

Appendix A Section 7 Biological Opinion for the
U.S. 50/Missouri Flat Road
Interchange Project



United States Department of the Interior



FISH AND WILDLIFE SERVICE

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2800 Cottage Way, Room W-2605
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In reply refer to:
1-1-04-F-0012

DEC 9 2003

Gary N. Hamby
U.S. Department of Transportation
Federal Highway Administration
980 Ninth Street, Suite 400
Sacramento, California 95814

Subject: Formal Endangered Species Consultation on U.S. Route 50, Missouri Flat Road Interchange, Placerville, El Dorado County, California

Dear Mr. Hamby:

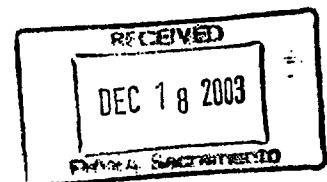
This is in response to the U.S. Department of Transportation, Federal Highway Administration's (FHWA) September 16, 2003, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on El Dorado County Department of Transportation's proposed U.S. Route 50, Missouri Flat Road interchange project near Placerville, in El Dorado County, California. This document represents the Service's final biological opinion on the effects of the proposed action on the threatened California red-legged frog (*Rana aurora draytonii*). This document supercedes the draft biological opinion that was sent to your office on April 1, 2003, (Service files 1-1-03-F-0132 and 1-1-03-F-0121). This biological opinion has been prepared pursuant to section 7(a) of the Endangered Species Act of 1973, as amended (Act).

This biological opinion is based on information provided in the August 2003, *Final Biological Assessment: U.S. Highway 50/Missouri Flat road interchange project*, the 1998, *Missouri Flat Area Master Circulation & Funding Plan*, the July 2002, *Draft Biological Assessment: U.S. Highway 50/Missouri Flat Road Interchange Project* and the July 2002, *Final Natural Environment Study Report U.S. Highway 50/Missouri Flat Road Interchange Project*, and other information on file in our office.

Consultation History

February 21, 2001. On the behalf of El Dorado County Department of Transportation, Jones and Stokes requested a species list for the proposed project.

February 23, 2001. The Service sent Jones and Stokes a species list for the proposed project (Service file 1-1-01-SP-1175).



October 3, 2001. Shannon Ludwig and Catherine Hibbard, of the Service, met at the project site with Jason Meigs of the California Department of Transportation, Kris Payne of the El Dorado County Department of Transportation, and Debbie Loh of Jones and Stokes. It was agreed that effects on the California red-legged frog would need to be analyzed in a biological assessment for the project.

September 5, 2002. The Service received a letter dated September 4, 2002, from the FHWA that provided the Service with a copy of the July 2002 *Draft Biological Assessment: U.S. Highway 50/Missouri Flat Road Interchange Project* and the July 2002 *Final Natural Environment Study Report U.S. Highway 50/Missouri Flat Road Interchange Project*.

November 13, 2002. Peter Epanchin of the Service met at the project site with Kris Payne of the El Dorado County Department of Transportation, and Debbie Loh and Steve Avery of Jones and Stokes. The draft biological assessment was discussed in terms of the effects of the proposed project on the California red-legged frog and the proposed recovery actions associated with the project.

November 19, 2002. Peter Epanchin of the Service met at Spivey Pond within the Weber Creek watershed with Kris Payne of the El Dorado County Department of Transportation, Alan Ehrgott of the American River Conservancy, and Steve Avery of Jones and Stokes. Conservation measures to minimize project impacts and to advance recovery actions for the California red-legged frog were discussed.

April 1, 2003. The Service issued the FHWA a draft biological opinion on the proposed project (Service files 1-1-03-F-0132 and 1-1-03-F-0121). In the draft biological opinion the Service concluded that the proposed project would not jeopardize the continued existence of the California red-legged frog. The Service also determined that the proposed project is not likely to adversely affect the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

June 18, 2003. Peter Epanchin and Gary Burton of the Service met with Kris Payne of the El Dorado County Department of Transportation and Steve Avery of Jones and Stokes at the Service's Sacramento Field Office. The draft biological opinion and biological assessment were discussed so as to finalize both documents.

BIOLOGICAL OPINION

Description of the Proposed Action

The following project description was derived mainly from information presented in the August 2003, *Final Biological Assessment: U.S. Highway 50/Missouri Flat Road Interchange Project* and the July 2002, *Final Natural Environment Study Report U.S. Highway 50/Missouri Flat Road Interchange Project*. Additional information is from sources in the Service's administrative record.

The proposed project is located in the foothills of the Sierra Nevada mountains in western El Dorado County at the U.S. Highway 50, Missouri Flat Road interchange, approximately 1.3 km (km) (0.8 mile (mi)) west of the Placerville city limits between the El Dorado Road and the Forni Road, Placerville Drive interchanges.

The proposed action would improve and expand the U.S. Highway 50, Missouri Flat Road interchange. This project was initially proposed as part of the larger 1998 *Missouri Flat Area Master Circulation & Funding Plan*, an analysis of 199-hectares (492-acres) including the action area of the proposed project. The El Dorado County Department of Transportation intends for the proposed project to: (1) increase the U.S. Highway 50, Missouri Flat Road interchange capacity to solve existing operational deficiencies; (2) to accommodate traffic associated with planned growth in the County; and (3) address safety problems associated with the interchange.

The project description of the proposed action specifically includes:

1. Reconstructing the Missouri Flat Road interchange on U.S. Highway 50 by providing two lanes on the interchange ramps, two left-turn lanes, two right-turn lanes for each of the off-ramps at the ramp intersection, and providing auxiliary lanes in both directions on U.S. Highway 50 from the Missouri Flat Road interchange to the Forni Road, Placerville Drive interchange;
2. Realigning and reconstructing Missouri Flat Road, by replacing the Missouri Flat Road overcrossing structure, providing dual left-turn lanes leading to the highway on-ramps, and providing two northbound and two southbound through lanes;
3. Seismically retrofitting and widening the eastbound and westbound Weber Creek bridges by providing additional strength to the structural steel bracing members, additional concrete at the tops of the piers to accommodate anticipated seismic movement, and widening the east and west bound traffic lanes and shoulders on Weber Creek bridge to provide two new auxiliary lanes;
4. The construction of six additional footings and columns to support the widened highway; and
5. Additional improvements to the intersections surrounding the interchange, including reconstructing: Perks Court; Mother Lode Drive to provide 2 left-turn lanes and 1 right-turn lane at the intersection of Mother Lode Drive and Missouri Flat Road; Missouri Flat Road/Prospector's Plaza Drive intersection; and Mother Lode Drive/Greenleaf Drive intersection.

Construction staging areas may be located in the existing park-and-ride lot in the southwest quadrant of the interchange (where existing parking spaces would be displaced by project construction), on parcels off of Perks Court which would be fully acquired for project construction, in the area where the existing U.S. Highway 50 westbound loop off-ramp would be replaced, and east of the Weber Creek bridges north and south of U.S. Highway 50.

