



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009



In Reply Refer To:
FWS-ERIV 3282.4

Mr. Gene K. Fong
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, California 95814

SEP 23 2004

Re: Programmatic Biological Opinion for Five Interchanges and Associated Arterial Improvement Projects along Interstate 10 and the Tiered Biological Opinion for the Palm Drive/Gene Autry Trail - Interstate 10 Interchange Improvement Project in Eastern Riverside County, California (1-6-04-F-3282.4; EA: 08-455800)

Dear Mr. Fong:

This document transmits the Fish and Wildlife Service's (Service) Programmatic Biological Opinion (Programmatic) for Five Interchanges and Associated Arterial Improvement Projects along Interstate 10 (I-10) and the Tiered Biological Opinion (Opinion) for the Palm Drive/Gene Autry Trail I-10 Interchange Improvement Project located in the Coachella Valley, eastern Riverside County, California, and the effects on the federally threatened Coachella Valley fringe-toed lizard (*Uma inornata*; fringe-toed lizard) and the federally endangered Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*; milk-vetch) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your February 23, 2004, request for formal consultation was received at our office on February 26, 2004.

This Opinion is based on information provided in the January 2004, *Biological Assessment Palm Drive/Gene Autry Trail Interchange Improvements* (Caltrans: BA); the August 2003, *Conservation Bank Plan Addressing the Direct, Indirect, and Cumulative Effects of Interstate 10 Coachella Valley Interchange Projects* (Caltrans 2003a); a site visit on July 2, 2002; and discussions during numerous meetings to develop the Plan and the programmatic conservation strategy.

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CONSULTATION HISTORY

During 2002, the Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), California Department of Fish and Game (CDFG) and the Service met numerous times to develop an approach for avoiding, minimizing, and offsetting direct and indirect effects to listed species from improvements to interchanges and their associated arterial streets along I-10 in the Coachella Valley. In addition, Caltrans agreed to include 32.9 acres to the total acreage of the Conservation Bank to offset previous impacts to 30.0 acres for a Palm Drive widening project and 2.9 acres for a Ramon Road improvement project. Accompanying their December 22, 2003, letter, Caltrans issued the final version of the *Conservation Plan Addressing the Direct, Indirect, and Cumulative Effects of Interstate 10 Coachella Valley Interchange Projects* (Plan). The Plan outlines the conservation strategy developed for the Programmatic and subsequent Tiered biological opinions, including a commitment by Caltrans and FHWA to purchase 1795.4 acres of land to augment and build on existing wildlife preserves to ensure the long-term viability of sand dune habitat in the Coachella Valley.

Caltrans requested a species list for the five interchange projects discussed in the Plan in a letter dated November 20, 2003. The Service provided this species list in our December 2, 2003, letter.

In a letter dated February 23, 2004, and received by the Service on February 26, 2004, the Federal Highway Administration (FHWA) requested formal consultation on the fringe-toed lizard and milk-vetch from the direct and indirect effects of the proposed project. In a letter dated March 30, 2004, the Service responded that all information required to initiate formal consultation had been received by the Service.

During Spring 2004, the Service coordinated with CVAG to discuss purchasing the 8,881 acre Catton Investments, Inc. property. In our letter dated June 4, 2004, we recognized using a portion of the 8,881 acre Catton Investments, Inc. property for offsetting impacts from four of the five projects addressed by this Opinion including Palm Drive/Gene Autry Trail, Date Palm Drive, Ramon Road/Bob Hope Drive, and Jefferson Avenue interchange improvement projects. Up to 1,100.0 acres could be used for off-setting impacts of the four interchange projects and up to 362.8 acres could be used for offsetting impacts from direct effects of the associated arterial streets.

DESCRIPTION OF THE PROPOSED ACTION

The primary purpose of the proposed action is to improve traffic flow at interchanges along I-10 through the Coachella Valley (Figure 1). This consultation is programmatic because it is intended to cover interrelated projects by establishing conservation measures, including conservation banking protocol, based on avoidance and minimization measures developed to reduce both direct and indirect effects to threatened, endangered, and sensitive species in the action area for each project. At the Programmatic level, this Opinion develops the protocol for covering improvements to five I-10 interchanges and their associated arterial streets up to the

next logical termini. At the project level, this Opinion addresses the I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project.

Programmatic

Caltrans, in cooperation with FHWA, proposes to improve five interchanges and their associated arterial streets along I-10 in eastern Riverside County, California. The five interchange projects include Indian Avenue, Palm Drive/Gene Autry Trail, Date Palm Drive, Ramon Road/Bob Hope Drive, and Jefferson Avenue (Figure 1). The arterial street improvements included at the Programmatic Level of this Opinion begin at the outer limits of each proposed interchange project and extend along each arterial street to the next logical termini (Table 1). For each interchange improvement project and each arterial street improvement project, a tiered biological opinion will be written to describe the project, discuss effects of the project, and provide incidental take.

The Programmatic and Tiered action areas include those areas directly and indirectly affected by the proposed project footprint, and the road effect zone along both sides of interchange improvements and adjacent arterial streets from the freeway interchange to the next logical termini (Table 1). The road effect zone for all projects covered by this Opinion is 360 feet on each side of the roadway. The existing effect distance within the road effect zone is 50% (180 feet) of the width of the road effect zone. The induced traffic increases due to interchange and arterial improvements will increase the effect distance by 50% (an additional 180 feet) resulting in reaching the threshold of the road effect zone. The development of offsetting conservation measures for the road effect zone considered species covered by the proposed Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) including the federally threatened Coachella Valley fringe-toed lizard; federally endangered Coachella Valley milk-vetch and triple-ribbed milk-vetch (*Astragalus tricarinatus*); the Federal candidate Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*); and the sensitive flat tailed horned lizard (*Phrynosoma mcallii*), Palm Springs pocket mouse (*Perognathus longimembris bangsi*), burrowing owl (*Speotyto cunicularia*), LeConte's thrasher (*Toxostoma lecontei*), Coachella Valley giant sand-treader cricket (*Macrobaenetes valgum*), Coachella Valley Jerusalem cricket (*Stenopelmatus cahuilaensis*), and little San Bernardino Mountains linanthus (*Gilia maculata*).

Specific activities for the Programmatic action include geotechnical and archaeological surveys. These two activities may occur prior to consultation on a specific interchange project to provide information necessary for project design.

Geotechnical surveys typically entail drilling a test hole to analyze the subsurface geology and temporarily placing fill material adjacent to the boring activity. Immediately following the geotechnical study at a test pit, the borehole will be covered with the excavated material. Cross-country travel may be required for these activities.

