



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
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IN REPLY REFER TO:  
1-1-06-F-0159

JUN 27 2006

Mr. Gene Fong  
Federal Highway Administration  
Department of Transportation  
650 Capital Mall, Suite 4-100  
Sacramento, California 95814

Subject: Biological Opinion for the Proposed Uvas Creek Scour Mitigation Project  
in Santa Clara County, California (Caltrans EA 448800)

Dear Mr. Fong:

This is in response to your March 6, 2006, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Uvas Creek Scour Mitigation Project in Santa Clara County, California. Your request was received in this office on March 8, 2006. This document represents the Service's biological opinion on the effects of the proposed action on the threatened California red-legged frog (*Rana aurora draytonii*) and the endangered least Bell's vireo (*Vireo bellii pusillus*). This document has been prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

This biological opinion is based on: (1); the *Proposed Uvas Creek Scour Mitigation Project Biological Assessment* (Biological Assessment), dated February 2006; (2) the May 9, 2006 site visit by the California Department of Transportation (Caltrans) and the Service; (3) additional project information provided by Caltrans on May 22, 2006; (4) miscellaneous correspondence and electronic mail concerning the proposed action between the Service and Caltrans; and (5) other information available to the Service.

### Consultation History

March 8, 2006 The Service received the Biological Assessment for the Uvas Creek Scour Mitigation Project, Santa Clara County, California from the Federal Highway Administration (FHWA).

May 5, 2006 The Service sent FHWA a request for additional information to complete formal consultation on the California red-legged frog. The Service also stated

- that it did not concur with the not likely to affect determination for the least Bell's vireo and recommended formal consultation.
- May 9, 2006 The Service met Caltrans at the project site to review the project and discuss relevant issues.
- May 22, 2006 The Service received information that had been requested on May 5, 2006 from Caltrans via electronic mail. This information included statements characterizing the action area as potential occupied least Bell's vireo habitat along with associated conservation measures.
- May 23, 2006 The Service received a copy of the information provided on May 22, 2006, on compact disc from Caltrans.
- June 21, 2006 The Service met with Caltrans to discuss consultation status and compensation needs.
- June 22, 2006 The Service reviewed the compensation requirements of the project with Caltrans via phone conference.
- June 23, 2006 The Service received a commitment to provide compensation for the loss of California red-legged frog and least Bell's vireo habitat from Caltrans via electronic mail.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

#### General Scope of Work

Caltrans proposes to replace the existing Uvas Creek Bridge on State Route 152, because it has been weakened due to scouring at the base of the bridge supports. Uvas Creek Bridge is located west of the City of Gilroy, between Post Mile 6.1 and Post Mile 6.68 on State Route 152, in Santa Clara County, California. The replacement bridge will be built parallel to and north of the existing bridge. The new bridge design includes safety upgrades to the bridge rails, metal beam guardrails, and provides for standardized shoulders. The project site includes the area needed for construction of the new bridge and demolition of the existing bridge. The project action area includes all access routes, construction roads, temporary water diversions, highway realignments, a soil nail wall, temporary construction easements, and construction staging areas.

#### Construction Scheduling

This project is to be completed over two years. Construction of the proposed bridge will be completed in the first year and demolition of the existing bridge will be completed the following

year. Construction activities related to the proposed project are scheduled to occur between June 15 and October 15 to coincide with the typical dry season. This seasonal avoidance is intended to minimize potential impacts to Uvas Creek. Some construction site preparation activities, including tree removal and trimming, may take place outside of this seasonal work window.

### Pre-construction Activities

#### *Construction Exclusion Fencing*

Pre-construction activities will include installation of environmentally sensitive area (ESA) fencing. The environmentally sensitive area fence serves as a boundary around the action area and all access routes of the project to restrict access by vehicles, work activities, and personnel.

#### *Wildlife Exclusion Fencing*

Caltrans will install wildlife exclusion/environmentally sensitive area fencing along the work area boundaries, including new access routes and staging/equipment laydown areas, to promote the exclusion of California red-legged frogs and other local wildlife from the project impact area. Exclusion fencing will be made of 4 foot by 8 foot (1.2 meter by 2.4 meter) treated exterior plywood that is 0.5 inch (1.3 centimeters) thick. This plywood will be wired to 5.5 foot (1.67 meter) metal t-posts. The exclusion fence will also line both the upstream and downstream riparian area along Uvas Creek. The exclusion fence will continue from the creek through the riparian habitat within and adjacent to the area. An exclusion fence will also be attached to the top of the diversion channel and cofferdams to exclude wildlife in the channel from entering the work area.

#### *Slope Protection*

Pre-construction activities will require removal of the current rock slope protection located along Pier 2 and Pier 3. New rock slope protection will be placed along the east bank and extend south of the existing bridge for approximately 49.2 feet (15 meters) along the bank. This is consistent with bank protection currently existing along the banks both upstream and downstream of the bridge. Sack concrete slope protection currently located north of the existing Uvas Creek Bridge will also be removed during pre-construction activities. Sack concrete at this location will be replaced with rock slope protection during the construction phase of the project. Placement of additional rock slope protection is a permanent impact on the riparian habitat in Uvas Creek because the rock slope protection will remain as a permanent feature following completion of the project. Caltrans will plant willows in between the crevices of the rock slope protection if it can be completed without compromising the integrity of this erosion control measure. Planting willows in between rock slope protection has been shown to be successful on other Caltrans projects near aquatic habitat (e.g., Steven's Creek Bank Stabilization Project and 92 West Uphill Slow Vehicle Lane Project). Additionally, the rocks provide cover for wildlife species within the project area.

*Establishing Access and Staging Areas*

Development of all access routes and the construction of cofferdams and a diversion channel for Uvas Creek will occur during the pre-construction phase. Four total access routes will be established to allow for equipment and construction crews to access the project area. Two access routes will be established for construction of the new bridge and two other access routes will be established for demolition of the existing bridge. In the first year, construction will require two access roads located north of State Route 152. One access road will extend from the maintenance road to the east bank of Uvas Creek. The second access road will be developed from State Route 152 to the west bank of Uvas Creek. In the second year, demolition of the existing Uvas Creek Bridge will require two new access routes located south of State Route 152. One access road will extend from Burchell Road, south of State Route 152, to the east bank of Uvas Creek. The other access road will extend from State Route 152 to the west bank of Uvas Creek. Caltrans will establish all access roads within the footprint of the proposed bridge except for the use of the existing Bonfante Gardens access and maintenance road (directly south of State Route 152 and Burchell Road). Caltrans will pursue a temporary construction easement with Bonfante Gardens to use this road.

Removal of oak woodlands, along the north side of State Route 152 and east of Burchell Road is necessary to realign State Route 152 with the new bridge and to accommodate the approximately 426.5 feet (130 meter) long by 19.7 feet (6 meter) high soil nail wall.

The staging area will be located within the defined action area and will be used for parking, equipment storage, and equipment fueling. Any fueling activity will conform with Caltrans Standard Construction Site Best Management Practices which states that fueling areas must be located at least 50 feet from downstream drainage facilities and watercourses and on level ground.

*Coffer Dam*

Caltrans will construct two cofferdams and a U-channel diversion design to divert water flow around active work areas during construction. The diversion will be designed to promote continued wildlife passage and avoid potential adverse effects to Uvas Creek. The total area of the cofferdam during both years of construction will be approximately 0.1 acres (0.04 hectares). In the first year the cofferdam will begin 6.6 feet (2 meters) beyond the north edge of the proposed bridge alignment and terminate under the current bridge. The cofferdam will be designed to accommodate a maximum flow rate of 48 cubic feet per second (14.6 cubic meters per second). All construction and stream disturbance related activities will be scheduled between June 15 and October 15 in order to minimize and avoid adverse effects to South-Central California Steelhead (*Oncorhynchus mykiss*).

The U-channel diversion design will consist of parallel K-rails extending approximately 78.7 feet (24 meters) between the north and south coffer dams, and will be spaced approximately 8.2 feet

(2.5 meters) on either side of the existing Uvas Creek thalweg (the line defining the lowest points along the length of a river bed). During the demolition activities that will take place in the second year of construction, the U-channel will be shortened to accommodate the narrower bridge width. Heavy gauge plastic sheeting will line the diversion channel between the parallel K-rails and be secured in place with sandbags on both sides of each K-rail. This design allows the maximum expected water volume to pass through the water diversion while maintaining a minimum depth of 4 inches (18 centimeters) during low flows, and a flow velocity of 5.9 feet per second (1.8 meters per second ) during maximum flows. Meeting these depth and flow requirements is expected to promote the passage of aquatic wildlife species through the U-channel.

Caltrans will first construct the cofferdams on the upstream and downstream sides of the action area. Flows of Uvas Creek will be temporarily stored behind the upstream cofferdam or other temporary storage facilities while the diversion channel is being constructed. Once the diversion channel is constructed (lined with plastic sheeting), the Uvas Creek flow will be conveyed through the channel to downstream of the project area. Similarly, the diversion channel and cofferdams will be removed at the end of the construction season. Based on decreased flows during the construction period, Caltrans expects silt and other material deposition within the diversion channel to be minimal. All deposition remaining in the diversion channel following use will be contained in the plastic sheeting and removed from the action area during clean-up and restoration activities at the end of each of the two construction seasons.

