United States Department of the Interior

FISH AND WILDLIFE SERVICE
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Sacramento, California 95814

In reply refer to:
2022-0036069-S7-001

April 7, 2023

Lindsay Vivian
California Department of Transportation
District 4
Office of Biological Sciences and Permits
111 Grand Ave, MS-8E
Oakland, CA 94612

Subject: Formal Consultation on the 1Q580 SR-101 Multi Asset Capital Preventive Maintenance (CAPM) Project in San Mateo County, California

Dear Ms. Vivian:

This letter is in response to the California Department of Transportation (Caltrans) June 28, 2022, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed 1Q580 SR-101 Multi Asset CAPM Project (Project) in San Mateo County, California. At issue are the proposed project's effects on the federally threatened California red-legged frog (*Rana draytonii*) and western snowy plover (*Charadrius nivosus nivosus*), and the federally endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), salt marsh harvest mouse (*Reithrodontomys raviventris*), and California clapper rail (*Rallus longirostris obsoletus*). Regarding taxonomic assignment and nomenclature for the California clapper rail, until a time when the Service officially adopts changes made by the American Ornithologists' Union (from California clapper rail [*Rallus longirostris obsoletus*] to Ridgway's rail [*Rallus obsoletus*]), the Service maintains the use of California clapper rail (*Rallus longirostris obsoletus*) as used in this current correspondence. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The Infrastructure Investment and Jobs Act (IIJA), signed into law on December 6, 2021, includes provisions (23 U.S. Code 327) to promote streamlined and accelerated project delivery. Caltrans is approved to participate in the IIJA project delivery program through the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU). The MOU allows Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for most highway projects in California. Caltrans is exercising this authority as the Federal nexus for section 7 consultation on this project.

In reviewing this Project, the Service has relied upon: (1) Caltrans' June 28, 2022, email requesting initiation of formal consultation; (2) the June 2022, *Biological Assessment for the Minor Rehabilitation-Capital Preventative Maintenance Project, California Department of Transportation, District 04 Highway 101, San Mateo County*; and (3) other information available to the Service.

Caltrans determined the proposed Project is likely to adversely affect the western snowy plover. However, habitat is lacking adjacent to work areas on United States Route US-101 and western snowy plovers are not likely to forage or nest within the Action Area. Therefore, the Service does not concur with Caltrans' may affect and likely to adversely affect determination for the western snowy plover and has determined the proposed Project is not likely to adversely affect the species.

The remainder of this document provides our biological opinion on the effects of the proposed Project on the California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail.

Consultation History

June 28, 2022:	The Service received a request from Caltrans to initiate formal consultation on the 1Q580 SR-101 Multi Asset CAPM Project in San Mateo County, California.
August 4, 2022:	The Service sent an email to Caltrans requesting more information.
August 9, 2022:	The Service received additional information from Caltrans.
December 12, 2022:	The Service received an Environmentally Sensitive Areas (ESAs) impact table from Caltrans.
February 16, 2023:	The Service received additional information from Caltrans regarding the acreage of habitat to be affected by construction noise.

BIOLOGICAL OPINION

Description of the Proposed Action

This Project is a minor rehabilitation, CAPM project, located on United States Route US-101 (U.S. 101) in San Mateo County from Post Mile (PM) 0.0 to 16.5 (from the Santa Clara County line to the Broadway Overcrossing) and Pavement and Transportation Management System (TMS) Action located on U.S. 101 in San Mateo County from PM 0.0 to 21.8 (from the Santa Clara County line to 0.3 mile south of Grand Avenue Interchange). The number of lanes varies from four to five lanes of traffic in each direction. The mainline, on-ramp & off-ramp roadbed surface is largely flexible pavement (Asphalt Concrete) with a few short segments of rigid pavement (Portland Cement Concrete). The Project is in the cities of East Palo Alto, Menlo Park,

Redwood City, San Carlos, Belmont, Foster City, San Mateo, Burlingame, Millbrae and South San Francisco.

The purpose of this Project is to preserve, repair and extend the life of the existing pavement whereby minimal maintenance is required, and improve ride quality and optimize the performance of the transportation system for travelers and goods.

The proposed Project consists of the following primary improvements:

• Cold Plane, crack seal, dig-out & thin overlay for the existing flexible pavement. Spot repair, crack seal and rubberized hot mix asphalt- gap graded or rigid pavement throughout the Project from PM 0.0-21.8.

• Addition of California Highway Patrol (CHP) enforcement area by widening the existing shoulder at one location, PM 11.77-11.85. This area is for CHP vehicles to monitor and enforce compliance and would provide barrier protection for the officer and vehicle.

• Addition of ramp metering by widening single lane on-ramp to two lanes on-ramp at one location, PM 19.20-19.43.

• Upgrade the TMS elements from PM 0.0 to PM 21.8. TMS includes a broad class of technology assets on the highway system dedicated to improving operational efficiency and user interactions. TMS assets help reduce traveler delay, enhance safety, improve communication, and collect data regarding traffic behavior.

• Upgrade the existing nonstandard pedestrian curb ramps to standard pedestrian curb ramps at all the on ramps & off-ramps locations to comply with the Americans with Disabilities Act (ADA).

• Replace existing Metal Beam Guard Railing (MBGR) with the Midwest Guardrail System (MGS) and end-treatments/attenuators, bridge approach guard railing, existing dikes, adding shoulder backing, re-delineating pavement markings and striping throughout the Project limit.

• Upgrade the drainage inlets with bicycle friendly grates at pedestrian curb ramp locations.

• Upgrade the existing nonstandard signposts & sign panels throughout the Project limit.

• Upgrade the median concrete barrier & double thrie beam barrier to the current standard.

• Replace the existing deteriorated metal culverts with the new metal culverts to avoid collapsing and subsequent settling of the roadbed, which would subject motorists to a hazardous condition; replacement would also reduce maintenance needs.

Installation of signaling and traffic control measures: MBGR’s would be installed, and temporary lane closures would be established to create the necessary workspace for construction. Traffic control measures would include use of metal signage, flashing signal lights, and traffic

cones. Caltrans would implement traffic control measures and temporary lane closures while performing construction activities.

Access, Staging, and Laydown Areas

All access, staging, and laydown areas would be established within the Caltrans right-of-way and would occur only within approved work areas or on paved surfaces. The Project biologist will determine staging locations during the plans, specifications, and estimates (PS&E) phase of this Project. Lane closures and shoulder closures are anticipated, and details will be finalized during the PS&E phase.

Vegetation removal and trimming

Vegetation removal would be conducted on construction sites and in staging areas, and any vegetation hanging into the paved work area would be removed or trimmed. Vegetation removal or trimming of large shrubs and trees likely would occur earlier than other construction activities, to avoid the bird nesting season.

Construction Equipment and Vehicles

Construction equipment and vehicles that may be used for this Project are listed below. The contractor may select an alternative but similar vehicles or equipment, based on site specific considerations.

- Utility truck
- Semi-truck
- Small drill rig
- Paving machine
- Crane
- Jack hammer

Site Clean-up and Restoration

All construction-related materials would be removed after completion of construction activities. Temporary staging areas would be cleaned up, and any remaining construction materials would be removed and hauled to an appropriate waste disposal facility. Because the Project footprint would be contained primarily within paved areas and graveled/disturbed road shoulders, vegetation restoration is not anticipated to be necessary. Restoration, such as hydroseeding or planting, may be performed in unpaved areas, to facilitate slope stabilization where applicable.

Sequencing and Schedule

Construction is anticipated to require 89 working days to complete work at all locations. Individual locations will require fewer working days, with the exact number for each location dependent on the scope of work. Night work is not anticipated.

Conservation Measures

Best Management Practices (BMPs)

1. A water pollution control program (WPCP) and erosion control BMPs will be developed and implemented to minimize any wind or water-related material discharges, in compliance with the requirements of the Regional Water Quality Control Board. The WPCP will provide measures to avoid and minimize stormwater and non-storm water discharges; temporary construction BMPs will be used to the maximum extent necessary.

2. Vegetation Removal. Vegetation removal will be minimized to the greatest extent feasible. No clearing or grubbing will be permitted beyond designated construction sites. All cleared vegetation will be removed from the Project site to avoid attracting wildlife and disposed of at a compost facility off site.

3. Preconstruction Nesting Bird Surveys. Tree removal or trimming will be conducted during the non-nesting period, between September 1 and January 31, to the maximum extent feasible. If vegetation trimming or tree removal cannot be completed prior to January 31, and must occur between February 1 and August 31, a qualified biologist(s) will survey for nesting birds, including raptors. The survey area will include the Project footprint and a buffer 300 feet beyond its boundaries. If active raptor nests are detected within 300 feet of an active construction site, or if active nests of other migratory birds are detected within 50 feet, the biological monitor will establish an appropriate non disturbance buffer to avoid direct effects or construction related disturbance. All nest avoidance requirements of the Migratory Bird Treaty Act and the California Fish and Game Code will be observed.