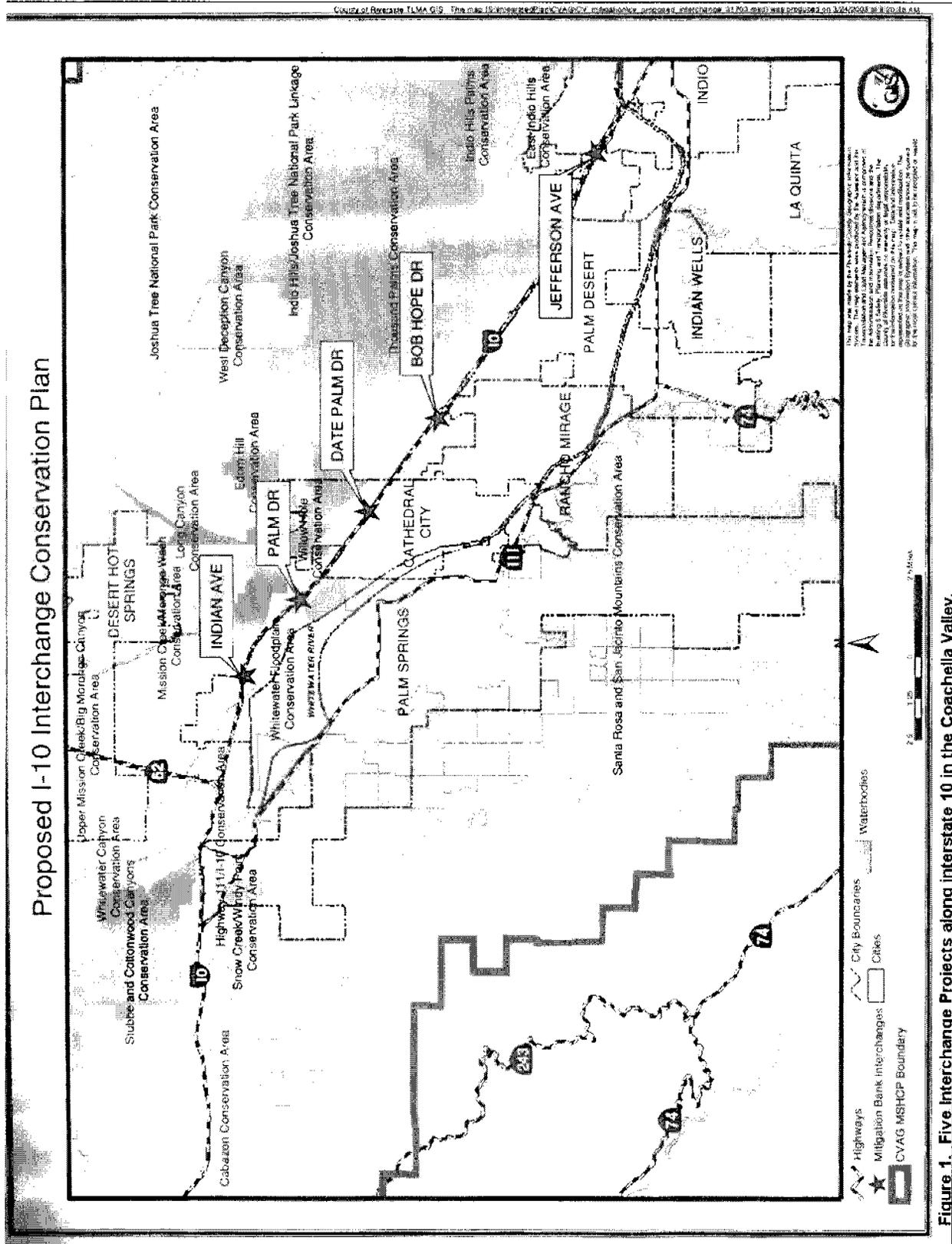


Figure 1. Five Interchange Projects along interstate 10 in the Coachella Valley.

Archaeological surveys will occur for the Jefferson Interchange Project and will likely entail manual excavation of 30x30 cm shovel probes, 1x1 m and 1.2 m test units, and perhaps some 5x5 m shovel scrapes down to 10-20 cm. Archaeological surveys may also entail mechanically excavating 3-4 trenches (24 inches wide) as deep as possible before they cave in. These surveys will include site mapping, photographs and surface collections.

I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project

The project area (Figure 1) is located in the Coachella Valley, eastern Riverside County, California in the City of Palm Springs. The purpose of the proposed project is to relieve traffic congestion at the intersection of the I-10 on-and off-ramps with Palm Drive/Gene Autry Trail; accommodate planned future growth in and around the City of Palm Springs; improve access to developing residential, commercial, and industrial areas in eastern Riverside County; and improve the operational characteristics of the interchange.

Existing Average Daily Traffic (1999 ADT) volumes for this segment of I-10 in the vicinity of the Palm Drive/Gene Autry Trail interchange range between 26,152 and 32,942 vehicles in each direction. The existing peak hourly volumes range from 1,359 vehicles per hour (vph) to 2,175 vph. Projected ADT and peak hourly volumes on I-10 are expected to increase up to 78,120 and 5,430 respectively by the year 2025. Without traffic improvements, the severe congestion at the Palm Drive/Gene Autry Trail interchange will be in excess of roadway capacity, an event referred to as breakdown conditions.

The existing interchange is a diamond configuration constructed in 1968. Existing traffic controls consist of two four-way stop signs posted at the intersection of the on- and off-ramps and Palm Drive/Gene Autry Trail. Riverside County recently improved the two four-way stop signs to signalized intersections. Through the project area, I-10 is eight lanes wide, four in each direction, with no high-occupancy vehicle (HOV) lanes.

The proposed project will reconstruct the interchange at Palm Drive/Gene Autry Trail (Figure 2). The existing overcrossing will be removed and a new overcrossing (bridge) will be constructed to accommodate six lanes. A retaining wall will be required under the bridge. The six lanes will taper to connect with the existing roadway prior to reaching the existing Union Pacific Railroad overhead to the south.

The proposed project will include the following specific improvements:

- realignment of eastbound direct ramps in southeast (on-ramp) and southwest (off-ramp) quadrants,
- realignment of westbound direct ramps in northeast (off-ramp) and northwest (on-ramp) quadrants,
- addition of single-lane eastbound/westbound loop on-ramps in the northeast/southwest quadrants (with grading to accommodate a second future on-ramp lane for HOV access in the northeast/southwest quadrants),

Table 1. Interchange projects and associated arterial streets covered under the Programmatic biological opinion 1-6-03-F-3282.4. Included are approximate acreage impacted from both direct and indirect effects.

Interchange	Arterial	Logical Termini	Direct Effects (acres)	Indirect Effects (acres)
Indian Avenue			29.9	43.8
	Indian Avenue	I-10 to Dillon Road	11.27	35.48
	Indian Avenue	I-10 to San Rafael	29.56	111.76
Palm Drive/Gene Autry Trail			33.2	33.3
	Palm Drive	I-10 to 20 th Avenue	7.84	62.23
	Gene Autry Trail	I-10 to Vista Chino	19.81	75.42
	Varner Road	Palm Drive to Mountain View Road	18.02	66.88
Date Palm Drive			27.4	24.2
	Date Palm Drive	I-10 to Varner Road	10.28	39.38
	Date Palm Drive	I-10 to Ramon Road	10.43	55.81
	Varner Road	Mountain View Road to Vista Chino	45.19	167.73
Ramon Road/Bob Hope Drive			71.9	97.2
	Bob Hope	Ramon Road to Dinah Shore Drive	14.35	14.6
	Ramon Road	Los Alamos to Bob Hope	9.92	14.13
	Ramon Road	I-10 to Varner	2.56	0.0
	Ramon Road	Varner to Monterey	1.29	7.89
	Varner Road	Vista Chino to ½ mile before Rio Del Sol	20.85	75.06
	Varner Road	I-10 to midpoint	2.25	3.72
Jefferson Avenue			39.3	14.7
	Jefferson Avenue	I-10 t 40 th Avenue	2.2	4.21
Ramon Road *			2.9	
Palm Drive*			30.0	
Total Acreages			440.42	947.5

