

1 **STAFF DRAFT WATERCOURSE CROSSING INTEGRATION-ROAD RULES, 2013**

2
3 **923.310, 943.310, 963.310 Watercourse Crossings [All Districts]**

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

9 **(a)** The location of all new permanent watercourse crossing drainage structures and
10 temporary crossings located within the WLPZ shall be shown on the THP map. If the
11 structure is a culvert intended for permanent use, the minimum diameter of the culvert
12 and the method(s) used to determine the culvert diameter shall be specified in the plan.

13 Extra culverts beyond those shown in the THP map may be installed as necessary.

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

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

23 **(c)** Drainage structures on watercourses that support fish shall allow for unrestricted
24 passage of all life stages of fish that may be present, and shall be fully described in the
25 plan in sufficient clarity and detail to allow evaluation by the review team and the public,

1 provide direction to the LTO for implementation, and provide enforceable standards for
2 the inspector.

3 **(d)** Fills for constructed and reconstructed logging road watercourse crossings shall be
4 thoroughly compacted in approximately one-foot lifts during installation. The face of
5 crossing fills shall be no greater than 65 percent (1.5:1, horizontal to vertical).

6 Excavated material and cut banks resulting from construction or reconstruction which
7 has access to a watercourse shall be sloped back from the channel to prevent
8 slumping, to minimize soil erosion, and to prevent significant sediment discharge.

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

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

14 **(f)** Watercourse crossings and associated fills and approaches shall be constructed or
15 maintained to prevent diversion of stream overflow down the road and to minimize fill
16 erosion should the drainage structure become obstructed. Methods to mitigate or
17 address diversion of stream overflow at logging road watercourse crossings shall be
18 stated in the plan. The RPF may propose an exception where explained in the THP and
19 shown on the THP map and justified how the protection provided by the proposed
20 practice is at least equal to the protection provided by the standard rule.

21 **(g)** All new permanent culverts on Class I watercourses, where fish are always or
22 seasonally present or where fish habitat is restorable, shall be planned, designed and
23 constructed to allow upstream and downstream passage of fish or listed aquatic species
24 during any life stage and for the natural movement of bedload to form a continuous bed
25 through the culvert and shall require an analysis and specifications demonstrating

1 conformance with the intent of this section and subsection, and the conditions of
2 required DFG 1600 Agreements.

3 **(h) All new and replacement culverts used for logging road watercourse crossings shall**
4 **be designed to be installed at or slightly below the natural watercourse grade, except**
5 **where downspouts and/or rock energy dissipaters are utilized,, in alignment with the**
6 **watercourse channel and of the appropriate length to prevent fill erosion.**

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

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

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

21
22 **In watersheds with listed anadromous salmonids, where crossing fills over culverts are**
23 **large or where logging road watercourse drainage structures historically have a high**
24 **failure rate, such structures shall be oversized, designed for low maintenance,**
25 **reinforced, or removed before completion of timber operations.**

1 (l) Where conditions are encountered during logging road watercourse crossing
2 construction or reconstruction that differ from what was anticipated during the
3 preparation and review of the plan and that will result in a significant adverse impact on
4 the environment or to public safety, the LTO shall notify the RPF or plan submitter of
5 these unanticipated conditions in accordance with 14 CCR § 1035.3. If necessary, the
6 responsible RPF or plan submitter shall submit to the Director a proposed deviation to
7 the plan describing the unanticipated conditions and proposing appropriate actions.

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

11 (n) Logging road watercourse crossings shall be installed no later than October 15,
12 except where logging road construction or reconstruction takes place from October 15
13 to November 15 or from April 1 to May 1, as specified in an approved winter period
14 operating plan per 14 CCR § 914.7 [934.7, 954.7] subsection (b), where logging road
15 watercourse crossings shall be installed concurrent with the activity.