A platform will be suspended above the top of the creek diversion to prevent construction debris from falling into the channel. The suspended platforms will allow natural light into the open diversion to encourage fish passage, yet shade the channel throughout the day, keeping water temperatures cool. Environmentally sensitive area fencing will be installed along the length of the U-channel's K-rail to prevent construction personnel and equipment from entering the active water diversion channel.

Caltrans characterizes the U-channel and cofferdams as areas of temporary project effects. Following each construction season and prior to completion of the proposed project, the cofferdams and U-channels will be removed and Uvas Creek will be restored to its original alignment and flow levels.

#### *Wildlife Surveys*

Pre-construction surveys for migratory birds will be conducted no more than seven days prior to the commencement of vegetation removal activities by a qualified biologist or team of biologists.

#### Bridge Construction Activities

Caltrans will begin bridge construction by driving piles into the dry channel bed followed by the placement of pile caps and bridge support columns. Two columns will be constructed in one row

perpendicular to the bridge span between the thalweg and the east bank. These two columns will replace the three pier wall design that support the existing Uvas Creek Bridge on either side of the thalweg (existing Pier 2 and Pier 3) and between the channel and the east bank (existing Pier 4). Each of the two proposed columns will be 5 feet (1.53 meters) in diameter and will extend from the surface of the creek bed, occupying an area of 0.0004 acres (0.0002 hectares). Following column placement, the column footings will be back-filled and falsework will be installed to support the column and soffit formwork. Each column footing will be approximately 13.1 feet by 13.1 feet (4 meters by 4 meters) and will extend approximately 4 feet (1.2 meters) below the creek bed.

### Existing Uvas Creek Bridge Demolition

As in the first year, site preparation and pre-construction activities including wildlife exclusion/environmentally sensitive area fencing, cofferdams, and covered U-channel water diversion will be installed prior to second year demolition activities. The cofferdam and water diversion channel will be constructed as in the previous year. However, the K-rails will extend approximately 55.8 feet (17 meters) between the upstream and downstream dams to accommodate the narrower width of the older bridge.

Demolition of the existing bridge and the removal of the existing pier walls, pile caps, and rock slope protection will occur in the summer and early fall months between June 15 and October 15. A temporary falsework platform will be constructed horizontally and directly under the existing bridge deck. Falsework supports will be placed in the creek bed west of the eastern water diversion channel on four (4 feet by 51.8 feet or 207.2 feet<sup>2</sup> (1.22 meters by 15.79 meters or 19.25 meters<sup>2</sup>) supports. The two access routes south of State Route 152 will only be in use for the second year activities and will be needed to construct the temporary falsework.

Demolition of the existing bridge deck, girders, overhangs and top of the abutments will take place on the existing bridge deck, beginning in the middle of the bridge span and working simultaneously outwards toward both east and west abutments. Demolition will be conducted in a controlled manner to reduce the potential for material to enter the water diversion channel and Uvas Creek below.

Following demolition of the bridge deck, all temporary falsework will be removed, and the remaining portions of the bridge abutments, pier walls and pile caps will be cut 3 feet (0.91 meters) below grade and extracted from the creek bed. Approximately 0.003 acres (0.001 hectares) of existing pier wall material will be removed from riparian habitat and approximately 0.073 acres (0.03 hectares) of pier wall footing material will be removed from the creek bed. Existing bridge abutments and rock slope protection below the 100-year water surface shall remain in place.

All construction materials including exclusion fencing, water diversion channel and cofferdams will be removed following the second year of demolition activities.

Soil Nail Wall

The soil nail wall, located immediately east of the new bridge along the north side of State Route 152, beginning at the Burchell Road intersection, is designed to reduce the amount of land acquisition and grading required for implementation of the proposed project.

Permanent and Temporary Habitat Loss

According to Caltrans estimates, the following table represents the areas of expected permanent and temporary habitat loss within the action area during and following project construction. The table represents the overall areas of effects although the area of effect will differ between the first and second season of construction. Some areas of effect were considered to be permanent even though they will be restored following construction. Effects to riparian, oak woodland, and riverine habitat were considered permanent because these habitats will be unavailable to California red-legged frog and least Bell's vireo for greater than one season prior to successful restoration.

**Table 1. Area of Temporary and Permanent Effects to Vegetation Types Within the Action Area**

<b>Vegetation Type</b>	<b>Temporary Effect (acres [hectares])</b>	<b>Permanent Effect (acres [hectares])</b>
Valley Foothill Riparian	0	1.31 [0.53]
Coastal Oak Woodland	0	2.66 [1.08]
Annual Grassland	0.23 [0.1]	0.24 [0.1]
Riverine	0	0.24 [0.1]
Barren	0.09 [0.03]	0.64 [0.26]
Orchard/Landscaped	1.27 [0.51]	0.4 [0.16]

Equipment

The equipment used on the proposed project will ultimately be up to the contractor's discretion. All vegetation within the riparian area will be cleared using only hand tools, and will include all access routes (as bounded by environmentally sensitive area fencing). Clearing of vegetation will be done using hand tools only. After vegetation has been removed the project site will be grubbed. Grubbing typically involves the use of excavators, dozers, mulchers, and dump trucks to remove tree stumps within the proposed work areas. Dozers and excavators will likely be used for general grading and contouring. Rollers are then used to compact the soil and water trucks are used to aid soil compaction and dust control. Dumptrucks, graders, pavers, and rollers are used to lay the road base and asphalt.

Restoration

All construction related materials including the water diversion, cofferdams, and environmentally sensitive area fencing will be removed following the completion of first year construction activities.

Following completion of the proposed project all temporary roads, staging areas, and work areas will be removed. These areas will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the project area. Caltrans has developed an associated Conceptual Revegetation Plan to identify the types of vegetation that will be planted in all temporary work area following completion of the bridge and scour protection project. Areas of restoration are expected to provide baseline habitat values within three to five years after completion of the proposed project.

Following completion of the new bridge, this falsework will be removed and the area will be revegetated to provide baseline habitat values for species within the action area.

Caltrans will plant shade tolerant plant species under the new bridge span to provide the similar wildlife habitat to that which exists below the current Uvas Creek Bridge.

In coordination with the California Department of Fish and Game, Caltrans will develop a comprehensive revegetation and monitoring plan to mitigate for the impacts to riparian vegetation. Wherever possible to provide access, existing willows (*Salix* species) within the riparian area will be cut to ground level to facilitate regrowth. The remaining rootstocks are expected to sprout following the completion of construction related activity at the project site. Additional willow cuttings will be taken from surrounding trees and planted with direction from the Caltrans' Office of Landscape Architecture. Caltrans has developed a project-specific, conceptual revegetation plan that will be used for this restoration. The conceptual plan will replant the riparian zone with big leaf maple (*Acer macrophyllum*), red leaf willow (*Salix laevigata*) and various native understory plants. The flood plain will be planted with western sycamore (*Platanus racemosa*) and various native understory plants. The transition zone will be planted with California buckeye (*Aesculus californica*), California gooseberry (*Ribes* var.), black oak (*Quercus kelloggii*), monkey flower (*Mimulus aurantiacus*), pacific blackberry (*Rubus ursinus*) and various native understory plants. Oak woodlands will be planted with coast live oak (*Quercus agrifolia*), black oak, and various native understory plants.

#### Proposed Conservation Measures

According to the Biological Assessment and information provided by Caltrans on May 22, 2006, Caltrans proposes to avoid, minimize, and compensate for effects to listed species by implementing the following measures:

1. The contractor shall follow Caltrans' Construction Site Best Management Practices (BMP) Manual. The following BMPs are identified in this manual under the title *Vehicle and Equipment Fueling*:
  - a. Onsite vehicle and equipment fueling will only be used where it is impractical to send vehicles and equipment off-site for fueling.

- b. When fueling must occur on-site, the contractor will select and designate an area to be used, subject to approval of the Resident Engineer.
- c. Absorbent spill clean-up materials and spill kits will be available in fueling areas and on fueling trucks and will be disposed of properly after use.
- d. Drip pans or absorbent pads will be used during vehicle and equipment fueling, unless the fueling is performed on an impermeable surface in a dedicated fueling area.
- e. Dedicated fueling areas will be protected from storm water run-on and runoff, and will be located at least 50 feet (15 meters) from downstream drainage facilities and watercourses. Fueling will only be performed on level graded areas.
- f. Nozzles used in vehicle and equipment fueling will be equipped with an automatic shut-off to control drips. Fueling operations will not be left unattended.
- g. Fueling areas will be protected with berms and/or dikes to prevent run-on, runoff, and to contain spills.
- h. Vapor recovery nozzles will be used to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD) and the nozzles will be secured upright when not in use.
- i. Fuel tanks will not be "topped-off."
- j. Vehicles and equipment will be inspected on each day of use for leaks. Leaks will be repaired immediately or problem vehicles or equipment will be removed from the project site.
- k. Absorbent spill clean-up materials will be made available in fueling and maintenance areas and used on small spills instead of hosing down or burying techniques. The spent absorbent material will be removed promptly and disposed of properly.
- l. Federal, state and local requirements will be observed for any stationary above ground storage tanks.
- m. Mobile fueling of construction equipment throughout the site will be minimized. Whenever practical, equipment will be transported to the designated fueling area.
- n. Fueling areas and storage tanks will be inspected regularly. An ample supply of spill cleanup material will be kept on the site.



these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The Service-approved biologist will relocate the red-legged frogs to the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the proposed project. The approved biologist will maintain detailed records of any individuals that are removed (e.g., size, coloration, any distinguishing features, photographs) to assist the approved biologist in determining whether translocated animals are returning to the original point of capture.

