923.310, 943.310, 963.310  Watercourse Crossings  [All Districts]

Watercourse crossing drainage structures on logging roads shall be planned, constructed, reconstructed, and maintained or removed, in the context of a systematic logging road layout pattern and consistent with their proposed use, according to the following standards. Exceptions may be provided through application of Fish and Game Code Sections 1600 et seq. and shall be included in the THP plan.

(a) The planning for and use of logging road watercourse crossings shall include the evaluation and documentation of significant existing and potential erosion sites consistent with 14 CCR § 923.1(e) [943.1(e), 963.1(e)].

(b) The number of crossings shall be kept to a feasible minimum. Existing logging road watercourse crossing locations shall be utilized where feasible and appropriate.

(gc) All new permanent culverts on Class I watercourses, where fish are always or seasonally present or where fish habitat is restorable, shall be planned, designed and constructed to allow upstream and downstream passage of fish or listed aquatic species during any life stage and for the natural movement of bedload to form a continuous bed through the culvert, and shall require an analysis and specifications demonstrating conformance with the intent of this section and subsection, and the conditions of required DFG 1600 Agreements.

(cd) Drainage structures on watercourses that support fish shall allow for unrestricted passage of all life stages of fish that may be present, and shall be fully described in the plan in sufficient clarity and detail to allow evaluation by the review team and the public, provide direction to the LTO for implementation, and provide enforceable standards for the inspector.
In watersheds with listed anadromous salmonids, for Class I watercourses, where fish are always or seasonally present or where fish habitat is restorable, any plan involving timber operations within the WLPZ shall contain the following information:

1. A description of all existing permanent logging road watercourse crossings.

2. Clear and enforceable specifications describing how these crossings are to be modified, used, and treated to minimize risks, giving special attention to allowing fish to pass both upstream and downstream during all life stages and in conformance with the standards of subsection (h) above.

3. Clear and enforceable specifications for construction and operation of any new crossing(s) of a Class I watercourse to prevent direct harm, habitat degradation, water velocity increase, hindrance of fish passage at all life stages, or other potential impairment of beneficial uses of water.

In watersheds with listed anadromous salmonids, in addition to the requirements of 14 CCR § 923.10(k) [943.10(k), 963.10(k)], the method of analysis and the design for crossing protection shall be included in the plan.

The location of all new permanent constructed and reconstructed, and temporary logging road watercourse crossings, including those crossings to be abandoned or deactivated, drainage structures and temporary crossings located within the WLPZ shall be shown on the THP map. This requirement may be met by depicting the intersection of a logging road and a watercourse. If the structure is a culvert intended for permanent use, the minimum diameter of the culvert and the method(s) used to determine the culvert diameter shall be specified in the plan. Extra culverts beyond those shown in the THP map may be installed as necessary.

1. The location of all logging road watercourse crossings to be constructed or reconstructed shall be flagged or otherwise identified on the ground prior to the pre-
harvest inspection, if necessary, or prior to logging road watercourse crossing construction or reconstruction. Exceptions may be explained and justified in the plan and agreed to by the Director if flagging is unnecessary as a substantial aid to examining possible significant adverse effects of the crossing location on the factors listed under 14 CCR § 923(b) [943(b), 963(b)].

(eh) All permanent watercourse crossings that are constructed or reconstructed shall accommodate the estimated 100-year flood flow, including debris and sediment loads.

(i) All culverts used for new and replacement logging road watercourse crossings shall be installed at or as close as practical and feasible to the natural watercourse grade. Culverts shall be installed in alignment with the watercourse channel to the extent feasible, and of the appropriate length to prevent fill erosion.

(1) Logging road watercourse crossings shall not discharge water onto erodible fill or other erodible material without the installation of energy dissipaters and other necessary protective structures.

(j) Fills for constructed and reconstructed logging road watercourse crossings shall be thoroughly compacted in approximately one-foot lifts during installation. The face of crossing fills shall be no greater than 65 percent (1.5:1, horizontal to vertical). Excavated material and cut banks resulting from construction or reconstruction which has access to a watercourse shall be sloped back from the channel to prevent slumping, to minimize soil erosion, and to prevent significant sediment discharge.