Project Phasing and Timing

The proposed action would be constructed in two phases. Construction of Phase 1 improvements (the specific actions listed above) is expected to commence in the summer of 2005 and provide an adequate level of service until at least 2015. A final intersection configuration and U.S. Highway 50 lane expansion would be constructed in Phase 2 (the Ultimate Phase), if warranted, based on future level of service meeting or exceeding the levels of service projected for 2025. The need for and timing of implementing the Ultimate Phase will largely depend on the land use map that El Dorado County adopts as part of the new general plan.

Conservation Measures

California Red-legged Frog

Conservation measures specifically pertaining to the California red-legged frog for the proposed project and its associated construction activities have been developed and are listed below. The first conservation measure for the California red-legged frog listed below is specifically for the compensation of direct and indirect effects associated with the proposed action, and for cumulative effects associated with the proposed action and six other transportation projects within the Weber Creek watershed. These six transportation projects are: (1) Missouri Flat Road/Pleasant Valley Road Connector; (2) Missouri Flat Road/El Dorado Road signalization and intersection improvements; (3) El Dorado Road/Mother Lode Drive intersection signalization improvements; (4) El Dorado Road at U.S. 50 ramp signalization; (5) Green Valley Road bridge reconstruction at Tennessee Creek; and (6) Western Placerville interchanges improvement project which includes interchange improvements at Forni Road and Placerville Drive and a new interchange at the Lawyer Drive Overcrossing. Conservation measures two through ten are to minimize and/or avoid effects to the California red-legged frog.

1. Prior to ground breaking activities associated with the proposed project, the applicant will fund the American River Conservancy (or another party mutually agreed upon between the applicant and the Service) with \$40,000. The sum of this money will be spent to partially fund a California red-legged frog habitat improvement proposal at Spivey Pond on the North Fork of Weber Creek. The main focus of this proposal will be on the creation of off-channel ponds that are managed for the California red-legged frog.
2. In-water construction activities will be limited to the summer low- or no-flow period. The summer low- or no-flow period is defined as generally between May 1 and October 15 or before the onset of the rainy season, whichever occurs first. The rainy season is defined as a frontal system that results in depositing 0.25 inch or more of precipitation during one event in the area.
3. Using a standard turbidity meter, water quality of Weber Creek will be visually inspected every four hours during construction immediately upstream and 300 feet downstream of the construction area. Construction activities shall not cause turbidity increases in surface waters to exceed the following criteria:
 - a. Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;

- b. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%;
 - c. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - d. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%;
 - e. If the turbidity increases exceed these standards, mitigation measures shall be implemented immediately to meet these standards. Potential mitigation measures include minimizing disturbance of soils and stream bed gravels, and constructing a silt barrier immediately downstream of the construction area.
4. A toxic materials control and spill-response plan will be developed and implemented for the proposed project.
 5. Throughout project construction and implementation, hazardous materials will be stored at an approved storage facility located at least 30.5 m (100 ft) from any surface waters. Refueling and vehicle maintenance will be performed at least 30.5 m (100 ft) from receiving waters.
 6. Temporary orange construction barrier fencing (and sedimentation fencing in some cases) shall be installed around the construction areas.
 7. A riparian restoration plan to compensate for the unavoidable temporary loss of riparian vegetation along Weber Creek will be prepared and implemented. The plan will focus on replanting or enhancing riparian habitat along Weber Creek in the construction area, and in other areas along Weber Creek that are publicly-owned and can be protected in perpetuity, such as the County-owned area below the old Weber Creek bridge located just south of U.S. Highway 50. Woody riparian vegetation shall be replaced at a minimum of a 1:1 ratio (1 acre planted for every 1 acre removed). A total of 0.71 acre of riparian vegetation will be replaced.
 8. A biological resources education program will be conducted for construction crews before project implementation. The education program will include a brief review of the special-status species that may occur in the project area (including their life history, habitat requirements, and pictures of the species), the portions of the project area in which they may occur, and their legal status. The program will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period. Restrictions and guidelines that must be followed by construction personnel are as follows:
 - a. Project-related vehicles shall observe the posted speed limit on hard-surfaced roads and a 16.1-km-per-hour (10-mi-per-hour) speed limit on unpaved roads during travel in the project area.

- b. Project-related vehicles and construction equipment shall restrict off-road travel to the designated construction area.
 - c. Night time construction adjacent to Weber Creek shall be minimized to the extent possible.
 - d. All food-related trash shall be disposed of in closed containers and removed from the project area at least once each week during the construction period. Construction personnel shall not feed or otherwise attract wildlife to the project area.
 - e. No pets or firearms shall be allowed in the project area.
 - f. No rodenticides or herbicides shall be applied in the project area during construction activities.
 - g. To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel shall not service vehicles or construction equipment outside of designated staging areas.
 - h. Any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped, shall immediately stop construction activities and report the incident to the biological monitor. The monitor shall immediately notify El Dorado County, who will provide verbal notification to the Service's endangered species office in Sacramento, California, and to the local California Department of Fish and Game warden or biologist within 3 working days. (It may not be practical to immediately halt some construction activities, such as the pouring of concrete. For these activities, more than 3 days may be required for notification so that the activity can be safely completed). El Dorado County shall follow up with written notification to the Service and the California Department of Fish and Game within 5 working days.
9. A preconstruction survey for the California red-legged frog shall occur within 48 hours prior to the start of construction activities within the riparian or aquatic habitat at Weber Creek. In the event that a California red-legged frog is observed during the preconstruction survey, the frog will be relocated out of the construction area and an exclusion fence will be installed to prevent the movement of frogs back into the construction area. If a California red-legged frog becomes trapped during construction activities within the creek, activities will cease until the biological monitor is contacted and the frog is relocated upstream from the construction area and an exclusion fence is installed to prevent the movement of frogs back into the construction area. Relocation of California red-legged frogs will only take place by an individual permitted by the Service to handle this species.
10. A Service approved qualified biologist shall be on site to monitor all construction occurring in water within Weber Creek for compliance with the project's mitigation measures. For construction activities occurring outside of the water, a Service approved qualified biologist will be available during the construction period and will make weekly monitoring visits to the Weber Creek construction area. The biological monitor will assist the construction personnel, as needed, to comply with all project implementation restrictions and guidelines.

Furthermore, the biological monitor will be responsible for ensuring that the contractor maintains the staked and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources.