4. Trash Control. To eliminate attraction to predators of protected species, all food related trash items (e.g., wrappers, cans, bottles, and food scraps) will be disposed in solid, closed containers (trash cans) and will be removed from the Action Area at the end of each day.

5. Speed Reduction. Project-related vehicles will be required to observe a 10-mile per hour speed limit in all staging or storage areas.

6. Firearms and Pet Restrictions. No firearms or pets will be permitted in the Action Area at any time.

7. Wildlife-Safe Erosion-Control Materials. To prevent listed species from becoming entangled or trapped in erosion-control materials, plastic mono-filament netting (i.e., erosion-control matting or wattles) or similar material will not be used in the Action Area. Straw wattles will be made of natural fiber, and no plastic or synthetic material will be used.

The following avoidance and minimization measures will be required to occur only within California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail habitats, which for this Project will be limited to the West-of-Bayshore mitigation site (California red-legged frog and San Francisco garter snake), the Millbrae overpass cloverleaf

(California red-legged frog), and Smith Slough and Belmont Slough (salt marsh harvest mouse and California clapper rail).

1. Preconstruction Surveys and Biological Monitoring. Preconstruction surveys will be conducted by a Service-approved biologist no more than 30 minutes before the start of construction activities in the immediate vicinity of California red-legged frog and San Francisco garter snake habitat (the West-of-Bayshore mitigation site and Millbrae overpass cloverleaf). The Service-approved biologist also will inspect any open holes, pipes, and equipment in designated staging areas for the presence of listed species.

2. Worker Environmental Awareness Training. Before the start of construction activities, a Service-approved biologist will conduct environmental awareness training for Project construction worker who are working in the immediate vicinity of California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail habitat. At a minimum, the training will include a description of California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail and their habitats; the potential occurrence of these species in the Action Area; an explanation of the status of these species and protection under the Act; the measures to be implemented to conserve listed species and their habitats as they relate to construction sites; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction workers before they enter the Project footprint. On completion of this training, each person will sign a form, confirming attendance and an understanding of all the avoidance and minimization measures.

3. All California red-legged frog and San Francisco garter snake upland and aquatic habitat within the Project site have been designated as ESAs. The boundary between the construction areas and the West-of-Bayshore Mitigation Site and the boundary between construction areas and the Millbrae overpass cloverleaf will be fenced with ESA fencing.

4. Wildlife Escape Ramps. In the immediate vicinity of California red-legged frog and San Francisco garter snake habitat (the West-of-Bayshore mitigation site and Millbrae overpass cloverleaf), all excavated, steep walled holes or trenches 1 foot or more deep will be covered at the end of each workday, or a dirt ramp will be built to provide a means of escape for wildlife. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

5. Pipe Capping. In the immediate vicinity of California red-legged frog and San Francisco garter snake habitat (the West-of- Bayshore mitigation site and Millbrae overpass cloverleaf), all pipes, culverts, and similar structures staged in the Project footprint will be capped or will be thoroughly inspected for trapped animals before being buried, re-capped, or moved.

6. Refueling, oiling, or cleaning of vehicles and equipment will be done a minimum of 50 feet from riparian and aquatic areas (or utilizing pads or other catchments to avoid potential discharges in cases where equipment cannot be moved).

7. Work Windows. All work within suitable habitat for the California red-legged frog and San

Francisco garter snake will occur between April 15 and October 15, and during dry conditions.

8. Service-approved biologist. At least 30 days prior to the onset of any construction-related activities or species-related activities, Caltrans shall submit to the Service, for approval, the name(s) and credentials of proposed Service-approved biologists. Information included in a request for authorization must include, at a minimum: (1) relevant education; (2) relevant training on species identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized for such activities by the Service; (3) a summary of field experience conducting requested activities (to include project/research information and actual experience with the species); (4) a summary of biological opinions and/or informal consultations, including Service File Numbers, under which they were authorized to work with the listed species and at what level (such as construction monitoring versus handling), to include the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project including detail on whether the species was encountered or not; and (5) a list of 10(a)1(A) permits, if any, held or under which individuals are authorized to work with the species (to include permit number, authorized activities, and name of permit holder). No project activities shall begin until Caltrans has received written Service approval for Service-approved biologists to conduct specified activities.

9. Due to the difficulty of identifying salt marsh harvest mice in the field, these conservation measures will apply to any harvest mouse.

10. The Service-approved biologist will be present during all activities within suitable habitat and will have stop-work authority in the event of non-compliance with the measures and for protection of the California red-legged frog, San Francisco garter snake, salt marsh harvest mouse and/or California clapper rail.

11. Protocol for Species Observation: The Service-approved biologist will have the authority to halt work through coordination with the resident engineer in the event that a listed species is observed in the Action Area. The resident engineer will keep construction activities suspended in any construction area where the biologist has determined that a potential take of the species could occur. Work will resume after observed listed individuals leave the site voluntarily, the biologist determines that no wildlife is being harassed or harmed by construction activities, or the wildlife is removed by the biologist to a release site using Service-approved handling techniques.

Activity Timing

1. Project activities will be restricted to daylight hours 30 minutes after sunrise and 30 minutes before sunset.

2. Project activities should avoid high tides and periods when the marsh plain is inundated.

Salt Marsh Harvest Mouse

1. Prior to initiation of work activities within suitable habitat, the Service-approved biologist will survey the work area for the presence of salt marsh harvest mice and nests.

2. Halting activities and establishing a no-disturbance zone.

    a. If salt marsh harvest mice are observed within work or access areas during the pre-activity surveillance or any activity, activities within 100 feet of the observation will be halted immediately and will not resume until the Service-approved biologist has determined the individual has left the area on its own.

    b. If an active nest is observed within work or access areas during the preactivity surveillance or any activity, activities will be halted and a 100-foot no-disturbance buffer area implemented until the Service-approved biologist has determined that all salt marsh harvest mice have weaned and are not present within 100 feet of the work area.

3. Temporary removal of vegetation

    a. Only non-motorized equipment (i.e. hand shears) or hand-held motorized equipment (i.e. string trimmer) will be used to remove the vegetation.

        i. The Service-approved biologist will walk a safe distance in front of vegetation removal equipment to ensure no salt marsh harvest mice are present (flushing).

        ii. Vegetation removal shall move in a direction toward salt marsh harvest mouse habitat and continue in a uniform direction.

        iii. Vegetation will be removed to bare ground or stubble no higher than one inch. Vegetation will be cut in at least two passes: with the first pass cutting vegetation at approximately half of its height above the ground (mid-canopy) and the next pass, or subsequent passes, cutting vegetation to ground-level or no higher than one inch.

        iv. Cut vegetation should not be piled in the area where vegetation removal is taking place (i.e., the area that will be the exclusion area). It should be removed from the exclusion area as it is being cut, so that no standing or cut vegetation remains in the exclusion area when the fence is installed.

4. Exclusion fencing of work areas and access routes

    a. Following completion of vegetation removal, exclusion fencing will be installed to isolate the access routes and work areas.

        i. To prevent salt marsh harvest mice from moving through work and access areas during operations, temporary exclusion fencing will be placed around the defined

work area prior to the start of construction/excavation activities and immediately after vegetation removal. The fence should be made of a non-textured material that does not allow salt marsh harvest mice to pass through or climb (such as Visqueen©), and the bottom should be buried to a depth of at least 4 inches so that animals cannot crawl under the fence. Fence height should be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. Fence posts should be placed on the work area side (vegetation cleared side) of the fencing. The fencing should be installed under the supervision of a Service-approved biologist.

ii. The Service-approved biologist will conduct daily surveys to ensure that the mouse-proof fencing is intact and that no mice have entered the Project area.

California Clapper Rail

1. Non-breeding season (September 1 – January 30)

   a. Work activities adjacent to suitable habitat should not occur within two hours before or after extreme tides (6.5 feet or above measured at the Golden Gate Bridge adjusted to the timing of local high tides) or when the marsh plain is inundated, which could prevent individuals from reaching available cover. Current and predicted tides and currents measured at the Golden Gate Bridge can be accessed via the National Oceanic and Atmospheric Administration (NOAA) website at: https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=9414290&legacy=1.

   b. Prior to initiation of work activities within suitable habitat, the Service-approved biologist will survey the work area for the presence of California clapper rails.

   c. If rails are encountered, activities will be halted until the individual has left the area on its own.