7. Pre-construction surveys for migratory birds will be conducted no more than seven days prior to the commencement of vegetation removal activities by a qualified biologist or team of biologists.
8. Before any activities begin on the project, a Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the project, and the boundaries within which the project may be accomplished.
9. A Service-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. Following removal of all California red-legged frogs and disturbance of habitat, the approved biologist will train a Caltrans biologist or Caltrans approved biologist to monitor construction. If the monitor or Service-approved biologist recommends that work be stopped because a California red-legged frog would be affected to a degree that exceeds the levels anticipated by Caltrans and the Service during review of the proposed action, they will notify the resident engineer (the Caltrans engineer directly overlooking construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or require that all actions that are causing these effects be halted. If work is stopped, the Service will be notified as soon as is reasonably possible.
10. Caltrans will schedule clearing activities outside of the least Bell's vireo breeding season (April 1 to September 30). However, if this is not possible and clearing of vegetation is to occur between April 1 and September 30, Caltrans will conduct Service-approved protocol-level surveys for least Bell's vireo prior to construction. If least Bell's vireos are found during pre-construction surveys, clearing and grubbing activities will be delayed until nest monitoring confirms that fledging is complete or the nest has failed.
11. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

12. All refueling, maintenance, and staffing of equipment and vehicles will occur at least 60 feet (18.3 meters) from riparian habitat or water bodies and not in a location from where a spill would drain directly towards aquatic habitat. The monitor will make certain contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will make certain that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
13. Project sites will be revegetated with an assemblage of native riparian, wetland and upland vegetation suitable for the area. Invasive, exotic plants will be controlled to the maximum extent practicable.
14. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless it is determined by Caltrans or the Service that it is not feasible.
15. The number of access routes, size of staging areas and the total areas of activity will be limited to the minimum necessary to achieve the project goal. Environmentally Sensitive Areas will be established with fencing to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat. This goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
16. Caltrans will implement BMPs described in Caltrans' Construction Site Best Management Practices Manual to protect water quality within and surrounding the action area.
17. The Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), crayfish (*Pacifastacus* species), and centrarchid fishes from the project area, to the maximum extent possible. The Service-approved biologist will be responsible for ensuring that such actions are in compliance with California Department of Fish and Game Code.
18. Caltrans will compensate for the permanent and temporary loss of California red-legged frog and least Bell vireo habitat as follows:
  - a. The permanent effects to 4.45 acres (1.8 hectares) of California red-legged frog habitat will be compensated at 3:1 (13.35 acres [5.4 hectares]). The permanent effects to 1.55 acres (0.63 hectares) of least Bell's vireo riparian breeding habitat will be compensated at 3:1 (4.65 acres [1.88 hectares]). The permanent effects to

2.9 acres (1.17 hectares) of least Bell's vireo oak woodland foraging habitat will be compensated at 1:1 (2.9 acres [1.17 hectares]).

- b. The temporary effects to 0.23 acres (0.09 hectares) of California red-legged frog habitat will be compensated at 1.1:1 (0.25 acres [0.1 hectares]). Caltrans will seek a 1:1 credit (0.23 acres [0.09 hectares]) for temporary effects compensation through adequate on-site restoration of temporarily effected California red-legged frog habitat. In such an event, Caltrans will need to compensate 0.1:1 (0.02 acres [0.01 hectares]). Onsite restoration and compensation of California red-legged frog habitat also will satisfy the needed restoration and compensation requirements for the temporary effects to 0.23 acres (0.09 hectares) of least Bell's vireo habitat.
- c. Compensation for the permanent and temporary effects to these two species is 20.92 acres (8.47 hectares). With Service approval, purchase of appropriate conservation bank credits, contribution to the purchase of habitat acquisition, or contribution to an in lieu fee program that complies with FHWA policy for Federal aid participation will be shared for both species if the habitat is appropriate. For appropriate shared mitigation habitat, the compensation for the permanent and temporary effects to these two species is 13.37 acres (5.41 hectares).
- d. Sufficient funds for the compensation requirements for effects to California red-legged frog and least Bell's vireo associated with the Uvas Creek Scour Mitigation Project will be budgeted. Caltrans will expend the funds to purchase credits at a Service-approved approved conservation bank, contribute to habitat acquisition, or contribute to an in lieu fee program that complies with FHWA policy for federal aid participation.

### **Action Area**

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed action, the action area includes all lands associated with the approximately 9.79 acre (3.96 hectares) project footprint and roads (except for County roads, and State and Federal highways) and other areas accessed by project vehicles.

## Status of the Species and Environmental Baseline

### *California Red-legged Frog*

The red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). Please refer to the final rule and the Recovery Plan for the California Red-Legged Frog (*Rana aurora draytonii*) (Service 2002) for additional information on this species.

This species is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches (3.81 to 12.95 centimeters) in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have lighter centers (Stebbins 2003) and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3.1 inches (1.52 to 7.87 centimeters) in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

Red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Female frogs deposit egg masses on emergent vegetation, allowing the egg mass floats on the surface of the water (Hayes and Miyamoto 1984). Red-legged frogs breed from November through March with earlier breeding records occurring in southern localities (Storer 1925). Individuals occurring in coastal drainages are active year-round (Jennings *et al.* 1992), whereas those found in interior sites are normally less active during the cold season.

The historic range of the red-legged frog extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The red-legged frog was historically documented in 46 counties but the taxa remains in 238 streams or drainages within 23 counties. This represents a loss of 70 percent of its former range (Service 2002). Red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (California Department of Fish and Game 2006).

Adult red-legged frogs prefer dense, shrubby or emergent riparian vegetation closely associated with deep (>2.3 feet [0.7 meters]), still, or slow-moving water (Hayes and Jennings 1988). However, frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. The largest densities of red-legged frogs currently are associated with deep pools with dense stands of overhanging willows (*Salix* species) and an intermixed fringe of cattails (*Typha latifolia*) (Jennings 1988). Red-legged frogs disperse upstream and downstream of their breeding habitat to forage and seek sheltering habitat.

During other parts of the year, habitat includes nearly any area within 1-2 miles (1.6-3.2 kilometers) of a breeding site that stays moist and cool through the summer (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote bush (*Baccharis pilularis*), California blackberry thickets, and root masses associated with willow (*Salix* species) and California bay trees (*Umbellularia californica*). Sometimes the non-breeding habitat used by red-legged frogs is extremely limited in size. For example, non-breeding red-legged frogs have been found in a 6-foot (1.8-meter) wide coyote bush thicket growing along a tiny intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 18 inches (45.7 centimeters) also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

Red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5 mile (0.8 kilometers), with a few individuals moving up to 1-2 miles (1.6-3.2 kilometers) (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005). Dispersing frogs in northern Santa Cruz County traveled distances from 0.25 miles (0.4 kilometers) to more than 2 miles (3.2 kilometers) without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al.* 2003).

Egg masses contain about 2,000 to 5,000 moderate-sized (0.08 to 0.11 inches [0.2 to 0.3 centimeters] in diameter), dark reddish brown eggs and are typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus* species) or cattails (Jennings *et al.* 1992). Red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Eggs hatch in 6 to 14 days (Jennings 1988). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand results in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1990). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925; Jennings and Hayes 1985). Red-legged frogs may live 8 to 10 years (Jennings *et al.* 1992). Populations of red-legged frogs fluctuate from year to year. When conditions are favorable red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a

concomitant increase in the number of occupied sites. In contrast, red-legged frogs may temporarily disappear from an area when conditions are stressful (e.g., drought).

The diet of red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. According to their data, vertebrates, such as Pacific tree frogs and California mice (*Peromyscus californicus*) represent over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs primarily along the shoreline and on the surface of the water (Hayes and Tennant 1985). The diet of red-legged frogs is not well studied, but their diet is likely similar to other ranid frogs that feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b).

Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frogs (*Rana aurora aurora*) in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* species), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). Habitat loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the red-legged frog throughout its range.

Several researchers in Central California have noted the decline and eventual disappearance of red-legged frog populations once bullfrogs became established at the same site (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora aurora*), and suggested that bullfrogs could prey on subadult northern red-legged frogs as well. Bullfrogs may also have a competitive advantage over red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Further more, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings, in litt. 1993; R. Stebbins in litt. 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat.