11. Potential cumulative losses to California red-legged frogs resulting from proposed future development on commercially designated land (see Cumulative Effects, below) would be addressed by the implementation of the following measures: (1) prior to issuance of a grading permit for any proposed *Missouri Flat Area Master Circulation & Funding Plan* development on commercially designated land or proposed roadway improvement project that contains potential suitable California red-legged frog habitat, a qualified biologist will consult with the Service to determine whether California red-legged frog could potentially occur on the project site; (2) if the Service determines that there is no potential for the occurrence of California red-legged frogs on the project site, the species may be assumed to be absent and no further mitigation will be necessary; (3) if the Service determines that surveys are needed to determine whether California red-legged frogs could occur on the project site, a survey will be conducted in accordance with the Service's protocol survey methods; and (4) if California red-legged frogs (or other listed species) are found or will be affected, the project proponent will consult with the Service (pursuant to section 7 or section 10 of the Act) to determine a course of action and to determine appropriate mitigation and avoidance measures that will be required.

Valley Elderberry Longhorn Beetle

Conservation measures specifically pertaining to the beetle involve the following:

1. Fencing will be placed at the edge of the existing road adjacent to the elderberry bush, for 30.5 m (100 ft) along the road on both sides of the bush for a total of 61 m (200 ft) to protect it from construction vehicles. This buffer zone will be marked with fencing or flagging, and a sign will be erected at the edge of this buffer zone. The sign shall have the following information: "This is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment."
2. No new ground disturbance will occur within 9.1 m (30 ft) of beetle habitat.
3. The project proponent shall conduct a biological resources education program for construction crews and enforce the construction restrictions.

Status of the Species

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996, (61 FR 25813) effective June 24, 1996. This species is the largest native frog in the western United States (Wright and Wright 1949), ranging from 4 to 13 centimeters (1.5 to 5.1 inches) in length (Stebbins 1985). The abdomen and hind legs of adults are largely red; 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 light centers

(Stebbins 1985), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 14 to 80 millimeters (0.6 to 3.1 inches) in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

California red-legged frogs have paired vocal sacs and vocalize above water (Hayes and Krempels 1986). Female California red-legged frogs deposit egg masses on emergent vegetation so that the egg mass floats on the surface of the water (Hayes and Miyamoto 1984). California 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.

California red-legged frogs have been observed using a variety of habitat types, including various aquatic, riparian, and upland habitats; they may complete their entire life cycle in a particular area without using other components (*i.e.*, a pond is suitable for all life stages) or utilize multiple habitat types. These variable life history characteristics enable California red-legged frogs to change habitat use in response to varying conditions. During a period of abundant rainfall (*e.g.*, El Nino), the entire landscape may become suitable California red-legged frog habitat; conversely, habitat use may be drastically confined during periods of prolonged drought. Populations of California red-legged frogs are most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal, a trait typical of many anuran species (Marsh et al. 1999, Griffiths 1997, Sjogren-Gulve 1994, Mann et al. 1991, Laan and Verboom 1990, Reh and Seitz 1990). Where this habitat mosaic exists, local extinctions may be counterbalanced by the colonization of new habitat or recolonization of unoccupied areas of suitable habitat.

Breeding sites have been documented in a variety of aquatic habitats. Larvae, juveniles and adult California red-legged frogs have been observed inhabiting streams, creeks, ponds, marshes, sag ponds, deep pools and backwaters within streams and creeks, dune ponds, lagoons, estuaries, and artificial impoundments, such as stock ponds and tailing ponds. Furthermore, breeding has been documented in these habitat types irrespective of vegetative cover. California red-legged frogs often successfully breed in artificial ponds with little or no emergent vegetation and have been observed to successfully breed and inhabit stream reaches that are not cloaked in riparian vegetation. Factors other than cover are more likely to influence the suitability of aquatic breeding sites, such as the general lack of introduced aquatic predators.

California red-legged frogs often disperse from their breeding habitat to utilize various aquatic, riparian, and upland habitats as summer habitat. This could include ponds, streams, marshes, boulders or rocks and organic debris such as downed trees or logs; industrial debris; and agricultural features, such as drains, watering troughs, or spring boxes. When riparian habitat is present, California red-legged frogs may spend time resting and feeding in the vegetation. Recent radiotelemetry data show that California red-legged frogs are found extensively within 60 meters (196 feet) from the edge of aquatic habitat and up to 100 meters (328 feet) away from aquatic habitat (Bulger et al. 2003). When riparian habitat is absent, California red-legged frogs may spend time resting and feeding under rocks and ledges both in and out of water. Red-legged frogs can also use small mammal burrows and moist leaf litter (Jennings and Hayes 1994), and incised stream channels with

portions narrower and deeper than 18 inches may also provide habitat (61 FR 25813). This type of dispersal and habitat use, however, is not observed in all California red-legged frogs and is most likely dependent on the year to year variations in climate and habitat suitability and varying requisites per life stage.

At any time of the year, adult California red-legged frogs may move from breeding sites. They can be encountered living within streams at distances exceeding 2.8 km (1.8 miles) from the breeding site and have been found greater than 100 m (328 ft) from water in adjacent dense riparian vegetation for up to 77 days (Bulger et. al 2003), but are typically within 60 m (200 feet) of water. During periods of wet weather, starting with the first rains of fall, some individuals may make overland excursions through upland habitats. Most of these overland movements occur at night. Dispersing adult California red-legged frogs in northern Santa Cruz County traveled distances from 0.4 km (0.25 mile) to more than 3.2 km (2 miles) without apparent regard to topography, vegetation type, or riparian corridors (J. Bulger et. al 2003). Newly metamorphosed juveniles tend to disperse locally July through September and then disperse away from the breeding habitat during warm rain events (Jennings, *in litt.* 2000, Scott, *in litt.* 2000). The distances newly metamorphosed juveniles are capable of traveling has not been studied, but is likely dependent upon rainfall and moisture levels during and immediately following dispersal events and are likely dependent on habitat availability and environmental variability. The ability of juveniles and adults to disperse is important for the long term survival and recovery of the species as the dispersing individuals can recolonize and rescue areas subjected to localized extinctions.

Egg masses contain about 2,000 to 5,000 moderate sized (2.0 to 2.8 millimeters [0.08 to 0.11 inches] in diameter), dark reddish brown eggs and are typically attached to vertical emergent vegetation, such as bulrushes (*Scirpus* spp.) or cattails (Jennings et al. 1992). California 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). 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; survival from hatching to metamorphosis has been estimated as less than 1 percent (Jennings et al. 1992), 1.9 percent (Cook 1997), less than 5 percent for California red-legged frog tadpoles co-occurring with bullfrog tadpoles and 30 to 40 percent for California red-legged frog tadpoles occurring without bullfrogs (Lawler et al. 1999). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925, Jennings and Hayes 1985). California red-legged frogs may live 8 to 10 years (Jennings et al. 1992). Populations of California red-legged frogs fluctuate from year to year. When conditions are favorable California 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, California red-legged frogs may temporarily disappear from an area when conditions are stressful (*e.g.*, drought).

