

FPC Road Rules Proposal

Issue summary and comments for discussion at May 2010 meeting

Prepared by Staff
May 21, 2010

Relevant rules sections under review to date:

895.1 Definitions

923 Intent -- Logging roads, landings, and logging road watercourse crossings

923.1 Planning for Logging Roads and Landings

916.3 General Limitations Near Watercourses...

923.2 Design and Implementation (Roads & Landings)

923.3 Mapping and Identification (Roads & Landings)

923.4 Construction and Reconstruction (Roads & Landings)

923.5 Erosion Control (Roads & Landings)

Issues list and status as of May 2010 FPC meeting

Issue	Status
1. Hydraulic disconnection. (comment 1)	Partially completed
2. Surface erosion prevention (road approach and ditch rocking) (comment 1B, 33)	Partially completed
3. Road distance from watercourse or WLPZs (comment 2)	completed
4. Roads on slopes greater than 65% (comment 4)	No work to date
5. Consistent language for preventing discharge of sediment – “deleterious quantities” (comment 13A, 17, 18)	Partially completed
6. Erosion site assessment (comment 14)	No work to date
7. Duplicate standards prohibiting new roads in WLPZs (comment 12)	No work to date
8. Definitions edits (comments 26-31)	No work to date
9. Exceptions (comment to be submitted by CAL FIRE)	No work to date
10. Redundancies (comment to be submitted by CAL FIRE)	No work to date
11.	
12. Unstable areas (comments 15, 16, 19 and others from 2008 ASP input to be added)	No work to date
13. Winter ops dates and rule adequacy (comment 33 and others from 2008 ASP input to be added)	No work to date
14. Watercourse crossings (comments for 2008 ASP input to be added)	No work to date
15. Use of Rolling Dips vs. waterbars (comment 3)	completed
16. Road Density (comment 20)	No work to date
17. Use of private roads (comment 23)	Partially completed
18. Ditch standards (comment 14, 16)	No work to date

Comment 1 Hydraulic disconnection and surface rocking. Providing specific guidance on how roads and crossings are to be hydraulically disconnected from watercourses. This term is introduced in 923.1 (a)(9) and used in other sections. The rule package (see Pg 60, 923.6, J (2)) specifies hydraulic disconnection to the extent feasible which could be difficult to enforce. In addition, this section of the rules calls for rocking roads used during the winter where necessary. The question here is who determines when this is necessary? The landowner, CDF, NCWRCB etc.

(comment: Laing 3/15/10)

Status: Wording for "hydro disconnection proposed in 923.2 (a) (4), 923.4 (s) (3) , and 923.5 (p)(3), See DFG/CGS wording dated 4/30/10. Edits drafted by Tom Spittler in consultation with Curt Babcock. FPC resolved wording for 923.2(a) in May meeting. Others sections to be considered.

Comment 1A Hydraulic disconnection and surface erosion. RRTF proposal provides a performance standard for surface erosion and hydrologic disconnection. No prescriptive standard.

(comment: RRTF Matrix; Staff review 3/22/10).

Status: Wording for "hydro disconnection proposed in 923.2 (a) (4), 923.4 (s) (3) , and 923.5 (p)(3), See DFG/CGS wording dated 4/30/10. Edits drafted by Tom Spittler in consultation with Curt Babcock. FPC resolved wording for 923.2(a) in May meeting. Others sections to be considered.

Wording for "road surfacing to preventing erosion" proposed in sections 923.2 (a) (5) and 923.5 (p)(4)and (5) for ASP watersheds by Tom Spittler in consultation with Curt Babcock. FPC rejected wording for 923.2(a)(5) in May meeting. Others sections to be considered beginning in June 2010.

Comment 1B Hydraulic disconnection and surface rocking - See proposed DFG/CGS edits below:

923.2, 943.2, 963.2 Design and Implementation for Logging Roads and Landings

All (DFG Option) Constructed and reconstructed logging roads and landings shall be designed and implemented in accordance with their proposed use, maintenance requirements, and the approved plan:

(a) All (DFG Option) Constructed and reconstructed logging roads and landings shall:

(1) Avoid or mitigate potential impacts to public safety.

(2) Avoid unstable areas and connected headwall swales and minimize activities that adversely affect them.

(3) Minimize cuts and fills to the extent feasible.

(4 DFG Option) Be hydrologically disconnected from watercourses and lakes to the extent feasible. This shall be accomplished by outsloping where feasible and draining with waterbreaks, cross drains or rolling dips in conformance with other applicable Forest Practice Rules. All of these shall drain to stable sediment filter strips. Be outsloped where feasible and drained with waterbreaks or rolling dips in conformance with other applicable Forest Practice Rules.