The urbanization of land within and adjacent to red-legged frog habitat has also adversely affected red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs. This report further identifies the conversion and

isolation of perennial pool habitats resulting from urbanization as an ongoing impact to red-legged frogs.

The California red-legged frog may be susceptible to many of the same pathogens, fungi, water mold, bacteria, and viruses have been known to adversely affect tiger salamander (*Ambystoma* species) species or other amphibians. As with the California tiger salamander (*Ambystoma californiense*), Chytridiomycosis and ranaviruses may be a particular developing concern for California red-legged frog populations. Mao *et al.* (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also presented in sympatric three-spined sticklebacks (*Gasterosteus aculeatus*) in northwestern California. Ingles (1932a, 1932b, and 1933 cited in Fellers 2005) reported four species of trematodes from red-legged frogs, but he later synonymized two of them (found them to be the same as the other two). As mentioned for the California tiger salamander, nonnative species, such as bullfrogs and nonnative tiger salamanders, are both located within the range of the California red-legged frog and have been identified as potential carriers of these diseases. Human activities can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (i.e. contaminated boots or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in red-legged frogs being more susceptible to the effects of disease. Disease will likely become a growing threat because of the relatively small, fragmented remaining California red-legged frog breeding sites, the many stresses on these sites due to habitat losses and alterations, and the many other potential disease-enhancing anthropogenic changes which have occurred both inside and outside the species' range.

The recovery plan for red-legged frogs identifies eight Recovery Units (Service 2002). The establishment of these Recovery Units is based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of the red-legged frog will be considered within the smaller scale of Recovery Units as opposed to the overall range. These Recovery Units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the draft recovery plan is to protect the long-term viability of all extant populations within each Recovery Unit. Within each Recovery Unit, core areas have been delineated and represent contiguous areas of moderate to high red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of red-legged frogs.

According to the Biological Assessment, there are documented observations of California red-legged frogs within 5 miles (8 kilometers) of the action area and Caltrans considers it likely that red-legged frogs are using the Uvas Creek riparian corridor in the action area. The local section of the Uvas Creek riparian corridor contains the characters of viable California red-legged frog

habitat including perennial hydrology, a well-developed riparian vegetation structure, and adjacent open grasslands. Therefore, the Service has determined it is reasonable to conclude the red-legged frog disperses through and inhabits the action area, based on the biology and ecology of this listed species, and the presence of suitable habitat.

#### *Least Bell's Vireo*

The least Bell's vireo was federally listed as endangered on May 2, 1986 (Service 1986), and State listed as endangered in California on October 2, 1980. A draft recovery plan was prepared for this species in March 1998 (Service 1998). Critical habitat was designated for the least Bell's vireo in 1994 but does not include locations outside of southern California (Service 1994).

The least Bell's vireo is a small migratory songbird. It is olive-gray above and whitish on its underparts with two dull white wing stripes and dull white to olive narrow margins on the outer border of its wings and tail. Males and females are identical in plumage. This species is easily distinguished by its song, a rapid bubbling series of rough notes, increasing in tempo and intensity toward a rapid climax. Phrases of the song are alternatively slurred upward and downward.

The least Bell's vireo is in the family Vireonidae, and is one of four recognized subspecies of *Vireo bellii* (Bell's vireo). Although the four subspecies are similar in behavior and life history, they are isolated from one another on both their breeding and wintering grounds (Hamilton 1962).

The historic range of the least Bell's vireo included valley bottom riparian habitats from Tehama County, California, southward (but locally) to northwestern Baja California, Mexico. Latitudinal, this species ranged from near the Pacific coast, in some areas, to as far east (inland) as the Owens Valley, Death Valley, and along the Mojave River in California (Grinnell and Miller 1944). Except for a few outlying pairs, the remaining populations/metapopulations of this subspecies are primarily restricted to southern California south of the Tehachapi Mountains and northwestern Baja California (Garrett and Dunn 1981). Most breeding pairs are currently located in San Bernardino, Ventura, Los Angeles, Orange, Riverside, and San Diego Counties, California. Other populations are found in Monterey, San Benito, and Inyo counties. Occasional breeding pairs have been observed in Contra Costa and Stanislaus Counties since 2001. According to Grinnell and Miller (1944) 1,200 meters (4,000 ft.) is the upper elevational limit to least Bell's vireo occurrence in coastal southern California.

The least Bell's vireo primarily occupies riparian habitats that typically feature dense cover within 3 to 7 feet (1 to 2 meters) of the ground and a dense, stratified canopy. Low, dense riparian growth at water's edge or along dry parts of intermittent streams is of particular importance. This understory is typically dominated by sandbar willow (*Salix hindiana*), mule fat (*Baccharis salicifolia*), other willow species such as arroyo willow (*Salix lasiolepis*) or black willow (*Salix gooddingii*), and one or more herbaceous species (Salata 1983a, 1983b, Zembal

1984, Zembal *et al.* 1985). Important overstory species include mature arroyo willows and black willows. Other overstory species that may contribute to vireo habitat include cottonwoods (*Populus* species), western sycamore (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*). Crown cover is usually more than 50 percent and contains occasional small openings. The most critical structural component to least Bell's vireo breeding habitat is a dense shrub layer at 2 to 10 feet (0.6 to 3 meters) above the ground (Franzreb 1989).

The least Bell's vireo exhibits year-round diurnal activity but is known to be a nocturnal migrant (Brown 1993). This subspecies feeds primarily on insects and spiders, and sometimes on fruit (Brown 1993). Insects consumed include true bugs, beetles, bees, wasps, ants, snails, grasshoppers, moths, and butterflies (Terres 1980). The vireo forages primarily within willow stands or associated riparian vegetation with forays into non-riparian vegetation including chaparral and oak woodlands later in the breeding season (Gray and Greaves 1984, Salata 1983b, Kus and Minor 1987). Individuals travel between 10 and 200 feet (3 and 61 meters) while foraging, with the majority of these destinations occurring within 98 feet (30 meters) of the edge of riparian vegetation (Kus and Minor 1987). Least Bell's vireo forage in all vertical vegetation layers from 0 to 66 feet (0 to 20 meters) but most feeding is concentrated in the first 20 feet (6 meters) of vegetation (Kus and Minor 1987, Salata 1983b). Feeding behavior largely consists of collecting prey from leaves or in bark crevices while perched or hovering, and less frequently by capturing prey by aerial pursuit (Salata 1983a, 1983b).

Least Bell's vireo are mainly monogamous, however, some individuals of both sexes are sequentially polygamous within a breeding season (Greaves 1987). Male vireos contest and establish breeding territories (Barlow 1962) which range in size from 0.5 to 7.4 acres (0.2 to 3.0 hectares) (Gray and Greaves 1984, Collins *et al.* 1992) with most territories averaging between 1 and 3 acres (0.4 and 1.2 hectares) (Service 1998). Territories in Bell's vireo are maintained by threat and physical confrontation early in the breeding season, and vocal warnings later in the season (Barlow 1962).

The breeding season for least Bell's vireo extends from mid-March to mid- or late-September (Service 1986). A majority of the birds arrive from the Mexican wintering areas by the end of March, and depart by end of August (Zeiner *et al.* 1990). Most breeding vireos depart the breeding grounds by the third week of September, and only very few are found wintering in the United States (Garrett and Dunn 1981, Salata 1983b).

Nests are typically suspended in forked branches of various understory vegetation with no clear preference for any particular plant species (Nolan 1960, Barlow 1962, Gray and Greaves 1984). Bell's vireo nests are usually placed between 1.6 and 4.9 feet (0.5 and 1.5 meter) from the ground with a range between 0.7 and 26.2 feet (0.2 and 8.0 meters) (Brown 1993). Females probably select the nesting sites but both genders participate in nest construction (Barlow 1962). Nests appear to only be used once with new ones constructed after nest failure or for successive broods (Greaves 1987). Between 2 to 5 (typically 3 or 4) eggs are laid shortly after nest construction (Service 1998). Eggs are on average 0.7 inches (17.5 millimeters) long, and dull white, often

with fine brown, black, or reddish-brown dots concentrated on the larger end (Brown 1993). A typical clutch is incubated by both parents for about 14 days with the young remaining in the nest for another 10-12 days (Pitelka and Koestner 1942, Nolan 1960, Barlow 1962). A female least Bell's vireo may produce two broods of young and occasionally up to four per season, although it is thought that most are capable of successfully raising only one brood (Franzreb 1989).

Banding records have documented Bell's vireos that have lived approximately seven years; however, maximum life-span is probably longer (Brown 1993). Over two different time periods, within the same population, Greaves and Gray (1991) found that only a small percentage of the vireos within their study were older than 3 and 4 years (8 percent and 15 percent). In a study of nesting success conducted in several large drainages in southern California, the average percentage of nests to successfully produce fledglings ranged from 46 percent (on the Santa Ana River) to a high of 74 percent (on the western portion of the San Luis Rey River) (Service 1998). Beyond one year, survivorship increases averaging approximately 47 percent (Service 1998). Predation of the least Bell's vireo nests is common due in part to low nest height (Franzreb 1989). Nest predation among least Bell's vireo has been reported as high as 45 percent in the San Luis Rey River to as low as 8 percent on the San Diego River (Salata 1983b).

