario of 82 dBA for a bulldozer, as will be the case during the road construction along the project corridor, all areas within 350 feet of the project corridor will have noise levels exceeding 65 dBA. Construction noise levels will attenuate to 55 dBA at a distance of 1,100 feet from construction activities. Attenuation could be achieved at much shorter distances depending upon the local topography, vegetation, climatic conditions, and time of year. Noise impacts will detract from the undeveloped characteristics of the project corridor. However, this level of noise is expected to be minimal and localized and is expected to return to pre-project conditions at the completion of construction. Therefore, noise impacts will be temporary, with minimal impacts on ambient noise levels.

Vibration levels and airblast overpressure will increase as a result of blasting activities. Airblast overpressure is low frequency air pressure, which usually falls below the sound level that a human ear can hear; however, the energy that is produced could potentially damage nearby structures (MEMCL 1999). Table 4-3 shows a range of vibration and airblast overpressure based upon distance from the affected structure. Vibration levels are measured by the peak particle velocity (PPV) and recorded in inches per second (IPS). Airblast overpressure levels are measured and recorded in decibels (dB). The dB levels for the blasting falls within the “uncomfortably loud” category (120 dB), as shown in Table 4-3. However, the overpressures will not be high enough to damage nearby structures. Industry acceptable maximum PPV level near residential dwellings is 2.00 IPS and the noise level maximum is 140 db for construction related blasting.

Additionally, BMPs, such as the use of blasting mats, will be implemented to minimize the potential for debris and reduce increases in noise levels. Minimal impacts will occur as a result of the blasting activities due to the temporary nature of the work and use of proper BMPs.

Table 4-3. Vibration and Airblast Overpressure Levels

Distance from Blast Site to Structure	Calculated PPV	Calculated dB
900 feet	0.06 IPS	123.14 dB
775 feet	0.07 IPS	124.54 dB
485 feet	0.15 IPS	129.02 dB
300 feet	0.32 IPS	133.63 dB

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 5.0
LAND USE, RECREATION AND AESTHETICS



5.0 LAND USE, RECREATION AND AESTHETICS

5.1 AFFECTED ENVIRONMENT

5.1.1 Land Use

A description of land use and how it is identified is herein incorporated by reference from the DHS 2003 EA. In summary, land within the project areas is predominately undeveloped. Land use is indicative of land ownership, with ownership in the project corridor divided between private ownership and Federal lands. BLM is the majority landowner for the project corridor, including the 60-foot-wide Roosevelt Reservation, which is used for recreation and grazing rights. In 1994, BLM issued the South Coast Resource Management Plan (RMP), which provides management guidance and identifies land use decisions to be implemented under BLM jurisdiction within the South Coast Region. The goals of the RMP were to provide a framework for BLM to maximize values and the multiple uses of BLM lands through a rational, consistently applied set of guidelines (BLM 1994). An example of this would be the promotion and protection of long-term recovery abilities for both flora and fauna within BLM lands. The private lands within and near the project corridor are typically developed as single-residence ranch land or remain undeveloped and held for occasional use (i.e., recreation) or investment purposes.

5.1.2 Aesthetics

Visual and aesthetic resources were discussed in the DHS 2003 EA, and this information is incorporated herein by reference. Aesthetic resources consist of the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. It is essentially based on an individual's or group of individuals' judgment as to whether or not an object is pleasing and/or will affect quality of life. With the exception of small residential communities near Canyon City, Campo, and Jacumba, the project region is characterized by undeveloped, open landscapes. The major appeal of the region is its vast areas of naturally occurring landscape. At a closer look, however, a large number of illegal trails and roads, damage from human-induced wildland fires, and litter left behind by IAs can be found throughout the project corridor, all of which detracts from the region's natural beauty. There are no unique, natural, or man-made features in the project area that create any visual landscapes different than those described above.

5.2 ENVIRONMENTAL CONSEQUENCES

5.2.1 Land Use

With the implementation of the Planned Action, land use within the Roosevelt Reservation will remain a Federal law enforcement zone. The Planned Action will conform to the BLM South Coast Resource Management Plan and will not impact BLM's guidance for lands under BLM jurisdiction (Hill 2007). Privately-owned land and land owned by BLM is currently open and undeveloped. The land use in the project corridor in these areas will change from open and undeveloped to USBP infrastructure,

which would impact recreational opportunities. However, open space is common within this area and the Planned Action will not pose a major change to the land use or recreational opportunities regionally. The staging areas, which are needed to store and stockpile materials and equipment, will temporarily affect approximately 22 acres. These areas will be rehabilitated upon completion of construction activities and the current land use restored; therefore, impacts associated with the staging areas are considered temporary and minimal.

Approximately 21 acres of privately-owned land will be used for USBP activities. Negotiations are ongoing with private land owners, and they will be compensated at fair market value for any lands acquired by USBP for the Planned Action.

5.2.2 Aesthetics

The construction of primary pedestrian fence and road will have adverse impacts on the appearance of the project corridor. However, the Planned Action is extending existing roads and fences that have already degraded the aesthetic value of the project area. In addition, illegal trails and trash currently detract from the visual qualities of the project corridor. The presence of construction equipment, use of staging areas, and use of portable lighting will have a minimal impact on appearance during construction. Additionally, as a mitigation measure, all staging areas will be rehabilitated upon completion of construction activities; thus, further minimizing impacts. The Planned Action will not substantially or permanently degrade the existing visual character of the region; thus, impacts would be considered minimal.

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

SECTION 6.0
GEOLOGICAL RESOURCES AND SOILS



6.0 GEOLOGICAL RESOURCES AND SOILS

6.1 AFFECTED ENVIRONMENT

General information regarding soil associations, soil types, and geology within the project corridor and region was previously presented in the DHS 2003 EA, and is incorporated herein by reference. The entire project corridor is located within the Peninsular Range Geomorphic Province, which is mostly composed of granitic rock (Nyman 2002). The Peninsular Ranges Province was formed by the Southern California Batholith, a composite of several bodies of igneous rock formed in the subsurface (Demere 1997). These bodies of rock, having varying chemical composition, shifted from gabbro to granodiorite. In the Cretaceous period, the Nevadan Orogeny caused major upward thrusting in southern California (Sharp 1976).

The project corridor consists of soils in the Tollhouse, La Posta, Rock land, Calpine, Kitchen Creek, and Mottsville associations. The Tollhouse association is described as consisting of shallow, somewhat excessively or excessively drained soils that formed in material weathered from granitic rocks (USDA 1973). The La Posta association consists of well-drained stony fine sandy loams that have clay subsoils (USDA 1973). Exposed bedrock and large boulders dominate the Rock land association, which consists of rocks and boulders with little vegetation (USDA 1973). The La Posta association is somewhat excessively drained loamy coarse sands over decomposed granodiorite; the Mottsville association is similar, but is associated with alluvial fans. All these soils have a severe erodibility rating (USDA 1973). None of these soils are considered prime farmland.

6.2 ENVIRONMENTAL CONSEQUENCES

Minor surface impacts on geologic formations will be expected from road and primary pedestrian fence construction activities. Although geologic formations will be adversely affected, these effects will be minimal and localized. No dangerous or unstable conditions will be created within any geologic unit as a result of the Planned Action. Additionally, the Planned Action will not expose people or structures to potential substantial adverse effects. Furthermore, no geologic resource is found exclusively within the project corridor; thus, no geologic resources will be removed from future scientific study. Therefore, the Planned Action will not have a major adverse impact on any geologic unit or local or regional geologic formation.

The Planned Action will have a direct, permanent impact on approximately 40 acres of soils. These include: 13 acres of Tollhouse association soils, 8 acres of La Posta association soils, 5 acres of Rock land association soils, 4 acres of the Calpine soils, 5 acres of Kitchen Creek soils, and 5 acres of Mottsville association soils. These soils are common locally and regionally; therefore, no major impacts are expected.

Short-term impacts on soils, such as increased runoff, can be expected from the construction of roads; however, these impacts will be alleviated once construction is

finished. Long-term effects on soils will be compaction from vehicles on new roads. Pre- and post-construction BMPs will be developed and implemented to reduce or eliminate erosion and downstream sedimentation. Compaction techniques and erosion control measures, such as waterbars, gabions, straw bales, and the use of rip-rap or sediment traps, will be some of the BMPs expected to be implemented.