(4 CGS Option) Include adequate drainage structures and facilities necessary to avoid concentrating and diverting runoff, to minimize erosion of roadbeds, landing surfaces, drainage

ditches, sidecast and fills, and to hydrologically disconnect the logging road or landing from Class I, II, III, or IV watercourses or lakes to the extent feasible.

(comment: DFG/CGS 4/30/10)

(45) Include adequate drainage structures and facilities **(DFG Option)** **and road rocking** necessary to avoid concentrating and diverting runoff, to minimize erosion of roadbeds, landing surfaces, drainage ditches, sidecast and fills, to minimize the potential for soil erosion and sediment transport, and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious that violate Water Quality requirements or result in significant adverse impacts to the beneficial uses of water.

(6 CGS Option) Where necessary and feasible, logging road surfaces, inside ditches, rolling dips, waterbars, and landing surfaces shall be rocked, paved, or receive other surface treatment that will prevent the discharge of sediment to watercourses or lakes in quantities that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.

923.4, 943.4, 963.4 Construction and Reconstruction for Logging Roads and Landings

(s) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, the following shall apply:

(1) On slopes greater than 50 percent that have access to a watercourse or lake:

(A) Specific provisions shall be identified and described for all logging road construction.

(B) Where cutbank stability is not an issue, logging roads may be constructed as a full-benched cut (no fill). Spoils not utilized in logging road construction shall be disposed of in stable areas with less than 30 percent slope outside of any WLPZ, EEZ, or ELZ designated for watercourse or lake protection. The Director, with concurrence from other responsible agencies, may waive inclusion of these measures where the RPF can show that slope depressions and other natural retention and detention features are sufficient to control overland transport of eroded material.

(C) Logging roads may be constructed with balanced cuts and fills:

(i) If properly engineered, or,

(ii) If fills are removed and the slopes recontoured prior to the winter

period.

(2) 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(a) [934.7(a), 954.7(a)] that specifically addresses, where applicable, proposed logging road or landing construction, reconstruction.

(3 DFG Option) No road or landing construction, reconstruction, or decommissioning shall be undertaken during the extended wet weather period, or at any time outside this period when saturated soil conditions exist, except on hydrologically disconnected road segments.

Comment [ts1]: The first part of this subsection is addressed in (s)(2) above, with the second portion addressed in (j).

923.5, 943.5, 963.5 Erosion Control for Logging Roads and Landings

(p) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, the following shall apply:

(1) Constructed and reconstructed logging roads shall be outsloped where feasible and drained with waterbreaks or rolling dips ~~(where the road grade is inclined at seven (7) percent or less)~~ in conformance with other applicable Forest Practice Rules.

(2) In addition to the provisions listed under 14 CCR § 923.2(d)(2) [943.2(d)(2), 963.2(d)(2)], all permanent and seasonal logging roads with a grade of 15 percent or greater that extend 500 continuous feet or more shall have specific erosion control measures stated in the plan.

(3) Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into watercourses or lakes in quantities deleterious to aquatic species or the quality and beneficial uses of water, or that threaten to violate applicable water quality requirements shall be described in the plan as follows:

(A) In addition to the requirements of subsections (k)-(o), soil stabilization is required for the following areas:

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

(ii) Disturbed logging road and landing cut banks and fills, and

(iii) Any other area of disturbed soil that threatens to discharge sediment into water in quantities deleterious that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.

(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 packed into the ground surface through the use of a tractor or equivalent piece of heavy equipment the minimum slash coverage shall be 75 percent.

(D) For areas disturbed from May 1 to October 14 outside of 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 deliver sediment into a watercourse or lake in quantities deleterious that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.

(E) For areas disturbed from October 15 to May 1 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.

(F) Where the natural ability of ground cover is inadequate to protect the beneficial uses of water by minimizing soil erosion or by filtering sediments within any ELZ or EEZ designated for watercourse or lake protection, the plan shall specify protection measures to retain and improve the natural ability of the ground cover to filter sediment and minimize soil erosion.

(4 DFG Option) The following erosion control shall be completed:

(A) Logging road approach surfaces on the following shall consist of high-quality, durable, compacted rock or paving: (i) permanent roads, (ii) seasonal roads crossing Class I watercourses, (iii) roads used for hauling (logs, rock, heavy equipment) during the extended wet weather period.

(B) Logging road approach surfaces on the following shall be treated with either: rock, slash, seed and straw mulch, seed and stabilized straw, or seed and slash: (i) all seasonal roads used for hauling in the current year, (ii) all seasonal roads used during the extended wet weather period for purposes other than hauling.