* Previous impacts from Caltrans projects along these arterial streets

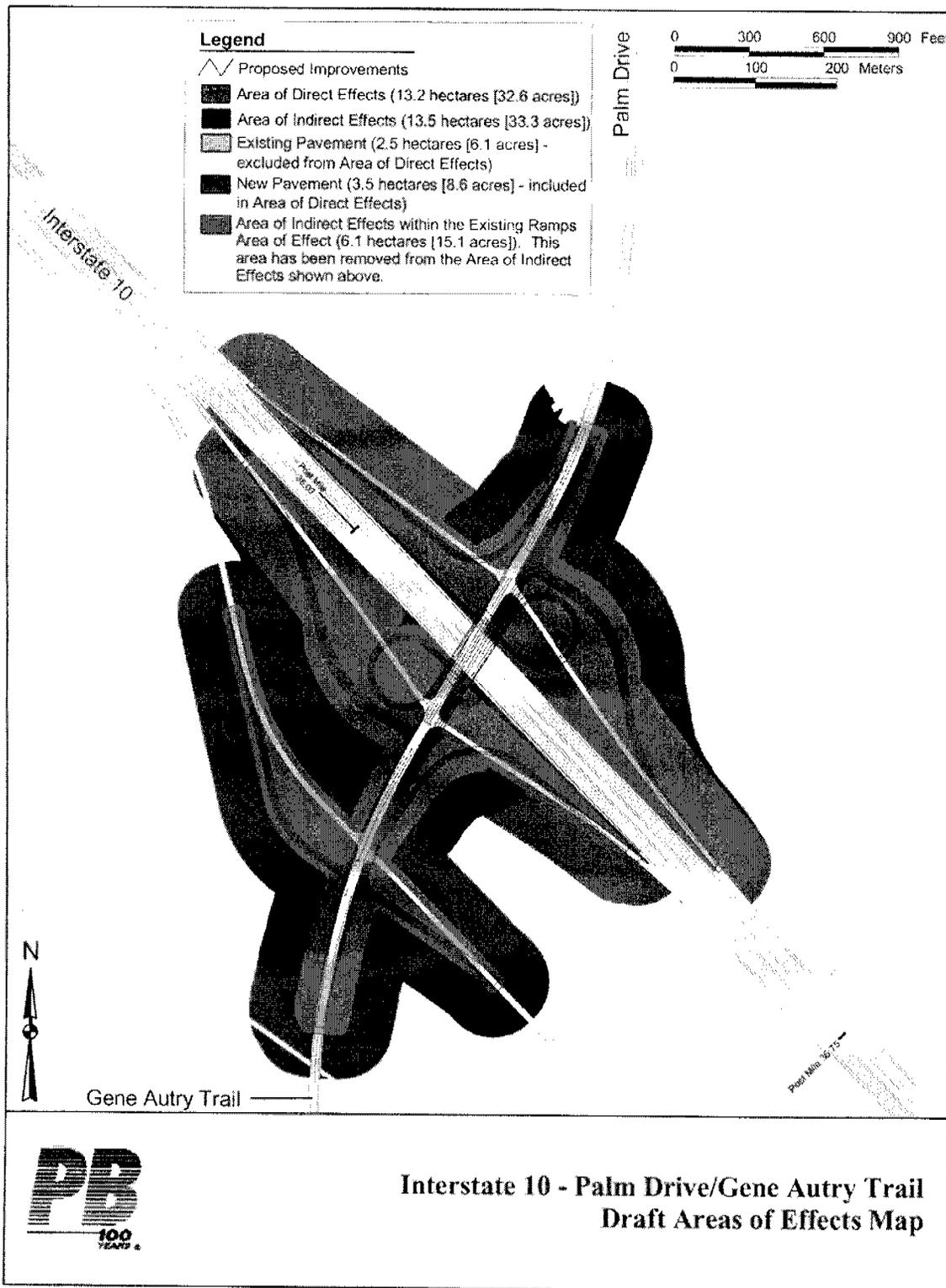


Figure 2. Tiered project within Programmatic.

- addition of pedestrian walkways and a Class II bikeway (striped, no barrier) on both sides of the bridge,
- signalized crosswalks on the eastbound and westbound on- and off-ramps, and
- realignment of the existing Micro Place/Salvia Road so that the intersection with Gene Autry Trail will be farther south.

Additional right-of-way (ROW) will need to be acquired for the improvements in all four quadrants of the interchange, totaling approximately 4.24 acres. The design of the overpass will be constructed with enough horizontal clearance to accommodate the planned widening of I-10 from eight to ten lanes.

The proposed project will directly impact 33.2 acres of desert habitat and indirectly impact 237.83 acres of desert habitat. The proposed project is scheduled for construction in fiscal year 2008 and is anticipated to take approximately 14 months.

Conservation Measures

Programmatic

The following measures will be implemented as part of all interchange and arterial street improvements covered under this Opinion:

1. All areas outside of the project footprint will be delineated as Environmentally Sensitive Areas (ESAs). All parties in conjunction with this operation will strictly avoid these areas. No construction activities, materials, or equipment will be permitted in the ESAs. These areas must be placed on the design plans and included in the construction contract.

ESAs will be designated by erecting protective fencing delineating the project impact boundary and sensitive habitats. This barrier fencing will be constructed in such a way as to restrict the movement of reptiles into impacted areas. Fencing material can vary; however, it should consist of a cloth-like material that can withstand high winds, sun and heat. This fence should be buried 24-inches below the surface, to prevent terrestrial species from burrowing underneath, and extend above ground at least 24-inches.

2. An employee education program will be developed. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program within two weeks of working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of Federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area environs. Included in this program will be color photos of the listed species, which will be shown to the employees. Following the education program, the photos will be posted in the

contractor and resident engineer's office, where they will remain throughout the duration of the project. The contractor, Resident Engineer, and Service-approved biological monitor will be responsible for ensuring that employees are aware of the listed species.

3. The project proponent will designate a Service-approved qualified biologist who will be responsible for overseeing compliance with protective measures for the listed species. The biologist will have the authority to halt all associated project activities that may be in violation of this biological opinion. In such an event, the biologist will contact the Service within 24 hours.
4. Construction work areas will be delineated and marked clearly in the field prior to habitat removal, and the marked boundaries maintained and clearly visible to personnel on foot and by heavy equipment operators. Employees will strictly limit their activities and vehicles to the proposed project areas, staging areas, and routes of travel. The project proponent and/or the biological monitor will contact the Service to verify that the limits of construction have been properly staked and are readily identifiable.
5. A biologist will monitor construction to ensure that vegetation removal, Best Management Practices (BMPs), ESA fencing, and all avoidance and minimization measures are properly constructed and followed.
6. All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities, will occur in designated upland areas. The designated upland areas will be located in such a manner as to prevent any runoff from entering waters of the United States, including wetlands.
7. Typical erosion control measures, BMPs, in the vicinity of streams will be employed in accordance with the conditions in the 401 Water Quality Certification requirements of the Regional Water Quality Control Board.
8. Use of invasive exotic plant species in landscaped areas adjacent to or near sensitive vegetation communities will be restricted. In compliance with Executive Order 13112, impacted areas will be revegetated with plant species native to desert habitat types and the Coachella Valley, and will avoid the use of species listed in Lists A & B of the California Exotic Pest Plant Council's list of Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999.
9. The seed of Coachella Valley milk-vetch will be collected off of plants from within the boundaries of permanent and temporary impacts from project construction. Seed collection will occur when the seed is past soft dough and prior to being naturally dispersed. The top four inches of soil surrounding the milk-vetch plants to be impacted will be collected and placed in plastic bags. This seed and soil will be distributed at an area consisting of aeolian habitat immediately following collection. The location where seed will be dispersed will be coordinated with the Service prior to collection.

10. All construction equipment will be inspected and cleaned prior to use in the proposed project footprint to minimize the importation of non-native plant material. All mulch, topsoil and seed mixes used during post construction landscaping activities and erosion control BMPs will be free of invasive plant species propagules. A weed abatement program will be implemented should invasive plant species colonize the area within the project footprint post-construction.
11. No off-road vehicle activity from construction personnel or other persons affiliated with the project will occur outside of the project footprint.
12. To reduce attraction of ravens and crows, which may eat fringe-toed lizards, all trash will be placed in raven-proof containers and promptly removed from the site.
13. No pets or firearms will be permitted inside the project's construction boundaries or other associated work areas.
14. All sand removal and storage activities will be restricted to the project footprint. No maintenance activities will be authorized that extend beyond the boundaries of the project footprint.
15. To the extent possible, no sand removal activities will take place from 1 November - 30 March (to avoid winter dormancy periods for the lizards) or if ambient air temperature exceeds 102 degrees Fahrenheit (the temperature at which lizard activity tends to be reduced).
16. Vehicle speeds on unpaved access roads will be restricted to a maximum of 25 MPH.
17. All culverts, bridges, and associated water passage structures will be maintained such that water and sediment may pass between upstream and downstream locations and so as not to block the passage of wildlife.
18. Impacts resulting from this project will be offset by implementing the agreements established in the *Conservation Bank Plan Addressing the Direct, Indirect, and Cumulative Effects of Interstate 10 Coachella Valley Interchange Projects* (Plan). The Plan assesses potential effects and offsetting measures for the proposed projects. The Plan establishes mitigation ratios at 2:1 for direct impacts of the interchange and associated arterial improvements covered under this Opinion and 1:1 for indirect impacts. Required offsetting measures will be provided through the acquisition of land and the final conservation bank agreement. Caltrans and/or Coachella Valley Association of Governments (CVAG) will set up an endowment fund for the purpose of managing the proposed conservation bank in perpetuity.
19. Prior to beginning construction, CVAG, Caltrans, and FHWA will purchase and establish a conservation bank (Bank), as per the Plan; finalize a conservation bank agreement with the Service and CDFG, and set up the endowment fund for managing the property in

perpetuity. Sufficient land will be purchased for the bank prior to start of construction for any given project. CVAG, Caltrans, and FHWA will coordinate with the Service and CDFG to locate and acquire Bank lands. All Bank lands will be approved by the Service and CDFG prior to purchase to ensure that these conservation lands benefit the fringe-toed lizard and milk-vetch. In addition, CVAG or its designee will be the manager of all Bank lands.