Logging road watercourse crossings shall not discharge water onto erodible fill or other erodible material without the installation of energy dissipaters and other necessary protective structures.

(fk) Watercourse crossings and associated fills and approaches shall be constructed and maintained to prevent diversion of stream overflow down the road, and to minimize
fill erosion should the drainage structure become obstructed. Methods to mitigate or address diversion of stream overflow at logging road watercourse crossings shall be stated in the plan. The RPF may propose an exception to the standard rule may be approved by the Director where the RPF has explained and justified in the plan that the protection provided by the proposed practice is at least equal to the protection provided by the standard rule. The location of proposed exceptions shall be and shown on the THP plan map, and justified how the protection provided by the proposed practice is at least equal to the protection provided by the standard rule.

(l) Any necessary protective structures associated with logging road watercourse crossings such as wing walls, rock armored headwalls, and downspouts shall be adequately sized to transmit runoff, minimize erosion of crossing fills, and prevent significant sediment discharge. Rock used to stabilize the outlets of ford crossings shall be adequately sized to resist mobilization, with the range of required rock dimensions described in the plan.

(m) The following drainage standards shall apply to logging road watercourse crossings:

   (1) Adequate surface drainage at logging road watercourse crossings shall be provided through the use of logging road surface shaping in combination with the installation of drainage facilities, ditch drains, or other necessary protective structures to hydrologically disconnect the road from the crossing to the extent feasible.

   (2) Consistent with 14 CCR § 923.5(a)-(i) [943.5(a)-(i), 963.5(a)-(i)], drainage facilities and ditch drains shall be installed adjacent to logging road watercourse crossings, as needed, to hydrologically disconnect to the extent feasible the logging road approach from the crossing, to minimize soil erosion and sediment transport and to prevent significant sediment discharge during and upon completion of timber operations.
(3) Drainage facilities installed adjacent to logging road watercourse crossings shall be located to avoid discharging concentrated runoff onto fills, erodible soils, unstable areas, and connected headwall swales.

(n) Where a significant volume of sediment is stored upstream from a logging road watercourse crossing that is proposed to be reconstructed or removed, the stored sediment shall be removed or stabilized, to the extent feasible, as described in the plan and in conformance with the conditions of required DFG 1600 agreements, where applicable.

(o) Where crossing fills over culverts are large, or where logging road watercourse crossing drainage structures and erosion control features historically have a high failure rate, such drainage structures and erosion control features shall be oversized, designed for low maintenance, reinforced, or removed before the completion of timber operations, or as specified in the plan.

(p) Logging road watercourse crossings shall not be constructed or reconstructed under saturated soil conditions or when such activities could result in significant sediment discharge.

(q) Temporary logging road watercourse crossings shall be removed and stabilized prior to the winter period or as specified in the plan.

(1) If operations are conducted during the winter period, temporary logging road watercourse crossings shall be sized to accommodate the estimated 100-year flood flow level unless properly functioning or removed before the flow exceeds capacity at the individual crossing.

(r) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, during the extended wet weather period no timber operations shall take
place unless the approved plan incorporates a complete winter period operating plan pursuant to 14 CCR § 914.7(b) [934.7(b), 954.7(b)] that specifically addresses, where applicable, proposed logging road watercourse construction or reconstruction. Where logging road watercourse crossing construction or reconstruction is proposed, the RPF shall describe in the plan a logical order of treatment.

The following stabilization standards shall apply to logging road watercourse crossings:

(1) Bare soil on fills or sidecast associated with logging road watercourse crossings that are created or exposed by timber operations shall be stabilized to the extent necessary to minimize soil erosion and sediment transport and to prevent significant sediment discharge. Erosion control measures for the traveled surface of roads and landing surfaces are specified in 14 CCR §§ 923.5 [943.5, 963.5] and 923.7 [943.7, 963.7]. Sites to be stabilized include, but are not limited to, sidecast or fill greater than 20 feet in slope distance from the outside edge of the road surface at the logging road watercourse crossing.

(2) Soil stabilization measures shall be described in the plan and may include, but are not limited to, removal, armoring with rip-rap, replanting, mulching, seeding, installing commercial erosion control devices to manufacturer's specifications, or chemical stabilizers.