Additional long-term research is needed to determine dispersal characteristics of least Bell's vireo (Service 1998). Fledgling Bell's vireos have been found to expand their dispersal distances from about 33 feet (10 meters) the first day to approximately 197 feet (60 meters) several weeks after fledging (Hensley 1950, Nolan 1960). This distance has been shown to increase to approximately 1 mile (1.6 kilometer) during the same breeding season (Gray and Greaves 1984). Studies by Kus and Greaves have provided estimates of extra-watershed dispersal rates and distances for least Bell's vireo, with approximately 20 percent dispersing outside their natal drainages over distances of up to 130 miles (210 kilometer) (Service 1998). Data collected by Kus also suggests that males are more likely to disperse from their natal sites than females (Service 1998).

### Population Trend

No other passerine (perching songbird) species in California is known to have declined as dramatically as the least Bell's vireo (Brown 1993). The narrow and limited nature of the habitat of the least Bell's vireo makes the subspecies more susceptible to major population reductions than the other subspecies of Bell's vireo. Intensive surveys between 1977 and 1985 resulted in the observation of only 46 pairs in locations that had once supported 150 breeding territories (Gaines 1977, Goldwasser 1978, Goldwasser *et al.* 1980). Once common, the vireo populations had decreased substantially by the late 1980's primarily due to loss and degradation of habitat as well as from brown-headed cowbird (*Molothrus ater*) parasitism (Goldwasser *et al.* 1980).

By the time the vireo was federally listed as endangered in 1986, the rangewide population in the United States was estimated to be 300 breeding pairs, all of which occurred in California. At that time, those pairs were limited to primarily San Diego, San Bernardino, Ventura, Santa Barbara,

Santa Ynez, Inyo, Kern, Monterey, Orange, Riverside, and Los Angeles Counties, with the majority in San Diego County. However, there is a large degree of variation among the numbers of birds within each county.

The most recent range wide surveys occurred in 1996. These surveys found that San Diego County had the most birds, with 1,421 territorial males. Riverside County had the second most birds with 257 territorial males, all within the Santa Ana River. Orange County had 32 territorial males and Ventura County had 44 territorial males all in the Santa Clara River. Los Angeles County had five territorial males. San Bernardino and Santa Barbara County (Santa Ynez River) each had two territorial males. Inyo County, Kern County, and Monterey County had none in 1996 but ranged from one to three territorial males for each County since 1986.

data indicates the same proportion of birds throughout its distribution in the county.

While a few of the populations have stabilized in size (e.g. the Sweetwater, San Diego and Santa Ynez Rivers populations), most have undergone substantial growth to the point that approximately 2,000 vireo pairs were on territories in 1998. Vireos on the Santa Margarita River at Marine Corps Base Camp Pendleton increased from 15 males in 1980 to over 1000 in 1998. Similar increases occurred at the Prado Basin on the Santa Ana River where the vireo population grew from 12 males in 1985 to 345 pairs in 1998. The Tijuana River population grew from 13 males in 1990 to 139 males in 1998 (Wells and Turnbull 1998).

Data indicate that the United States breeding population in 1999 apparently declined. Population declines were noted at Marine Corps Base, Camp Pendleton, the Prado Basin, and at other locales throughout the range of the species in 1999 (Service, unpublished data). The reason for this apparent, recent population decline is unknown. However, observed increases in the Prado Basin and Anza Borrego populations during the 2001 and 2002 breeding seasons (USGS 2004) and the detection of vireos at sites in 2002 where they had been absent for 25+ years (e.g., Santa Ana River Mouth) (Service, unpublished data) suggest that the vireo numbers may not be experiencing a declining trend. A consistent upward trend has not been confirmed either. Recent observations in northern California suggest there is a potential for least Bell's vireos to recolonize portions of their historic range in the Coyote, San Joaquin, and Sacramento Valleys.

### Threats

Causes for decline of the least Bell's vireo include destruction of habitat, river channelization, water diversions, lowered water tables, gravel mining, agricultural development, mining, invasion of exotic species (including *Arundo* species and *Tamarix* species), fire, recreation, and cowbird parasitism. Vireos are known to be sensitive to many forms of disturbance including noise, night lighting, and consistent human presence in an area. Excessive noise can cause vireos to abandon an area. Greaves (1989) hypothesized that the lack of breeding vireos in one particular area of apparently suitable habitat was due to human disturbances (e.g., bulldozers, off-road vehicles, and hiking trails). He further suggested that buffer zones between natural areas and surrounding degraded and disturbed areas could be used to increase the suitability of some vireo habitat. It appears that vireos nesting in areas containing a high proportion of degraded

habitat have lower productivity (e.g., hatching success) than those in areas of high quality riparian woodland (Pike and Hays 1992). Additionally, widespread habitat losses have fragmented most remaining populations into small, disjunct, widely dispersed subpopulations (Franzreb 1989). As much as 90 percent of the original extent of riparian woodland in California has been eliminated, and most of the remaining 10 percent is in a degraded condition (Smith 1977, Dahl 1990). Oberbauer (1990) reported a 61 percent loss of riparian habitat for San Diego County. Habitat fragmentation negatively affects abundance and distribution of neotropical migratory songbirds, in part by increasing incidence of nest predation and parasitism (Small and Hunter 1988, Yahner and DeLong 1992). Management programs aimed at reducing numbers of cowbirds have been considered very successful at maintaining some local populations (Small 1994).

The current threats are not reduced or eliminated for the least Bell's vireo populations/metapopulations listed above to the point where the vireo are capable of persisting without significant human intervention, nor have perpetual endowments been secured for cowbird trapping and exotic plant (*Arundo*) control throughout riparian habitat occupied by the least Bell's vireo.

#### Survival and Recovery Needs of the Species

Based on the nature of the primary threats to the least Bell's vireo over the majority of its range, the survival and recovery needs of the vireo are integrally linked with the following biological principles: (1) the presence of functionally intact riparian communities with structural complexity and a dense understory, (2) the absence or control of brown-headed cowbirds, (3) well connected riparian corridors with self-sustaining vireo populations in relatively close proximity to one another to facilitate survival and movement.

Specifically, the draft recovery plan for the vireo indicates that the following criteria must be met to consider the vireo recovered: (1) stable or increasing least Bell's vireo populations/metapopulations, each consisting of several hundred or more breeding pairs, that are protected and managed at the following sites: Tijuana River, Dulzura Creek/Jamul Creek/Otay River, Sweetwater River, San Diego River, San Luis Rey River, Camp Pendleton/Santa Margarita River, Santa Ana River, an Orange County/Los Angeles County metapopulation, Santa Clara River, Santa Ynez River, and an Anza Borrego Desert metapopulation; (2) stable or increasing least Bell's vireo populations/metapopulations, each consisting of several hundred or more breeding pairs established, protected, and managed for at the following sites: Salinas River, a San Joaquin metapopulation, and a Sacramento Valley metapopulation; and, (3) threats are reduced or eliminated so that least Bell's vireo populations/metapopulations listed above are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant (*Arundo*) control in riparian habitat occupied by the least Bell's vireo.

Status of the Species within the Action Area

In the early 1900's, and even as late as the 1940's, the least Bell's vireo was considered a common bird in the riparian plant communities of California. Although small fragmented populations persisted in southern California, the vireo has largely been considered extirpated from its historical range in northern California for the past 60 years. As the species has appeared to expand in southern California in recent years, recent observations of least Bell's vireos have also been reported in northern California. A least Bell's vireo pair produced a successful nest in the San Joaquin River National Wildlife Refuge in 2005 and the species has also been observed in recent years in Monterey, San Benito, and Santa Clara Counties (CDFG 2006).

Least Bell's vireos were observed in 1997 and 2001 within the Llagas Creek riparian corridor, south of State Route 152 and approximately 6 miles (9.7 kilometers) from the Uvas Creek Bridge action area. The Santa Clara Valley Water District (Water District) has been conducting annual point count surveys along Llagas Creek, south of State Route 152 since 1997 (John Cleckler, Service, personal communication with Nina Merrill, Santa Clara Valley Water District, June 15, 2006). The Water District also performed point count surveys on the lower 3,000 feet (0.9 kilometers) of Uvas-Carnadero Creek, just upstream of the Pajaro River confluence, approximately 9 miles (14.5 kilometers) downstream of the action area during the breeding season in 2004 (John Cleckler, Service, personal communication with Nina Merrill, Santa Clara Valley Water District, June 15, 2006). The least Bell's vireo has not been observed in the general vicinity since the 2001 observation on nearby Llagas Creek. However, there is appropriate multi-canopy riparian habitat along portions of Llagas and Uvas-Carnadero creeks, including the action area, and there is potential for this species to return to those habitats during the breeding season in any given year.