20. Geotechnical borings in areas with aeolian sand deposits will include the following measures:
 - a. No cross country-travel and geotechnical borings will take place from 1 November - 30 March (to avoid winter dormancy periods for the lizards) or if ambient air temperature exceeds 102 degrees Fahrenheit (the temperature at which lizard activity tends to be reduced).
 - b. When traveling cross-country, a route will be established and followed that avoids, to the maximum extent practicable, all sand hummocks and dunes.
 - c. The surface area will be returned to the pre-disturbance state. If sand dunes or hummocks were impacted, then the surface sand will be placed in a separate pile and replaced as a dune or hummock.
21. Archaeological surveys in areas with aeolian sand deposits will include the following measures:
 - a. The outer perimeter of all survey areas will be delineated and the area within this perimeter will be calculated and deducted from the Conservation Bank.
 - b. All work including staging, depositing excavated materials, storing equipment, etc, will be conducted within the perimeter of the survey area.

I-10 Palm Drive/Gene Autry Trail Interchange Project

The proposed action contains the following measures that will be implemented as part of the proposed I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project:

22. The Project proponent will ensure that conservation measures one through twenty listed above are followed.
23. Direct impacts to 33.2 acres of partially consolidated and unconsolidated blowsand habitats will be offset through the debit of 66.4 acres (a 2:1 replacement ratio) from the Bank. Indirect effects to 237.83 acres of partially consolidated and unconsolidated blowsand habitats will be offset through the debit of 237.83 acres (a 1:1 replacement

ratio) from the Bank. The 304.23 acres will be preserved in perpetuity by the Conservation Bank Manager as established in the conservation bank agreement.

24. The 304.23 acres of aeolian sand habitat will be debited from the Bank prior to the commencement of construction activities associated with the project.

STATUS OF THE SPECIES

Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*)

Listing Status

The Service listed the Coachella Valley milk-vetch as endangered on October 6, 1998 (63 FR 53596-53615). Critical habitat for the taxon has not been designated. A recovery plan has not been developed for this species.

Species Description

Astragalus lentiginosus was first described by Sir William Jackson Hooker (1831) based on a specimen collected by David Douglas in the Blue Mountains of Oregon (Kuntz 1891). Rupert C. Barneby (1964) described the Coachella Valley milk-vetch based on a specimen collected in 1913 by Alice Eastwood in Palm Springs, California. The Coachella Valley milk-vetch, a member of the pea family (Fabaceae), is an erect winter annual or short-lived perennial with ascending stems 4-12 inches tall. Short, appressed, white hairs densely cover the leaves, stems, and fruits. The plant has pink-purple flowers arranged in 13 to 25-flowered racemes and strongly inflated two-chambered fruits (Hickman 1996). The Coachella Valley milk-vetch is one of 19 varieties of *A. lentiginosus* found in California (Spellenberg 1993), none of which occur in the same region or habitat types. However, *A. aridus* and *A. crotalariae* may be found within the geographical and ecological range of *A. lentiginosus* var. *coachellae*. Both taxa, in contrast to the Coachella Valley milk-vetch, have fruits with a single chamber.

Distribution

Historical abundance of the taxon in the Coachella Valley is unknown. The California Natural Diversity Data Base (CNDDDB) contains records of twenty to twenty-five occurrences within the past decade. Ninety percent of these occurrences were found within 3 miles of I-10 (Barrows 1987) from north of Indio to Cabazon. The Coachella Valley Preserve System protects approximately 20 to 25 percent of the documented plant locations. Approximately 75 to 80 percent of the known Coachella Valley milk-vetch locations are found on unprotected lands. Of these, approximately 7 percent exist on Southern California Edison lands, 7 percent occurs on lands within the Agua Caliente Indian Reservation, and the remainder is situated on other private parcels.

There are six known occurrences of this species in the Desert Center area along Highway 177 (Cornett 1994). Two of these occurrences are on the Bureau of Land Management Desert Lily Preserve, three are on private land, and one within Joshua Tree National Park. Although a recent 1998 California Department of Fish and Game survey confirmed the presence of two significant populations along the southwest border of the Desert Lily Preserve approximately 7 miles from Desert Center, most recorded Coachella Valley milk-vetch populations occur between Cabazon and Indio.

Life History

Coachella Valley milk-vetch is an annual to short lived perennial plant. As an annual, an individual plant grows from seed, blooms, produces new seed (after a flower is pollinated), and then dies all in one year's time (and typically only during the spring–summer growing season). As a short-lived perennial, an individual may bloom and produce seed for a few consecutive seasons and then die. Depending on a given year's conditions, perennial and annual plants can vary in size. Variation in growing conditions can also influence the size and extent of a population of individual standing plants.

The true population of a species of annual or short lived perennial plant generally consists of its seed bank (a reserve of dormant seeds, generally found in the soil). The entire seed bank typically does not germinate in any given year. During any given year, the visible population of standing plants rarely reflects the spatial or numerical extent of the seed bank. The number and location of standing plants in a population can vary annually due to a number of factors, including the amount and timing of rainfall, temperature, and soil conditions. Indeed, there may be no visible evidence of a population for a year or even a span of several years only to return again when local conditions are suitable for seed germination. Additionally, a seed bank may remain viable for years without input of new seeds. For example, seemingly unoccupied habitat for *Holocarpha macradenia* (Santa Cruz tarplant), was found to contain a viable seed bank where standing plants had not been seen in more than 7 years (Bainbridge, *in litt.* 1999).

Habitat Affinities

The Coachella Valley milk-vetch is found on loose wind-blown or alluvial sands on dunes/flats largely within the Coachella Valley of Riverside County, California. Holland (1986) characterized the habitat type as stabilized and partially-stabilized desert sand fields. Species often found in association with the Coachella Valley milk-vetch include, *Larrea tridentata* (creosote bush), *Ambrosia dumosa* (burro-weed), *Psoralea argemonea* (indigo bush), *Atriplex canescens* (fourwing saltbush), *Abronia villosa* (sand verbena), *Dicoria canescens* (dicoria), *Achnatherum hymenoides* (Indian ricegrass), *Croton californicus* (croton), *Chamaesyce polycarpa* (sandmat), *Petalonyx thurberi* (sandpaper plant), *Astragalus aridus* (annual desert rattleweed), *A. crotalariae* (Salton milk-vetch), and *Oenothera deltoides* (devil's lantern). Barneby (1964) initially described this taxon as apparently confined to the Coachella Valley.

However, he later identified specimens collected in 1973, from the valley floor near Desert Center [approximately 50 miles to the east], as *A. lentiginosus* var. *coachellae*.

Population Trend

Population sizes of the Coachella Valley milk-vetch vary widely from year to year, depending on environmental conditions, making assessments of total individual numbers difficult. At locations where botanists monitored the Coachella Valley milk-vetch in 1995, densities varied from 1 plant per acre to 24 plants per acre (Sanders and Thomas Olsen Associates 1995). One of the largest known remaining sites for this taxon occurs in the north, near Snow Creek Road. In 1995, this area supported about 24 plants per acre, the greatest densities of Coachella Valley milk-vetch found during the 1995 surveys (Barrows 1987, Sanders and Thomas Olsen Associates 1995).

Threats

The primary threat to the Coachella Valley milk-vetch is habitat destruction due to extensive development within the Coachella Valley. The elimination of habitat began with the introduction of agriculture over a century ago, but urbanization has accelerated greatly in the past 40 years. Significant dune habitats that once occurred along the southwestern edge of the Coachella Valley, along the base of the Santa Rosa Mountains, now support five cities (Barrows 1987). Increased urbanization has reduced available habitat through direct conversion of land and alterations in the sand transport system responsible for the creation/maintenance of sandy habitats (Barrows 1987). As habitat becomes increasingly fragmented by urban development, remaining populations become more vulnerable to adverse effects of vehicular activities, roadside maintenance, or subsequent paving/landscaping and accompanying weed invasions. Fragmentation increases the potential for stochastic events that detrimentally affect long-term survival probability. Similarly, fragmentation decreases the species' resilience to rebound from such events.