(3) Soil stabilization treatments shall be in place upon completion of operations for the year of use or prior to the extended wet weather period, whichever comes first. An exception is that bare areas created during the extended wet weather period shall be treated prior to the start of rain that generates overland flow, or within 10 days, whichever is sooner, or as agreed to by the Director.
(4) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, within the WLPZ and within any ELZ or EEZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent significant sediment discharge, shall be described in the plan as follows:

(A) In addition to the requirements of 14 CCR § 923.10(s)(1)-(3) [943.10(s)(1)-(3), 963.10(s)(1)-(3)], soil stabilization is required for the following:

(i) Areas exceeding 100 continuous square feet where timber operations have exposed bare soil.

(ii) Disturbed logging road watercourse crossing cut banks and fills, and

(iii) Any other area of disturbed soil that threatens to cause significant sediment discharge.

(B) Where straw mulch is used, the minimum straw coverage shall be 90 percent, and any treated area that has been reused or has less than 90 percent surface cover shall be treated again by the end of timber operations.

(C) Where slash mulch is applied, slash coverage in contact with the ground surface shall be a minimum of 75 percent.

(D) For areas disturbed outside the extended wet weather period, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface that could result in significant sediment discharge.

(E) For areas disturbed during the extended wet weather period, treatment shall be completed prior to any day for which a chance of rain of 30 percent or
greater is forecast by the National Weather Service or within 10 days of disturbance, whichever is earlier.

(1) When watercourse crossings, other drainage structures, and associated fills are removed, the following standards shall apply: All logging road watercourse crossings that are proposed by the plan submitter to be removed, including temporary crossings and those along abandoned or deactivated roads, shall be removed as described in the plan and shall apply the following standards:

1. Fills shall be excavated to form a channel that is as close as feasible to the natural watercourse grade and orientation, and that is wider than the natural channel as observed upstream and downstream of the logging road watercourse crossing to be removed.

2. The excavated material and any resulting cut bank shall be no greater than 65 percent (1.5:1, horizontal to vertical) from the outside edge of the constructed channel sloped back from the channel and stabilized to prevent slumping, and to minimize soil erosion and sediment transport, and to prevent significant sediment discharge. Where needed, this material Exposed soil located between the watercourse crossing and the nearest adjacent drainage facility or hydrologic divide, whichever is closer, including cut banks and excavated material, shall be stabilized by seeding, mulching, rock armoring, replanting, installing commercial erosion control devices to manufacturer’s specifications or other suitable treatment to prevent soil erosion and significant sediment discharge.

3. Where it is not feasible to remove a logging road watercourse crossing or its associated fill to the above standards, the plan shall identify how soil erosion and significant sediment discharge will be prevented.
(4) All logging road watercourse crossings proposed for removal shall be removed upon completion of use, prior to the winter period or as specified in the applicable DFG 1600 agreement, whichever is earlier, or as otherwise specified in the plan.

(5) Where the removal of an individual logging road watercourse crossing would eliminate access to other temporary crossings, the orderly removal of all such temporary crossings shall be as specified in the plan.

(u) Logging road watercourse crossings shall be monitored and maintained during timber operations and throughout the prescribed maintenance period as needed, to comply with 14 CCR § 1050. The prescribed maintenance period is specified in 14 CCR § 923.7(i)-(j) [943.7(i)-(j), 963.7(i)-(j)]. Monitoring inspections shall be conducted, when access is feasible during the prescribed maintenance period, a sufficient number of times during the extended wet weather period, particularly after large winter storm events and at least once annually, to evaluate watercourse crossing function.

(1) Inspections shall include checking watercourse crossings for evidence of downcutting, plugging, overtopping, loss of function, and sediment delivery to Class I, II, or III watercourses and lakes. If evidence of sediment delivery or potential sediment delivery is present, and the implementation of feasible corrective measures could reduce the potential for significant sediment discharge, such additional measures shall be implemented when feasible.

(2) Inspections conducted pursuant to California Regional Water Quality Control Board requirements may be used to satisfy the inspection requirements of this section.

(v) Logging road watercourse crossings shall be maintained as designed, constructed, and reconstructed during timber operations and throughout the prescribed maintenance
period. Crossings used in connection with stocking activities shall be maintained throughout such use, even if this extends beyond the prescribed maintenance period.