The temporary operation of portable lights within the construction footprint will have no effect on soils. The potential exists for petroleum, oil, and lubricants (POLs) to be spilled during refueling of the generators; however, drip pans will be provided for the power generators to capture any POLs accidentally spilled during maintenance activities or leaks from the equipment; thus, the operation of the portable lights will have negligible impacts.

SECTION 7.0
WATER RESOURCES



7.0 WATER RESOURCES

7.1 AFFECTED ENVIRONMENT

7.1.1 Groundwater

The region's groundwater conditions were discussed in detail in the DHS 2003 EA, and that information is incorporated herein by reference. The Planned Action area lies within the Peninsular Range geomorphic province. This province covers a large portion of southern California, including all of San Diego County. Large quantities of water are stored in the granitic rock from which this area formed. Most of the stored groundwater moves through the area through cracks and fractures (Nyman 2002) and is replenished through rain and snow events. Therefore, these aquifers are stable and not in a deficit situation (Nyman 2002).

7.1.2 Surface Water and Waters of the U.S.

The list of water quality limited segments in the Tijuana River Watershed and their pollutants of impairment are provided in Table 7-1.

Table 7-1. Water Quality Limited Segments in the Tijuana River Watershed

Waterbody	Pollutants of Impairment
Tijuana River	Bacteria, Trace Elements, Solids, Low Dissolved Oxygen, Trash, Eutrophic, Pesticides, and Trash
Tijuana River Estuary	Bacteria, Low Dissolved Oxygen, Eutrophic, Pesticides, Trash, Thallium, Synthetic Organics, Lead, and Nickel

Source: EPA 2007a

The project area is located in the Tijuana River watershed (CA 91111000). Several ephemeral washes (Campo Creek, Boundary Creek, and several small unnamed creeks) cross the project area and contribute as water sources to the Tijuana River. No Total Maximum Daily Loads (TMDLs) have been developed by the California EPA (CalEPA) for streams in the project area (EPA 2007a).

The Tijuana River, Campo Creek, and other creeks in the area have the following designated beneficial uses:

- **Contact Water Recreation** – includes uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible.
- **Non-contact Water Recreation** – includes uses of water for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion is reasonably possible.
- **Warm Freshwater Habitat** – includes uses of water that support warm water ecosystems (e.g., aquatic habitat, vegetation, fish, and wildlife).

- **Wildlife Habitat** – includes uses of water that support terrestrial ecosystems including preservation and enhancement of terrestrial habitats, vegetation, wildlife, or wildlife water and food sources (California Regional Water Quality Control Board 1994)

The lack of beneficial uses listed for any given area does not rule out the possibility of existing or future beneficial uses.

The Tijuana River stream segment is on California's 303(d) list of impaired waters for eutrophication, bacteria indicators, low dissolved oxygen, pesticides, synthetic organics, solids, trace elements, and trash. This subsegment of the Tijuana River is not meeting designations for beneficial uses of primary and secondary contact recreation and wildlife and fish propagation. Sources of pollution are non-point sources and point sources (CalEPA 2007).

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory 1987). Due to the climate of the project area, most of the surface drainage channels are dry much of the year and are considered ephemeral. One potential jurisdictional wetland and six potential unvegetated tributary waters could be considered other WUS occur within the project corridor. The location of the wetland and WUS are illustrated in Figure 7-1.

7.1.3 Floodplains

A floodplain is the area adjacent to a river, creek, lake, stream, or other open waterway that is subject to flooding when there is a significant rain. If an area is in the 100-year floodplain, there is a 1 in 100 chance in any given year that the area will flood. Federal Emergency Management Agency (FEMA) floodplain maps were reviewed to identify project locations within mapped floodplains (FEMA 2007 and San Diego County 2007). CBP determined that none of the project components will be constructed within mapped floodplains based upon review of the FEMA maps.

7.2 ENVIRONMENTAL CONSEQUENCES

7.2.1 Groundwater

Water will be needed for road construction, widening, and maintenance. Workable soil moisture content must be obtained in order to properly compact soils for road construction and to reduce fugitive dust emissions during construction. Water for construction and maintenance will be hauled into the project corridor from existing wells or wells that were previously analyzed in the DHS 2003 EA. It is assumed that for primary pedestrian fence and road construction, approximately 1 acre-foot of water per mile will be needed for concrete and dust suppression, while road widening will require approximately 0.5 acre-foot per mile for dust suppression. The total amount of water that will be required to facilitate construction of the Planned Action will be approximately

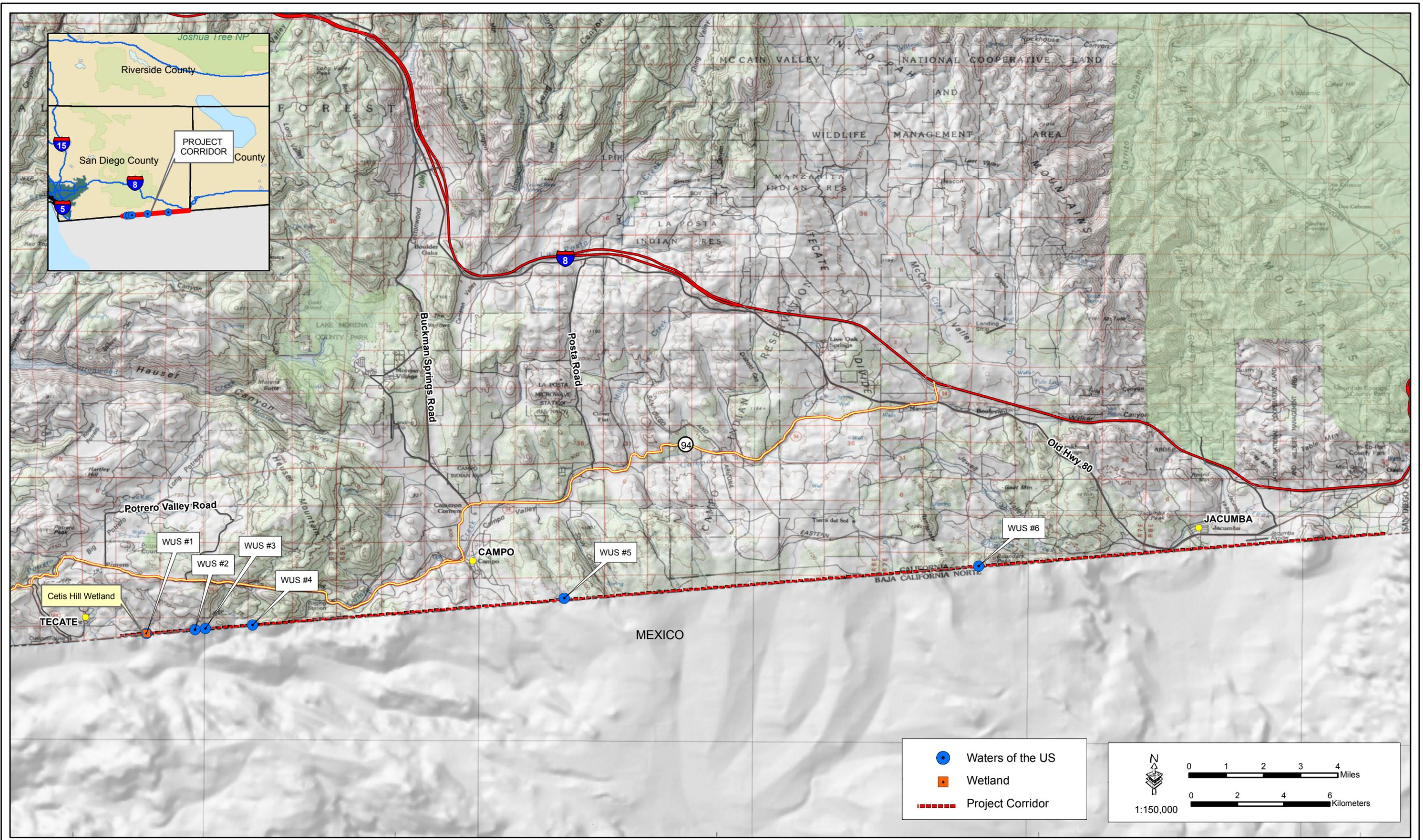


Figure 7-1: Waters of the US and Wetland at Cetus Hill

THIS PAGE LEFT INTENTIONALLY BLANK

15 acre-feet. This quantity will be consumed during the construction activities, which will be completed by December 2008. A hydrology report conducted for the DHS 2003 EA is included in Appendix E, which provides specific details on the region's groundwater resources. Although groundwater will be used from within the project corridor, the area is adequately recharged via rains and snow-melt each year. Therefore, no major impacts on groundwater or hydrology, locally or regionally, are expected as the aquifer is stable and not in a deficit situation.