Coachella Valley fringe-toed lizard (*Uma inornata*)

Listing Status

In 1980, the State and Federal (45 FR 63812-63820) governments listed the Coachella Valley fringe-toed lizard as an endangered and threatened species, respectively; critical habitat also was designated (*ibid.*). The species was listed due to the destruction/degradation of suitable habitat converted for agricultural and developmental purposes (The Nature Conservancy (TNC) 1985). In 1980, the Federal government designated critical habitat for the fringe-toed lizard as part of the final rule listing the fringe-toed lizard. In 1984, the Service published a recovery plan (Service 1984) for the fringe-toed lizard. In 1986, the Service approved a Habitat Conservation Plan (HCP) for the fringe-toed lizard that was signed by the County of Riverside, the nine cities of the Coachella Valley and the Service.

Species Description

The Coachella Valley fringe-toed lizard is a medium sized lizard that averages approximately 5.9 inches to 9.4 inches in total length. Adult males range from approximately 2.8 inches to 4.8 inches in snout-vent length and adult females range from about 2.6 inches to 3.9 inches. Tails comprise between 49 and 64 percent of total length of adult lizards. Dorsal color of the fringe-toed lizard is whitish to pale gray with a pattern of ocelli (eyelike markings) formed by dark markings on the pale background. The ocelli form a pattern of longitudinal stripes over the shoulders. The ventral surface is white. One or several black dots may be present on each side of the abdomen and dusky lines are present on the throat. The fringe-toed lizard has three internasal scales and less than 29 femoral pores (Norris 1958, Stebbins 1954, Mayhew 1965, and Pough 1973).

The numerous morphological adaptations that protect the lizard's body from abrasion, exclude sand particles from body openings, and allow the lizard to move about in an unstable environment include (Stebbins 1943, 1944, and Norris 1958): (1) nostrils that exclude sand; (2) U-shaped nasal passages that trap sand particles; (3) a wedge-shaped snout that allows passage through the sand; (4) an elongated upper jaw that overlaps the lower jaw, allowing the lizard to dive into sand without filling its mouth; (5) fringed eyelids with a double seal to exclude sand; (6) flaps of skin that cover the ears when under sand; (7) smooth scales to reduce friction; and (8) elongated, fringed toes that increase foot surface area and traction for running over and swimming through sand.

The fringe-toed lizard has the ability to run across the sand at relatively high speeds and literally dive into it. Fringe-toed lizards may move short distances after burial, engaging in what has been called "sand-swimming" until the lizard is completely buried (Stebbins 1944, Norris 1958).

Distribution

A.S. England (1983) calculated that the fringe-toed lizard occupied approximately 200 square miles of aeolian habitat in the Coachella Valley prior to significant agricultural development at the beginning of this century. At the time of England's analysis, nearly all natural habitat in the southern quarter of the valley had been converted to agricultural and associated urban uses. Based on England's analysis, the historical distribution of the fringe-toed lizard included approximately 144 square miles of suitable habitat west of the Coachella Canal and 56 square miles east of the canal. Suitable habitat in both areas is rapidly declining. By August 1979, only 10 square miles of undeveloped and fragmented habitat remained east of the canal. Because of the small size, isolation, and high development potential, these fragmented habitat patches are not considered adequate for the long-term survival of fringe-toed lizard populations (Service 1984).

Undeveloped fringe-toed lizard habitat west of the Coachella Canal also has declined sharply. The original 144 square miles of habitat were reduced to 122 square miles by 1955, to 101 square

miles by August 1978, and to 94.8 miles by December 1982 (England 1983). Portions of the remaining fringe-toed lizard habitat may only support very limited populations. The 1984 estimate of occupiable habitat throughout the range of the fringe-toed lizard is 127 square miles (Coachella Valley Fringe-toed Lizard Conservation Land Steering Committee 1984).

Since listing, the major local jurisdictions in the Coachella Valley, in coordination with the Service, Bureau of Land Management, and California Department of Fish and Game, have developed and implemented the Coachella Valley Fringe-toed Lizard Habitat Conservation Plan (HCP), which established a reserve system for conservation of this species. The HCP, approved by the Service in April 1986 under section 10(a)(1)(B) of the Act, established conditions under which local jurisdictions could approve development in aeolian sand habitats outside the boundaries of the reserve system (TNC 1985). Upon payment of a mitigation fee, the HCP permitted private development. The HCP established the mitigation fee to fund acquisition and management of the reserve system.

The reserve system created by the HCP established three separate preserves that collectively protect 26 square miles (mi^2) of land containing 12.25 mi^2 of occupiable blowsand habitat. The three reserves are the Whitewater River Preserve (1.9 mi^2), Willow Hole Preserve (2.2 mi^2), and the Thousand Palms Preserve (8.1 mi^2). Some researchers believed that the Whitewater River Preserve has a sustainable aeolian sand source as long as there are periodic flood flows within the Whitewater River (Meek and Wasklewicz 1993). Griffiths *et al.* (2002) were more tentative. They believed the hydrologic effects of the percolation ponds upstream could adversely affect the sediment deposition from the Whitewater and San Geronio Rivers. Regardless, the biological value of this reserve requires protecting the integrity of the Whitewater River hydrologic and sediment delivery system.

The Willow Hole Preserve appears to receive sand from the Morongo and Mission Creek washes west of the Indio Hills (Weaver 1981, Meek and Wasklewicz 1993). There is no substantial evidence of recent aeolian activity northwest of the Willow Hole Preserve, and this suggests these deposits may have slowly accumulated over thousands of years (Meek and Wasklewicz 1993). The present immobility of sands, anchoring of sand by mesquite, and protection of deposits from wind within valleys suggest sands in this area could remain indefinitely (Meek and Wasklewicz 1993). Strong winds transport fluvial sediment from the Mission-Morongo depositional plain to Willow Hole and Edom Hill (Griffiths *et al.* 2002). In addition, intense summer thunderstorms recycle these aeolian deposits on Edom Hill into Willow Hole. However, lowering the groundwater table through pumping could result in the dieback of mesquite that anchor the dunes on the Preserve, which would render dunes vulnerable to erosion (Meek and Wasklewicz 1993).

The Thousand Palms Preserve is located north of I-10 and Bermuda Dunes. The Thousand Palms Preserve's primary sand source is considered to be a series of relatively small canyons in the Indio Hills west of Thousand Palms Canyon (Simons, Li and Associates 1997). The Thousand Palms Canyon Watershed was identified as a secondary sand source for the Preserve. The

Thousand Palms' dunes are moving towards the southeast and consist of largely unvegetated active dunes surrounded by a creosote bush and saltbush dune hummocks area where aeolian activity varies from year to year. This site is the driest and hottest of the three preserves and has the lowest perennial plant species richness and abundance (Center for Natural Lands Management (CLNM) 2000).

Habitat Affinities

The Coachella Valley fringe-toed lizard is endemic to fine, wind-blown sand habitat in the Coachella Valley and is restricted to sandy plains, mesquite dunes, and sand hummocks (45 FR 63818). According to Norris (1958), sandy plains are a featureless, nearly level plain covered with a variable thickness of mixed silt and sand. Deposits on sand plains typically result from the winnowing of fine sand from adjacent sand accumulation. Norris (1958) describes a variety of dune systems throughout the range of *Uma* species. The few remaining mesquite dunes in the Coachella Valley are found along and above the San Andreas Fault. The San Andreas Fault acts as a spring that channels ground water up towards the surface.

Sand hummocks or accretion dunes are an accumulation of sand in piles within and around bushes (Norris 1958). Sand hummocks typically form in the periphery to large deposits of sand. In the Coachella Valley, where the wind direction is constant, the accumulated sand deposits are oriented with regard to the wind source. The windward slope is composed of coarse sand and is usually truncated close to the base of the bush, while the leeward side, favored for basking by fringe-toed lizards, possesses a long stringer of fine sand. The greatest height of such an accumulation is usually within the bush. When sand accumulates around large bushes such as mesquites and desert willows, accretion dunes may reach heights of 30 feet or more. Sand hummocks are the most common type of blow-sand deposits in the Coachella Valley comprising about 80 percent of fringe-toed lizard habitat (England and Nelson 1976).

Critical Habitat

Critical habitat for fringe-toed lizards includes approximated 12,000 acres (18.5 square miles) of Federal, State, local, and private lands in eastern Riverside County the majority of which is in private ownership (45 FR 63812-63820). Primary constituent elements for fringe-toed lizards are those habitat components that are essential for the primary biological needs of foraging, nesting, rearing of young, intra-specific interactions, dispersal, genetic exchange, or sheltering. Primary constituent elements are provided in undeveloped areas where sandy plains, sand hummocks and mesquite dunes exist.

