

**Project Design, Review, and Approval, Implementation and Construction, and Mitigation Requirements for Natural Communities and Covered Species**

**CM CON 3: Best Management Practices to be Implemented During O&M and Construction Activities**

1. Temporary fill/disturbance of coastal marsh habitats shall be avoided to the maximum extent practicable. Any projects resulting in the loss of marsh vegetation for more than one growing season shall be required to mitigate at the ratios specified in Section 6.4.7.
2. Native vegetation trimmed or removed on the project site will be stockpiled during work. After construction activities, when removal of temporary mats and construction-related materials and application of native seed mix have been completed, stockpiled native vegetation will be reapplied over temporarily disturbed wetlands to provide temporary soil protection and as a seed source.
3. Where wetland vegetation removal is required, work will be conducted using hand-held tools, unless other methods are approved by SCWA, USFWS, and CDFW, to enable wildlife to escape. Vegetation will be cut starting at the outside edge (nearest unvegetated or disturbed areas) working toward the project limits to allow wildlife opportunity to escape toward appropriate cover.
4. Removal of vegetation in wetland habitat will be conducted with an Approved Biologist present. This monitor will watch for special-status wildlife species and temporarily stop work if special-status species are encountered. Wildlife will be allowed to escape before work is resumed. Service-approved biologist with appropriate qualifications to handle special-status species will be allowed to move special-status species to safe locations as permitted by the terms of their credentials.
5. Temporarily affected wetlands (restored within 1 year) will be restored by removing construction related debris and trash. Affected areas will be seeded with a ee, site-appropriate native seed mix, as provided in the revegetation plan developed in cooperation with the Resource Agencies. Mulch with certified weed-free mulch. Rice straw may be used to mulch upland areas.
6. Prior to removing upland habitat adjacent to pickleweed-dominated coastal marsh habitat, the upland habitat shall be mowed during the dry season so that vegetative cover has a height of no greater than 2 inches for a period of at least 2 weeks prior to the habitat removal.

**CM CON 4: Use of Riprap**

In order to avoid attracting predators of Covered and Special Management Species associated with salt marsh habitat, the use of rock riprap shall be avoided to the maximum extent practicable within 500 feet of coastal salt marsh habitat. Where such use is



unavoidable, all exposed riprap shall be covered with soil and revegetated with native marsh plants.

**CM CON 8 California Clapper Rail, California Black Rail, Suisun Song Sparrow**

In areas with suitable habitat for these California clapper rail, California black rail, and Suisun song sparrow, work for Covered Activities shall be conducted between September 1 and January 31 to the maximum extent practicable. Covered Activities conducted outside of this time period shall implement the following additional avoidance and minimization measures:

1. An Approved Biologist shall conduct preconstruction protocol surveys to identify and subsequently avoid nesting areas for California clapper rail, California black rail, and Suisun song sparrow. Surveys for these species shall be conducted using standard protocols established by SCWA and the Resource Agencies. Surveys shall be designed and of sufficient intensity to document rail nesting within 500 feet of planned work activities and within 100 feet for Suisun song sparrow nesting activity.
2. If Suisun song sparrow is found to be nesting in the planned work area, a minimum 100 feet wide buffer shall be maintained between construction activities and the nest location. Buffer zones may be reduced if it can be demonstrated to the satisfaction of SCWA and the Resource Agencies, that the birds would be unaffected by project-related activities. Buffers shall be maintained until the young have fledged and are capable of flight or until September 15.
3. If California clapper rail or California black rail are present in the immediate construction area, the following measures will apply during construction activities.
  - a. To minimize or avoid the loss of individual rails, activities within or adjacent to suitable rail habitat will not occur within 2 hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated.
  - b. To minimize or avoid the loss of individual California clapper rails and black rails, activities within or adjacent to tidal marsh areas will be avoided during the breeding season from February 1 through August 31 each year unless surveys are conducted to determine rail locations and rail territories can be avoided.

