

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

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 (μPa) 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 μPa 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).