The approximate 12,000 acres designated as critical habitat include both the areas of highest lizard concentration and a source of blow sand (45 FR 63812-63820). Designated critical habitat encompasses suitable habitat on the Coachella Valley Preserve and unsuitable lands that are the sand source in the Thousand Palms Canyon watershed and canyons/alluvial fans along the southern flank of the western Indio Hills. These unsuitable areas generate source material blow-

sand habitats downstream and downwind. Absent an adequate sand supply, the strong, unidirectional winds erode and deplete sand accumulations. Researchers originally thought Thousand Palms Canyon and western Indio Hills contribute equally to accretion of wind-blown sand on the preserve; however, further investigation (Lancaster *et al.* 1993, Meek and Wasklewicz 1993, and Simons, Li and Assoc. 1997) found that the western Indio Hills contributed most of the sand. These studies concluded Thousand Palms Canyon was only a minor contributor of blow-sands to the Preserve.

Life History

The fringe-toed lizard is primarily insectivorous, but will take plant material (Stebbins 1944, Smith 1946, Mayhew 1965). Captive fringe-toed lizards have been observed eating insects, juveniles of their own and other lizard species, leaves, and flower parts (Carpenter 1963)

Reproductive activity starts in the spring (typically late April), shortly after adults emerge from winter dormancy, and extends through mid-August (Mayhew 1965). Location and timing of egg-laying has not been observed in the wild, but multiple clutches may be laid in one year (Mayhew 1965). Hatchling fringe-toed lizards have been observed from late August through the fall (Stebbins 1954, Mayhew 1965). A few precocial fringe-toed lizards may breed the summer after the year they hatch, but most do not reach sexual maturity until the second summer (Mayhew 1965).

The fringe-toed lizard hibernates below ground, between November and February/March, when the daytime temperatures are predominantly below its activity range of body temperature (TNC 1985). Turner *et al.* (1981) found fringe-toed lizards to be active when ambient temperatures were 22-39° C, and ground surface temperatures were 37-58°C. During the hottest times of the year, when the surface temperatures may reach or exceed the lethal limit for the species, fringe-toed lizards become increasingly crepuscular. Periods of inactivity are spent below the surface where cooler temperatures prevail.

Population Trend

The fringe-toed lizard was considered common throughout the Coachella Valley prior to major land conversions in the 1920's. Since then, the population of fringe-toed lizards has declined due loss of habitat, habitat fragmentation, lizard collecting, and many other human activities. The Coachella Valley continues to grow at rapid rate, further destroying and fragmenting the remaining areas of suitable habitat. Since 1999, drought conditions have reduced available forage for fringe-toed lizards which has affected reproductive success and population densities.

Researchers currently know little about fringe-toed lizard populations outside the reserve system described above, other than blow-sand habitats continue to decline in association with conversion to agricultural and developed lands. Early population studies suggested that population densities of fringe-toed lizards can vary widely. Important habitat features, such as sand compaction and

patch size, likely influence densities (Turner *et al.* 1981, 1984; Barrows 1997). Turner *et al.* (1981) estimated the density of fringe-toed lizards in seven study plots to range from 1.8 to 18.2 lizards per acre. Monitoring efforts have documented fluctuations in population numbers that appear related to availability of resources, such as food and loose sand (Barrows 1996).

Threats

The loss, fragmentation, and adverse modification of aeolian sand systems are the principal reasons for the fringe-toed lizard's federally threatened status (45 FR 63812-63820). In addition, numerous natural and human activities continue to threaten the lizard including (CNLM 2000): (1) the lack of protection of sand sources and sand transport corridors to any of the three preserves; (2) sand loss, due to natural down wind movement combined with the prolonged period of time between large storm events that replenish sand sources; (3) exotic plant species such as wild mustard (*Brassica tournefortii*) and Mediterranean grass (*Schizmus barbatus*) that colonize and stabilize active dune systems; (4) off road vehicle trespass on dunes; (5) tamarisk in riparian ecosystems and along windrows; and (6) increased automobile traffic along roads that are adjacent to or fragment blow-sand habitat.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress.

Programmatic

The interchange and arterial street improvement projects discussed in the project description above span the range of the species listed in the Plan. All interchanges occur within the range of the milk-vetch and the fringe-toed lizard.

Approval of the Coachella Valley fringe-toed lizard HCP by the Service anticipated incidental take of fringe-toed lizards in association with development outside the reserve system boundaries in accordance with the general plan and zoning designations of local jurisdictions. Though past and future habitat losses consistent with the HCP are appropriately considered as part of the environmental baseline for the fringe-toed lizard, they are not for the Coachella Valley milk-vetch, whose conservation needs were not addressed in the HCP. Additionally, the Coachella Valley milk-vetch occurs outside the Coachella Valley, on the Desert Lily Preserve. The designation of this Bureau of Land Management parcel as an Area of Critical Environmental Concern offers protection to this population.

Modeled habitat for the milk-vetch and fringe-toed lizard occurs throughout the aeolian sand habitat from west of the Indian Avenue Interchange through the Coachella Valley to east of the Jefferson Road Interchange. Within the modeled habitat are historic occurrences of both species. Many of the historic occurrences have been permanently displaced and/or lost to habitat destruction from the construction of windmills, aquifer recharge facilities, railroad projects, infrastructure improvements, and residential and commercial development. Some of these developments have permanently impacted the sand source areas for sand hummocks currently occupied by the milk-vetch and fringe-toed lizard. The disconnection with sand source areas could eventually lead to degradation of sand hummocks further impacting suitable occupied habitat.

The current distribution of fringe-toed lizards along the I-10 corridor through the Coachella Valley is unknown at this time. The development of a multi-species HCP for the jurisdictions comprising the CVAG and the Agua Caliente Indian Tribe includes a preserve design to protect the fringe-toed lizard. This Programmatic Opinion is part of a coordinated effort with CVAG to develop a long-term conservation strategy for the fringe-toed lizard. The aeolian sand habitat along the five interchanges and their associated arterial streets is in various states of habitat suitability, including high quality active sand dunes south of the Bob Hope Drive/Ramon Road Interchange, stabilized desert scrub, and creosote hummock communities partially stabilized by exotic plants or the lack of recent sand transport. The use of the stabilizing creosote hummock communities by fringe-toed lizards is largely unknown. The population of lizards on the stabilizing creosote hummock communities is likely to be lower than in active blowsand areas. Due to fragmentation, drought, and degradation of habitat, portions of the remaining fringe-toed lizard habitat may only support very limited populations.

At the Palm Drive/Gene Autry Trail Project, no fringe-toed lizards were detected and a few individual milk-vetch plants were found in various locations within the proposed project footprint (Caltrans 2004). During focused surveys for the Date Palm Drive Project, the Chambers Group detected small groups of milk-vetch distributed throughout the project footprint with suitable habitat existing on all unpaved areas of the proposed project site (Parsons Brinckerhoff, Quade & Douglas 2002). During the same survey season, the Chambers Group detected no fringe-toed lizards within the project area. Focused surveys at the Ramon Road/Bob Hope project detected both fringe-toed lizards and milk-vetch within and adjacent to the project area (Caltrans 2003b, Michael Brandman Associates 2001). The aeolian sand system on the north and south sides of the I-10 and west of the interchange are high quality habitat for fringe-toed lizards and milk-vetch. A small number of fringe-toed lizards likely occupy and move through the proposed project footprint. Numerous milkvetch occur within and adjacent to the proposed project footprint. Focused surveys at the Indian Avenue project did not detect milk-vetch (LSA Associates 2001). No fringe-toed lizard surveys were conducted at Indian Avenue. Fringe-toed lizards and milk-vetch are known to occur along Indian Canyon Drive, south of the interchange, and within the Whitewater River Preserve. Though no focused surveys were conducted for the fringe-toed lizard or milk-vetch at the Jefferson Avenue Project, this area may

support low numbers of few fringe-toed lizards and milk-vetch based on the presence of suitable soils with degraded habitat conditions.

Urbanization and agricultural development in the Coachella Valley have significantly impacted the blowsand ecosystem. Development has occurred directly on sand fields and in the wind corridor, thereby partially blocking the aeolian transport of sand to the area south of the I-10 corridor. Development has also led to a reduction in groundwater, which in turn has reduced the vegetative communities, such as mesquite, that causes the blowsand to settle in specific regions. As the Coachella Valley continues to urbanize, an increasing concern as to whether or not the blowsand system is adequately protected has contributed to the impetus to complete a multi-species Habitat Conservation Plan for the Valley.