The diet of California red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. Vertebrates, such as Pacific tree frogs (*Hyla regilla*) and California mice (*Peromyscus californicus*), represented over half the prey mass eaten by larger California red-legged frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile California red-legged frogs to be active diurnally and nocturnally, whereas adult California red-legged frogs were largely nocturnal. Feeding activity

probably occurs along the shoreline and on the surface of the water (Hayes and Tennant 1985). Larvae likely eat algae (Jennings et al. 1992).

Habitat loss and alteration, over-exploitation, and introduction of exotic predators were significant factors in the species' decline in the early- to mid-1900s. Reservoir construction, expansion of introduced predators, grazing and prolonged drought fragmented and eliminated many of the Sierra Nevada foothill populations (USFWS 2002). Several researchers have noted the decline and eventual disappearance of California red-legged frog populations once bullfrogs became established at the same site (Lawler et. al 1999, Cook *in litt.* 2000). This has been attributed to both predation and competition. Cook (*in litt.* 2000) documented bullfrog predation of a large adult California red-legged frog. This supports Twedt's (1993) suggestion that bullfrogs could prey on subadult northern red-legged frogs. In addition to predation, bullfrogs may have a competitive advantage over California red-legged frogs, because bullfrogs are larger, possess more generalized food habits (Bury and Whelan 1984), possess an extended breeding season (Storer 1933) where an individual female can produce as many as 20,000 eggs during a breeding season (Emlen 1977), and larvae are unpalatable to predatory fish (Kruse and Francis 1977). In addition to competition, bullfrogs also interfere with California red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus with both male and female bullfrogs (Jennings and Hayes 1990, Twedt 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat.

California red-legged frogs are currently threatened by human activities, many of which operate synergistically and cumulatively with each other and with natural disturbances (*i.e.*, droughts and floods). Current factors associated with declining populations of the California red-legged frog include degradation and loss of its habitat through agriculture, urbanization, mining, improper management of grazing, recreation (including off-highway vehicle use), timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, and introduced predators. These factors have resulted in the isolation and fragmentation of habitats within many watersheds, often precluding dispersal between sub-populations and jeopardizing the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal, and are capable of colonizing or rescuing extinct habitat patches). Although California red-legged frog populations are usually threatened by more than one factor, the small, isolated nature of the remaining populations in combination with the continued colonization of existing habitat by non-native species represents the most significant current threat to California red-legged frogs, especially in the Sierra Nevada. The remaining populations within the Sierra Nevada are in immediate need of additional suitable breeding habitat to ensure that stochastic events will not result in their extirpation.

In California, chytrid fungus (*Batrachochytrium dendrobatidis*) has been detected in nine amphibian species including the California red-legged frog (Fellers and Green pers. comm. as cited in Briggs *et al.* 2002). Chytrid fungus affects the keratinized mouth parts and epidermal tissue of larvae and metamorphosed frogs. Not until the late 1990's was it discovered to affect amphibians. Whether adult frogs acquire this fungus from tadpoles or whether the fungus is retained through metamorphosis is unknown. Effects of chytrid fungus on host populations of amphibians are variable, ranging from extinction, persistence with a high level of infection, and

persistence with low levels of infection. The California red-legged frog may suffer further population declines with the spread of chytrid fungus and increased rates of infection.

Critical Habitat: Critical habitat for the California red-legged frog was designated on March 13, 2001 (66 FR 14625). In November of 2002, the Service settled a critical habitat lawsuit with the Homebuilders Associations of Northern California and El Dorado County, California (plaintiffs). As a result, all but two units of critical habitat for the California red-legged frog were vacated and remanded to the Service for new rulemaking. Neither of the remaining units is within the proposed project area (one of the remaining units is in southern California while the other is in the Southern Sierra Nevada).

The primary constituent elements (physical and biological features essential to the conservation of the species, which may require special management considerations and protections) of critical habitat for the California red-legged frog include three elements: aquatic, upland, and dispersal habitats. At a minimum this will include two (or more) suitable breeding locations, a permanent water source, associated uplands surrounding these water bodies up to 90 meters (300 feet) from the water's edge, all within two kilometers (1.25 miles) of one another and connected by barrier-free dispersal habitat that is at least 90 meters (300 feet) in width. When these elements are all present, all other essential aquatic habitat within two kilometers (1.25 miles) and free of dispersal barriers, is also considered critical habitat.

Aquatic components consist of all low gradient freshwater aquatic features, with the exception of deep lacustrine water habitat inhabited by nonnative predators. The subspecies requires a permanent water source such as ponds, streams, plunge pools, seeps, and springs. According to the Final Determination of Critical Habitat for the California Red-legged Frog (66 FR 14625), aquatic habitats for breeding must have a minimum deep water depth of 0.5 meters (20 inches) and maintain water throughout the tadpole rearing stage. The proposed Designation of Critical Habitat for the California Red-legged Frog (55 FR 54892) required aquatic habitat used for breeding to have a minimum depth of 20 centimeters (8 inches), using this more conservative depth in habitat site assessments is likely to reveal more suitable habitat and locations with California red-legged frog occupancy, especially in the Sierra Nevada where habitat characteristics may exhibit higher plasticity than elsewhere in the subspecies' range.

However, as previously stated, critical habitat has been vacated including Unit 3, where the proposed project is located. Unit 3 or the Weber-Cosumnes Unit, included the upper portion of the Weber and Clear Creek drainages and a portion of the North Fork Cosumnes River drainage in El Dorado County. The unit encompassed approximately 24,900 hectares (59,531 acres) in El Dorado County.

Environmental Baseline

California red-legged frog

California red-legged frogs have been extirpated or nearly extirpated from approximately 70 percent of their historic range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. The largest extent of currently occupied habitat within the historic range of the California red-legged frog occurs

primarily in California's central coast region. The most secure aggregations of California red-legged frogs are found in aquatic sites that support riparian and aquatic vegetation, lack non-native predators, and are surrounded by at least one mile of protected upland areas.

The *Final recovery plan for the California red-legged frog* identifies eight Recovery Units (USFWS 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. These Recovery Units are delineated by major watershed boundaries as defined by USGS hydrologic units and the limits of the range of the California red-legged frog. One goal of the 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 in which to focus recovery actions either because they represent viable populations or because the locations will contribute to the connectivity of habitat and thus increase dispersal opportunities between populations. Core areas located in the historic range represent areas where restoration of habitat is most feasible, where pilot reestablishment efforts are most likely to be successful, and where natural recolonization is expected. Preservation and enhancement of each core area is important to maintain and expand the distribution of California red-legged frog populations rangewide.

The designation of core recovery units (priority one watersheds) is not intended to limit the scope of recovery plan implementation. Areas of suitable or potentially suitable habitat outside of core areas (in priority two and priority three watersheds) also need to be examined for the recovery of the frog and managed accordingly. Priority two watersheds are those that are not listed as core areas but currently support the California red-legged frog. These watersheds need appropriate conservation management to ensure population viability and connectivity to core areas and other suitable habitat. Priority three watersheds are areas that historically had California red-legged frogs but where habitat suitability has been degraded and habitat restoration needs to occur prior to recolonization or reestablishment. The likelihood of successful recovery in these watersheds is lower than in the core areas and priority two watersheds.