Exception: Only inspection, maintenance, research, or monitoring activities may be performed during the California clapper rail breeding season in areas within or adjacent to California clapper rail breeding habitat with approval of the USFWS and CDFW under the supervision of a qualified biologist.

4. An Approved Biologist familiar with the habitat and ecology of California clapper rail shall be present on site during all construction activities to ensure that avoidance and minimization measures and construction limits are enforced. The Approved Biologist shall have the authority to stop any construction activity that is not consistent with approved plans and amendments.

#### **CM DES 1: Habitat Avoidance**

Permanent fill of coastal marsh habitat shall be avoided to the maximum extent practicable. Where permanent fill is proposed, the Plan Participant (or third-party applicant) shall provide documentation explaining why avoidance is not practicable and/or would not contribute to the conservation goals and objectives of the HCP, in accordance with the procedures in Section 10.4.1. The determination of compliance with CM DES 1 of any proposed activity that would result in the filling of coastal marsh habitat will be made by SCWA in consultation with the HCP Technical Review Committee (see Section 10.2.6).

#### **CM DES 2: Buffers**

Coastal marsh habitat shall be protected from direct and indirect impacts from Covered Development Activities through establishment of site-specific buffers that are designed to preclude changes to water and soil salinity and the flooding/inundation regime. Buffers shall be preserved in perpetuity and managed consistent with the reserve criteria described in Sections 7.2 and 10.5. Habitats within 500 feet of the boundary of existing (as of the effective date of the HCP) roads or development (includes vacant but graded and filled building pads) shall be considered to be indirectly impacted and subject to the mitigation requirements in Section 6.4.7.

#### **RLF CON 4: Best Management Practices to be Implemented During O&M and Construction Activities**

This measure is applicable to project design considerations and is required to be implemented throughout the Inner Coast Range Natural Community (Figure 3-5). These mandatory requirements include the following:

1. Biological Monitor
  - a. At least 15 days prior to the onset of work activities, the applicant shall submit the name(s) and credentials of biologists who will conduct California red-legged frog monitoring activities. No work activities shall begin until written approval has been received from SCWA.
  - b. Prior to commencement of work activities, the Approved Biologist shall conduct a training session for all construction personnel. At minimum, the training shall include: (1) a description of California



- red-legged frog and its habitat; (2) project-specific measures being implemented to conserve the red-legged frog and the possible penalties for not complying with these requirements; (3) who is authorized to handle and relocate frogs; and (4) identification of the boundaries of permitted work areas.
- c. The Approved Biologist shall be present at the work site to monitor compliance with all minimization measures. The Approved Biologist shall have the authority to halt any action that might result in impacts in excess of anticipated levels. The Approved Biologist will submit a report detailing the results of the activities to SCWA within 7 days of the completion of the habitat disturbance.
2. Habitat Protection and Take Avoidance During Work Activities
- a. Exclusion fencing shall be installed prior to any required preconstruction surveys and maintained between project work areas and adjacent to preserved habitat during all work activities. Exclusion fencing will consist of silt fabric, plastic, plywood, aluminum, or other SCWA-approved material. The base of the fence will be buried a minimum of 3 to 5 inches in the ground to prevent animals from crawling under and be a minimum of 3 feet in height above ground to serve as a barrier for animals moving on the ground surface. The fence will be pulled taut at each support to prevent folds or snags and the supports shall be placed on the inside of the exclusion fence. Exclusion fences shall also include provisions (e.g., ramps, one-way doors, or exit funnels) for California red-legged frogs and other species to leave the work area. Construction personnel will also install an orange plastic-mesh construction fence 1 foot on the development side of the exclusion fence to increase visibility unless the exclusion fence is composed of high visibility materials. Exclusion fencing shall be inspected weekly and repaired immediately when damage is observed during construction work.
  - b. Control of dense vegetation in and adjacent to water delivery canals (either mechanical or chemical) shall not be conducted until individuals have had sufficient time (minimum of 24 hours) to move away from the work area to more suitable habitats.
3. Preconstruction Surveys
- a. The Approved Biologist shall survey the work site 2 weeks prior to the onset of construction activities. Any life stage of California red-legged frogs (adults, tadpoles, or eggs) found in construction areas shall be captured and relocated to secure sites approved by SCWA in consultation with the HCP Technical Review Committee. Only