Recent Caltrans projects have impacted desert scrub habitat at Ramon Road and Palm Drive. The Ramon Road project impacted 2.9 acres of aeolian sand fields and the Palm Drive project impacted 30.0 acres of desert scrub.

I-10 Palm Drive/Gene Autry Trail Interchange Project

The action area for the proposed project is dominated by Sonoran Creosote Bush Scrub and active/partially stabilized aeolian sand habitat. The action area of the proposed project includes historical and currently occupied habitat of the Coachella Valley milk-vetch. Surveys conducted during 2000, and 2001, detected Coachella Valley milk-vetch within the ROW for I-10 and Palm Drive. Specific locations include the area within the westbound onramp and the westbound freeway, along I-10 immediately east of the existing westbound offramp, in a planter in the Arco parking area along the western boundary of Palm Drive in the northernmost part of the project site, and along the western boundary of Palm Drive south of the Arco station.

The action area of the proposed project includes historically occupied habitat for the Coachella Valley fringe-toed lizard. Although Coachella Valley fringe-toed lizards were only detected during focused surveys near the Ramon Road/Bob Hope interchange in 2000 and 2001, it is likely that fringe-toed lizards utilize some of the habitat within the action area for the remaining projects. The action area for the proposed project includes partially fragmented blocks of poor to high quality habitat surrounded by roads, the railroad, and urban development. The high mobility of the fringe-toed lizard combined with low to high quality habitat suggest that the fringe-toed lizard inhabits sand hummock habitat in the action area. A small number of milk-vetch were detected within the project footprint. Drought conditions over the last five years has likely reduced the germination rate and establishment of this species. The distribution in the seed bank is unknown.

EFFECTS OF THE ACTION

Programmatic

At the Programmatic Level, the effects of the action include the construction of road improvements at the five interchange projects and the associated arterial streets to their logical termini. These projects are all designed to reduce congestion and improve traffic flow along the I-10 corridor from the City of Palm Springs to the City of Indio. Each of these interchange and adjacent arterial street projects were grouped together during the development of the Plan. These interchange and arterial street improvement projects are to be constructed in the next three to twelve years depending on the availability of funding.

Direct Effects

Direct effects from the interchange and arterial street improvement projects include both temporary and permanent impacts (Table 1). Temporary and permanent impacts include clearing and grading sand hummocks, and constructing the road bed and overlying street surfaces. Direct effects encompass 407.52 acres of area associated with project footprints. Once graded, permanent impacts would result from the construction of the roadway. Temporary impacts will occur in a 25-foot wide area adjacent and parallel to the toe of slope of the newly constructed road-bed. The 407.52 acres of habitat varies in quality for supporting the fringe-toed lizard. The highest quality habitat encompasses a portion of the total area to be impacted. The majority of habitat to be impacted by all projects addressed by this Opinion consists of creosote hummock communities with *Schizmus* ssp. and other exotic plants partially stabilizing the sand hummocks. In the majority of the areas to be impacted, the habitat for fringe-toed lizards is sub-optimal, therefore, the expected distribution of fringe-toed lizards is likely lower than 1.8 to 18 lizards per acre predicted for high quality habitat (Turner *et al.* 1981) and probably varies from less than one to up to five lizards per acre. Based on the degraded nature of the habitat in areas to be impacted by the five interchange projects and the associated arterial streets, there is the potential that ten to one-hundred milk-vetch and between 50 and 2,400 fringe-toed lizards could be adversely affected by construction activities. Due to drought conditions and the lack of detection of fringe-toed lizards at each of the proposed project locations (except Ramon Road/Bob Hope Interchange), a small, but unknown number of fringe toed lizards could be adversely affected by project construction. To reduce impacts to less than one-hundred individual milk-vetch plants and the associated seed bank, and a small but unknown number of fringe-toed lizards, conservation measures 1 through 21 of this Opinion would be implemented. Direct effects from fugitive dust, offroad vehicle activity, and human caused disturbances to adjacent occupied habitat would be avoided by implementing conservation measures 1-21 of this Opinion.

Indirect Effects

The road effect zone (Forman *et al.* 1997, 2000) is the area from the road edge to the outer limit within which road traffic has significant ecological effects on wildlife. The width of the effect distance of the road effect zone is based on traffic intensity, whether the road is a two lane or greater roadway, the species present along the roadway, and a variety of ecological variables. Changes in traffic intensity can alter the effect distance along roads within the road effect zone. For each species, there is a threshold where the effect distance and the road effect zone are the same.

During the development of the Plan, the working group (FHWA, Caltrans, CDFG, the Service) established a threshold width for the road effect zone of 360 feet on each side of the roadway where habitat exists. The 360-foot distance is based on a home range of 418,284 square feet (Brodie *et al.* 1999) for the flat-tailed horned lizard (*Phrynosoma mcallii*). The diameter of a circular home range for the flat-tailed horned lizard is 360 feet. Since there are insufficient data on home ranges for the fringe-toed lizard and the fringe-toed is faster and has a more active habits than the flat-tailed horned lizard, the working group determined that the home range for the fringe-toed lizard would be at least as large as the home range for the flat-tailed horned lizard. Using a circular home range with a diameter of 360 feet, the working group agreed that under existing conditions, 50 percent of lizards with a home range that overlaps the adjacent roadway would be directly killed by automotive traffic. For threshold traffic intensity, the working group assumed that all lizards having a home range that overlaps the adjacent roadway will be directly killed by automotive traffic.

Since existing traffic intensity is leading to direct mortality of 50 percent of lizards inhabiting the habitat adjacent to the roadway, the effect distance for current conditions is 180 feet from the road edge. Traffic intensity resulting from construction of the five interchanges and their associated arterial streets would increase this distance to 360 feet for a change of 180 feet. This 180-foot change in the effect distance is considered the width of indirect effects to fringe-toed lizards and the other fauna listed in the Plan. Multiplying this width by the length of the road improvement projects results in indirect effects to 947.5 acres. Since habitat to be impacted varies between high quality aeolian sand habitat and stabilizing creosote hummocks, the expected distribution of fringe-toed lizards is likely lower than 1.8 to 18 lizards per acre predicted for high quality habitat (Turner *et al.* 1981) and could vary from less than one to up to five lizards per acre. Due to drought conditions and the lack of detection of fringe-toed lizards at each of the proposed project locations, a small, but unknown number of fringe toed lizards could be adversely affected by project construction. To reduce impacts to a small but unknown number of fringe-toed lizards, conservation measures 8, 10, 11, 12, and 18 through 21 of this Opinion would be implemented.

Habitat fragmentation would also occur due to the implementation of the proposed improvement projects. Constructing new roads and widening existing road corridors without installing undercrossings for sand transport and species dispersal would result in the loss of connectivity

between large expanses of habitat including sand source areas. In particular, widening of arterial streets at Indian Avenue, Gene Autry Trail, Palm Drive, and Varner Road between Palm Drive and Date Palm Drive should have underpass systems installed to allow for species dispersal between the fringe-toed lizard HCP reserves, and the proposed CVMSHCP reserve design. Accordingly, CVAG's proposed MSHCP is designed to provide wildlife movement underpasses across all of these arterial streets.

I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project

Direct Effects

Direct effects to 33.2 acres of stabilizing Sonoran Creosote Bush Scrub and aeolian sand habitat occupied by the milk-vetch and fringe-toed lizard would occur from the construction of the proposed project, including temporary and permanent impacts. The loss of 33.2 acres of occupied Sonoran Creosote Bush Scrub and aeolian sand habitat would harm those fringe-toed lizards occupying the area of temporary and permanent impacts and result in the loss of all milk-vetch individuals and the associated milk-vetch seedbank. Based on the drought conditions and the lack of detection of fringe-toed lizards at the project site, the project has the potential to directly affect a small but unknown number of-toed lizards. Direct effects to milk-vetch can range from a few individuals to several hundred individuals depending on the seed bank expression during the rainy season. Direct effects to milk-vetch would be minimized by collecting seed and the underlying soil from those plants found within the project footprint and distributing this seed within preserved aeolian sand habitat. Direct effects to fringe-toed lizards and milk-vetch would be offset by implementing conservation measures 1 through 20 and 22 through 24 listed above and preserving lands necessary for maintaining aeolian sand systems, as proposed by the Plan.