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

20 (o) In watersheds with listed anadromous salmonids and in planning watersheds
21 immediately upstream of, and contiguous to, any watershed with listed anadromous
22 salmonids, during the extended wet weather period no timber operations shall take
23 place unless the approved plan incorporates a complete winter period operating plan
24 pursuant to 14 CCR § 914.7 [934.7, 954.7], subsection (b) that specifically addresses,
25 where applicable, proposed logging road watercourse construction or reconstruction.

1 Where logging road watercourse crossing construction or reconstruction is proposed the
2 RPF shall describe in the plan a logical order of treatment.

3 **(p)** The following drainage standards shall apply to logging road watercourse crossings:

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

8 **(2)** Drainage facilities and ditch drains shall be installed adjacent to logging road
9 watercourse crossings, as needed, to hydrologically disconnect to the extent feasible
10 the logging road approach from the crossing, to minimize soil erosion and sediment
11 transport and to prevent significant sediment discharge during and upon completion of
12 timber operations. See 14 CCR § 923.5 [943.5, 963.5], subsections (a)-(i)

13 **(3)** Drainage facilities installed adjacent to logging road watercourse crossings
14 shall be located to avoid discharging concentrated runoff onto fills, erodible soils,
15 unstable areas, and connected headwall swales.

16 **(q)** The following stabilization standards shall apply to logging road watercourse
17 crossings:

18 **(1)** Bare soil on fills or sidecast associated with logging road watercourse
19 crossings that are created or exposed by timber operations shall be stabilized to the
20 extent necessary to minimize soil erosion and sediment transport and to prevent
21 significant sediment discharge. Erosion control measures for the traveled surface of
22 roads and landing surfaces are specified in 14 CCR §§ 923.5 [943.5, 963.5] and 923.7
23 [943.7, 963.7]. Sites to be stabilized include, but are not limited to, sidecast or fill
24 greater than 20 feet in slope distance from the outside edge of the road surface at the
25 logging road watercourse crossing.

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

5 (3) Soil stabilization treatments shall be in place upon completion of operations
6 for the year of use or prior to the extended wet weather period, whichever comes first.

7 An exception is that bare areas created during the extended wet weather period shall be
8 treated prior to the start of rain that generates overland flow, or within 10 days,
9 whichever is sooner, or as agreed to by the Director.

10 (4) In watersheds with listed anadromous salmonids and in planning watersheds
11 immediately upstream of, and contiguous to, any watershed with listed anadromous
12 salmonids, within the WLPZ and within any ELZ or EEZ designated for watercourse or
13 lake protection, treatments to stabilize soils, minimize soil erosion, and prevent
14 significant sediment discharge, shall be described in the plan as follows:

15 (A) In addition to the requirements of subsections (q)(1)-(3), soil
16 stabilization is required for the following:

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

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

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

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

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

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

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

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

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

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

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

5 (t) apply:All logging road watercourse crossings that are proposed by the plan submitter
6 to be removed, including temporary crossings and those along abandoned or
7 deactivated roads, shall be removed as described in the plan and shall apply the
8 following standards.

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

13 (2) The excavated material and any resulting cut bank shall be no greater than
14 65 percent (1.5:1, horizontal to vertical) from the outside edge of the constructed
15 channel sloped back from the channel and stabilized to prevent slumping, and to
16 minimize soil erosion and sediment transport, and to prevent significant sediment
17 discharge. Where needed, this material Exposed soil located between the watercourse
18 crossing and the nearest adjacent drainage facility or hydrologic divide, whichever is
19 closer,, including cut banks and excavated material, shall be stabilized by seeding,
20 mulching, rock armoring, replanting, installing commercial erosion control devices to
21 manufacturer's specifications or other suitable treatment to prevent soil erosion and
22 significant sediment discharge.

23 (3) Where it is not feasible to remove a logging road watercourse crossing or its
24 associated fill to the above standards, the plan shall identify how soil erosion and
25 significant sediment discharge will be prevented.

1 **(4) All logging road watercourse crossings proposed for removal shall be**
2 **removed upon completion of use, prior to the winter period or as specified in the**
3 **applicable DFG 1600 agreement, whichever is earlier, or as otherwise specified in the**
4 **plan.**

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