The least Bell's vireo's riparian breeding habitat in northern California has been diminished due to the encroachment of adjacent agriculture and other development. Waterways have been channelized and otherwise altered for flood control, contributing to the constriction of riparian corridors and the loss of riparian vegetation. The vireo's dense riparian understory vegetation has also been lost to extensive livestock grazing. The nest parasitizing brown-headed cowbird is common within the action area vicinity and large scale efforts to control their populations have not been initiated in northern California. Cowbird trapping has been instrumental in aiding least Bell vireo recovery in southern California.

Efforts to acquire protect, and restore riparian habitat in Santa Clara County likely will enhance the opportunities for least Bell's vireo to recolonize historical breeding habitat within the Gilroy vicinity. The Water District partnered with the Land Trust for Santa Clara County to purchase 474 acres (192 hectares) of undeveloped land in southern Santa Clara County which is now known as the Carnadero Preserve. The preserve is intended to retain agriculture land uses and preserve and enhance riparian habitat along Tar, Tick, and Carnadero creeks. Carnadero Creek is the downstream portion of Uvas Creek.

The Water District has also been conducting an *Arundo* removal program on Uvas and Llagas creeks as part of their Stream Maintenance Program. This includes recent and on-going *Arundo* removal within and adjacent to the action area. The Stream Maintenance Program also provides funding for the Water District to purchase land in order to establish 150 foot (45.7 meter) buffers along both sides of creeks within Santa Clara County. This combined 300 foot (91.4 meter) creek buffers will allow the restoration of the local flood plain and enhance and widen the associated riparian corridor. Also, as a result of the 1997 and 2001 vireo observations, vegetation management has ceased on Llagas Creek, south of State Route 152, and has resulted in an increasingly dense and complex riparian vegetation community, enhanced for further occupation by the least Bell's vireo.

Caltrans noted that suitable habitat is present in the action area, however, they concluded the least Bell's vireo is not expected to occur within the action area due to its rarity and possible extirpation in this portion of its northern range (Caltrans 2006). However, the Service has determined that this endangered bird is likely to inhabit the action area due to the presence of suitable multi-canopied riparian habitat, the recent records of the species, especially the recent records within the Llagas Creek corridor, its biology and ecology, the on-going restoration and enhancement of riparian habitat in Santa Clara County, and the apparent on-going recolonization of its former range in northern California.

#### Threats in the Action Area

Continued threats to the vireo and its habitat remain as obstacles to large scale recolonization of potential least Bell's vireo habitat along Uvas Creek and other riparian corridors within the general vicinity. These threats include: 1) the vegetation in the river is susceptible to washing out during a flood because channelization constricts flood waters and increases the velocity and scouring force; 2) flood waters and flood control activities discourage the establishment of dense riparian undergrowth; 3) indirect effects such as pets, garbage, invasive plants, and predation exist due to adjacent development and human activities; 4) fragmentation of the river has increased due to the construction of bridges, State Route 152, and arterial roads; 5) the presence of exotic vegetation, including *Arundo donax*, that can invade native riparian vegetation; 6) natural disturbances such as fires or floods, which can temporarily destroy riparian vegetation; 7) groundwater pumping projects that can increase the depth to groundwater thereby altering survival, growth, competition, and successional patterns in riparian vegetation; 8) illegal fills that destroy riparian vegetation; and 9) and the lack of brown-headed cowbird control.

#### Survival and Recovery Needs of the Species in the Action Area

The Service's Draft Recovery Plan for the Least Bell's Vireo identifies the protection, restoration, and creation of habitat and the control of cowbird parasitism as necessary to conserve this species. The Plan specifically identifies 14 population/metapopulation units that should be managed to meet these objectives in a manner sufficient to promote stable or increasing vireo

populations. These units include the Salinas River, the San Joaquin Valley, and the Sacramento Valley, in northern California.

The Recovery Plan states that populations occurring in the Sacramento-San Joaquin Valleys and Sierra Nevada foothills have been completely extirpated and vast portions of these areas are no longer available for recolonization or expansion. However, least Bell's vireo observations have been increasing in northern California since the issue of the Plan in 1998.

Recovery criteria for delisting include establishment of stable and increased populations along Salinas River, a San Joaquin Valley metapopulation, and a Sacramento Valley metapopulation.

The Plan also includes statements regarding how these populations and metapopulations should be increased and stabilized by reducing or eliminating threats that least Bell's vireo populations/metapopulations are capable of persisting without significant human intervention, or perpetual endowments are secured for cowbird trapping and exotic plant control in riparian habitat occupied by least Bell's vireos.

The Water District has conducted surveys for least Bell's vireo and has made management decisions based on the observations on Llagas Creek but the species is unlikely to recolonize Santa Clara County without efforts to continue restoration of the mixed canopy riparian habitat, cowbird removal, and appropriate changes in land use adjacent to potential habitat.

The County of San Jose and the City of Gilroy are participants in the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan which will include the least Bell's vireo as a covered species. The conditions for coverage for the vireo under these plans are yet to be determined.

### **Effects of the Proposed Action**

#### California Red-legged Frog

The proposed project could have direct effects to California red-legged frogs through direct mortality, injury, or harassment of individual immature adults and adults. According to the February 2006 Biological Assessment for this project, no permanent or seasonal wetlands or ponds appropriate for California red-legged frog breeding would be affected by the proposed action. However, implementation of the proposed action would result in the temporary loss of 0.23 acres (0.09 hectares) and permanent loss of 4.45 acres (1.8 hectares) of California red-legged frog habitat.

Mortality, injury, or harassment of the California red-legged frog could occur from being crushed by earth moving equipment and other vehicles within the action area. Individuals of this listed species also could fall into trenches, pits, or other excavations, and then be directly killed or unable to escape and be killed due to desiccation, entombment, or starvation. Individuals also

may become trapped by plastic mono-filament netting used for erosion control or other purposes where they could be subject to death by predation, starvation, or desiccation (Stuart *et al.* 2001). Various conservation measures such as minimizing the total area disturbed by project activities, and properly constructing exclusionary fencing may reduce mortality, injury, or harassment.

Various other work activities associated with the proposed project also may adversely affect California red-legged frogs. Trash left during or after project activities could attract predators to work sites, which could subsequently harass or prey on the animals. For example, raccoons (*Procyon lotor*), crows (*Corvus brachyrhynchos*), and ravens (*Corvus corax*) are attracted to trash and also prey opportunistically on amphibians. Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment and establishment and removal of the diversion channel could degrade water quality or habitat to a degree where salamanders and frogs are adversely affected. Some potential also exists for disturbance of habitat which could result in the spread or establishment of non-native invasive plant species. There is also a possibility that people working on the site, particularly the onsite biologists could introduce amphibian disease to habitat used by California red-legged frogs.

Increased levels of vehicles and increased vehicle speeds could lead to an increased mortality level for the California red-legged frog in the action area. The project could result in temporary habitat fragmentation. The results of fragmentation are inhibition of genetic exchange between populations and impediments to recolonization of habitats from which populations have been extirpated. Small, isolated populations are substantially more vulnerable to stochastic events (e.g., aberrant weather patterns, fluctuations in availability of food) and may exhibit reduced adaptability to environmental (natural or anthropogenic) changes.

#### Least Bell's Vireo

The proposed project could have direct and indirect effects to least Bell's vireo through injury, death, harassment, or harm of eggs, nestlings, immature adults, and adults. According to the February 2006 biological assessment and information provided by Caltrans in May 2006 for this project, implementation of the proposed action would result in the temporary removal of 0.23 acres (0.09 hectares) and the permanent loss of 4.45 acres (1.8 hectares) of suitable least Bell's vireo habitat. The permanent habitat loss will include 1.55 acres (0.63 hectares) of breeding habitat and 2.9 acres (1.17 hectares) of foraging and dispersal habitat.

All vegetation clearing will occur between October 1 to March 31, after vireos have migrated south and thus should have no direct impacts to individuals (including eggs and chicks). Caltrans has stated that they will conduct Service-approved protocol-level surveys for least Bell's vireo if it is necessary to perform vegetation clearing during the breeding season (April 1 to September 30). If least Bell's vireos are found during surveys, Caltrans will delay clearing and grubbing activities until nest monitoring confirms that fledging is complete or the nest has failed. The primary effect of the proposed action on the least Bell's vireo will be the permanent loss of breeding, rearing, and foraging habitat.

Various other work activities associated with the proposed project also may adversely affect least Bell's vireo. Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade water quality or habitat to a degree where downstream riparian breeding habitat is adversely affected. Some potential also exists for disturbance of habitat which could result in the spread or establishment on non-native invasive plant species.

The project could result in temporal habitat fragmentation as a result of vegetation clearing that will likely take greater than five years to regain its mature riparian structure. The results of fragmentation are inhibition of genetic exchange between populations and impediments to recolonization of habitats from which populations have been extirpated. Small, isolated populations are substantially more vulnerable to stochastic events (e.g., aberrant weather patterns, fluctuations in availability of food) and may exhibit reduced adaptability to environmental (natural or anthropogenic) changes.