2. Breeding season activities (February 1 – August 31)

   a. Work activities adjacent to suitable habitat should not occur within two hours before or after extreme tides (6.5 feet or above measured at the Golden Gate Bridge adjusted to the timing of local high tides) or when the marsh plain is inundated, which could prevent individuals from reaching available cover. Current and predicted tides and currents measured at the Golden Gate Bridge can be accessed via the NOAA website at: https://tidesandcurrents.noaa.gov/noaatidepredictions .html?id=9414290&legacy=1.

   b. If activities may take place during the breeding season within the Action Area where suitable breeding habitat is present, a Section 10(a)(1)(A)- permitted biologist shall be retained to conduct California clapper rail Service protocol-level presence/absence surveys at the proposed site in appropriate habitat for the California clapper rail to determine absence/presence of the rail. The surveys should be conducted following the Service's June 2015 protocol at: https://www.fws.gov/sites/default/files/

documents/survey-protocol-for-california-ridgways-rail.pdf

c. If rails are detected during breeding season surveys, the Service shall be notified to determine if work activities may continue. Activities should not occur within a buffer distance determined by site-specific noise analysis from the suitable habitat during the breeding season. The noise analysis and buffer distances shall be sent to the Service for approval prior to work activities resuming.

d. If rails are encountered outside of the no-disturbance zone buffer distance determined by site-specific noise analysis, activities will be halted until the individual has left the area on its own.

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." The Action Area for this consultation encompasses all areas that may be directly or indirectly affected as a result of activities for the Project and the broader area that, while outside the Project footprint, may be directly or indirectly affected by vibrations, noise, dust, light, or movement associated with the proposed Project.

The Action Area encompasses paved areas and associated roadway shoulders along the U.S. 101 corridor, as well as the maximum extent/limits of vegetation clearing, soil disturbance, excavation and fill, and areas required for operating construction equipment and a buffer of 50 feet. Therefore, the boundaries of the Action Area in these locations have been expanded to accommodate the potential direct and indirect effects from construction noise, human presence, and water quality effects. Ground disturbance in unpaved areas generally would be limited to the edges of the roadway or areas located between U.S. 101 and freeway on- and off-ramps. In limited areas, the Action Area extends outside the existing Caltrans right-of-way, where work may include placement of utilities or connections to power or communication lines. The Action Area also includes the existing right-of-way, to accommodate the additional north and southbound lanes, including realignment of local frontage roads.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably will be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed Federal action, and any cumulative effects, on the rangewide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the current rangewide condition of the species, the factors responsible for that condition, and its survival and

recovery needs; (2) the *Environmental Baseline*, which analyzes the current condition of the species in the Action Area without the consequences to the listed species caused by the proposed action, the factors responsible for that condition, and the relationship of the Action Area to the survival and recovery of the species; (3) the *Effects of the Action*, which includes all effects that are caused by the proposed Federal action; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the Action Area on the species. The *Effects of the Action* and *Cumulative Effects* are added to the *Environmental Baseline* and in light of the *Status of the Species*, the Service formulates its opinion as to whether the proposed action is likely to jeopardize the continued existence of listed species.

Status of the Species

California Red-Legged Frog

For the most recent comprehensive assessment of the range-wide status for the California red-legged frog, please refer to the *California Red-Legged Frog 5-Year Review* (Service 2022; https://ecos.fws.gov/docs/tess/species_nonpublish/4021.pdf). No change in the listing status for the species were recommended in the 5-year review.

In addition to the information provided in the species' 5-year review, the following should be noted for transportation projects.

Negative effects to wildlife populations from roads and pavement may extend some distance from the actual road. The phenomenon can result from any of the effects described in this biological opinion, such as vehicle-related mortality, habitat degradation, and invasive exotic species. Forman and Deblinger (1998, 2000) described the area affected as the "road effect" zone. Along a four-lane road in Massachusetts, they determined that this zone extend for an average of approximately 980 feet to either side of the road for an average total zone width of approximately 1,970 feet. They describe the boundaries of this zone as asymmetric and in some areas diminished wildlife use attributed to road effects was detected greater than 0.6 mile from Massachusetts Route 2. The "road-zone" effect can also be subtle. Van der Zande *et al.* (1980) reported that lapwings and black-tailed godwits feeding at 1,575-6,560 feet from roads were disturbed by passing vehicles. The heart rate, metabolic rate and energy expenditure of female bighorn sheep increase near roads (MacArthur et al. 1979). Trombulak and Frissell (2000) described another type of "road-zone' effect due to contaminants. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet of roads, but elevated levels of metals in both soil and plants were detected at 660 feet of roads. The "road-zone" apparently varies with habitat type and traffic volume. Based on responses by birds, Forman and Deblinger (2000) estimated the effect zone along primary roads of 1,000 feet in woodlands, 1,197 feet in grasslands, and 2,657 feet in natural lands near urban areas. Along secondary roads with lower traffic volumes, the effect zone was 656 feet. The "road-zone" effect with regard to California red-legged frogs has not been adequately investigated.

The necessity of moving between multiple habitats and breeding ponds means that many amphibian species, such as the California red-legged frog, are especially vulnerable to roads and well-used large, paved areas in the landscape. Van Gelder (1973) and Cooke (1995) have examined the effect of roads on amphibians and found that because of their activity patterns,

population structure, and preferred habitats, aquatic breeding amphibians are more vulnerable to traffic mortality than some other species. Large, high-volume highways pose a nearly impenetrable barrier to amphibians and result in mortality to individual animals as well as significantly fragmenting habitat. Hels and Buchwald (2001) found that mortality rates for anurans on high traffic roads are higher than on low traffic roads. Vos and Chardon (1998) found a significant negative effect of road density on the occupation probability of ponds by the moor frog in the Netherlands. In addition, incidents of very large numbers of road-killed frogs are well documented (e.g., Ashley and Robinson 1996), and studies have shown strong population level effects of traffic density (Carr and Fahrig 2001) and high traffic roads on these amphibians (Van Gelder 1973; Vos and Chardon 1998). Most studies regularly count road kills from slow moving vehicles (Hansen 1982; Rosen and Lowe 1994; Drews 1995; Mallick *et al.* 1998) or by foot (Munguira and Thomas 1992). These studies assume that every victim is observed, which may be true for large conspicuous mammals, but it certainly is not true for small animals, such as the California red-legged frog. Amphibians appear especially vulnerable to traffic mortality because they readily attempt to cross roads, are slow moving and small, and thus cannot easily be avoided by drivers (Carr and Fahrig 2001).

Recovery Plan: The *Recovery Plan* for the California red-legged frog identifies eight recovery units (Service 2002). The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Within each recovery unit, delineated core areas, designed to protect metapopulations, represent contiguous areas of moderate to high California red-legged frog densities. The management strategy identified within this *Recovery Plan* will allow for the recolonization of habitats within and adjacent to core areas naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

San Francisco Garter Snake

For the most recent comprehensive assessment of the San Francisco garter snake's range-wide status, please refer to the species' 2020 *5-Year Review*, available at: https://ecos.fws.gov/docs/tess/species_nonpublish/2969.pdf (Service 2020a) and the Species Status Assessment for the San Francisco garter snake, available at: https://ecos.fws.gov/ServCat/DownloadFile/171618 (Service 2020b). No change in the species' listing status was recommended in this 5-year review. While the threats posed by habitat destruction and modification as well as other factors including curtailment of habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; and disease or predation are ongoing, to date no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species. Habitat loss and the degradation of remaining habitat continue to be primary threats to the species' recovery.

Salt Marsh Harvest Mouse

There are two subspecies of the salt marsh harvest mouse: the northern subspecies (*R. r. halicoetes*) and the southern subspecies (*R. r. raviventris*) both of which are listed as endangered. Information about the salt marsh harvest mouse biology and ecology is available in the *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California*, available at: https://ecos.

fws.gov/docs/recovery_plan/TMRP/20130923_TMRP_Books_Signed_FINAL.pdf (Service 2013). Critical habitat has not been designated for this species. Threats evaluated during the drafting of the recovery plan and discussed in the final document have continued to act on the species since its publication, with loss of habitat being the most significant effect. For the most recent comprehensive assessment of the species' range-wide status, please refer to the salt marsh harvest mouse 5-year review at https://ecos.fws.gov/docs/tess/species_nonpublish/3630.pdf (Service 2021). No change in the species' listing status was recommended in this 5-year review.

California Clapper Rail

Information about the California clapper rail biology and ecology is available in the Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California, available at: https://ecos.fws.gov/docs/recovery_plan/TMRP/20130923_TMRP_Books_Signed_FINAL.pdf (Service 2013). Critical habitat has not been designated for this species. For the most recent comprehensive assessment of the species' range-wide status, please refer to the California clapper rail 5-year Review, available at https://ecos.fws.gov/docs/five_year_review/doc6592.pdf (Service 2020c). No change in the species' listing status was recommended in this 5-year review. Threats evaluated during that review and discussed in the final document have continued to act on the species with loss of habitat being the most significant effect.

Environmental Baseline

Environmental Baseline refers to the condition of the listed species or its designated critical habitat in the Action Area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The *Environmental Baseline* includes the past and present impacts of all Federal, State, or private actions and other human activities in the Action Area, the anticipated impacts of all proposed Federal projects in the Action Area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the *Environmental Baseline*.