7.2.2 Surface Water and Waters of the U.S.

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

The Planned Action will not have a permanent impact on any perennial or intermittent streams, as none are present within the project corridor. As mentioned previously, six jurisdictional ephemeral WUS were identified during field surveys within the project corridor. The WUS will be traversed using some type of drainage structure, which could include concrete low water crossings, improvements to existing dirt/gravel crossings, reinforced concrete pipes, box culverts, or bridges. The expected impacts to each WUS are presented in Table 7-2.

Table 7-2. Impacts on Potential Waters of the U.S.

Planned Action Component	WUS No.	Acres Impacted
Cetis' Hill	1	0.041
Horseshoe Canyon	2	0.016
Horseshoe Canyon	3	0.038
East Bell Valley	4	0.008
LaGloria Canyon	5	0.033
West Boundary Peak	6	0.005
TOTAL		0.142

Existing drainage patterns of transboundary runoff will not be changed as a result of the Planned Action. In addition, rip-rap, rock, or other energy dissipating materials will be placed downstream of the drainage structures to alleviate flow velocity, long-term erosion, and downstream sedimentation.

One jurisdictional wetland was also delineated within the project corridor, and is located adjacent to the WUS found near the Cetis Hill project component (See Figure 7-1). This wetland totals approximately 0.08 acres in size and will be filled as part of the Planned Action. CBP will seek advice from USACE Los Angeles District regarding appropriate potential mitigation or compensation for the loss of 0.08 acres of wetland.

During construction activities, water quality within ephemeral drains will be protected through the implementation of BMPs (e.g., silt fences). General BMPs routinely employed as part of CBP construction projects were previously described in Section 1.5. Additionally, the primary pedestrian fence (bollard style) has been designed to ensure that proper conveyance of floodwaters is achieved and that floodwaters are not backed up on either side of the border.

No impacts are expected on surface water or WUS from the placement of up to 10 portable lights. To reduce the potential of surface water contamination, lights will not be placed in or adjacent to drainages. As a precaution, catch pans will be placed under the portable light generators to contain any accidental POL spills that may occur during refueling or operation.

The construction of stream crossings within the project corridor could have indirect adverse impacts on ephemeral drains during seasonal rain events; these will include stream channel sedimentation, stream bank erosion, and possible release of POLs into stream channels. However, equipment needed for construction activities will not be staged or maintained in or near any surface water resources to prevent surface water contamination from accidental POL spills.

The Planned Action will also be expected to have an indirect beneficial impact on WUS by reducing erosion and sedimentation resulting from degraded road segments and off-road travel associated with vehicles deviating from road surface to avoid degraded road segments.

The Planned Action will not result in severe erosion or sedimentation, nor will it substantially alter existing drainage patterns. Therefore, because of the limited impacts expected coupled with the use of mitigation measures outlined in Section 1.5, the Planned Action will result in minimal impacts on WUS and water quality.

7.2.3 Floodplains

None of the construction activities would occur within the 100-year floodplain; therefore, no impediments to stream flow or increases in storm water runoff will occur that could cause flood elevations or flood flow velocities to increase. The Planned Action will have no impacts on floodplains.

SECTION 8.0
BIOLOGICAL RESOURCES
(VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL STATUS SPECIES)

8.0 BIOLOGICAL RESOURCES (VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL STATUS SPECIES)

8.1 AFFECTED ENVIRONMENT

8.1.1 Vegetation

General information regarding vegetation within the project corridor and region was previously given in the DHS 2003 EA, and is incorporated herein by reference. During October 2007, additional pedestrian surveys were conducted for each of the project sites to identify specific community types, sensitive species, and habitat suitable to support sensitive species. Table 8-1 lists the vegetation communities identified at each project site. It should also be noted that these surveys were conducted immediately prior to the 2007 wildfires, and much of the vegetation in the areas in and surrounding the western-most project sites has been destroyed by these fires.

Table 8-1. Vegetation Communities and Impacts (acreage) within the Project Area

Project Site	Vegetation Community	Acreage Impacted
Cetis Hill	Coastal Sage Scrub	5.0
East Brickyard to Gunsight	Coastal Sage Scrub	0.9
Horseshoe Canyon	Coastal Sage Scrub/Chamise Chaparral	2.3/4.6
East Bell Valley	Chamise Chaparral	0.9
Ag Loop	Chamise Chaparral	5.2
La Gloria Canyon	Mixed Chaparral and Coast Live Oak Woodland	3.3
West Smith Canyon	Mixed Chaparral	0.9
Rattlesnake Ridge	Mixed Chaparral	8.0
West Boundary Peak	Chamise Chaparral	0.4
Willow Access Road	Mixed Chaparral	0.3
Road Widening (Willows 1)	Disturbed coastal sage scrub	6.0
Road Widening (Ag Loop and East Bell Valley)	Chamise chaparral	2.0
Total		39.9

Coastal sage scrub is identified by low scrub shrubs that are drought-resistant and most active in the rainy periods of winter and early spring (Holland 1986). Dominant plant species typically found within this vegetation community are California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Rhus laurina*), and white sage (*Salvia apiana*) (Holland 1986). Plant species observed within the coastal sage scrub community include broom baccharis (*Baccharis sarothroides*), broom matchweed (*Gutierrezia californica*), peppergrass (*Lepidium* spp.), chalk-lettuce (*Dudleya pulverulenta*), caterpillar phacelia (*Phacelia cicutaria*), tocalote (*Centaurea melitensis*), and ripgut grass (*Bromus diandrus*). This community occurs in the western portions of the project corridor, specifically at Cetis Hill, East Brickyard to Gunsight, and the extreme western portion (i.e., near Sacred Canyon) of the Horseshoe Canyon project reach.

Chamise chaparral is dominated by chamise (*Adenostoma fasciculatum*) that is often densely interwoven with little understory when mature (Holland 1986). Chamise is adapted to revegetating areas cleared by fire by stump sprouting (Holland 1986). Other plant species observed within the chamise chaparral vegetation community include red shank (*Adenostoma sparsifolium*), holly-leaved cherry (*Prunus ilicifolia*), sugar bush (*Rhus ovata*), lilac (*Ceanothus* sp.), Mexican manzanita (*Arctostaphylos pungens*), our Lord's candle (*Yucca whipplei*), yerba santa (*Eriodictyon crassifolium*), San Diego bushmallow (*Malocothamnus densiflorus*), Davidson's buckwheat (*Eriogonum davidsonii*), brittlebush (*Encelia farinosa*), broom matchweed, broom baccharis, deerweed (*Lotus scoparius*), wild oat (*Avena* sp.), rock rose (*Helianthemum scoparium*), saw-toothed goldenbush (*Hazardia squarrosa*), sagebrush (*Artemisia* sp.), California milkweed (*Asclepias californica*), San Diego County sunflower (*Viguiera laciniata*), and thistle (*Cirsium* sp.).

Mixed chaparral is typically dominated by scrub oak (*Quercus berberidifolia*), chamise, and any one of several taxa in manzanita (*Arctostaphylos* sp.) and *Ceanothus* species (Holland 1986). Mixed chaparral is also adapted for repeated fires, to which many species respond by stump sprouting (Holland 1986). Plant species observed during field surveys within the mixed chaparral vegetation community include Tecate cypress (*Cupressus forbesii*), sugar bush, deerweed, four-wing saltbush (*Atriplex canescens*), mustard (*Brassica* sp.), prickly pear (*Opuntia phaeacantha*), our Lord's candle, valley cholla (*Opuntia parryi* var. *parryi*), catclaw acacia (*Acacia greggii*), Mexican manzanita, Davidson's buckwheat, lilac, California buckwheat (*Eriogonum fasciculatum*), Mormon tea (*Ephedra californica*), and holly-leaved cherry.