### **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.

Numerous non-Federal activities continue to negatively affect the California red-legged frog and the least Bell's vireo in the action area. Habitats are lost or degraded as a result of road and utility construction and maintenance, overgrazing, agricultural expansion, and water irrigation and storage projects that may not be funded, permitted, or constructed by a Federal agency. Other threats include contamination, poisoning, increased predation, and competition from non-native species associated with human development. Small private actions that may impact listed species, such as conversion of land, small mammal population control, mosquito control, and residential development, may occur without consultation with or authorization by the Service or the California Department of Fish and Game pursuant to their respective Endangered Species Act.

From 1995 to 2020, the human population is projected to increase by 18 percent for the San Francisco Bay hydrologic region while at the same time agricultural crop land use in the region is projected to remain around 65,000 acres (California Department of Water Resources 1998). According the California Department of Forestry, from 2000 to 2020, the human population within counties in the Bay Area region is expected to grow by 29 percent (5.3 million people to 6.8 million people), and by 60 percent from 2000 to 2040 (5.3 million people to 8.4 million people) (California Department of Forestry 1998). There will likely be many other development projects that occur during this timeframe due to increases in human population growth that will continue to imperil the California red-legged frog and the least Bell's vireo.

There is a continued demand for new housing in Santa Clara County. Considering this, the remaining open space adjacent to State Route 152 and Uvas-Carnadera Creek is likely threatened by development. Development of adjacent wildlife habitat will continue to result in the loss of not only breeding, resting, and foraging habitat, but the loss of dispersal corridors between breeding populations, thereby further isolating and fragmenting wildlife populations. Additionally, development of small reservoirs or water bodies, such as golf course hazards, and water diversions may occur which may pose further threats such as disruption of dispersal corridors for terrestrial species, and competition or predation from with non-native species such as bullfrogs for aquatic species.

Cumulative effects to the California red-legged frog and the least Bell's vireo include continuing and future conversion of suitable breeding, foraging, sheltering, and dispersal habitat resulting from urban development. Additional urbanization can result in road widening and increased traffic on roads that bisect habitat, thereby increasing road-kill while reducing in size and further fragmenting remaining habitats.

California red-legged frogs and the least Bell's vireo likely are exposed to a variety of pesticides and other chemicals throughout their ranges. These species could also die from starvation due to the loss of their prey base. Hydrocarbon and other contamination from oil production and road runoff; the application of numerous chemicals for roadside maintenance; urban/suburban landscape maintenance; and rodent and vector control programs may all have negative effects on red-legged frog populations. In addition, red-legged frogs may be harmed through increased road kill due to the construction and use of new roads and increased traffic in the overall region and collection by amphibian enthusiast and others.

Further habitat fragmentation; additional non-native species introduction; and increased access to aquatic habitat could facilitate or increase the spread of amphibian diseases within the range of the California red-legged frog.

A habitat conservation plan pursuant to section 10(a)(1)(B) of the Act is being prepared by the cities of San Jose, Gilroy, Morgan Hill, the County of Santa Clara, the Santa Clara Valley Transportation Agency, and the Santa Clara Valley Water District, for this portion of Santa Clara County. Given the on-going or near term nature of a number of projects, there is a need for large scale conservation planning for both the least Bell's vireo and the California red-legged frog in the Gilroy area. Impacts and mitigation to these two listed species currently are evaluated on a project-by-project basis. A comprehensive conservation plan will benefit the long term survival and recovery of the California red-legged frog and the least bell's vireo.

## **Conclusion**

After reviewing the current status of the California red-legged frog and the least Bell's vireo; the environmental baseline for the action area; the effects of the proposed Uvas Creek Scour Mitigation Project and the cumulative effects; it is the Service's biological opinion that the

project, as proposed, is not likely to jeopardize the continued existence of these two listed species. Critical habitat is designated for the least Bell's vireo and the California red-legged frog but do not occur within or adjacent to the action area for the proposed Uvas Creek Scour Mitigation Project; therefore none will be affected.

### INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including 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 section 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 this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by FHWA so that they become binding conditions of any grant or permit issued to Caltrans as appropriate, in order for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this Incidental Take Statement. If FHWA (1) fails to require Caltrans 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 that incidental take of the California red-legged frog will be difficult to detect for the following reasons: their relatively small body size make the finding of a dead specimen unlikely; the secretive nature of the species; losses may be masked by seasonal fluctuations in numbers or other causes; and the species occurs in habitats that makes it difficult to detect. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as all of the California red-legged frogs inhabiting or utilizing the 4.68 acres (1.9 hectares) (permanent effects = 4.45 acres [1.8 hectares]; temporary effects = 0.23 acres [0.1 hectares]) of California red-legged frog upland habitat identified in the action area. The incidental take is expected to be in the form of capture, harm, harassment, injury, and mortality to

adult California red-legged frogs from habitat loss/degradation, construction-related disturbance, and capture and relocation.

The Service anticipates that incidental take of the least Bell's vireo will be difficult to detect for the following reasons: their small body size makes the finding of an individual or dead individual unlikely; the secretive and cryptic nature of the species; losses may be masked by seasonal fluctuations in numbers or other causes; and the species occurs in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of least Bell's vireos that will be taken as a result of the proposed action, the Service is quantifying incidental take of all individuals of least Bell's vireo inhabiting or utilizing the action area (4.68 acres [1.9 hectares] = 4.45 acres [1.8 hectares] permanent + 0.23 acres [0.1 hectares] temporary) in the form of injury, death, harassment, and harm.

As stated in the California Department of Fish and Game Code Section 2080.1, FHWA is advised to submit this incidental take statement for the least Bell's vireo to the Director of Fish and Game for a consistency determination. FHWA may be required to apply for a State Incidental Take Permit for the least Bell's vireo under section 2081(b) of the Fish and Game Code if the California Department of Fish and Game determines that this Federal document is not consistent with the California Endangered Species Act.

Upon implementation of the following reasonable and prudent measures incidental take associated with the proposed action described above for the California red-legged frog and the least Bell's vireo will become exempt from the prohibitions described under section 9 of the Act.

### **Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog and the least Bell's vireo and is not likely to jeopardize the continued existence of these two species. The action area is not within designated or proposed critical habitat for the California red-legged frog or the least Bell's vireo; therefore, none will be affected.

### **Reasonable and Prudent Measures**

The following reasonable and prudent measures are necessary and appropriate to minimize the effect of the proposed action on the California red-legged frog and the least Bell's vireo:

1. Caltrans will implement the conservation measures in the project description as described in the February 2006 biological assessment, additional information provided in May and June 2006, and this biological opinion.
2. Reduce adverse effects to the California red-legged frog and the least Bell's vireo.

3. Caltrans shall ensure their compliance with this biological opinion.

**Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, FHWA shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):
  - a. Caltrans shall minimize the potential for harm, harassment, or killing of federally listed wildlife species resulting from project related activities by implementation of the conservation measures as described in the February 2006 biological assessment, the June 23, 2006, electronic mail message from Caltrans to the Service, and appearing in the *Project Description* of this biological opinion.
  - b. Caltrans shall include Special Provisions that include the Conservation Measures and the Terms and Conditions of this biological opinion in the solicitation for bid information. In addition, Caltrans shall educate and inform contractors involved in the project as to the requirements of the biological opinion.
  - c. As described in their June 23, 2006, electronic mail message to the Service, at least ninety (90) calendar days prior to the date of initial ground breaking at the project site, with the Service's written approval, Caltrans shall purchase appropriate conservation bank credits, contribute to habitat acquisition, or contribute to an in-lieu fee participation program that complies with FHWA policy for Federal aid participation for the California red-legged frog, the least Bell's vireo, or appropriate habitat that is shared by both species
2. The following Terms and Conditions implement Reasonable and Prudent Measure two (2):
  - a. The Resident Engineer or their designee shall be responsible for implementing the conservation measures and Terms and Conditions of this biological opinion and shall be the point of contact for the project. The Resident Engineer or their designee shall maintain a copy of this biological opinion onsite whenever construction is taking place. Their name and telephone number shall be provided to the Service at least thirty (30) calendar days prior to groundbreaking at the project. Prior to ground breaking, the Resident Engineer must submit a letter to the Service verifying that they possess a copy of this biological opinion and have read the Terms and Conditions.

biologist(s) must be presented to the Service for review and written approval prior to ground-breaking at the project site. Prior to approval, the biologist(s) must submit a letter to the Service verifying that they possess a copy of this biological opinion and understand its Terms and Conditions. The biologist(s) will keep a copy of this biological opinion in their possession when onsite. The biologist(s) shall be given the authority to stop any work that may result in take of these listed animal species. If the biologist(s) exercises this authority, the Service and the California Department of Fish and Game shall be notified by telephone and electronic mail within one (1) working day. The Service contact is Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Division at the Sacramento Fish and Wildlife Office at telephone (916) 414-6600.