The Project alignment is located on the San Francisco Bay peninsula, a low-lying, low-relief area that is heavily urbanized. U.S. 101 on the San Francisco Peninsula is the main access route to San Francisco International Airport (SFO) from the North and South Bay. It also serves as a major gateway route between the City of San Francisco and Silicon Valley, as well as provides access to San Jose International Airport at the southern end of the corridor. U.S. 101 connects to the East Bay via the Dumbarton Bridge (State Route [SR] 84), the San Mateo Bridge (SR 92), and the San Francisco–Oakland Bay Bridge. U.S. 101 provides access to the Port of Redwood City. The Project would take place in the approximately 21.8-mile corridor between the Santa Clara County line to 0.3 mile south of Grand Avenue Interchange. The Project lies at a low elevation, between 1 foot and 60 feet above mean sea level.

The Project is located primarily on paved surfaces and the adjoining roadway shoulders along U.S. 101 and along on- and off-ramps. Along the edges of U.S. 101, the Project is subject to ambient noise levels, influenced by the adjacent freeway traffic. Depending on the location,

adjacent uses range from highly urbanized development with existing sound walls and adjacent frontage roads, to protected utility corridors and airport lands that support vegetated communities. Road shoulder conditions primarily are made up of roadside fill mixed with rock and gravel. The limited vegetation communities surrounding portions of the Action Area primarily consist of ruderal vegetation, with small sections adjacent to saline emergent wetland and other naturally occurring habitats.

There is a total of 87 on/off-ramps – 44 northbound (NB) and 43 southbound (SB). The surface of the ramps for both NB and SB directions is also largely flexible pavement, with the exception of the ramps to SR 92, which involve rigid pavement.

Hydrologic Resources

Aquatic habitat in the Action Area includes seasonal and permanent ponds, creeks and tidal and brackish marshes. Anza Lagoon is the Action Area east of U.S. 101 for about 3,800 feet and connects to the San Francisco Bay at the southern end. Many streams pass through the Action Area as they cross beneath U.S. 101, including Colma Creek, Mills Creek, Easton Creek, Sanchez Creek, San Mateo Creek, Borel Creek, Laurel Creek, Pulgas Creek, Redwood Creek, and San Francisquito Creek. Ponds are in the Action Area as well, including those in the Baylands Nature Preserve such as Egret Pond, and two ponds within Poplar Creek Golf Course.

Soils

The Action Area includes 15 soil series or complexes, mapped by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) (NRCS 2021). Twelve of the 15 series in the Action Area are classified as Urban Land with added silty clay or clay loam fill soils. The remaining two series are 117 Novato clay (San Mateo County), 126 Reyes clay.

Land classified as Urban Land is considered to be any land that mostly is covered by streets, parking lots, buildings, and other human-made structures. Two of the Urban Land series are defined as Orthents with Urban Land complex. Orthent soils are shallow and poorly drained, and often are found on steep slopes with high erosion potential (NRCS 1999). Orthents and Urban Land do not have a NRCS hydric soil rating. Soil complexes added to urban land as artificial fill in the study area include Botella, Elpaloalto, Hangerone, Embarcadero, Campbell, and Elder. Hangerone and Embarcadero are poorly drained clay loams; the others are considered well-drained soils. Elpaloalto, Hangerone, and Embarcadero soil complexes have hydric soil ratings in California.

The two-soil series that are not Urban Land in the study area are derived from native formations: 117 Novato clay and Reyes clay; and 157 Novato clay. The Novato clay soil type is classified as a poorly drained clay and is mapped in six of the soil units along U.S. 101 on the eastern side of the Action footprint, adjacent to waterways with access to the San Francisco Bay. The Reyes clay soil type is classified as a somewhat poorly drained clay and is mapped in one soil unit on the eastern side of the Action footprint between San Carlos and Redwood City.

The Action Area is mostly paved, barren, or dominated by ruderal vegetation. These areas were classified as "Urban" and included pavement, landscaped trees, shrubs, and ground cover

landscape plantings. Tree and shrub plantings along freeway interchanges and margins also fit into this habitat classification. Natural vegetation communities observed within the Action Area were classified using the California Wildlife Habitat Relationships System (CWHR), developed by the California Department of Fish and Wildlife (CDFW) to classify habitats with respect to their ability to support wildlife species (Mayer and Laudenslayer 1988).

Vegetation Communities

Freshwater Emergent Wetlands

Freshwater emergent wetlands were found in small patches throughout the Action Area, primarily in depressions of freeway interchanges where storm water collects and drains. Thus, many of these wetlands were created as part of construction of U.S. 101. Several freshwater wetlands also were found along streams above the tidal inundation zone, such as in the stream at the south end of Poplar Creek Golf Course. These marshes have a sufficiently high elevation so that they do not experience substantial saltwater intrusion at high tides. Freshwater emergent wetlands mostly were dominated by species not known to have a strong affinity for saline environments, including both broadleaf and narrowleaf cattail (*Typha latifolia* and *T. angustifolia*), several rushes (*Juncus ambiguus*, *J. effusus* ssp. *pacificus*, and *J. phaeocephalus*), umbrella sedge (*Cyperus eragrostis*), lance leaf water plantain (*Alisma lanceolatum*), brass buttons (*Cotula coronopifolia*), rabbit's foot grass (*Polypogon monspeliensis*), water beard grass (*Polypogon viridis*), dotted smartweed (*Persicaria punctata*), and fringed willow herb (*Epilobium ciliatum* ssp. *ciliatum*). Most of the freshwater emergent wetlands drain to saline emergent wetlands, and the vegetation gradually transitions to more salt-tolerant species as elevation decreases. Several species, including saltmarsh bulrush (*Bolboschoenus maritimus* ssp. *paludosus*) and salt grass (*Distichlis spicata*), can tolerate a range in salinity and are found in both freshwater and saline wetlands.

Saline Emergent Wetlands

The vast majority of wetlands in the Action Area are emergent saltmarshes, with small but varying degrees of influence from freshwater. These wetlands are characterized by the tidal influence of saltwater from the San Francisco Bay, but seasonally variable inputs of freshwater from streams and drainages can produce more brackish water at times. The largest areas of saline emergent wetlands in the Action Area were found at Burlingame Lagoon and Belmont Slough, where large, nearly flat expanses of this vegetation community exist. Many smaller saltmarshes also were found in the narrow sloughs along the freeway and freeway interchanges, where the elevation gradients generally are more abrupt. In the lower saltmarsh zone, the vegetation is made up strictly of species adapted to daily saltwater inundation, including the dominant fleshy Jaumea (*Jaumea carnosa*), several sea lavender species (*Limonium californicum and L. ramosissimum*), alkali heath (*Frankenia salina*), Alaska alkali grass (*Puccinellia nutkaensis*), California cordgrass (*Spartina foliosa*), and glasswort (*Salicornia pacifica*), which often grows with its parasite saltmarsh dodder (*Cuscuta pacifica var. pacifica*). Brackish marsh and saline emergent wetlands are both included under this description. In the upper saltmarsh zone, many of the above-listed species still are present but are less dominant. Other species inhabiting the upper saltmarsh zone include marsh gumplant (*Grindelia stricta var. angustifolia*),

Mediterranean saltwort (*Salsola soda*), saltgrass (*Distichlis spicata*), perennial pepper weed (*Lepidium latifolium*), and fat-hen (*Atriplex prostrata*). In the highest reaches of the upper saltmarsh, some upland ruderal species (e.g., fennel [*Foeniculum vulgare*], cut leaf plantain [*Plantago coronopus*], pampas grass [*Cortaderia selloana*], sea figs [*Carpobrotus sp.*], and slender wild oats [*Avena barbata*]) intergrade with the typical upper saltmarsh species.

Estuarine

Estuarine habitats exist in the Action Area, where freshwater flows into the more saline water from the San Francisco Bay. Estuarine habitat is found at Burlingame Lagoon, in unvegetated mud flats that are below the saline emergent wetland zone. During high tides, the estuarine habitat in the Action Area is covered in brackish water by tidal action.

Coastal Scrub

Small patches of coastal scrub communities were found in several upland areas in the Action Area. These communities were dominated by coyote brush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), and in some locations by big saltbush (*Atriplex lentiformis*). Herbaceous understory vegetation was dominated by non-native forbs, such as fennel, Italian thistle (*Carduus pycnocephalus*), and non-native grasses, such as smilo grass (*Stipa miliacea*) and slender wild oat. The presence of big saltbush indicates saline influence in some upland areas. Few native species other than the dominant shrubs remain in the small patches of coastal scrub habitat in the Action Area.