Coast live oak woodlands are dominated by coast live oak (*Quercus agrifolia*), which can grow up to 90 feet in height (Holland 1986). The shrub layer in the coast live oak woodland is typically poorly developed, but may include toyon (*Heteromeles arbutifolia*), *Ribes* spp., laural sumac, or Mexican elderberry (*Sambucus mexicana*). The herb component is continuous and dominated by *Bromus* spp. and other introduced taxa (Holland 1986). Plant species observed during field surveys include lemonade berry (*Rhus integrifolia*), caterpillar phacelia, mustard, deerweed, Mexican manzanita, western ragweed (*Ambrosia psilostachya*), aster (*Aster* sp.), spiny cocklebur (*Xanthium spinosum*), San Diego honeysuckle (*Lonicera subspicata*), scrub oak, curly dock (*Rumex crispus*), California peony (*Paeonia californica*), chamise, mountain mahogany (*Cercocarpus betuloides*), holly-leaved cherry, and California deergrass (*Muhlenbergia rigens*). This community occurred only as a small patch on the east side of LaGloria Canyon and was an inclusion within the surrounding mixed chaparral community.

8.1.2 Wildlife

California is one of the most biologically diverse areas in North America. Within its 160,000 square miles, California harbors more unique animals than any other state (Steinhart 1990). The native faunal components of the Peninsular Range support 432 species of birds, which are dominated by wood warblers (40 species), swans, geese, and ducks (34 species), sandpipers and phalaropes (30 species), gulls and terns (20 species), sparrows and towhees (20 species), and tyrant flycatchers (22 species). The

majority of these species occurs in spring and fall when neotropical migrants (e.g., flycatchers and warblers) pass through on their way to either summer breeding or wintering grounds. The majority of the 94 mammalian species found in the Peninsular Range are evening bats and rodents, with rodents being the most common. Only 17 species of amphibians are found within this province, with frogs being the most abundant and common. A total of 54 species of reptiles inhabit the Peninsular Range, with the iguanid lizards and colubrid snakes being dominant (Ingles 1957; Stebbins 1985; Holt 1990).

Wildlife species observed within the project corridor during field visits conducted in October 2007 were western scrub jay (*Aphelocoma californica*), common raven (*Corvus corax*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), American kestrel (*Falco sparverius*), California quail (*Callipepla californica*), house finch (*Carpodacus mexicanus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), red-tailed hawk (*Buteo jamaicensis*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*) scat, and desert cottontail (*Sylvilagus audubonii*).

8.1.3 Protected Species and Critical Habitat

General information regarding Federal, state, and BLM threatened and endangered species, critical habitat, and a list of protected species within the San Diego County was previously given in the DHS 2003 EA, and is incorporated herein by reference. A full list of Federal and state threatened and endangered species occurring within San Diego County can be found in Appendix F.

The Federally-listed species with the greatest potential to occur within or near the project corridor are the least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher, Quino Checkerspot Buttery (QCB), arroyo toad (*Bufo microscaphus californicus*), desert bighorn sheep (*Ovis canadensis nelsonii*), Otay tarplant (*Hemizonia conjugens*), willow monardella (*Monardella linoides* ssp. *viminea*), Encinitas baccharis (*Baccharis vanessae*), and San Diego thornmint (*Acanthomintha ilicifolia*).

Biological surveys were completed for each portion of the Planned Action in October 2007 to determine the presence of potential habitat for protected species. No Federally-listed threatened or endangered species were observed during the biological surveys for this project or from past surveys in the area (USACE 1994, 1997; DHS 2003); however, due to schedule conflicts, the October 2007 surveys were not conducted during the proper season or in accordance with USFWS protocol for least Bells' vireo, coastal California gnatcatcher, QCB and arroyo toad. Thus, only habitat assessments could be made to determine the presence of suitable habitat for these species.

However, from March 14th through March 18th 2008, Mr. Michael Klein of Klein-Edwards Professional Services, conducted a suitable habitat analysis for the QCB within the project corridor. Mr. Klein is a USFWS QCB permitted biologist, 10 (a) permit number TE-039305-3. According to Mr. Klein's findings, approximately 27 acres within the footprint of the project is considered suitable habitat for the QCB. The areas that were dismissed as being suitable habitat were disturbed or lacked proper host plants or

nectar resources. Table 8-2 depicts each project component and the presence of suitable QCB habitat within the particular project component.

Table 8-2. Suitable QCB Habitat

Project Component	Suitable Habitat (Yes/No)	QCB Habitat Impacted (Acres)
Cetis' Hill	Yes	5.0
East Brickyard to Gunsight	No	0
Horseshoe Canyon	Yes	6.9
East Bell Valley	No	0
Ag Loop	Yes	5.2
La Gloria	No	0
West Smith Canyon	Yes	0.9
Rattlesnake Ridge	Yes	8.0
West Boundary Peak	Yes	0.4
Willows	No	0
O'Neil Valley	No	0
Airport Mesa	No	0
Staging Areas	No	0
Road Widening	No	0
Total		26.4

Although the desert bighorn sheep is listed as endangered within San Diego County the potential for this species to occur in the project corridor is minimal due to the lack of habitat. However, bighorn sheep are known to occur east of the project corridor in Imperial County within the Jacumba Mountains.

There is little potential for the least Bell's vireo or the arroyo toad to occur at or near the project sites due to the lack of suitable habitat. However, Boundary Creek, near the Willows project site, has historic records of arroyo toads further north (upstream). Suitable habitat for the coastal California gnatcatcher was observed at the western extreme of the Horseshoe Canyon site, as Diegan coastal sage scrub vegetation was present.

Although the East Brickyard to Gunsight and Cetis Hill project sites also displayed Diegan coastal sage scrub vegetation, these sites had a greater level of disturbance due to the proximity to residential and commercial establishments on the border as well as recent wildfires. Therefore, these areas were not considered high-quality suitable habitat.

Otay tarplant, willowy monardella, Encinitas baccharis, and San Diego thornmint were not observed within the areas surveyed for the individual project sites during October 2007.

The Wildlife and Habitat Data Analysis Branch of the California Department of Fish and Game (CDFG) maintains lists of Wildlife of Special Concern. These lists include species whose occurrence in California is or may be in jeopardy, or species with known

or perceived threats or population declines. The California Natural Diversity Database (CNDDDB) is a statewide inventory of the locations and conditions of Federally protected species as well as the state's rare species and natural communities. The CDFG currently lists 99 species that are considered endangered, threatened, or species of concern within San Diego County (CNDDDB 2007). The CNDDDB indicated no known locations of Federally-listed species within 1 mile of the project sites (CNDDDB 2007); however, numerous state-listed species have been reported near the project corridor, as shown in Figures 8-1 and 8-2.

The BLM Manual 6840 provides policy and guidance for the conservation of special status species of plants and animals and the ecosystems upon which they depend. These are species which are proposed for listing, officially listed as threatened or endangered, or are candidates for listing as threatened or endangered under the provisions of the Environmental Species Act (ESA); those listed by a state in a category such as threatened or endangered implying potential endangerment or extinction; and those designated by each BLM State Director as Sensitive. Tecate cypress (*Cupressus forbesii*), a BLM sensitive plant species, is known to occur near the Willows Access project site. The Thorne's hairstreak butterfly (*Callophrys gryneus thornei*) is also a BLM sensitive butterfly that uses the Tecate cypress as its host plant. The remaining BLM sensitive species are included in the list provided in Appendix F.

8.2 ENVIRONMENTAL CONSEQUENCES

8.2.1 Vegetation Communities

The Planned Action will permanently alter approximately 40 acres of vegetation (see Table 8-1). Road widening will impact 2 acres of chamise chaparral and 6 acres of disturbed coastal sage scrub. The new road and fence construction will permanently impact 9 acres of mixed chaparral, 14 acres of chamise chaparral, 3 acres of mixed chaparral/coast oak woodlands, and 6 acres of coastal sage scrub. It should be noted that approximately 0.65 miles within the project footprint (0.25 mile west of Horseshoe Canyon and 0.4 mile east of Ag Loop) as well as all the staging areas have not been surveyed. However, CBP will ensure that biological surveys are completed prior to any construction activities within these areas. Although the project footprint has not been surveyed, through aerial photography interpretation as well as knowledge of the project corridor, these areas have been accounted for in the vegetation communities to be impacted.

The staging areas are expected to temporarily affect approximately 22 acres. The staging areas will be rehabilitated upon completion of construction activities and, thus, would represent only a short-term minor impact. These plant communities are both locally and regionally common, and the permanent loss of 40 acres of vegetation will not adversely affect the population viability or fecundity of any floral or faunal species. Therefore, impacts are expected to be minimal to moderate.