The California red-legged frog will be considered for delisting when: suitable habitat within all core areas are protected and managed in perpetuity for the frog; ecological integrity of the core areas is not threatened by adverse anthropogenic habitat modification and; populations are stable (with existing populations throughout the range of the species having reproductive rates that allow for long term viability without human intervention, including stable or increasing populations at each core area), well distributed geographically (so that viable metapopulations persist despite fluctuations of individual populations), linked by suitable habitat, and successfully reestablished in portions of its historic range (so at least one reestablished population is stable or increasing at each core area where frogs are currently absent). This delisting criteria may be revised over time, based on new information.

To recover this subspecies in the Sierra Nevada all efforts must be made to protect known populations from adverse disturbances. Habitat protection and enhancement at each of the known sites, suitable habitat within dispersal distance of known sites, and maintaining habitat connectivity is critical for the survival and recovery of this subspecies in the Sierra Nevada. Threats to any of the five known locations of California red-legged frogs

in the Sierra Nevada may reduce the potential for the recovery of the species in this part of its range. Due to the low population densities and isolation of all known California red-legged frog populations within the Sierra Nevada, their continued survival is vulnerable to disturbances including catastrophic and stochastic events. Conservation of suitable California red-legged frog habitat and the extant California red-legged frog populations in the Sierra Nevada are essential to the survival and recovery of the species because the populations in this area represent unique morphological (and possible genetic) characteristics implicating a possible genetic divergence from the remaining extant populations of California red-legged frogs (Barry 1999).

The California red-legged frog was historically found west of the Sierra-Cascade crest at elevations below 5,000 feet (Jennings and Hayes 1994). Historic records indicate more than 60 California red-legged frog populations in the Sierra Nevada, today only five documented populations are known to remain in the Sierra Nevada. The known occurrences from the Sierra Nevada are isolated populations ranging in elevation from 640 to 975 m (2,100 to 3,200 feet), all of these populations are currently populated at low densities.

The Final recovery plan for the California red-legged frog has designated three core recovery areas have been designated in the Sierra Nevada (USFWS 2002). The Feather River watershed has been designated as Core Recovery Area 1, the Yuba River and South Fork Feather River watersheds have been designated as Core Recovery Area 2, and Weber Creek and the Cosumnes River have been designated as Core Recovery Area 4 (where the proposed project is located). Portions of these watersheds have been designated as core recovery areas because they are currently occupied by the California red-legged frog, they have the potential for long-term viability of the existing populations, they have the potential to serve as source populations for the reestablishment and augmentation of populations elsewhere, and they contain suitable California red-legged frog habitat.

Extant populations are known at six areas in Recovery Unit 1 of the Sierra Nevada foothills: French Creek, in the Feather River watershed (private land currently being transferred to the Plumas National Forest), Butte County; Little Oregon Creek, in the North Fork Yuba River watershed (Plumas National Forest), Yuba County; Sailor Flat, in the South Fork Yuba River watershed (private land) Nevada County; Ralston Ridge (non-breeding population), in the Middle Fork American River watershed (El Dorado National Forest), Placer County; Spivey Pond, Weber Creek, in the South Fork of the American River watershed, (Bureau of Land Management) Eldorado County; and a new location on privately owned land in Calaveras County, the specifics of which are still being gathered. The Placer County population (discovered in 2001) is known only from a single frog, found near the confluence of the Rubicon and Middle Fork American Rivers, its breeding site is unknown. It is possible that additional, small undocumented populations currently exist within the Sierra Nevada.

The closest California red-legged frog population to the proposed action is located in El Dorado County, at Spivey Pond on the North Fork of Weber Creek. In 1996 and 1997, adult California red-legged frogs were detected at two locations upstream of Weber Dam on the North Fork of Weber Creek. Three egg masses were first detected at Spivey Pond (also upstream of Weber Dam) on the North Fork of Weber Creek on April 27, 1998. Other records of California red-legged frog occupancy in the South Fork of the Weber Creek

drainage date from 1996 and 1997 at Snows Road and from 1957 on the Main Stem of Weber Creek in the Placerville area near Highway 50. Surveys on Weber Creek are limited; in 1998 (Foothill Associates Environmental Consultants) and 2000 (Greystone Environmental Consultants), surveys were conducted. The surveys covered the North Fork of Weber Creek from Weber Reservoir to 400 meters downstream. Suitable habitat was reported to be present but was not quantified. No California red-legged frogs were identified. These surveys used the Service's February 18, 1997, interim Guidance on Site Assessment and Field Surveys for California Red-legged Frogs. This protocol has not been successful in detecting California red-legged frog populations where they occur in low numbers. The Service is currently revising this protocol so that it may be more effective at detecting California red-legged frog populations consisting of few individuals.

The Spivey pond population is critical as a source for the repopulation of California red-legged frogs in the Weber Creek watershed. Despite existing disturbances within the watershed (e.g. exotic predators, habitat degradation and fragmentation, and impacts to water quality), Spivey pond is the only known consistent location with California red-legged frog presence in the Weber Creek watershed. However, baseline population, distribution, and habitat data for California red-legged frogs within the Weber Creek area has never been thoroughly and systematically quantified. The July 2001 results of a site assessment for the California red-legged frog, prepared for the proposed project, identify the project to contain and be adjacent to a number of potential breeding and dispersal habitat sites for the California red-legged frog.

In February 2001, California red-legged frog habitat upstream of the action area was degraded when a non-permitted discharge of approximately 4,653 cubic yards of fill material was released from Weber Reservoir into Weber Creek. It is estimated that 99.5% of the sediments were deposited in the first five river miles downstream of Weber Dam. The Service assumes that any California red-legged frog egg masses, larvae, or adults in the impacted reaches were killed, injured, harmed, or harassed by this release of sediments. The extent to which the baseline of the California red-legged frog was lowered is not known but could be substantial. The recovery time period for the California red-legged frog's prey base within the action area is not known but could also be substantial. On July 20, 2001, the Service completed consultation on the clean up response of this discharge (Service file 1-1-01-F-0177).

Conservation needs in the Weber Creek watershed (as per the Final California red-legged frog recovery plan) include: (1) The development and implementation of a watershed management and protection plan to determine restoration and land management needs. A watershed management and protection plan should include methods to enhance habitat and minimize or eliminate identified threats and proposals to incrementally protect, via conservation easements, fee title, acquisition, or other mechanisms, important breeding, and dispersal habitat, and; (2) The protection of the occupied pond and other areas with suitable habitat and ponds/streams within dispersal distances, the restoration of additional habitat and habitat connectivity, and population reestablishment and/or augmentation of the existing population.