Valley Foothill Riparian

Small patches of valley foothill riparian habitat are present in the Action Area, in the SFO mitigation wetlands. This habitat is dominated by arroyo willow (*Salix lasiolepis*) and holly leaf cherry (*Prunus ilicifolia*). Close to the existing valley foothill riparian habitat, a habitat restoration site (the West of Bayshore mitigation site) with additional plantings of riparian woodland species was observed. Planted species include coast live oak (*Quercus agrifolia*), California wax myrtle (*Morella californica*), toyon (*Heteromeles arbutifolia*), California coffeeberry (*Frangula californica*), and coyote brush (*Baccharis pilularis*). If these plantings are successful, they will constitute a coastal oak woodland that transitions to the valley foothill riparian habitat.

Annual Grassland

Annual grasslands in the Action Area were found in upland areas on freeway interchanges and in other sites adjacent to freeway corridors; they have been highly disturbed from more than a century of development along the freeway corridor. Very few native species were found in annual grasslands. Some of the few native species that were observed included California brome (*Bromus carinatus var. carinatus*), annual fireweed (*Epilobium brachycarpum*), arroyo lupine (*Lupinus succulentus*), sticky willy (*Galium aparine*), and California poppy (*Eschscholzia californica*); none of these were dominant species. Additional native species that flower earlier than the time of the surveys (August– September) also could be present. Annual grasslands were

dominated by non-native grasses and by herbs, including smilo grass (*Stipa miliacea*), slender wild oat, fennel (*Foeniculum vulgare*), bird's foot trefoil (*Lotus corniculatus*), Italian thistle (*Carduus pycnocephalus*), sea fig (*Carpobrotus chilensis and C. edulis*), and bull mallow (*Malva nicaeensis*).

Perennial Grassland (Serpentine Soils, Historical)

Although perennial grasslands were not observed in the Action Area, two lines of evidence suggest that they occurred historically in the Action Area. Serpentine grasslands, which serve as habitat for many special-status species, are treated as perennial grasslands under the CWHR classification system (California Department of Fish and Game 1988). Several of the annual grassland areas along the freeway interchanges had small scattered serpentine rocks, although no differences in vegetation was found to coincide with the presence of these rocks. In addition, San Francisco owl's clover (*Triphysaria floribunda*), a species that usually grows in serpentine grasslands, was present historically in the Action Area, as confirmed by a collection from "one mile south of San Mateo on Highway 101" from 1932 (Occurrence 44 in the California Natural Diversity Database [CNDDB]). Although vegetation typical of serpentine grasslands were not observed, serpentine grassland species, especially annuals, possibly could be observed if surveys were conducted at a different time of year.

California Red-Legged Frog

The Action Area is located within the range of the California red-legged frog. A map depicting the species' range is included in the Service's online profile for the species at: https://ecos.fws.gov/ecp/species/2891. The proposed Project is within Recovery Unit 4 (South and East San Francisco Bay) (Service 2002). The Action Area is located within Core Area #18 (South San Francisco Bay) of that Recovery Unit (Service 2002). The conservation needs for the South San Francisco Bay Core Area are: (1) protect existing populations, (2) control non-native predators, (3) increase connectivity between populations, (4) reduce erosion, (5) implement guidelines for recreation activities to reduce impacts, (6) implement forest practice guidelines, and (7) reduce impacts of urbanization. This Core Area contains an important source population for the species.

Three California red-legged frog occurrences are in the Action Area, and three additional occurrences are within 1 mile of the Action Area. All six of these occurrences are located in the vicinity of the West-of-Bayshore mitigation site. CNDDB Occurrence No. 33 includes six larvae in the Action Area in South Lomita Canal in 1991, and 20 adults and 9 juveniles were observed in 2007 (CDFW 2022). This occurrence is within the West-of-Bayshore mitigation site (maintained by SFO, the Bay Area Rapid Transit, and Caltrans), located west of U.S. 101 near SFO. CNDDB Occurrence No. 1114 was also in the Action Area and included four adults in September and October 2008, in a canal at the West-of-Bayshore mitigation site (CDFW 2022). A breeding population was reported in the U.S. 101/Millbrae Avenue cloverleaf, located in the Action Area, in 1997 (Caltrans 2011; City of Burlingame 2004: Chapter 7). In 2004, one adult California red-legged frog was observed in a freshwater drainage near 1510 Rollins Road, as close as 270 feet west of the Action Area (Caltrans 2011). This drainage flows underneath U.S. 101; therefore, habitat connectivity exists between the occurrence and the Action Area. Another

breeding population was reported in a freshwater drainage near 1616 Rollins Road along a Pacific Gas and Electric Company transmission corridor, approximately 480 feet west of the Action Area (Caltrans 2011; City of Burlingame 2004: Chapter 7). In 2001, another adult California red-legged frog was observed near the intersection of David Road and Rollins Road in Burlingame, approximately 700 feet west of the Action Area (Caltrans 2011).

Due to the presence of known records of the species and other additional potential breeding ponds in the site vicinity, California red-legged frogs may occur within the Action Area when dispersing between breeding and/or nonbreeding aquatic habitats in the vicinity of the West-of-Bayshore property and the Millbrae overpass cloverleaf. There are no other areas within the Action Area that provide habitat for the California red-legged frog. The local diversity of vegetation types, aquatic resources, moderate climate, and limited development support the rich ecosystem processes that promote the persistence of a wide strata of wildlife, including the California red-legged frog and the prey that they subsist on. Vertical barriers can limit or prevent passage, but California red-legged frogs are not averse to steep topography and could move back and forth between the Action Area and nearby ponds in the vicinity by way of upland and riparian areas. Adult California red-legged frogs are highly mobile and have been documented to move more than 2 miles over upland habitat. The frog habitat within the Action Area is connected to a vast expanse of suitable habitat well within the feasible movement distance to other resources vital to its life history.

The land adjacent to the proposed project is influenced by the use of the U.S. 101 transportation corridor. Traffic volume, traffic noise, exhaust, fluid leaks, invasive vegetation, and the threat of animal-vehicle collision have an adverse effect on the function of the neighboring habitat for both common and listed wildlife. This parallel band of disturbance is referred to as a "road effects zone." The outward extent of this zone can vary with factors such as topography and the sensitivity of a given species to those effects. A spectrum of typical road effects are likely to negatively influence the suitability of the California red-legged frog habitat in and adjacent to the Project footprint as well as the behavior of the species within their respective road effects zone. The road effects zone applies to the California red-legged frog and in this case, road mortality is a risk for frogs that attempt to cross U.S. 101. These baseline conditions likely create a risk for California red-legged frog that diminishes with distance from these roadways.

Protocol-level surveys were not performed for the proposed project because, given the proximity of known populations, presence of California red-legged frogs in the Action Area can be reasonably assumed. The California red-legged frog is reasonably certain to occur within the Action Area because: (1) the Project is located within the species' range and current distribution; (2) there is suitable upland habitat within the Action Area; (3) there are California red-legged frog observations adjacent to the construction footprint; (4) observations nearby the Project footprint are well within the known travel distance of the California red-legged frog; (5) there are no significant barriers to California red-legged frog movement between confirmed occupied areas along riparian corridors within and north and south of the Action Area; and (6) the biology and ecology of the animal.

San Francisco Garter Snake

The Action Area is within the historic range of the San Francisco garter snake. A map depicting the species' range is included in the Service's online profile for the species at https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=5956#currentRange. As described for the frog above, Caltrans did not conduct surveys for the San Francisco garter snake but the species has been well documented in the area.

A total of 32 sightings of San Francisco garter snakes have been recorded in the CNDDB within a 5-mile buffer surrounding the Action Area since 1938, with the most recent in February 2016. Recorded occurrences of San Francisco garter snakes have been observed, basking on dirt roadways and instances of vehicle strikes in the vicinity of SFO at the West-of-Bayshore mitigation site (Service 2006). The SFO's West-of-Bayshore property, which runs adjacent to several of the proposed culvert replacements, is identified as one of the six "significant" populations in the species' recovery plan (Service 1985). One of the objectives of the recovery plan is to monitor and manage the property for the listed snake (Service 1985).

Based on what is known about this species' life history, evidence suggests that San Francisco garter snakes typically remain within 0.6 mile of aquatic habitat (Service 2006). However, individuals do disperse through upland habitat and likely spend more time foraging away from aquatic habitat during the summer season as their frog prey metamorphose and wetlands and other ephemeral water sources dry up. Upland travel is also important for individuals to disperse to other suitable habitats. Therefore, the listed snake may be encountered in the Project footprint dispersing or in search of prey (which includes the California red-legged frog) along the West-of-Bayshore property.

The San Francisco garter snake experiences the same road-related risks described for the California red-legged frog. As noted in the snake's *5-Year Review*, the San Francisco garter snake likely uses roads for thermoregulation, placing it at greater risk of vehicle collision (A.M. McGraw *in litt* 2005 as cited in Service 2006). The species has been observed basking on roads and an individual was run over by a bicycle on a road adjacent to the San Francisco Public Utilities Commission property (Service 2006).