THIS PAGE LEFT INTENTIONALLY BLANK

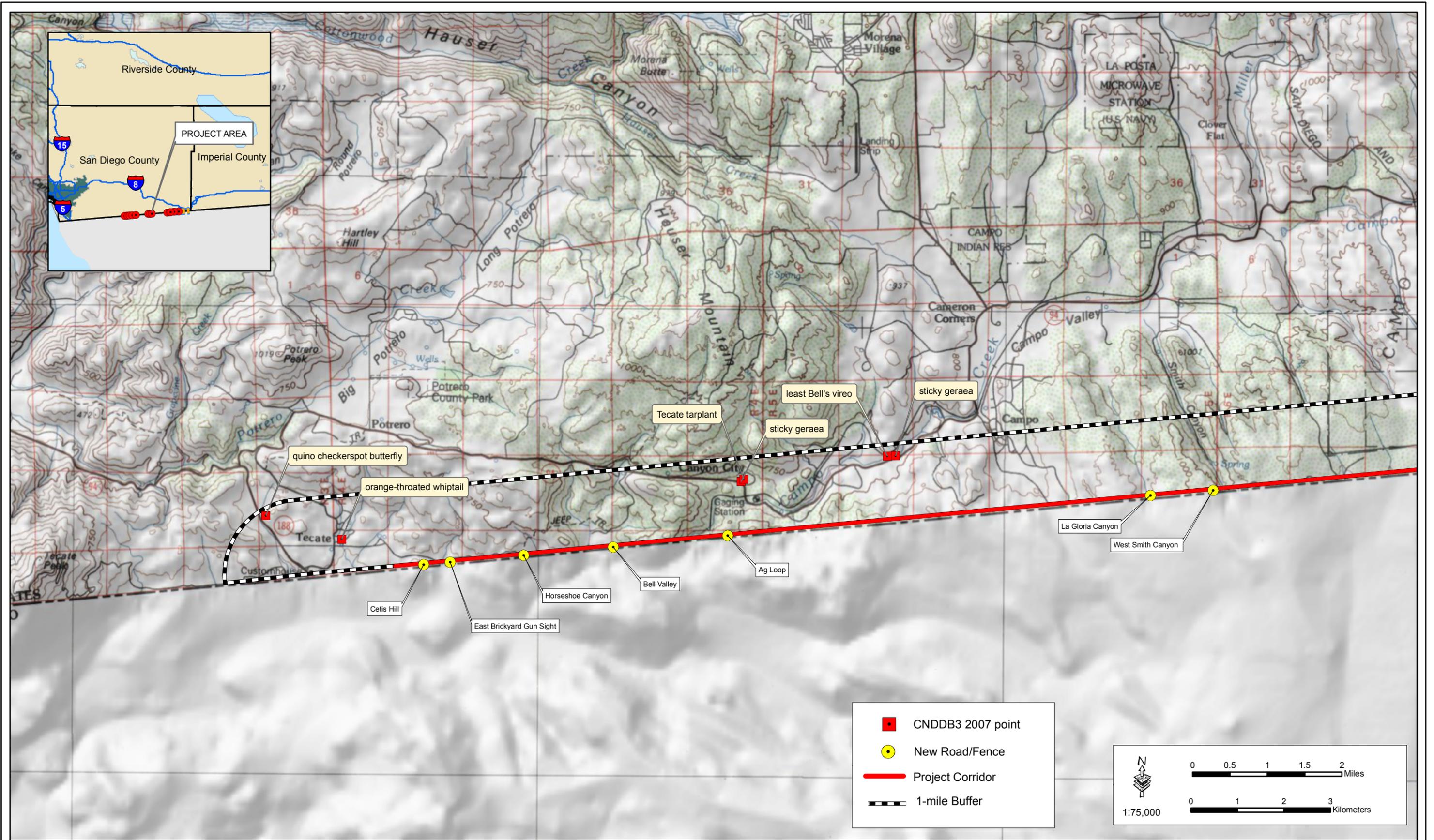


Figure 8-1: Proposed Action & CNDDDB Map 1

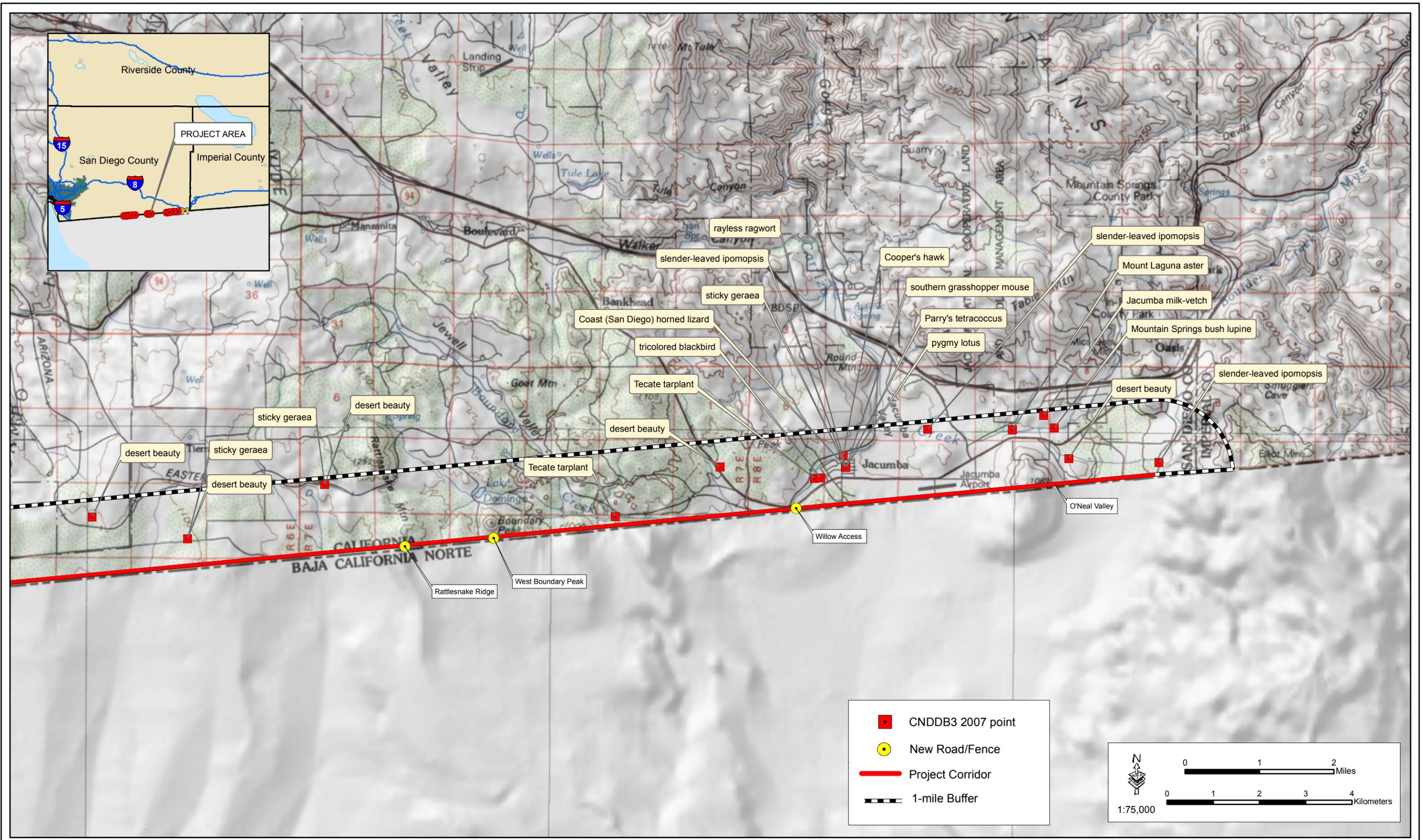


Figure 8-2: Proposed Action & CNDDDB Map 2

The Planned Action will also have temporary indirect impacts on vegetation. Fugitive dust emissions resulting from construction will affect photosynthesis and respiration of plants within and adjacent to the project corridor. The magnitude of these effects will depend upon several biotic and abiotic factors, including the speed and type of vehicles, climatic conditions, success of wetting measures during construction, and the general health and density of nearby vegetation. Acute toxicity tests have been completed for PennzSuppress® to determine its effects on plant growth. Based upon these tests and the EPA's assessment of "low concern", PennzSuppress® is considered not to be harmful to plant growth (PennzSuppress® 2002).