Effects of the Proposed Action

California red-legged frog: Direct and Indirect Effects

Habitat within the direct footprint of the proposed project includes the bed and banks of Weber Creek and the associated uplands surrounding the aquatic habitat up to 90 m (300 ft) from the edge of wetlands and riparian habitat. Habitat types within this area include aquatic, riparian, and mixed woodland. Surveys for the California red-legged frog, conducted in June and July 2001, did not detect this species within the project area. The action area is located within the Sierra Nevada Foothills Recovery Unit; specifically it is located within Core Recovery Area 4 as designated in the Service's 2002 *Final recovery plan for the California red-legged frog*. The action area is within 8 miles (12.8 km) of one of five known localities of California red-legged frogs in the Sierra Nevada.

The Weber Creek corridor is a potential California red-legged frog dispersal corridor from Spivey pond. Breeding and/or dispersing California red-legged frogs may occur within the project area. Project activities may result in take of California red-legged frogs in the form of harm, harassment, and death. The effects of the proposed action and our subsequent conclusion have been evaluated with the assumption that all protective measures described in the proposed action will be fully implemented and/or enforced. Under these measures, the activities within the riparian and wetland habitats will be minimized (see project description).

Within the Weber Creek watershed, the proposed project will result in temporary adverse effects to approximately 0.71 acres of riparian habitat, 3.0 acres of oak woodland upland, and 0.25 acres of aquatic habitat, totaling 3.96 acres. The proposed project will also result in the permanent loss of approximately 0.008 acres of oak woodland and 0.004 acre of aquatic habitat, totaling 0.012 acre. The total acreage of aquatic dispersal and breeding, and upland dispersal California red-legged frog habitat that will be adversely affected as a result of the proposed project is 3.972 acres.

Riparian areas provide sheltering and dispersal habitat for California red-legged frogs. Alterations to riparian vegetation can impact aquatic resources. Changes within the microenvironment, specifically to soil and air temperature, soil moisture, relative humidity, wind speed, and solar radiation may occur as a result of removal of riparian vegetation. Excessive changes in microclimate may lead to the loss of both aquatic and sheltering habitat. These changes may in turn impact the habitat for prey species of the California red-legged frog including aquatic invertebrates. Some of the access points for the proposed action will be directed into riparian areas that contain a dominance of blackberries and other vegetation which provide potential shelter and dispersal habitat for California red-legged frogs and their prey species. Activities which disturb California red-legged frog sheltering areas may result in displacement, injury, or death of the species. Modification of aquatic habitats through vegetation removal and sedimentation may reduce the ability of California red-legged frogs to take cover from introduced predators such as bullfrogs, crayfish, green sunfish, mosquito fish, and non-native trout (Jennings 1988, Hayes and Jennings 1988,).

Loss of California red-legged frog habitat is expected to occur during construction activities of the proposed project during Phase 1, specifically grading, drilling, fill, construction of temporary creek crossings in and adjacent to Weber Creek, and installation of permanent bridge footings in Weber Creek. Impacts associated with construction equipment within the riparian area may result in harm and harassment of California red-legged frogs. California red-legged frogs sheltering in riparian vegetation may be crushed by moving equipment or

temporarily displaced and made more vulnerable to predation. California red-legged frogs may also seek shelter under equipment after activities conclude and may be subsequently crushed by the commencement of following daily activities.

During construction activities, water quality will be temporarily impacted, specifically in terms of turbidity. Impacts to California red-legged frogs from turbidity may include: (1) harm or mortality to tadpoles if mobilized sediments deplete dissolved oxygen resulting in the smothering of tadpoles; (2) harm or mortality to tadpoles, postmetamorphs, subadults, and adults as a result of displacement, degraded water quality, and a reduced food base (e.g. the disturbance and removal of algae and aquatic insect prey base and their habitat due to degraded water quality and sediment deposition).

Aquatic invertebrates (which serve as a food base for California red-legged frogs) are often found in gravel or cobble substrate, or attached to woody debris within the creek and will be impacted by the use of construction equipment and the placement of additional bridge footings in the stream corridor. The impact of the proposed project on prey species is temporal, recovery of the aquatic invertebrate community is expected to be assisted by recolonization from upstream and tributary drainages.

Impacts associated with the use of heavy equipment to the channel and riparian community include but are not limited to: (1) accelerated erosion potential of the stream bank and roads used to access the restoration area; (2) alteration of channel morphology from the in-stream placement of bridge footings; (3) changes in run-off characteristics due to the removal of riparian vegetation and compaction of soils; and (4) loss of sheltering habitat from equipment operations.

Equipment noise and vibration is a source of disturbance which can affect wildlife populations in the project area. Any California red-legged frogs within the project area may be affected by the noise and vibration of the equipment. If the noise and vibration displaces California red-legged frogs by invoking a flee response, they may be subjected to an increased risk of predation.

Approximately 0.71 acres of riparian California red-legged frog dispersal habitat, 3.0 acres of oak woodland California red-legged frog dispersal habitat, and 0.25 acres of aquatic California red-legged frog dispersal and breeding habitat would be directly impacted by construction activities at Weber Creek related to the construction of 6 new piers. Most of these impacts would be temporary, though approximately 0.008 of oak woodland would be permanently lost as a result of the construction of four new piers within the woodland adjacent to Weber Creek and approximately 0.004 acres of aquatic habitat would be permanently lost as a result of the construction of the two new piers within Weber Creek. Implementation of the minimization measures described above are intended to ensure that the aquatic and upland habitat temporarily impacted by the proposed action would be restored and enhanced through the removal of nonnative species and planting of native species.

In summary, California red-legged frogs that may be present during the implementation of the proposed action may be directly or indirectly affected by the loss of instream habitat (including the invertebrate prey base),

degraded water quality, loss of sheltering habitat, human disturbance to due handling, potential changes in morphological characteristics of the channel, and direct wounding or killing of individuals by activities described above. No direct effects to California red-legged frogs are currently expected to occur during the Ultimate Phase of the proposed action.

Indirect effects of the proposed action on the California red-legged frog include those effects associated with construction activities in Phase 1 (described above), and interrelated and interdependent effects (such as the facilitation of local development and transportation projects) associated with the completion of the proposed project, including the Ultimate Phase. Indirect effects to the California red-legged frog and its habitat include: (1) the removal of riparian vegetation that provides shade, cover, and bank stabilization along Weber Creek; (2) the removal of associated upland mixed woodland vegetation that provides shade and cover; (3) an increase in suspended sediment concentrations and turbidity resulting from channel disturbance, affecting the invertebrate prey base and lasting at least the duration of the construction work in the channel and riparian area; (4) a potential for temporal degradation of water quality if hazardous material spills of substances such as gasoline and diesel fuels, engine oil, and hydraulic fluids, occur, thereby potentially contaminating the creek and affecting aquatic species; and (5) a temporal increase in ambient noise levels associated with construction equipment (drilling, grading, potential need for blasting) in and around Weber Creek.