The San Francisco garter snake is reasonably certain to occur within the Action Area because: (1) the Project is located within the species' range and current distribution; (2) suitable upland habitat exists within the Action Area; (3) local abundance and recorded occurrences exist within the Action Area and nearby; (4) the lack of significant disturbance or history of significant threats to the species in the general vicinity; (5) active monitoring, management, and conservation for the species in nearby public lands; and (6) the biology and ecology of the animal.

Salt Marsh Harvest Mouse

A total of 17 occurrences have been documented within a 5-mile radius of the Action Area. The four closest occurrences are CNDDB Occurrence Nos. 57, 134, 151, and 74. CNDDB Occurrence No. 57 was from 1960 and was in the Action Area, in the marsh between O'Neill Slough and U.S. 101 in Foster City. CNDDB Occurrence No. 134 was in 1988, approximately

300 feet from the Action Area, at Flood Slough, north of Marsh Road and the U.S. 101 interchange in Redwood City.
CNDDB Occurrence No. 151 was also from 1988, approximately 630 feet from the Action Area, at ITT (formerly International Telephone and Telegraph Corporation) Marsh, east of U.S. 101, 0.6 mile south of the Palo Alto Regional Water Quality Control Plant, next to Matadero Creek.
CNDDB Occurrence No. 74 is from 1992 at Bair Island, between Steinberger Slough and Redwood Creek in Redwood City, about 2,400 feet from the Action Area.

The salt marsh harvest mouse is reasonably certain to occur within the Action Area because: (1) the Project is located within the species' range and current distribution; (2) suitable tidal marsh habitat exists within the Action Area; (3) local abundance and recorded occurrences exist within the Action Area and nearby; (4) there are no significant barriers to salt marsh harvest mouse movement between confirmed occupied areas adjacent to the Action Area; and (5) the biology and ecology of the animal.

California Clapper Rail

A total of 19 occurrences of California clapper rail have been documented within a 5-mile radius of the Action Area, two of which overlap the Action Area. These two records are located at Belmont Slough and a non-specific location north of Burlingame in a portion of the Action Area that does not contain habitat for California clapper rail due to now being developed.

The California clapper rail is reasonably certain to occur within the Action Area because: (1) the Project is located within the species' range and current distribution; (2) suitable tidal marsh habitat exists within the Action Area ; (3) local abundance and recorded occurrences exist within the Action Area and nearby; (4) there are no significant barriers to California clapper rail movement between confirmed occupied areas adjacent to the Action Area; and (5) the biology and ecology of the animal.

Effects of the Action

Effects of the Action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. *Effects of the Action* may occur later in time and may include consequences occurring outside the immediate area involved in the action.

For this Project the effects are primarily associated with ground-disturbing activities including pavement repair, upgrading the TMS elements, upgrading the existing nonstandard pedestrian curb ramps, replacing the existing MBGR with MGS and end-treatments/attenuators, bridge approach guard railing, existing dikes, adding shoulder backing, re-delineating pavement markings and striping, upgrading the drainage inlets with bicycle friendly grates at pedestrian curb ramp locations, upgrading the existing nonstandard signposts and sign panels, upgrading the median concrete barriers and double thrie beam barriers, replacing the existing deteriorated metal culverts with the new metal culverts, installing and removing ESA fencing, ground clearing and grubbing, erosion control measures, equipment staging, parking, and soil storage and

replacement.

California Red-Legged Frog and San Francisco Garter Snake

Construction activities would occur within California red-legged frog and San Francisco garter snake upland habitat at the West-of-Bayshore mitigation site (PM 18.3-20.7) and within California red-legged frog upland habitat at the Millbrae overpass cloverleaf (PM 17.9- 17.3). Most of the construction activities will take place on paved surfaces and graveled road shoulders of U.S. 101, on the edge of the upland habitat, but culvert replacement would be within California red-legged frog and San Francisco garter snake habitat. The proposed Project would result in the permanent loss of 0.0164 acres of California red-legged frog and San Francisco garter snake habitat at the West-of-Bayshore mitigation site and the temporary loss of 0.049 acres of California red-legged frog and San Francisco garter snake habitat (0.0385 acres at the West-of-Bayshore mitigation site and 0.0105 acres at the Millbrae overpass cloverleaf).

The California red-legged frog and San Francisco garter snake could be encountered throughout the hardscape and landscape areas of the project footprint where they risk injury or mortality under staged and moving equipment/vehicles and ground disturbing activities. The installation of ESA fencing will prevent workers from accessing adjacent upland habitat at the West-of-Bayshore mitigation site and Millbrae overpass cloverleaf. Pre-construction surveys by a Service-approved biologist will assist in clearing California red-legged frogs and San Francisco garter snakes from the project footprint prior to the introduction of a potential construction-related threat. Biological clearance of the work areas prior to the start of each day's work and during construction will increase the chances of identifying frogs and snakes in the work area that would be susceptible to injury and minimizing the chances of that injury from occurring. Biological clearance of work areas is limited by the experience of the biologist, the complexity and abundance of potential cover sites, and the small size and inconspicuous nature of the species. Despite being "cleared" prior to construction, California red-legged frogs and San Francisco garter snakes could move into the work site undetected. Continued monitoring of the work areas by the Service-approved biologist is proposed to minimize potential injury or mortality to California red-legged frogs and San Francisco garter snakes.

The grassland and riparian vegetation within the Project footprint includes vegetative cover, debris, and mammal burrows. Following construction, as noted previously in the *Description of the Proposed Action* section, Caltrans has included the commitment to restore all temporarily impacted habitat within less than one year of initial disturbance as a condition of the action. Therefore the annual vegetation, debris, and burrows are likely to be reestablished within a year. Frogs and snakes are likely to continue utilizing these areas for dispersal, foraging, and cover. Therefore, the proposed project will result in minimal permanent habitat loss for the California red-legged frog or San Francisco garter snake. The uses of these areas by California red-legged frog and San Francisco garter snake for dispersal, foraging, and basking are likely to remain unchanged following construction.

Caltrans proposes to minimize construction related effects by implementing the *Conservation Measures* included in the *Description of the Proposed Action* section of this biological opinion. Effective implementation of *Conservation Measures* will likely minimize adverse effects to the

California red-legged frog and San Francisco garter snake during construction. The proposed project has the potential to result in a variety of similar adverse effects to these two species.

Educating Project personnel will encourage compliance with the *Conservation Measures* and increase the possibility that California red-legged frogs and San Francisco garter snakes in the work area will be identified and addressed appropriately for avoidance. Worker education is limited by the effectiveness of the presentation and the willingness of the construction personnel to participate in compliance.

Monitoring and covering steep-walled excavations should minimize the potential for these two listed species to be affected by predation, desiccation, entombment, or starvation. Proper trash disposal is often difficult to enforce and is a common non-compliance issue. Improperly disposed edible trash could attract predators, such as raccoons, crows, and ravens, to the site, which could subsequently prey on the California red-legged frog and San Francisco garter snake. Trapped California red-legged frogs may also be vulnerable to predation from the San Francisco garter snake.

If unrestricted, biologists, construction workers, and equipment traveling to the Project area from other project sites may transmit diseases by introducing contaminated equipment. The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytridiomycosis, caused by chytrid fungus, may exacerbate the effects of other diseases on amphibians or increase their sensitivity to environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch *et al.* 2001, Weldon *et al.* 2004). Infection is an obvious threat to the California red-legged frog but can also adversely affect the San Francisco garter snake by eliminating its amphibian prey.

Discovery, capture, and relocation of individual California red-legged frogs and San Francisco garter snakes may avoid injury or mortality due to construction activities; however, capturing and handling animals may result in stress and/or inadvertent injury during handling, containment, and transport. Relocation of animals can result in disorientation and increased risk of being exposed to other threats such as predation. Garter snakes can be difficult to capture due to their slender body, swift movement, and tendency to retreat (rather than take a defensive position or remain motionless). Therefore, their capture may be more prone to result in injury. Garter snake encounters in the work area are likely to have variable outcomes. Snakes could quickly retreat safely out of the work area or into areas of greater risk. California red-legged frogs are relatively easier to capture when moving in upland areas. The risks associated with capture and release will be minimized based on the experience level of the approved biological monitors and the use of prescribed methods.

California red-legged frogs, San Francisco garter snakes, and their prey could also be affected by contamination due to chemical or sediment discharge. Exposure pathways could include inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to reduce these risks by implementing BMPs that consist of refueling, oiling, or cleaning of vehicles and equipment a

minimum of 50 feet from riparian and aquatic areas (or utilizing pads or other catchments to avoid potential discharges in cases where equipment cannot be moved); installing coir rolls, straw wattles and/or silt fencing to capture sediment and prevent runoff or other harmful chemicals from entering the aquatic habitat; and locating staging, storage and parking areas away from aquatic habitat. Caltrans' commitment to use erosion control devices other than mono-filament should be effective in avoiding the associated risk of entrapment that can result in death by predation, starvation, or desiccation (Stuart *et al.* 2001).