- c. The Caltrans biologist shall have oversight over implementation of all the Terms and Conditions in this biological opinion, and shall have the authority to stop project activities, through communication with the Resident Engineer or their designee, if any of the requirements associated with these Terms and Conditions are not being fulfilled. If biologist/construction liaison has requested a stop work due to take of any of the listed species the Service and the California Department of Fish and Game will be notified within one (1) working day via email or telephone.
- d. Prior to any ground disturbance, pre-construction surveys shall be conducted by a Service-approved biologist for the California red-legged frog and the least Bell's vireo. These surveys shall consist of walking surveys of the project limits and adjacent areas accessible to the public to determine presence of the species.
- e. Only Service-approved biologist(s) who are familiar with the biology and ecology of the California red-legged frog shall capture or handle this listed species.
- f. Biologists shall take precautions to prevent introduction of amphibian diseases to the action area by disinfecting equipment and clothing as directed in the Service's California Red-Legged Frog Survey Guidance, available at the Service's Sacramento office website (<http://www.fws.gov/sacramento/es/protocol.htm>). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle frogs after working in other aquatic habitats.
- g. An employee education program covering the California red-legged frog and the least Bell's vireo must be conducted before groundbreaking for the Uvas Creek Scour Mitigation Project. The program should consist of a brief presentation by the on-site biologist to explain endangered species concerns to all contractors, their employees, and agency personnel involved in the project. The program should include a description of the California red-legged frog and the least Bell's vireo and their habitat needs; an explanation of the status of these species and their protection under the Endangered Species Act; associated consequences of noncompliance with this opinion; and a description of the measures being taken to reduce effects to these

species during project construction and implementation. An outline of the training program shall be submitted to the Chief of the Endangered Species Division at the Sacramento Fish and Wildlife Office within twenty (20) working days prior to the start of construction. Documentation of the training, including individual signed affidavits, will be kept of file and available on request.

- h. Project employees shall be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.
- i. Permanent and temporary disturbances and other types of project-related disturbance to the habitats of the California red-legged frog and the least Bell's vireo shall be minimized to the maximum extent practicable by Caltrans. To minimize temporary disturbances, all project-related vehicle traffic shall be restricted to established roads, construction areas, and other designated areas. These areas also should be included in pre-construction surveys and, to the maximum extent possible, should be established in locations disturbed by previous activities to prevent further adverse effects.
- j. The construction area shall be delineated with high visibility temporary fencing at least 4 feet (1.2 meters) in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment onto any sensitive areas during project work activities. No native vegetation outside the project impact limits shall be impacted to facilitate fence installation. Such fencing shall be inspected and maintained daily by the on-site biologist until completion of the project. The fencing will be removed only when all construction equipment is removed from the site. Actions within the project area shall be limited to vehicle and equipment operation on existing roads. No project activities will occur outside the delineated project construction area.
- k. To prevent inadvertent entrapment of California red-legged frogs during construction, all excavated, steep-walled holes or trenches more than 2 feet (0.61 meters) deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist should immediately place escape ramps or other appropriate structures to allow the animal to escape, or the Service and/or California Department of Fish and Game shall be contacted by telephone for guidance. The Service shall be notified of the incident by telephone and electronic mail within one working day.
- l. Project-related vehicles shall observe a 15-mile (24-kilometer) per hour speed limit within construction areas, except on County roads, and State and Federal highways; this is particularly important at night when the California red-legged frog is most active. To the maximum extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas shall be prohibited.

- m. All grindings and asphaltic-concrete waste shall be stored within previously disturbed areas absent of habitat and at a minimum of 150 feet (45.7 meters) from any culvert, or drainage feature.
- n. To eliminate an attraction to predators of the California red-legged frog and/or least Bell's vireo all food-related trash items such as wrappers, cans, bottles, and food scraps must be disposed of in closed containers and removed at least once every day from the entire project site.
- o. To avoid injury or death of the California red-legged frog and/or least Bell's vireo, no firearms shall be allowed on the project site except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
- p. To prevent harassment, injury or mortality of California red-legged frog and/or least Bell's vireo or destruction of their burrows or nests by dogs or cats, no canine or feline pets shall be permitted in the action area.
- q. Plastic mono-filament netting (erosion control matting) or similar material shall not be used at the project site because California red-legged frogs may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
- r. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas outside of waters of the United States within the flagged, tapped and/or fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas in such a manner as to prevent any runoff from entering waters of the United States, and shall be shown on the construction plans. If dispensing of fuel, oil, or coolant is necessary within the flood control channel because of the distance necessary for equipment to reach the limited access points, these activities may occur within the channel, but outside the low-flow channel or any open waters areas, using the BMPs described below. As part of the project Plans and Specifications document, the Corps requires the construction contractor to address environmental protection and pollution control using BMPs as requirements prescribed under the Storm Water Pollution Prevention Plan (SWPPP) for potential hazardous or contaminated material. This is a mandatory requirement of the Plans and Specs and is further implemented into the contractual agreement as part of the projects' Clean Water Act Section 402 permit requirement. Areas in which work will be accomplished, containment areas will be created using, as an example, berms and heavy duty liners and spill kits within immediate proximity. BMPs include such actions as having staged on site, hazardous waste clean-up equipment and spill kits, using the appropriate size and gauge drip pans and absorbent diapers. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. "No-fueling zones" shall be designated on construction plans.

- s. Upon completion of the proposed action, all California red-legged frog and least Bell's vireo habitat subject to temporary ground disturbances, including storage and staging areas, temporary roads, etc. must be re-contoured, if appropriate, and revegetated with seeds and/or cuttings of appropriate plant species to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Caltrans shall submit to the Service their draft proposal for the restoration and revegetation plan at least sixty (60) calendar days prior to initial ground breaking; the final plan shall be submitted for approval by the Service prior to ground breaking at the proposed project. To the maximum extent practicable (i.e., presence of natural lands), topsoil shall be removed, cached, and returned to the site according to successful restoration protocols. Loss of soil from run-off or erosion shall be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of listed animal species. The draft and final plan shall contain specific quantifiable criteria to evaluate the success of the restoration. A biologist shall ensure that areas subject to temporary disturbance have been adequately restored, and this information is included under the final reports described in 3.b. of the Terms and Conditions of this biological opinion.
3. The following Terms and Conditions implement Reasonable and Prudent Measure three (3):
    - a. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans shall allow access by Service and/or California Department of Fish and Game personnel to the project site to inspect project effects to the California red-legged frog and least Bell's vireo, and their habitats.
    - b. Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within 60 calendar days following project completion or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog, and least Bell's vireo, if any; (v) occurrences of incidental take of any of these two species; (vi) documentation of employee environmental education; and (vii) other pertinent information. The reports shall be addressed to the Deputy Assistant Field Supervisor of the Endangered Species Program, Sacramento Fish and Wildlife Office.
    - c. Caltrans shall report to the Service any information about take or suspected take of listed wildlife species not authorized by this biological opinion. Caltrans must notify

the Service via electronic mail and telephone within 24 hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program, Sacramento Fish and Wildlife Office at (916) 414-6600, and Special Agent, Scott Heard of the Service's Law Enforcement Division at (916) 414-6660.

### **Reporting Requirements**

Injured California red-legged frogs and/or least Bell's vireos must be cared for by a licensed veterinarian or other qualified person such as the on-site biologist; dead individuals of any of these two listed species should be preserved according to standard museum techniques and held in a secure location. The Service and the California Department of Fish and Game must be notified within one (1) working day of the discovery of death or injury to a California red-legged frog and/or least Bell's vireo that occurs due to project related activities or is observed at the project site. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office (916) 414-6600, and Scott Heard, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660. The California Department of Fish and Game contact is Dave Johnston at (831) 466-0234.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of construction activity. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog and least Bell's vireo, if any; (v) occurrences of incidental take of any of these two listed species, if any; (vi) documentation of employee environmental education; and (vii) other pertinent information.

### **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 that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats. We propose the following conservation recommendations:

1. Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage by California red-legged frog, other listed animals, and wildlife. Caltrans should include photographs, plans, and other information in their biological assessments if they incorporate "wildlife friendly" crossings into their projects.
2. Caltrans should provide roosting habitat for bats on the Uvas Bridge on State Route 152.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed and/or proposed species or their habitats, the Service requests notification of the implementation of these recommendations.

#### REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the proposed Uvas Creek Scour Mitigation Project, Santa Clara County, California. As provided in 50 CFR §402.16 and in the terms and conditions of this biological opinion, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (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 that was 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.

If you have questions concerning this opinion on proposed Uvas Creek Scour Mitigation Project, Santa Clara County, California, please contact Chris Nagano at the letterhead address or at (916) 414-6600.

Sincerely,

  
 Cay C. Coude  
Acting Field Supervisor

cc:

Margaret Gabil, California Department of Transportation, Oakland, California  
Jessica Range, California Department of Transportation, Oakland, California

Mr. Gene Fong

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David Johnston, California Department of Fish and Game, Santa Cruz, California  
Scott Wilson, California Department of Fish and Game, Yountville, California  
Carl Wilcox, California Department of Fish and Game, Yountville, California  
Tom Fitzwater, Santa Clara Valley Transportation Authority, San Jose, California  
Jonathan Ambrose, NOAA Fisheries, Santa Rosa, California  
Marc Klemensic, Santa Clara Valley Water District, San Jose, California

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