(C) Logging road approaches to temporary crossings shall be stabilized and maintained after crossing removal to avoid rutting or pumping fines during administrative use after removal.

(D) Logging road approach ditches exhibiting downcutting shall be lined with high-quality, durable rock, installed with erosion control materials or structures to manufacturers specifications, or treated with other effective means as described in the plan, in the following locations: (i) permanent logging roads, (ii) seasonal roads crossing Class I watercourses, (iii) logging roads used for hauling during the extended wet weather period.

(E) Logging road approach ditches shall be treated to minimize sediment transport in the following locations: (i) seasonal logging roads used for hauling in the current year, (ii) seasonal logging roads used during the extended wet weather period for purposes other than hauling.

(5 DFG Option) All segments of hydrologically connected logging roads in Class I and Class II WLPZs shall exhibit a rocked or paved stable operating surface. The surface shall consist of high quality, durable, compacted rock, or paving. The road surface and base shall be maintained to avoid generation of fines during use.

Status: Wording for “hydro disconnection proposed in 923.2 (a) (4), 923.4 (s) (3) , and 923.5 (p)(3), See DFG/CGS wording dated 4/30/10. Edits drafted by Tom Spittler in consultation with Curt Babcock. FPC resolved wording for 923.2(a) in May meeting. Others sections to be considered.

Wording for “road surfacing to preventing erosion” proposed in sections 923.2 (a) (5) and 923.5 (p)(4)and (5) for ASP watersheds by Tom Spittler in consultation with Curt Babcock. FPC rejected wording for 923.2(a)(5) in May meeting. Others sections to be considered beginning in June 2010.

Relevant proposed rule section: **923.1 (b)**

Comment 2 New Roads in WLPZs . The rule package specifies that new roads need to be no closer than 100 ft. from a WLPZ boundary. Weaver and Hagans recommend for a slope of 50%, a distance of 250 ft between the road and a watercourse. Assuming a Class I buffer of 100 ft. in this case, the Weaver and Hagans recommendation would be 150 ft from the road to the WLPZ boundary not 100 ft.

(comment: Laing 3/15/10;4/21/10)

Status: FPC rejected any changes from RRTF 3/2/10 proposal during May meeting.

Relevant proposed rule section: **923.2 (a) (4);**

Comment 3 Rolling grades and dips. The T/I rules should place a greater emphasis on preventing stream diversions at existing and newly constructed watercourse crossings by describing how diversions should be prevented. We strongly believe that well-constructed rolling dips ("Critical Dips") or grade breaks should be integral to all newly constructed or reconstructed crossings, and at existing crossings in the logging area where the potential for stream diversions exist. For example, §§ 923.3,943.3,963.3 (f) Watercourse Crossings could read as follows: "Permanent 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. Where the potential for diversion at a watercourse crossing exists, a rolling dip or grade break shall be constructed to prevent diversion. The RPF may propose an exception to the standard rule. Instead of using permanent well-constructed dips or grade breaks, foresters have relied too often on the use of standard waterbars. Waterbars are temporary structures and their effectiveness to prevent stream diversions relies on routine road maintenance. Maintenance periods for all roads are short-lived relative to the long-term potential impacts of roads. Waterbars are insufficient and are not a substitute for permanent, well-constructed dips or grade breaks, which if properly constructed, should require little or no maintenance.

We recognize that CAL FIRE inspectors for the past few years have been more consistent in requiring dips or grade breaks at crossings with no diversion potentials. Many landowners have also voluntarily adopted dips or grade breaks into crossing design. However, because the impacts from stream diversions are significant, we believe the requirement for dips or grade brakes to prevent

diversions should be codified for enforceability of a practice that should be routine is long overdue.

(Public comment from 2008 BOF request letter)

Status: No changes. FPC considered the comment and recommended no changes to any section . Topic was found to be adequately addressed in RRTF proposal.

Relevant proposed rule section: **923.2 (a) (6); 923.4 (m)**

Comment 4 Roads on slopes 65% . The rule package suggests that roads on slopes greater than 65% would be allowed. Both Meehan and Weaver and Hagans recommend not locating roads on slopes above 50-55%. If it is necessary to locate roads on slopes above 60% then full bench construction with no side cast is the recommended approach.

(comment: Laing 3/15/10;4//21/10)

Status: Will be considered in July 2010 FPC.

Relevant proposed rule section: **923.2 (a) (6); 923.4 (m)**

Comment 5 Conflicting Road standards. Language in 923.2 (a) (6) (“avoid”) is different from 923.4 (m) (shall not”) for standard for construction on slopes over 65%.