The completed Project is unlikely to increase the local risk of California red-legged frog and San Francisco garter snake mortality due to vehicle collision. The completed Project will not provide wildlife with increased access to the roadway or result in the addition of structures such as barriers that may result in greater risk of being stranded in the roadway increasing their risk of being killed. Likewise, the road effects zone described in the *Environmental Baseline* section is unlikely to change.

Construction activities will result in additional noise which could affect California red-legged frog and San Francisco garter snake behavior. U.S. 101 through San Mateo County features consistent, heavy traffic and human presence throughout the Action Area. However, the culvert replacement work is likely to exceed baseline levels for a short amount of time. This additional noise stressor is likely to disturb the California red-legged frog and San Francisco garter snake at the West-of-Bayshore mitigation site and Millbrae overpass cloverleaf. The movement to adjacent habitat by frogs and snakes, as a result of additional noise, could be energetically costly due to a lack of familiarity with the microhabitat and result in lower survivability. Individual frogs or snakes that move into adjacent habitat may be exposed to increased predation levels during more frequent active movement to forage or seeking shelter in vegetation communities with less dense canopy cover where there are predators present. Displaced frogs and snakes may also be subject to increased competition for resources in a more densely-occupied habitat or habitat which contains less food. These consequences will occur at a small enough scale to ensure that survival and recovery of the species is not appreciably diminished by the proposed activities.

It is also likely that some individuals could be accidentally harmed or killed during the removal of culverts. The implementation of the *Conservation Measures* described in the *Description of the Proposed Action* section will ensure the likelihood of harm, injury, and mortality resulting from the proposed actions remains low. No enduring permanent impacts are anticipated to occur.

Salt Marsh Harvest Mouse

Adverse effects to salt marsh harvest mouse within the Project footprint could occur at Smith Slough (PM 7.2-6.2) and Belmont Slough (PM10.3-9.7) from the use of heavy equipment, use of hand tools, soil removal and distribution, fence installation, noise, vibration, vegetation removal, and dust. If salt marsh harvest mice are present during Project implementation they will likely experience disruption in their normal behavioral patterns. They may respond to construction activities by relocating to refugial habitat within upland marsh to avoid noise and human interactions. If they are present during vegetation removal, salt marsh harvest mice will likely also experience harassment due to the disturbance of vegetation to encourage their movement

into adjacent marsh areas (i.e., flush).

Cutting vegetation during the initial construction activities may result in the removal of mouse nests, and excavation of occupied habitat may cause mice to flee into adjacent habitat where predation could occur. Construction equipment could run over salt marsh harvest mice that move into the construction footprint. Walking through the emergent vegetation during construction clearance actions and post-construction maintenance and monitoring activities could result in salt marsh harvest mice being stepped on or crushed, resulting in injury or death. Dust accumulation on native plants could inhibit growth and provide less food or cover for salt marsh harvest mice. The installation of exclusion fencing will prevent mice from entering the Project area from adjacent wetland habitat at the Smith Slough and Belmont Slough work areas. Pre-construction surveys by a Service-approved biologist will assist in clearing mice from the project footprint prior to the introduction of a potential construction-related threat. Biological clearance of the work areas prior to the start of each day's work and during construction will increase the chances of identifying mice in the work area that would be susceptible to injury. Despite being "cleared" prior to construction, mice could move into the work site undetected. Continued monitoring of the work areas by the Service-approved biologist will be necessary to minimize potential injury or mortality to mice.

Although vegetation removal will reduce the potential for mortality from entombment or crushing during construction activities, salt marsh harvest mice will still be affected. Construction activities will result in additional noise which could also affect salt marsh harvest mouse behavior. Depending on time of year and food availability, the relocation to adjacent habitat as a result of intentional flushing and noise could be energetically costly due to a lack of familiarity with the microhabitat and result in lower survivability. Individual salt marsh harvest mice that move into adjacent upland habitat may be exposed to increased predation levels during more frequent active movement to forage or seeking shelter in vegetation communities with less dense canopy cover where there are predators present. Displaced salt marsh harvest mice may also be subject to increased competition for resources in a more densely-occupied habitat or habitat which contains sparser patches of suitable food. Disturbance to females from March to November could result in consequences such as nest abandonment or failure of the current litter. Therefore, displaced salt marsh harvest mice will likely suffer from increased predation, competition, and potentially reduced reproductive success overall.

Vibration and soil movement resulting from construction activities have the potential to change salt marsh harvest mouse behavior. Studies have concluded that vibrational energy decreases fairly rapidly over distance from the source of disturbance (Attewell and Farmer 1973; Caltrans 2004). The road prism within the Action Area is likely compacted to at least 95 percent per industry standards and will absorb construction related vibration.

Although restoration activities will include replanting of native grasses and shrubs, the temporary absence of suitable vegetation will also amount to the loss of food availability, a barrier to dispersal in the area, and potentially reduced fecundity and reproductive success due to the habitat being unavailable for multiple life cycles. However, these consequences will occur at a small enough scale (temporary loss of 0.0385 acre) to ensure thatoverall effects are minor.

It is also possible some individuals could be accidentally harmed or killed during construction activities by equipment, or the transport of materials on access routes. The implementation of the *Conservation Measures* described in the *Description of the Proposed Action* section for the salt marsh harvest mouse will also ensure the likelihood of harm, injury, and mortality resulting from the proposed actions remains low. These measures include worker education, a Service-approved biologist on site during vegetation removal, exclusion fencing, and restoration of temporarily affected habitat. No enduring permanent impacts are anticipated to occur.

California Clapper Rail

The proposed Project may result in the disturbance, harm, injury, or death of California clapper rails that may occur adjacent to the project site at Smith Slough (PM 7.2-6.2) and Belmont Slough (PM10.3-9.7). A temporary loss of 0.0385 acre of California clapper rail habitat will occur on the Project site. Visual disturbance from construction and noise impacts could affect rails in adjacent tidal marsh. Equipment noise and vibration may interfere with normal behaviors. These behaviors include feeding, sheltering, movement between refugia and foraging grounds, and other essential behaviors. California clapper rails that are disturbed may be flushed from protective cover or their territories, exposing the rails to predators. The level of disturbance would be exacerbated if the construction activities occurred during the rail's breeding season resulting in the loss of breeding activity or if the work occurred during an extreme high tide when the California clapper rails are most likely to escape the adjacent flooded marsh plain to seek upland refugia cover.

The majority of Project impacts are limited to ruderal vegetative ground cover. California clapper rails are not expected to occur within the ruderal habitat, but are likely to occur within or near areas anticipated to be temporarily affected by noise and the presence of construction activities.

Temporary effects to California clapper rails would occur through noise and presence of construction activities adjacent to rail habitat at (PM 7.2-6.2 and PM 10.3-9.7). Noise is estimated to exceed the ambient noise level of 60 decibel (dB) at Smith Slough (PM 7.2-6.2) and Belmont Slough (PM10.3-9.7). It is estimated that these locations will receive temporary construction noise ranging from 85 dB to 61 dB. Elevated noise may result in rails flushing from cover and putting them at greater risk of predation. Noise may also have a masking effect that could hinder alerting behavior and calls. Even though construction will increase noise within the area, the Project will result in the overall reduction in rolling traffic noise due to a smoother surface of U.S. 101. New pavement has shown to have an estimated -3dB reduction in traffic noise over the existing condition (Illingworth and Rodkin 2011).

Implementation of the *Conservation Measures*, including working outside of the breeding season, will minimize these adverse effects. If rails are detected during breeding season surveys, activities will not occur within a buffer distance determined by site-specific noise analysis from the suitable habitat during the breeding season.

Cumulative Effects

Cumulative effects are those effects of future State or private activities, not involving Federal activities, which are reasonably certain to occur within the Action Area of the Federal action subject to consultation. Future Federal actions unrelated to the proposed Project are not considered in this section, because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-Federal actions that are reasonably certain to occur in the Action Area of the proposed Project.

Conclusion

After reviewing the current *Status of the Species* for California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail, the *Environmental Baseline* for the Action Area, the *Effects of the Action*, and the *Cumulative Effects*, it is the Service's biological opinion that the proposed Project is not likely to jeopardize the continued existence of these species. The Service reached this conclusion because the Project-related effects to the species, when added to the *Environmental Baseline* and analyzed in consideration of all potential *Cumulative Effects*, will not rise to the level of appreciably reducing the likelihood of survival or recovery of these species based on the following: (1) significant mortality or reduction in the population size is not anticipated to result from the proposed Project; and (2) the habitat affected by the proposed Project will not be permanently altered, fragmented, or reduced in foraging and sheltering quality to the extent the populations of these species in the area is at risk of extirpation.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3) Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any grant or permit issued to the applicants, as appropriate, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions, or (2) fails to require the (applicants) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)]

Amount or Extent of Take

The Service anticipates incidental take of California red-legged frog will be difficult to detect or quantify for the following reasons: the inherently elusive behavior, propensity to move rapidly through vegetation, and their cryptic occupancy of vegetation types resulting in low detectability. There is likely to be harm from intentional flushing, and injury or mortality as a result of the proposed activities and subsequent permanent and temporary loss or degradation of suitable habitat. Therefore, the Service anticipates take incidental to the proposed action in the form of harm, including injury or mortality, of all California red-legged frogs within the 0.0654 acre (0.049 acre temporarily affected and 0.0164 acre permanently affected) of suitable habitat on the Project site and 28.5 acres of suitable habitat within the Action Area adjacent to the West-of-Bayshore mitigation site (PM 18.3-20.7) and the Millbrae overpass cloverleaf (PM 17.9- 17.3) during construction.