- Approved Biologists shall participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
4. **Work Timing**
    - a. Work activities in riparian and aquatic habitat shall be completed between June 15 and October 15. If the applicant can demonstrate a need to conduct activities outside this time period, SCWA may authorize such activities in writing after consulting with USFWS and CDFW.
    - b. Ground-disturbing, mechanical clearing of vegetation and associated work activities in uplands shall be conducted between June 1 and November 1 or until the first fall rain that produces 0.25 inch of rainfall, unless prior surveys have been conducted and California red-legged frogs are shown to be absent from the site and the site boundary is fenced to preclude California red-legged frogs from moving onto the site.
  5. **Dewatering Activities**
    - a. If pumping will be used to dewater the project site, intakes shall be completely screened with wire mesh no larger than 5 millimeter in size to prevent California red-legged frog adults and tadpoles from entering the pump.
    - b. Prior to dewatering, the Approved Biologist shall capture and relocate any native fish or other vertebrate species found at the project site. Captured animals shall be relocated to a suitable pool or other location in the same waterbody above or below the project site.
    - c. All dewatering shall be pumped into a temporary siltation pond/desilting basin, Baker tank, or similar detention device in order to allow adequate time for settling of sediments prior to their release downstream in accordance with the approved SWPPP.
    - d. Following adequate settling time, water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
  6. **Exotic Species Removal**
    - a. The Approved Biologist shall permanently remove and humanely euthanize any exotic wildlife species, such as bullfrogs and crayfish, to the extent possible from within the project site.
  7. **Site Restoration**
    - a. After completion of any work activities that would temporarily disturb California red-legged frog aquatic or upland habitat,



- temporarily disturbed areas shall be restored to their original condition, including pre-work topography and hydrology. Disturbed areas shall be reseeded, if necessary, using local, native, noninvasive species seed mixes. All such restoration work shall be conducted under the supervision of an Approved Biologist.
- b. Plastic monofilament or wire mesh straw wattles or erosion control blankets shall not be used. Only erosion control materials (blankets, rolls, mats, etc.) with a minimum 2-inch square mesh made of natural coir fibers or other netting approved by SCWA in consultation with the HCP Technical Review Committee shall be used.
8. Firebreak Construction and Maintenance
- a. Mowing to establish fuel breaks is preferred to disking. Mowing shall generally be conducted as late as possible in the spring, reducing the herbaceous cover to less than 2 inches in height.
  - b. Where mowing is not practicable or will not provide an adequate fuel break, disking may be implemented under the following conditions:
    - 1) Prior to firebreak construction, “No Disk” zones shall be established for wetlands and any significant habitat areas such as California red-legged frog aquatic habitat, as well as areas with concentrations of fossorial mammal burrows. “No Disk” zones shall be permanently staked using metal fence posts placed at least 50 feet from the edge of the pools. A post and sign shall be installed on either side of the pool (“No Disk” zone) to warn the disk operator of the presence of habitat from either direction.
    - 2) At those points designated as “No Disk” zones, the disk operator shall raise the disk blades out of the soil and cross the “No Disk” zone. Not until the disk blades are beyond the “No Disk” sign on the opposite side of the sensitive habitat shall the operator be allowed to lower the blades, and in no case shall the operator allow the blades to touch the soil while in the “No Disk” zone.
    - 3) “No Disk” zones shall not be crossed if water is standing in wetlands, aquatic habitat, or if the soil is wet. In such cases, the operator must raise the disk blades and make a detour around the wetland or aquatic area. Operators shall consult a site map, if available, to determine the best route around this area.