The use of portable lighting could affect plant growth, but these effects will be temporary. As construction activities are completed within a particular area, the lights will be moved to the new construction area. It should be emphasized that a 24-hour work schedule will only occur when construction crews are delayed due to weather or unforeseen circumstances and need to work 24 hours a day to maintain schedule. Also, all lights will be removed from the project corridor upon completion of construction activities, and the lights will be fitted with backlighting shields to minimize any stray light from escaping to areas outside of the project area. Therefore, no major adverse impacts on vegetation from the use of portable lights are expected.

Beneficial indirect impacts, such as a reduction of damage to native vegetation from illegal activities and consequent USBP enforcement activities, will occur as IAs and smuggling activities are reduced or potentially eliminated within the area. Conversely, construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations and, therefore, are considered unpredictable and beyond the scope of this ESP.

The Planned Action is not expected to promote the establishment and spread of non-native and invasive species. Following construction, daily traffic and regular maintenance (1 to 3 times per year) of the roads will impede the establishment of non-native and invasive species. Further, temporary impact areas will be rehabilitated by the use of native vegetation or the distribution of organic and geological materials in association with natural revegetation. Rehabilitation efforts for temporary impact areas and mitigation measures, such as those outlined in Section 1.5, will reduce the potential for establishment of non-native and invasive species. Therefore, this action will not have a major impact on the spread of non-native and invasive species.

8.2.2 Wildlife

The Planned Action will permanently impact approximately 40 acres of wildlife habitat. These impacts will be considered negligible, as some of the project components occur near and within previously disturbed areas (e.g., due to road widening), TI will be constructed near existing infrastructure, and the wildlife habitat is locally and regionally common. Staging areas will temporarily impact 22 acres of wildlife habitat, but these will be rehabilitated upon completion of construction activities; therefore, any impacts of

the staging areas are considered negligible. The use of PennzSuppress® will not result in adverse impacts to wildlife (PennzSuppress® 2002).

The Planned Action will not have direct impacts on fish or other aquatic species, because the construction activities will not take place in naturally flowing or standing water. Mitigation measures will be implemented for construction in or near washes, as stated in Section 1.5, to reduce potential impacts to riparian areas from erosion or sedimentation.

Mobile animals (e.g., birds) will escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals could potentially be lost. As a result, direct minor adverse impacts on wildlife species in the vicinity of the project corridor are expected. Although some animals may be lost, this Planned Action will not result in any substantial reduction of the breeding opportunities for birds and other animals on a regional scale due to the suitable, similar habitat adjacent to the project corridor. Additionally, mitigation measures will be implemented to ensure minimal impact on migratory birds.

Although the primary pedestrian fence could impede transboundary migration patterns of animals, especially larger mammals (e.g., mule deer), thus fragmenting habitat within the project corridor, these impacts will be considered minimal. Habitat fragmentation typically affects species with small population sizes or that are dependent upon migration to obtain spatially or temporally limited resources. The primary pedestrian fence design (bollard style) will allow the transboundary migration of reptiles, amphibians, and small mammals; thus, reducing potential fragmentation effects. Wildlife will also still be able to migrate across the U.S./Mexico border either to the east or west of some of the project components. In addition, the species located within the project corridor that could be affected by fragmentation are regionally common in both the U.S. and Mexico. Therefore, no major adverse effects on the region's wildlife population are anticipated.

Increased noise during construction activities could have short-term impacts on wildlife species (e.g., mule deer, red-tailed hawk, desert cottontail, and California towhee). Physiological responses from noise range from minor responses, such as an increase in heart rate, to more damaging effects on metabolism and hormone balance. Long-term exposure to noise can cause excessive stimulation to the nervous system and chronic stress that is harmful to the health of wildlife species and their reproductive fitness (Fletcher 1990). Behavioral responses vary among species of animals and even among individuals of a particular species. Variations in response may be due to temperament, sex, age, or prior experience. Minor responses include head-raising and body-shifting, and usually, more disturbed mammals will travel short distances. Panic and escape behavior results from more severe disturbances, causing the animal to leave the area (Busnel and Fletcher 1978). Since the highest period of movement for most wildlife species occurs during nighttime or low daylight hours, and construction activities will be conducted during daylight hours to the maximum extent practicable, short-term impacts of noise on wildlife species are expected to be minimal to moderate.

The operation of portable lights could potentially affect wildlife. Some species, such as insectivorous bats, may benefit from the concentration of insects that will be attracted to the lights. However, the portable lights will only illuminate a minimal amount of area (200 feet per light), will be fitted with backlighting shields, will not shine into riparian areas, and will be temporary. The adverse and beneficial effects of lighting on reptiles and amphibians are currently unknown (Rich and Longcore 2006). However, the temporary exposure to light as a result of the project will not significantly alter circadian rhythms in mammals and birds. This artificial lighting may cause activity levels of diurnal animals to increase; however, any increase will not create major impacts (Rich and Longcore 2006). It is anticipated that the temporary lights will not operate any longer than 4 weeks in one location, no more than 0.5 mile of lights will be in operation at any one time, and no more than 10 lights will be used at once at each project location. The generators used for these lights produce noise levels to 75 dBA within 20 feet of the generators, but attenuate to acceptable levels of 65 dBA at 75 feet (Caltrans 1998). Noise emissions from the generators will create minimal impacts. Wildlife will not be exposed to a nighttime lighting source once the planned construction activities are complete. Therefore, impacts on wildlife are expected to be negligible as a result of the operation of portable lights.

Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations and, therefore, are considered unpredictable and beyond the scope of this ESP. Beneficial indirect impacts will be expected from the protection afforded to areas north of the project corridor.

8.2.3 Protected Species and Critical Habitat

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

The Planned Action has the potential to adversely affect the coastal California gnatcatcher and the QCB. However, only three of the project sites, Horseshoe Canyon, East Brickyard to Gunsight, and Cetus' Hill, supported coastal sage scrub vegetation that could be utilized by the coastal California gnatcatcher. East Brickyard to Gunsight and Cetus' Hill are highly disturbed due to wildfires that occurred prior to the biological surveys, and are in proximity to developed areas along the border. Therefore, the gnatcatcher habitat that currently exists at these sites is considered low quality.

Conversely, based upon current design concepts, 6.9 acres of mixed coastal sage scrub and chamise chaparral habitat will be impacted at the Horseshoe Canyon project site. CBP has determined that this loss of habitat may adversely affect the coastal California gnatcatcher, although there is an abundance of similar and higher quality habitat north of the project site and within the region. CBP has maintained close

coordination with USFWS and USFWS has provided valuable guidance to CBP regarding these adverse impacts to the gnatcatcher and potential mitigation measures that would be implemented.

The use of portable lighting and a 24-hour work schedule could also have adverse impacts on the gnatcatcher due to the potential disturbance of nesting and breeding opportunities. However, nighttime construction and use of portable lights will occur if it is necessary to meet congressionally mandated schedules or in the event of schedule delays due to weather or unforeseen circumstances. The portable lights will be removed upon completion of construction activities. The portable lights will be equipped with backlighting shields to minimize stray light in potential habitat north of the project corridor and no lights used for construction will be positioned in a manner to illuminate riparian areas.

Potential habitat for the least Bell's vireo is located along Boundary Creek, near the Willows 1 project site. Noise created during construction activities at this project site could have an impact, if they are indeed present. However, due to the temporary nature of the construction, CBP has determined that the Planned Action may affect, but is not likely to adversely affect, the least Bell's vireo.

As seen previously in Table 8-2, suitable habitat for the QCB exists within 27 acres of the total acreage to be disturbed as a result of the project. This loss of suitable habitat is likely to create adverse impacts for the QCB. Therefore, CBP has determined that the Planned Action may adversely affect the QCB and is has developed a BRP (Appendix B) to identify measures to reduce adverse impacts. Mitigation measures will be implemented to effect impacts for both the QCB and the gnatcatcher.