The Service anticipates incidental take of San Francisco garter snake will be difficult to detect or quantify for the following reasons: the inherently elusive behavior, propensity to move rapidly through vegetation, and their cryptic occupancy of vegetation types resulting in low detectability. There is likely to be harm from intentional flushing, and injury or mortality as a result of the proposed activities and subsequent permanent and temporary loss or degradation of suitable habitat. Therefore, the Service anticipates take incidental to the proposed action in the form of harm, including injury or mortality, of all San Francisco garter snake within the 0.0549 acre (0.0385 acre temporarily affected and 0.0164 acre permanently affected) of suitable habitat on the Project site and 22.8 acres of suitable habitat within the Action Area adjacent to the West-of-Bayshore mitigation site (PM 18.3-20.7) during construction.

The Service anticipates incidental take of salt marsh harvest mouse will be difficult to detect or quantify for the following reasons: the inherently elusive behavior, propensity to move rapidly through vegetation, and their cryptic occupancy of vegetation types resulting in low detectability. There is likely to be harm from intentional flushing, and injury or mortality as a result of the proposed activities and subsequent permanent and temporary loss or degradation of suitable habitat. Therefore, the Service anticipates take incidental to the proposed action in the form of harm, including injury or mortality, of all salt marsh harvest mice within the 0.0385 acre temporarily affected suitable habitat on the Project site and 20.9 acres of suitable habitat within the Action Area adjacent to Smith Slough (PM 7.2-6.2) and Belmont Slough (PM10.3-9.7) during construction.

The Service anticipates incidental take of California clapper rail will be difficult to detect or quantify for the following reasons: the inherently elusive behavior, propensity to move rapidly through vegetation, and their cryptic occupancy of vegetation types resulting in low detectability. There is likely to be harm from intentional flushing, and injury or mortality as a result of the proposed activities and subsequent permanent and temporary loss or degradation of suitable habitat. Therefore, the Service anticipates take incidental to the proposed action in the form of harm, including injury or mortality, of all California clapper rails within the 0.0385 acre temporarily affected suitable habitat on the Project site and 20.9 acres of suitable habitat within the Action Area adjacent to Smith Slough (PM 7.2-6.2) and Belmont Slough (PM10.3-9.7) during construction.

Upon implementation of the following reasonable and prudent measures, incidental take of California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail associated with the Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that the level of anticipated take is not likely to jeopardize the California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail.

Reasonable and Prudent Measure

All necessary and appropriate measures to avoid or minimize effects on California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail resulting from implementation of this Project have been incorporated into the Project's proposed *Conservation Measures*. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the incidental take of California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail:

1) All *Conservation Measures*, as described in the biological assessment and restated in the *Description of the Proposed Action* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the *Term and Condition* below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following term and condition, which implement the reasonable and prudent measure described above. This Term and Condition is non-discretionary.

1) Term and Condition 1 implements *Reasonable and Prudent Measure* 1:

    A) Caltrans shall minimize the potential for harm, killing or other forms of take of the California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail from Project-related activities by implementation of the *Conservation Measures* proposed in the *Description of the Proposed Action* in this biological opinion.

    B) Caltrans shall immediately notify the Service of any discovered, killed, injured, or entrapped California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail, within one (1) working day of the detection. Please contact the Assistant Field Supervisor of the Endangered Species Division at: San Francisco Bay-Delta Fish and Wildlife Office, 650 Capitol Mall, Suite 8-300, Sacramento, California 95814 or by telephone at (916) 930-2664.

C) If it is determined by the Service-approved biologist that relocation of California red-legged frog or San Francisco garter snake is necessary, the captured California red-legged frog or San Francisco garter snake will be released within appropriate habitat outside of the construction area but nearby the capture location. The release habitat will be determined by the Service-approved biologist. The Service-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (Service 2005).

D) No handling or relocation of California clapper rails and salt marsh harvest mice will occur.

E) Caltrans shall educate and inform personnel involved in the Project as to the *Conservation Measures* and *Terms and Conditions* in this biological opinion.

F) Caltrans shall comply with the reporting requirements of this biological opinion, including a post-construction report outlining how the *Conservation Measures* were implemented for this Project.

G) Caltrans shall ensure any personnel identified as biological monitors or biologists, who are responsible for ensuring compliance with the *Conservation Measures* or other parts of the Project which may affect federally-listed species, be Service-approved prior to implementing those activities.

Reporting Requirements

In order to monitor whether the amount or extent of incidental take anticipated from implementation of the Project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must reinitiate formal consultation as per 50 CFR § 402.16.

1) The Service must be notified within 24 hours of the finding of any injured or dead listed species or any unanticipated damage to its habitat associated with the proposed Project. Injured listed species shall be cared by a licensed veterinarian or other qualified person, such as the Service-approved biologist for the proposed Project. Notification will be made to the contact above in Term and Condition 1B, and must include the date, time, and precise location of the individual/incident clearly indicated on a U.S. Geological Survey 7.5 minute quadrangle or other maps at a finer scale, as requested by the Service, and any other pertinent information. When an injured or dead individual of the listed species is found, the Caltrans shall follow the steps outlined in the Salvage and Disposition of Individuals Taken section below.

2) Sightings of any listed or sensitive animal species shall be reported to the Service and the CNDDB (https://wildlife.ca.gov/Data/CNDDB/Submitting-Data).

3) Caltrans shall submit a post-construction compliance report to the San Francisco Bay-Delta Fish and Wildlife Office within 60 calendar days of the date of the completion of construction activities. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the Project in meeting the avoidance and minimization measures; (iii) an explanation of failure to meet such measures, if any; (iv) known Project effects on California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail, if any; (v) occurrences of incidental take of this listed species, if any; (vi) documentation of employee environmental education; and (vii) other pertinent information.

Salvage and Disposition of Individuals

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Assistant Field Supervisor of the Endangered Species Division at (916) 930-2664.

CONSERVATION RECOMMENDATIONS

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

1) Encourage or require the use of appropriate California native species in restoration efforts.

2) Facilitate additional educational programs geared toward the importance and conservation of tidal marsh and seasonal wetlands.

3) Assist the Service with implementing other recovery actions identified within the most current recovery plan for the California red-legged frog, San Francisco garter snake, salt marsh harvest mouse, and California clapper rail.

4) Encourage the participation of the applicant in programs being developed by the Federal and State resource agencies to limit and reverse the spread of non-natives, such as *Phragmites*, *Lepidium*, clams, and other invasives within wetlands.

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

REINITIATION – CLOSING STATEMENT

This concludes formal consultation on the 1Q580 SR-101 Multi Asset Capital Preventive Maintenance (CAPM) Project. As provided in 50 CFR § 402.16,

(a) Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

> (1) If the amount or extent of taking specified in the incidental take statement is exceeded;
>
> (2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
>
> (3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or
>
> (4) If a new species is listed or critical habitat designated that may be affected by the identified action.

(b) An agency shall not be required to reinitiate consultation after the approval of a land management plan prepared pursuant to 43 U.S.C. 1712 or 16 U.S.C. 1604 upon listing of a new species or designation of new critical habitat if the land management plan has been adopted by the agency as of the date of listing or designation, provided that any authorized actions that may affect the newly listed species or designated critical habitat will be addressed through a separate action-specific consultation. This exception to reinitiation of consultation shall not apply to those land management plans prepared pursuant to 16 U.S.C. 1604 if:

> (1) Fifteen years have passed since the date the agency adopted the land management plan prepared pursuant to 16 U.S.C. 1604; and
>
> (2) Five years have passed since the enactment of Public Law 115-141 [March 23, 2018] or the date of the listing of a species or the designation of critical habitat, whichever is later.

If you have any questions regarding this biological opinion, please contact Andrew Raabe, Fish and Wildlife Biologist (Andrew_Raabe@fws.gov) or Kim Squires, Section 7 Division Manager (Kim_Squires@fws.gov) at the letterhead address or at or at 916-930-5603. Please reference the Service File Number 2022-0036069-S7-001in any correspondence regarding this Project.

Sincerely,

DONALD RATCLIFF
Digitally signed by DONALD RATCLIFF
Date: 2023.04.07 13:46:43 -07'00'

Donald Ratcliff
Field Supervisor

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