**RSM CON 5 for Salmonids**

The following measure applies to all Covered Activities affecting the main stems and tributaries (e.g., headwaters to the bay) of the following stream systems that support or have the potential to support salmonids: Green Valley Creek, Suisun Creek, Ledgewood Creek, Gordon Valley Creek, Lynch Canyon Creek (a.k.a. American Canyon), Jameson Canyon Creek, the Napa River, and Putah Creek (only for Chinook salmon) (Figure 4-17).

1. In Covered Activity Zones 1 and 2 (Figure 1-4), in-stream work shall only be allowed from June 15 to October 31 during low-flow conditions.
2. No fill material, including concrete, shall be allowed to enter any waterways. Concrete piers, footings, or other structures shall be poured in tightly sealed forms and shall not encounter surface waters until the cement has fully cured (at least 30 days). Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry.
3. Channel disturbance shall be minimized and no material shall be left in the channel. If bridge footings are to be protected by riprap, the channel bottom elevation shall not be raised above the natural channel bottom.
4. For bridge removal, no portions of the old structure shall be left in the channel; and where abutments are removed, no depressions shall remain. Depressions shall be filled with a 2- to 5-inch layer of clean, round, river rock cobble or gravel.
5. Bridges and culverts shall be designed as full span and avoid impacts to channel hydraulics. Bridge and road design shall prevent discharge (such as culverts or bridge drains) of any untreated storm water runoff directly into any waterways.
6. Construction BMPs and erosion control methods (including revegetation of bare soil prior to October 15, unless an extension is granted by the applicable Resource Agencies) shall be implemented to prevent an increase in sediment entering waterways.
7. Construction sites shall be monitored to ensure no salmonids are present that could be harmed by construction activities. If salmonids are present, a qualified fishery biologist shall capture and relocate the fish in suitable habitat downstream of the work area.
8. Materials used for column repairs shall be non-toxic to aquatic life.
9. All equipment refueling and maintenance shall occur outside the creek channel, and appropriate measures shall be implemented to prevent the discharge of fuels or other contaminants into the stream in the event of spills.



10. Water that contacts wet concrete and has a pH greater than 9 shall be pumped out and disposed of outside the creek channel.
11. Conduct cleaning activities in designated salmonid habitat (see Chapter 4.0; Figure 4-17) during an appropriate work window when salmonids are less likely to be present (e.g., June 15 through October 31).
12. Have a qualified fishery biologist present to monitor the site for the presence of salmonids and, if necessary, provide for their escape or capture and relocation.
13. All seasonal or temporary diversion dams on known or suspected salmonid streams and their tributaries shall be removed by October 31 each year, unless extensions are granted by CDFW and the NOAA NMFS.
14. Operation of heavy construction equipment in stream channels with wetted areas shall be avoided.
15. Large woody debris shall be relocated rather than removed from the stream channel in order to maintain habitat for steelhead and Chinook.
16. A hydroacoustic impact analysis and monitoring plan shall be submitted to the SCWA and the Resource Agencies for all pile driving in aquatic habitats supporting steelhead or salmon for review and written approval. This plan will contain details regarding any limitations on which type of driver should be used (e.g., vibratory or impact driver), which size pile(s) to use, what level of hydroacoustic monitoring is required, whether a noise attenuation method such as a bubble curtain should be utilized to reduce underwater sound levels, as well as any seasonal restrictions on pile driving that may negatively affect specific fish species. The following general measures (based on 2015 interim guidelines by the Fisheries Hydroacoustic Working Group (FHWG) Caltrans 2015) that shall be implemented, as applicable include:
  - a. Both the vibratory hammer driver and impact hammer pile driver are subject to the performance standards as specified by the FHWG, the specifics in the hydroacoustic monitoring plan, and what is stated below.
  - b. A vibratory driver shall be used to the greatest extent possible before the impact driver is utilized to reduce the impact to fish species in the area.
  - c. Where practicable, at the beginning of each construction day pile driving shall be started at a lower decibel level to stimulate avoidance behavior in fish and allow the fish time to vacate the area (known as a soft start). Then the pile driving shall be ramped up (limiting the maximum noise level to Measure 16.e below) to complete the pile driving faster. The details of the soft start will be included in the hydroacoustic monitoring plan.