The likelihood of bighorn sheep inhabiting the project corridor is limited due to the lack of habitat; therefore, no direct impacts are expected as a result of the Planned Action. Construction and operation of TI will increase border security in the project corridor and may result in a change to illegal traffic patterns. However, changes to IA traffic patterns result from a myriad of factors in addition to USBP operations and, therefore, are considered unpredictable and beyond the scope of this ESP. Therefore, CBP has determined the Planned Action will have may affect the bighorn sheep; however, the nature or intensity of such effects cannot be accurately predicted at this time.

No effects on any other Federally protected species are expected, as the project sites lack suitable habitat or the species were not observed in the project corridor during recent biological surveys.

No state-listed species are expected to occur in or near the project sites; therefore, no direct impacts are anticipated for any state-listed species. The Tecate cypress is located within the footprint of the Willows Access Road and will be permanently impacted. Up to eight immature specimens of Tecate cypress will be removed by the construction of the Willows Access Road, depending upon the final road design and alignment. This loss, however, will not be considered a long-term, major impact with

respect to this species' population. The design of the road will be developed to avoid these specimens to the maximum extent practicable.

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

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 9.0
CULTURAL RESOURCES

9.0 CULTURAL RESOURCES

9.1 AFFECTED ENVIRONMENT

9.1.1 Cultural Overview

Cultural, historical, and archaeological resources were previously discussed in the DHS 2003 EA, and this information is incorporated herein by reference. The archaeological record in southern California begins approximately 12,000 years ago. Chartkoff and Chartkoff recognize four major periods: Paleoindian, Archaic, “Pacific” (herein referred to as Late Prehistoric, consistent with Erlandson 1994; Moratto 1984), and Historic (Vargas et al. 2002).

The Paleoindian Period (12,000 – 8,000 B.P.) is characterized by small, mobile bands of hunter-gatherers. There is only sparse evidence of terminal Paleoindian occupation in the San Diego area. Lasting from the terminal Pleistocene to the Altithermal in the San Diego region is a series of cultures termed the Western Pluvial Lakes Tradition (WPLT). Typically, WPLT sites are associated with pluvial lakes and the associated lake, marsh, and grassland environments. In the San Diego region, the cultural expression that parallels the WPLT has been classified by Moratto as a “Paleo-Coastal Tradition,” which includes the San Dieguito Complex (Moratto 1984; Vargas et al. 2002).

The Archaic Period (8,000 – 2500 B.P.) occupations that followed the San Dieguito Complex were originally defined as the Shell Midden Culture and were later renamed the La Jolla Complex (Vargas et al. 2002). The La Jolla tool kits include ceramics, large-stemmed and indented-based points, and unique discoidal and cogged stones of unknown function, and sites of this complex are frequently recognized by milling stone assemblages associated with shell middens (Vargas et al. 2002).

The Late Prehistoric Period (2500 – 200 B.P.) arose gradually from the Archaic and is characterized by a shift to a more local economy and the development of complex societies. Both True (1966, 1970) and Moratto (1984) suggest that for the San Diego Area the La Jolla evolved into the Cuyamaca Complex, which in turn evolved into the historic Digueño speakers.

The Historic Period (200 B.P. – present) marks the advent of European settlement in California. The first Spanish explorer in San Diego County was Juan Rodigro Cabrillo in 1542. Soon afterwards, other missions and presidios were established farther north along the coast of California. The mission complexes sought to convert the indigenous Yuman-speaking inhabitants to Christianity and make them loyal to the Spanish Crown. Mexico declared its independence in 1822 and replaced the colonial Spanish missions with the rancharo system. Mexico held this area of California until the Mexican-American War ended in 1848 with the signing of the Treaty of Guadalupe-Hidalgo and California was ceded to the U.S. By the 1850–1870 interval, California became a state and San Diego became an American frontier town. With its position on the San Diego Bay and plans for the construction of a railroad connection, San Diego became the

regional economic center and a merchant port. In 1919, the San Diego and Arizona Railroad was completed. Portions of the rail line occur north of the project area, west of Jacumba.

9.1.2 Previous Archaeological Investigations

A site record search was conducted by the South Coastal Information Center (SCIC) at San Diego State University in August 2007 to determine if previously recorded sites are located within the project Area of Potential Effect (APE). The records search included site descriptions and locations of previously recorded sites, locations of previously conducted archaeological investigations, and historic reference data such as historic homes databases and historic maps. The records search indicated that 44 archaeological sites are located within 1 mile of the project APE. These sites include prehistoric resource procurement and processing sites and temporary camps with minor habitation, and historic railroad, mining, and homesteading sites from the turn of the twentieth century through the middle 20th century. Of the 44 previously recorded archaeological sites, two sites are mapped by SCIC as being within or very close to the project area. One site, SDI 5164, consisted of a prehistoric lithic scatter of three to four flakes. This site is located outside the current APE and was not relocated from the description of the site record. The other site, SDI 14,425, consisted of a single bedrock milling feature with one grinding surface and no associated artifacts or subsurface midden. This site was relocated and falls within the APE. The records search also indicated that 31 previously conducted archaeological investigations have occurred within 1 mile of the project area. Three of these investigations appear to overlap the current project area.

9.1.3 Current Archaeological Investigations

A Class III cultural resources survey was conducted within the APE of the project. The cultural resources survey identified one previously recorded and one newly recorded prehistoric cultural resources and two historic cultural resources. The previously recorded prehistoric cultural resource consisted of two bedrock milling loci, including approximately four bedrock-milling features with 14 grinding surfaces (12 slicks and two basins). The site measures approximately 180 feet east/west by 23 feet north/south. No artifacts or other features were observed on the surface. Inspection of eroded and disturbed portions of the site revealed no evidence of subsurface artifacts or darkened midden soil. The second prehistoric cultural resource recorded consisted of a single retouched flake. No other artifacts or features were found associated with this isolate.

The two historic cultural resources identified were International Boundary Monuments No. 243 and No. 235. The monuments are associated with numerous treaties signed with Mexico concerning the surveying and marking of the international border and the subsequent resurveying, upkeep, and maintenance of the border markers stretching from El Paso, Texas/Ciudad Juarez, and Chihuahua to the Pacific Ocean. These treaties include the 1848 Treaty of Guadalupe Hidalgo, the 1853 Gadsen Treaty, and the Conventions of 1882, 1884, and 1889. Border Monuments No. 243 and No. 235 are also associated with U.S. Commissioner John Whitney Barlow, a prominent figure in American history.

9.2 ENVIRONMENTAL CONSEQUENCES

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

The two prehistoric cultural resources identified are not considered historic properties. Two historic objects, International Boundary Monument Numbers 243 and 235, are located within the project corridor and could be potentially affected by the Planned Action. These monuments are considered historic properties. Mitigation measures to prevent effects to these historic properties are outlined in Section 1.5. These measures, as well as other potential mitigation measures developed through coordination with the BLM or California State Historic Perseverations Office, will ensure that there are no effects on these historic properties. Additionally, all Federally recognized tribes affiliated with the project corridor have been consulted regarding the project.

As a result, the Planned Action will not result in major impacts on cultural resources, provided mitigation measures are properly implemented.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 10.0
SOCIOECONOMICS



10.0 SOCIOECONOMICS

10.1 AFFECTED ENVIRONMENT

10.1.1 Socioeconomics

The population in San Diego County in 2005 was 2,933,462 (U.S. Census Bureau 2005a). The 2005 racial mix of San Diego County was predominantly Caucasian (79.8 percent), followed by people of Asian descent (10.2 percent), followed by African Americans (5.6 percent), with the remaining 3.2 percent of the population split between American Indians and Alaskan Natives, Native Hawaiians, and other races (U.S. Census Bureau 2005a). Approximately 29 percent of the 2005 population of San Diego County identify themselves as of Hispanic or Latino origin (U.S. Census Bureau 2005a).

The total number of jobs in San Diego County in 2004 was 1,838,917, an increase of 29 percent over the number of jobs in 1994 (1,421,394) (Bureau of Economic Analysis [BEA] 2004a). The 2006 annual average unemployment rate for San Diego County was 4.0 percent. This is lower than the 4.2 percent average annual unemployment rate for the State of California (Bureau of Labor Statistics 2006).