Indirect Effects

Indirect effects to 237.8 acres of stabilizing Sonoran Creosote Bush Scrub and aeolian sand habitat occupied by a small but unknown number of fringe-toed lizards would occur due to habitat fragmentation and the effect of road mortality caused by increased traffic intensity from the improved interchange at I-10 and Palm Drive/Gene Autry Trail. For the proposed project, the effect distance would be 180 feet for existing roads. Indirect effects to 33.3 acres would occur within the road effect zone of the interchange project. Indirect effects would occur in the remaining 180 feet of the road effect zone along the adjacent arterial streets as follows: (1) 62.2 acres on Palm Drive from I-10 to 20th Avenue; (2) 75.4 acres on Gene Autry Trail from I-10 to Vista Chino; and (3) 66.9 acres on Varner Road from Palm Drive to Mountain View Road. Indirect effects to fringe-toed lizards and milk-vetch would be offset by implementing conservation measures 8, 10, 11, 12, 18 through 20, and 22 through 24 listed above and preserving lands necessary for maintaining aeolian sand systems, as proposed by the Plan.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future development on private land is likely to continue along the I-10 corridor throughout the Coachella Valley. This development will result in further fragmentation and obstruction or alteration of sand transport. Furthermore, based on projections for an increasing population in the Coachella Valley, development within the sand sources and corridors in the nearby designated critical habitat and proposed CVMSHCP preserves will increase and suitable habitat will decrease. Proposed land acquisition in the Plan to offset habitat loss from the proposed projects would further efforts to protect designated critical habitat and preserves.

Cities in the Coachella Valley are working together under the guidance of the CVAG to develop the CVMSHCP. The Agua Caliente Band of Cahuilla Indians also is developing an HCP for the area around the project. Within both HCPs are conservation strategies designed to protect the milk-vetch and fringe-toed lizard.

CONCLUSION

After reviewing the current status of the Coachella Valley milk-vetch and the Coachella Valley fringe-toed lizard, environmental baseline for the action area, effects of the proposed project, and cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the Coachella Valley milk-vetch and the Coachella Valley fringe-toed lizard. Though critical habitat has been designated for the fringe-toed lizard, critical habitat has not been designated within the action area, therefore, none would be adversely affected by the proposed project.

Programmatic

This conclusion is based on the following reasons:

1. The loss of 407.5 acres of suitable habitat for hundreds of milk-vetch, a small but unknown number of fringe-toed lizards, and the other species covered by the Plan from direct effects would be offset by acquiring 815.0 acres of land in an area deemed essential for the long term sustainability of the designed preserve system in the Coachella Valley.
2. The loss of a small but unknown number of fringe-toed lizards and numerous organisms of the species covered by the Plan that occupy 947.5 acres of suitable habitat adjacent to the project footprint and associated arterial streets from indirect effects would be offset by

acquiring 947.5 acres of land in an area deemed essential for the long term sustainability of the designed preserve system in the Coachella Valley.

3. All lands acquired to offset direct and indirect effects to the milk-vetch, fringe-toed lizard, and other species covered by the Plan would be preserved in perpetuity and managed for the recovery of the milk-vetch, fringe-toed lizard and other species covered by the Plan.

I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project

This conclusion is based on the following reasons:

1. The loss of a few to tens of milk-vetch and a small but unknown number of fringe-toed lizards that occupy 33.2 acres of sand hummocks would be offset by acquiring 66.4 acres of land in an area deemed essential for the long term sustainability of the designed preserve system in the Coachella Valley.
2. The loss of a small but unknown number of fringe-toed lizards occupying 237.8 acres of sand hummocks adjacent to the project footprint and associated arterial streets would be offset by acquiring 237.8 acres of land in an area deemed essential for the long term sustainability of the designed preserve system in the Coachella Valley.
3. All lands acquired to offset direct and indirect effects to the milk-vetch and fringe-toed lizard would be preserved in perpetuity and managed for the recovery of the milk-vetch and fringe-toed lizard.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The following incidental take authorization pertains to the I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project only. The measures described below are non-discretionary and must be implemented by FHWA, the project proponents, and the contractors so that they become binding conditions of any grant, contract, or permit issued to the applicant, as appropriate, for the exemption of section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity that is covered by this incidental take statement. If FHWA (1) fails to require the project proponent to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates the following levels of take for the Coachella Valley fringe-toed lizard could occur as a result of constructing and operating the proposed I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project:

1. A small but unknown number of fringe-toed lizards that utilize the 33.2 acres of stabilizing Sonoran Creosote Bush Scrub and aeolian habitat that would be temporarily and permanently impacted by the interchange project.
2. A small but unknown number of fringe-toed lizards that utilize the 360-foot road effect zone along the interchange and adjacent arterial streets to the next logical termini as described in Table 1.

Reasonable and Prudent Measures

The Service believes the following Reasonable and Prudent Measure is necessary and appropriate to minimize take of Coachella Valley fringe-toed lizards:

Caltrans and FHWA shall ensure that construction activities, and anthropogenic disturbances to listed species and their habitats are avoided and/or minimized.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary and shall be incorporated as binding requirements into all applicable funding agreements, contracts, and permits..

Caltrans shall implement the above reasonable and prudent measure through the following terms and conditions:

- 1 Caltrans shall ensure that all construction activities occur within the designated project footprint and that all adjacent native habitat is left undisturbed by construction activities.
- 2 A biological monitor shall be present at all pre-construction and pre-grading meetings and be present onsite during all vegetation removal. The biological monitor shall be authorized to halt all associated project activities that may be in violation of any permits issued.
- 3 During construction, soils to be impacted shall be watered down to prevent fugitive dust from drifting into adjacent habitat.
- 4 Caltrans and FHWA shall acquire all lands (at least 337.1 acres) and have an approved conservation bank agreement in place prior to beginning any and all construction activities. The 337.1 acres includes the 304.2 acres to offset impacts from the I-10 Palm Drive/Gene Autry Trail Interchange Project, the 2.9 acres from impacts at Ramon Road, and 30.0 acres from impacts at Palm Drive.

The Service retains the right to access and inspect the project site for compliance with the proposed project description and with the terms and conditions of this biological opinion. Any habitat destroyed that is not in the identified project footprint should be disclosed immediately to the Service for possible reinitiation of consultation.

Reporting Requirements

To demonstrate compliance with the foregoing terms and conditions, FHWA, or its designated contact, shall submit an annual report to the Service that describes and summarizes the implementation of the proposed project and its associated conservation measures.

Disposition of Sick, Injured, or Dead Specimens

The Service's Division of Law Enforcement, San Diego, California (619) 557-5063 is to be notified within three working days should any fringe-toed lizard(s) be found sick, injured, or dead in the project area. The Service's Carlsbad Fish and Wildlife Office should be notified concurrently at (760) 431-9440. Written notification to both offices must be made within five calendar days and include the collection date and time, location of the lizard(s), and any other pertinent information. Care must be taken in handling sick or injured lizard(s) to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The remains of intact fringe-toed lizard(s) shall be placed with educational or research institutions holding appropriate State and Federal permits.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information.

1. Currently, there are planning and implementation efforts to develop a preserve system to offset the impacts of development through the CVMSHCP. Caltrans and FHWA should assist in the planning of these efforts to ensure that all future road designs avoid adversely affecting future preserves. Caltrans and FHWA should assist in the implementation of acquisition and restoration efforts to enhance the long term viability of the preserves and their sand source areas.
2. Caltrans and FHWA should control and remove all exotic plant species along the I-10 corridor and all other State roads in the Coachella Valley. Caltrans and FHWA should follow Executive Order 13112 and only replant with native flora to reduce the need for irrigation and to prevent invasive exotic plant species from stabilizing active sand transport areas.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the I-10 Palm Drive/Gene Autry Trail Interchange Improvement Project outlined in the initiation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Mr. Gene K. Fong (FWS-ERIV 3282.4)

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If you have any questions or concerns about this biological opinion, please contact John DiGregoria of my staff at (760) 431-9440.

Sincerely,

A handwritten signature in cursive script, reading "Therese O'Rourke".

Therese O'Rourke
Assistant Field Supervisor

cc: Scott Quinnell, Biologist, Caltrans District 8 Office

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