- d. Pile driving with an impact driver shall only occur during the seasonal in-water work window specified by NOAA NMFS for this region, which is from August 1 through November 30. This limitation is for general avoidance of potential impacts to fish species in this region. The proposed work window may be adjusted based on the USFWS programmatic consultation on delta smelt. Conducting work within the work window will minimize the possibility that work activities may impact fish species as listed fish species are less likely to utilize the Plan Area as a migratory corridor during this period.
- e. The following sound requirements apply to pile driving with an impact hammer: accumulated sound exposure levels (SELs) shall not exceed 187 decibels (dB) measured at 33 ft (equivalent to 10 meters) for all listed fish, except those that are 0.07 ounce (equivalent to 2 grams) or less (Caltrans 2015). Accumulated SELs for fish weighing 0.07 ounce or less shall not exceed 183 dB measured at 33 ft. In addition, the peak sound pressure level for any single strike is 206 dB re: 1 micro-Pascal ( $\mu$ Pa) for all listed fish, except those that are 0.07 ounce or less. As a conservative measure, NOAA NMFS has also identified a behavioral disturbance threshold of 150 dB re: 1 $\mu$ Pa Root-Mean-Square (RMS) pressure for salmonids and green sturgeon as appropriate, until new information and research indicates otherwise. According to the FHWG, there are no established injury criteria for vibratory hammer pile driving (Caltrans 2015).

### SH DES 1: Nest Tree Protection

Trees with active Swainson's hawk nests or with historically active nests (i.e., occupied within the last 10 years) shall be avoided to the maximum extent practicable. Applicants proposing to remove an otherwise healthy nest tree shall provide written justification for the tree removal to SCWA. Sufficient rationale for tree removal shall be primarily based on declining or poor suitability of the tree as a nesting site for Swainson's hawk and/or to meet public safety needs. The justification letter shall provide a clear analysis of the biological value of the tree to Swainson's hawk under pre-project conditions and post-project conditions (if the tree were to be avoided), and will consider the presence of alternate nest sites in the vicinity of the project site. Nest trees shall only be removed if there is a biological basis that the use of the tree is unlikely under post-project conditions. SCWA, in consultation with the HCP Technical Review Committee, will be responsible for approval of the requests to remove healthy nest trees.



**SMS DES 1: Preconstruction Surveys**

In Valley Floor Grassland and Vernal Pool, Coastal Marsh, and Riparian, Stream, and Freshwater Marsh Natural Communities, preconstruction surveys shall be conducted between February 1 and August 31 to identify and subsequently avoid nesting areas for applicable Special Management Bird Species. An Approved Biologist shall conduct these surveys no more than 15 days before the anticipated start of construction. Surveys shall be designed and of sufficient intensity to document nesting activity within 100 feet of planned work activities for passerine and within 500 feet of planned work activities for raptors. These surveys may be concurrently conducted with surveys for Covered Species.

**VPG DES 1: Habitat Avoidance**

In Covered Activity Zones 2 and 3 (Figure 1-4) maximum avoidance of vernal pools and other seasonal wetlands is required except for approved habitat enhancement/restoration activities described in Section 10.5.4. In Covered Activity Zone 1, maximum avoidance is required in the following locations where:

1. The wetlands contribute to habitat quality and value or reserve/preserve lands established (or expected to be established) in perpetuity for conservation purposes
2. The wetlands are adjacent to or contiguous with riparian or stream corridors or permanently protected lands, or
3. The wetlands are located in or contiguous to High Value Vernal Pool Conservation Areas.