It is the intention of the FHWA and the El Dorado Department of Transportation for Phase 1 of the proposed action to solve existing operational deficiencies, safety concerns, and traffic congestion within the project area. Some of the growth that requires the construction of Phase 1 of the proposed action has already occurred. Therefore the proposed project may not be dependent on growth to justify its need. However, based on the August 2003 *Final Biological Assessment: U.S. Highway 50/Missouri Flat Road Interchange Project*, the Service concludes that additional growth may occur as a result of the implementation of the proposed project. We anticipate consulting on listed species potentially affected by future projects that are facilitated by the proposed project, at a site-specific level, pursuant to section 10 or section 7 of the Act. However cumulative effects of some of these future development and transportation projects are analyzed in this biological opinion. The Ultimate Phase of the proposed action will be constructed only if warranted, based on future levels of service, to be identified by El Dorado County in its final general plan.

Beneficial effects of the proposed project on the California red-legged frog include the conservation measures, specifically the contribution of \$40,000 towards the recovery of the California red-legged frog population at Spivey Pond on the North Fork of Weber Creek. The money will contribute to habitat improvements including the creation of off-channel ponds that would be managed for the California red-legged frog.

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.

Interrelated and cumulative effects are typically difficult to assess because of a lack of specific information on planned growth (nonfederal development and transportation projects). These future development sites have also not been intensively surveyed for biological resources. This analysis uses the best available information to assess the proposed action's potential for interrelated and cumulative effects, including the 1998 *Missouri Flat Area Master Circulation & Funding Plan*, an analysis of 199-hectares (492-acres) whose development (for both commercial and transportation purposes) would be supported by the proposed action. In addition, we have analyzed the cumulative effects of six other proposed transportation projects within the Weber Creek watershed.

In December 1998, El Dorado County adopted the *Missouri Flat Area Master Circulation & Funding Plan* as an implementation measure of the general plan to fund more than \$33.8 million for improvements to the U.S. 50, Missouri Flat Road interchange and adjacent arterials and collector roads. The *Missouri Flat Area Master Circulation & Funding Plan* includes all 199-hectares (492-acres) of land in the Missouri Flat area designated on the general plan as commercial and approximately 11.0-hectares (26.7-acres) of land associated with proposed *Missouri Flat Area Master Circulation & Funding Plan*-funded roadway improvements. The purpose of the *Missouri Flat Area Master Circulation & Funding Plan* is to fund road infrastructure projects that will relieve existing traffic congestion and create capacity for additional commercial development, but not generate commercial uses at levels beyond those consistent with the policies of El Dorado County.

Proposed retail development in the *Missouri Flat Area Master Circulation & Funding Plan* area falls into two general categories: (1) pending development proposals (projects that have been approved or planned and that are expected to occur by 2005); and (2) future commercial development (development expected to occur on commercially designated land in the next 20 years). Proposed retail development in the *Missouri Flat Area Master Circulation & Funding Plan* area is estimated at 65,905 square meters (732,278 feet) of retail development on 36.9 hectares (91.1 acres) through 2005 and an additional 69,120 meters (768,000 feet) of development on 162.2 hectares (400.9 acres) from 2006 to 2015. Pending retail development in the *Missouri Flat Area Master Circulation & Funding Plan* area includes 5 major projects: (1) Wal-Mart development has been completed; (2) Raley's Supermarket, a 5,670-square meter (63,000-square foot) supermarket on a 2.3-hectares (5.7-acres) parcel at the northeast quadrant of the Missouri Flat Road/China Garden Road intersection. El Dorado County has not received any grading or building permit applications for this development and its potential effects on listed species are unknown; (3) El Dorado Villages shopping center (formal consultation with the Service was completed on this project on December 13, 2002, Service file 1-1-02-I-2500); (4) Albertson's/Lucky Supermarket expansion in Prospector's Plaza, expansion has been completed; and (5) Sundance Plaza (formal consultation with the Service was completed on this project on March 3, 2000, Service file: 1-1-99-F-0039). The remaining pending projects are discussed below. In addition, at least six transportation projects have been proposed within the *Missouri Flat Area Master Circulation & Funding Plan* area.

In addition to the 36.9-hectares (91.1 acres) proposed for pending retail development described above, the *Missouri Flat Area Master Circulation & Funding Plan* area contains 162.2-hectares (400.9-acres) of commercially designated land that in the future (2006-2020) could accommodate approximately 69,120 square

meters (768,000 square feet) of retail development. The *Missouri Flat Area Master Circulation & Funding Plan* area contains aquatic and upland habitat potentially suitable for California red-legged frogs thus, this proposed retail development could adversely affect these habitats and this species.

In addition to the proposed U.S. Route 50, Missouri Flat Road Interchange project, there are six other proposed transportation projects within the Weber Creek watershed: (1) Missouri Flat Road/Pleasant Valley Road Connector; (2) Missouri Flat Road/El Dorado Road signalization and intersection improvements; (3) El Dorado Road/Mother Lode Drive intersection signalization improvements; (4) El Dorado Road at U.S. 50 ramp signalization; (5) Green Valley Road bridge reconstruction at Tennessee Creek; and (6) Western Placerville interchanges improvement project which includes interchange improvements at Forni Road and Placerville Drive and a new interchange at the Lawyer Drive Overcrossing. These projects are all proposed to ease traffic congestion, improve vehicle capacity, and/or improve safety. It is probable that the Green Valley Road, Tennessee Creek bridge reconstruction project and the Western Placerville interchanges improvement project will receive Federal funds thereby necessitating individual section 7 consultation with the Service, and are not considered further in this section.

El Dorado County has proposed the construction of a Missouri Flat Road/Pleasant Valley Road connector project to allow traffic flow from Pleasant Valley Road (at Fowler Lane) to Missouri Flat Road. The proposed connector alignment would extend southeasterly from Missouri Flat Road south of the Sacramento Placerville Transportation Corridor (SPTC), the former Southern Pacific Railroad corridor until it crosses Old Depot Road, at which point it would extend easterly within a portion of the SPTC corridor for approximately 1,500 feet. Thereafter, the alignment would diverge from the SPTC in an east to southeasterly direction and continue southward, intersecting with Highway 49 and continuing to Fowler Lane at Main Street, within the unincorporated community of Diamond Springs. The proposed alignment would initially be constructed as a two lane roadway and then possibly widened to four lanes if warranted by future levels of service. The proposed alignment could contain and adversely affect aquatic and upland habitats potentially suitable for the California red-legged frog.