In 2004, San Diego County had a per capita personal income (PCPI) of \$37,965 (BEA 2004b). This PCPI ranked 13th in the State of California, and was 108 percent of the state average of \$35,219, and 115 percent of the national average of \$33,050. The average annual growth rate of PCPI from 1994 to 2004 was 5.3 percent. This average annual growth rate was higher than the growth rate for the state (4.3 percent) and the nation (4.1 percent). In 2004, San Diego County had a total personal income (TPI) of \$111.4 billion. This TPI ranked 3rd in the state and accounted for 8.8 percent of the state total. The 2004 TPI reflected an increase of 7.1 percent from 2003, which was higher than 2003–2004 state change of 6.6 percent and the national change of 6.0 percent during the same period.

The estimated number of people of all ages living in poverty in San Diego County was 308,791 in 2004. This represented 10.9 percent of the population of the county, which is lower than the percentage of both the state's and the nation's population that live in poverty (U.S. Census Bureau 2004). The median household income in 2004 for San Diego County was \$51,939. This was higher than the 2004 median household income for both the state and the nation (U.S. Census Bureau 2004).

San Diego County had a total of 1,113,207 housing units in the 2005 Census (U.S. Census Bureau 2005b). The 2000 homeownership rate for San Diego County was 55.4 percent, compared to the state homeownership rate of 56.9 percent (U.S. Census Bureau 2005b).

10.1.2 Environmental Justice

Minority and poverty status in the vicinity of the project was examined to determine if any minority and/or low-income communities would potentially be disproportionately

affected by implementation of the Project. No low-income and minority populations are present within the ROI.

10.1.3 Protection of Children

Children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. Special risks to children related to construction activity may include safety, noise, pollutants, and hazardous materials. Children would be more likely to be present in residential neighborhoods adjacent to the project corridor rather than in the less populated agricultural areas.

10.2 ENVIRONMENTAL CONSEQUENCES

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

10.2.1 Socioeconomics

Because the project corridor encompasses private lands, the local tax base could be reduced. As mentioned previously in Section 6.0, 21 acres of privately owned lands could be acquired by CBP for the purposes of constructing the project. If this occurs, these 21 acres will be taken out of the San Diego County tax base. This minimal reduction of tax base will not be expected to create substantial decreases in the overall county tax base; therefore, no major impacts will be expected to occur.

Direct beneficial impacts of the Planned Action include minor and temporary increases in sales volume, material purchases, and sales taxes. Additionally, implementation of the Planned Action will reduce the amount of illegal traffic in the region, which, in turn, will reduce the associated societal and economic costs to the region. These societal and economic costs include, but are not limited to, the costs of removal of trash, overall degradation of property, reduction in property value, and degradation of natural and cultural resources. Consequently, this reduction in illegal traffic will have an indirect beneficial long-term impact on the local economy.

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

The Planned Action will not affect the region's population or housing markets and will not require an increased demand on public services that exceeds current capacity. Therefore, minimal to moderate impacts would occur.

10.2.2 Environmental Justice

No disproportionate environmental effects have been identified for any resource area or population (minority, low-income, or otherwise) analyzed in this ESP. Furthermore, there will be no displacements of residences or businesses.

Elimination of illegal cross-border activities will benefit the entire population of San Diego County, regardless of age, nationality, ethnicity, or economic status. Thus, the Planned Action will not disproportionately affect minority or low income populations.

10.2.3 Protection of Children

No residences or other facilities that would be associated with children are located near or within the project corridor. Therefore, no impacts relating to the protection of children will occur as a result of the Planned Action.

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 11.0
ROADWAYS AND TRAFFIC



11.0 ROADWAYS AND TRAFFIC

11.1 AFFECTED ENVIRONMENT

The primary transportation routes associated with the project are California Highway 94 and Old Highway 80. These roads generally parallel the U.S./Mexico border south of Interstate 8, and are the main roads for several towns (e.g., Jacumba and Campo) located north of the project corridor; however, these roads are also heavily traveled by large trucks transporting goods to Mexico through the Tecate POE. Highway 94 and Old Highway 80 provide access to Interstate 8 through various San Diego County roads. San Diego County maintained roads, such as Thing Road, Humphries Road, and Shockey Truck Trail, will be used to access the project component work sites (see Appendix C, Detailed Project Maps).

11.2 ENVIRONMENTAL CONSEQUENCES

With the implementation of the Planned Action, primary pedestrian fence and border/construction roads will be constructed to assist USBP in maintaining a secure border. It is expected that an average of 5 to 10 vehicle trips per day will occur on Highway 94 or Old Highway 80 while 15 to 25 vehicle trips per day are anticipated for county roads. The use of Highway 94 and Old Highway 80 will create minimal to moderate, but temporary, increases in current traffic levels along these roads. These roads are currently used as primary access routes to the Tecate POE; therefore, the type of vehicles used to transport equipment and materials will not vary greatly from the vehicles currently traveling on these roads. The delivery of equipment along these roads will occur primarily at the beginning and completion of the project, although materials will be delivered periodically throughout the construction process. Once the equipment and materials are within the project corridor, staging areas will be used as storage sites, thus, limiting the amount of heavy vehicle trips needed along these roads.

The use of county roads will be more frequent, as these roads will be used for border access through the project corridor to move construction activities from site to site. No construction activities (i.e., improvements) will occur on county roads; however, these roads will be brought back to pre-construction condition upon completion of the project. The county roads are currently used as patrols roads by USBP and are the only means of access to the different project components within the project corridor. The temporary increase in vehicle traffic will not cause a major adverse impact to existing traffic and capacity of the public transportation system.

The Willows Access Road connects to Old Highway 80 near Jacumba, and will need a driveway to be installed to connect the access road and Old Highway 80. Clear line of sight is achieved up to 400 feet to the west and over 1000 feet to the east of the junction of the Willows Access Road and Old Highway 80. This new driveway, as well as the use of county-maintained roads, will need construction and encroachment permits from San Diego County. The county requires these permits for any work performed within the

San Diego County's right-of-way (ROW), such as driveways or temporary road access points onto county-maintained roads.

The use of USBP constructed access roads (i.e., Willows Access Road) will be limited to government only use. The patrol roads created along the border, too, will be for the strict use of USBP; however, the existing access roads such as Thing Road and Humphries Road will continue to be publicly accessible roads. Therefore, minimal to moderate impacts to traffic along public roads will occur as a result of the Planned Action.

No long-term impacts are expected due to implementation of the Planned Action. Traffic levels will return to pre-construction levels upon completion of the project. Additionally, maintenance activities will be needed periodically along the new patrol and access roads. Impacts as a result of these activities will be negligible due to their temporary nature.

SECTION 12.0
HAZARDOUS MATERIALS

12.0 HAZARDOUS MATERIALS

12.1 AFFECTED ENVIRONMENT

EPA maintains a list of hazardous waste sites, particularly waste storage/treatment facilities or former industrial manufacturing sites in the U.S. EPA databases, Environmental and Compliance History Online and Envirofacts Data Warehouse, were reviewed for the locations of hazardous waste sites within or near the project corridor (EPA 2007b, 2007c). According to both of these databases, no hazardous waste sites are located near or within the project corridor.

Unregulated solid waste within east San Diego County has become a severe problem in recent years due to illegal vehicle and foot traffic. According to the Ninth Report of the Good Neighbor Environmental Board (GNEB) to the President and Congress of the U.S., the average IA disposes of approximately 8 pounds of waste a day. This waste consists of backpacks, clothing, blankets, water bottles, plastic sheeting, food, and other debris (GNEB 2006). Within the project area, these forms of unregulated solid waste are the most commonly observed.

12.2 ENVIRONMENTAL CONSEQUENCES

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

The potential exists for POL spills to occur while refueling construction equipment or portable lighting used during the implementation of the Planned Action. However, clean-up materials (e.g., oil mops) will be maintained at the project site to allow immediate action in case an accidental spill occurs. Drip pans will be provided for stationary equipment to capture any POL that is accidentally spilled during maintenance activities or leaks from the equipment. In addition, a SPCCP will be in place prior to the start of construction, and all personnel will be briefed on the implementation and responsibilities of this plan. BLM will be provided a copy of the SPCCP prior to the start of construction activities.

Sanitary facilities will be provided during construction activities and waste products will be collected and disposed of by licensed contractors. No gray water will be discharged to the ground. Disposal contractors will dispose of all waste in strict compliance with Federal, state, and local regulations, in accordance with the contractor's permits.

The infrastructure will also have indirect beneficial impacts through the reduction of solid waste. As illegal foot traffic is reduced or eliminated within the project corridor, so will be the solid waste that is associated with it.