Where temporary or permanent fill is proposed in any vernal pools or other seasonal wetlands in Covered Activity Zones 2 or 3 as well as the above-listed locations in Covered Activity Zone 1, the Plan Participant or eligible third-party applicant shall provide documentation explaining why avoidance isn't practicable and/or would not contribute to the conservation goals and objectives of the HCP, in accordance with the procedures in Section 10.4.1. The determination of compliance with VPG DES 1 of any proposed Covered Activity that would result in the filling of vernal pools or other seasonal wetlands will be made by SCWA in consultation with the HCP Technical Review Committee (see Sections 10.4.1 and 10.2.6).

**VPG DES 2: Site Design Standards**

The following site design standards shall apply to all Covered Development Activities affecting Valley Floor Grassland and Vernal Pools:

1. All Locations Specified Under VPG DES 1: (a through d below)
  - a. All avoided areas shall be preserved and managed consistent with the requirements in Sections 7.3 and 10.5. These areas shall also include sufficient buffers in compliance with the criteria outlined in VPG DES 3 and VPG DES 4.

- b. Development shall be designed to minimize direct and indirect impacts to wetlands and edge effects to preserved areas.
- c. The applicant shall incorporate measures into the project design to accomplish the following:
  - 1) Preserve and maintain sufficient unaltered watershed area to prevent significant adverse changes in water quality, and the volume and timing of inflows to preserved wetlands.
  - 2) Avoid changes in nutrient input from adjacent upland sources into preserved wetlands.
  - 3) Provide sufficient upland habitat to support associated amphibian and terrestrial fauna and vernal pool plant pollinator species.
  - 4) Accommodate linkages/corridors between individual aggregations of vernal pools in a larger vernal pool complex.
  - 5) Provide a terrestrial buffer to protect the core wetland and associated upland habitat from edge effects associated with surrounding land uses (i.e., prohibit backyards from backing up to preserves, place firebreaks on the development side of preserve/development boundaries, provide for a vegetated buffer between roads and preserve boundaries).
  - 6) Minimize the potential for spread of invasive species from the development into preserved lands.
- d. Development shall not isolate existing populations or suitable habitat areas. To maintain connectivity between adjacent reserves, a corridor shall be established linking these areas. Corridor reserves shall conform to the minimum requirements specified in VPG DES 6, Corridors.

## VPG DES 2

The following site design standards shall apply to all Covered Development Activities affecting Valley Floor Grassland and Vernal Pools:

- 2. Contra Costa Goldfield Core Population Areas (High Value Vernal Pool Conservation Areas 1B, 1C, 1D, 1E, 1F, 1G, and 1H)
  - a. No more than 10 percent of suitable wetland habitat for Contra Costa goldfields shall be directly impacted per project.
  - b. The 10 percent of suitable habitat impacted under Condition 1 shall not contain more than 50 percent of the current or historically documented occupied habitat on the site. The extent of occupied habitat shall be determined based on at least 2 years of field surveys/mapping at the site (occupied habitat area shall be based on



- the total area of the hydrologically contiguous occupied wetland, not just Contra Costa goldfield cover).
- c. Implementation of Conditions 1 and 2 shall not result in preserves less than 80 contiguous acres in size.

**VPG DES 3: Buffer Criteria for Covered Development Activities**

Vegetated buffers shall be established around preserved vernal pools and seasonal wetlands. Buffers shall be consistent with the following criteria:

1. Vegetated buffers shall consist of valley floor grassland and vernal pool vegetation and/or other natural vegetation (i.e., oak savanna/woodland, coastal marsh or riparian habitats, if applicable)
2. Buffers shall not contain any irrigated or landscaped lands, fire breaks, or public or maintenance access trails or roads.
3. Habitats (vernal pools, uplands, etc.) within 250 feet of development in High and Medium Value Vernal Pool Conservation Areas and 100 feet in Low Value Vernal Pool Conservation Areas (Figure 4-8) (see potential exceptions below under VPG DES 4 for Extremely Rare and/or Range-Limited Species) will be considered to be indirectly impacted. All such indirect impacts shall be subject to mitigation requirements under Section 6.4.2.
4. Buffers shall be preserved in perpetuity and managed consistent with the HCP reserve criteria described in Sections 7.3 and 10.5.