Neither the Missouri Flat Road/El Dorado Road signalization and intersection improvement project nor the El Dorado Road/Mother Lode Drive intersection signalization improvement project has been evaluated in terms of their potential impacts to listed species, therefore potential effects of these projects on listed species are not known. The biological assessment for the U.S. Highway 50, Missouri Flat Road interchange project states that a 1999 preliminary Environmental Impact Report used survey information to conclude the project site does not contain special-status plants or habitat for special-status wildlife species, therefore this project may not result in adverse effects on listed species, assuming that the Service agrees with the finding of the Environmental Impact Report.

In April of 2003, El Dorado County released a draft general plan and draft environmental impact report; the general plan is likely to be finalized in 2004. The finalized general plan will replace the 1996 El Dorado County General Plan and will direct land use planning within the project area.

Conclusion

After reviewing the current status of the California red-legged frog, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the El Dorado County Department of Transportation's proposed U.S. Route 50, Missouri Flat Road interchange project, funded in part by FHWA, is not likely to jeopardize the continued existence of the California red-legged frog.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as 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 actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior 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 significantly 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 nondiscretionary and must be undertaken by the FHWA so that they become binding conditions of any grant or permit issued to the El Dorado County Department of Transportation, as appropriate, for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the FHWA (1) fails to require the El Dorado County Department of Transportation 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 Incidental Take

The Service expects that incidental take of the California red-legged frog will be difficult to detect or quantify for the following reasons: (1) the aquatic nature of the organisms and their relatively small body size make the finding of a dead specimen unlikely, and; (2) the secretive nature of the species. Losses may be masked by seasonal fluctuations in numbers or other causes, and the species occurs in habitat (and possibly in low numbers) that makes them 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 the number of acres of aquatic and upland habitats that will become unsuitable for the species as a result of the action. Therefore, the Service estimates that all California red-legged frogs inhabiting

approximately 0.71 acre of riparian habitat, 3.0 acres of oak woodland uplands and 0.25 acre of aquatic habitat, a total of 3.972 acres, will be subject to incidental take. Upon implementation of the following reasonable and prudent measures, incidental take associated with the U.S. Route 50, Missouri Flat Road interchange project on these 3.972 acres of breeding and dispersal California red-legged frog habitat, in the form of harm, harassment, or killing of California red-legged frogs from habitat loss, degradation, or modification will become exempt from the prohibitions described under section 9 of the Act for direct impacts; in addition, incidental take in the form of harm, harassment, or killing associated with the U.S. Route 50, Missouri Flat Road interchange project on these 3.972 acres of breeding and dispersal California red-legged frog habitat will be exempt from the prohibitions described under section 9 of the Act for indirect impacts as a result of the management activities described.

The Service has developed the Incidental Take Statement based on the premise that the reasonable and prudent measures will be implemented. Upon implementation of the following reasonable and prudent measures, incidental take associated with the direct and indirect effects of the proposed action in the form of death, harm, and harassment of California red-legged frogs due to disturbances as a result of U.S. Route 50, Missouri Flat Road interchange project area will be exempt from the prohibitions described under section 9 of the Act for direct and indirect impacts, provided that such harm and harassment: (1) is the result of bona fide project activities; and (2) that all terms and conditions specified below are fully implemented.

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.

Reasonable and Prudent Measures

The following reasonable and prudent measure is necessary and appropriate to minimize the impact of U.S. Route 50, Missouri Flat Road interchange project activities on California red-legged frogs:

Minimize the impacts of the proposed action on the California red-legged frog resulting from habitat modification, harm, and harassment.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FHWA must ensure compliance with the following term and condition, which implement the reasonable and prudent measure described above. These terms and conditions are non-discretionary.

1. All of the applicant's proposed conservation measures as presented in this biological opinion (in the Conservation Measures section on pages 4 through 7) and in the applicant's biological assessment (in

the Environmental Commitments section on pages 9 through 12) shall be carried out to minimize potential impacts to special status (including federally listed) plant and wildlife species.

Reporting Requirements

Within three months of the completion of Phase 1 of the proposed activity, the Service shall be informed by the applicant, in writing with the confirmation that the ten conservation measures proposed for the California red-legged frog were implemented and successfully completed.

The Sacramento Fish and Wildlife Office is to be notified immediately by telephone at (916) 414-6600 and in writing within three working days of the finding of any dead or injured listed species found on the project site or any unanticipated take of species addressed in this biological opinion. The Service contact person for this is the Division Chief for Endangered Species. Any dead or severely injured California red-legged frog shall be transferred to the Fish and Wildlife Service's Law Enforcement Office at 2800 Cottage Way, Room W-2605, Sacramento, California, 95825-1846.

The Service shall be immediately notified if any listed species are found on site. Such notification will be submitted as a report to the Service from the applicant and will include date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The Service-approved qualified biologist shall submit locality information to the California Department of Fish & Game (CDFG), using completed California Native Species Field Survey Forms or their equivalent, no more than 90 calendar days after completing the last field visit of the project site. Each form shall have an accompanying scale map of the site such as a photocopy of a portion of the appropriate 7.5 minute U.S. Geological Survey map and shall provide at least the following information: township, range, and quarter section; name of the 7.5' or 15' quadrangle; dates (day, month, year) of field work; number of individuals and life stage (where appropriate) encountered; and a description of the habitat type. The Service-approved qualified biologist shall also provide a copy of this information to the CDFG at 1807 13th Street, Sacramento, California 95814.

The reasonable and prudent measure, with its implementing term and condition, is designed to minimize the impact of incidental take that might otherwise result from the proposed action. With implementation of this measure, the Service believes that all California red-legged frogs associated with the 3.972 acres impacted by the proposed project will be affected. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measure provided. The FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measure.

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 plans, or development of information and databases. The Service recommends the following additional actions:

1. The FHWA should assist the El Dorado Department of Transportation, the County of El Dorado, and the Service to develop and implement a county-wide Habitat Conservation Plan.
2. The FHWA should assist the El Dorado Department of Transportation and the Service to develop and implement a watershed management and protection plan for the Weber Creek drainage.
3. The FHWA should assist the El Dorado Department of Transportation and the Service in implementing recovery actions identified in the *Final recovery plan for the California red-legged frog*, specifically within Core Recovery Area 4 of Recovery Unit 1 .


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

REINITIATION - CLOSING STATEMENT

This concludes formal consultation with the FHWA on the El Dorado County Department of Transportation's proposed U.S. Route 50, Missouri Flat Road interchange project near Placerville, in El Dorado County, California. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat is 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.

The Service appreciates your cooperation and participation in the conservation of listed species. Please address any questions or concerns regarding this response to Peter Epanchin or Roberta Gerson, of my staff at (916) 414-6600.

Sincerely,


Cay Goude
Acting Field Supervisor

Mr. Gary N. Hamby

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cc:

El Dorado County Department of Transportation, Placerville, California (Attn: Kris Payne)
CDFG, Rancho Cordova, California (Attn: Stafford Lehr)

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