(Staff review 3/22/10)

Status: No changes. FPC found in April 2010 meeting these differences are compatible.

Relevant proposed rule section: **923.2 (a) (6); 923.4 (m)**

Comment 6 Duplicate Road Standards. Language in 923.2 (a) (6) and 923.4 (m) standard for construction on slopes over 65% is duplicate.

((Staff review 3/22/10)

Status: No changes. FPC found at April 2010 meeting these duplications are insignificant.

Comment 6A 14 CCR 923.9 (c): Modify the lead-in phrase to require linkage between the specified practices and proximity to watercourses as follows: “The following shall apply on slopes greater than 50% that have access to a watercourse or lake unless the RPF in the plan describes how slope depressions, drainage ways or other natural retention and detention features are sufficient to control overland transport of eroded material: ...”. There may be situations where roads are proposed to cross steep slopes for short distances and potential access to a watercourse is mitigated by a wide bench acting as retention feature to store excess construction materials should failure occur.

(Public comment from 2008 BOF request letter)

Status: No changes. FPC found at April 2010 the comment is addressed by RRTF plead.

Relevant proposed rule section: **923; 923.1 (d); 923.2 (a) (1)**

Comment 7 Undefined Term. Clarity meaning of the term “public safety”.
Term is not defined in the FPRS.
(Staff review 3/22/10)

Status: No changes. FPC found at April 2010 meeting these term are sufficiently self explanatory.

Comment 8 Undefined Term. Clarity meaning of the term “sensitive condition”.
Term is not defined in the FPRS.
(Staff review 3/22/10)

Status: No changes. FPC found at April 2010 meeting these term are sufficiently self explanatory.

Comment 9 Undefined Term. Clarity meaning of the term “systematic layout pattern”. Term is not defined in the FPRS.
(Staff review 3/22/10)

Status: No changes. FPC found at April 2010 meeting these term are sufficiently self explanatory.

Relevant proposed rule section: 923.1 (a); 923.1(a)(10); 923.1 (e) and (f)

Comment 10 Consistency with RMP requirements or other guidance documents. These subsections requires consideration of road location (“systematic layout”), road maintenance (“compatible with road classification and long-term usage”), “abandonment and deactivation”, and “effects on long term occupancy”. This requirement should be consistent with similar requirements for a Road Management Plan in section 1093 et seq. In other words, however these are considered in a RMP should be how they are considered in this proposal.

For example, in 923.1 (a), there is a “systematic layout” requirement. The proposed rule could be similar to 1093.2 (c)(1) or (2) which requires a description of the timberland owners long-term road planning process and objectives, and an inventory of roads and assessment of their location and condition relative to beneficial uses. For 923.1(a)(10) , 1093.2 (c)(3)(B) requires “a road maintenance and inspection component that includes a description of erosion control and stabilization treatments.” (ref: Staff review 3/22/10)

Other relevant documents are cited in the FPRs that provide guidance and language for the proposed 923.1 (e). The FPC should consider referencing the *California Salmonid Habitat Restoration Manual of 1998* for guidelines for road decommissioning. By referencing this document, there is consistency among rules and incorporation of contemporary standards that can't practically be disclosed in a regulation.
(Staff review 3/22/10)

Status: No changes. FPC found at April 2010 meeting these term are adequately organized.

Relevant proposed rule section: 923.1 (f) Option 1

Comment 11 Option 1, inconsistency with ASP rules. This option was not adopted in the ASP rules and should not be included here. RRTF notes this subsection needs to be re-visited.

(Staff review 3/22/10; RRTF matrix)

Status: Include Option 1 as preferred text. FPC found at April 2010 meeting this wording is preferable because it provides general, flexible language for planning roads and requires offsetting measures to avoid watershed impacts from roads.

Relevant proposed rule section: 923.1 (g)

Comment 12 Consistency with use of terminology. This section is duplicative to 923.1 (b).

(Staff review 3/22/10)

Status: Chris Browder to consider edits that consolidates two sections. No estimated date for consideration.

Relevant proposed rule section: 923.2 (a) (5), 923.1 (h), 923.2 (c), 923.4 (j) and (p)(2), 923.5 (k), (n), and (p).

Comment 13 Consistency with use of terminology and CWA: minimize, prevent, mitigate, significant, “deleterious quantities”, “threaten to cause”.

This section uses a frequently repeated requirement: “minimized erosion and sediment transport and prevent discharge... in quantities deleterious to beneficial use of water”. This phrase should be standardized throughout the FPRs, including here (see 916.916(c), 916.9(a), 923 “significant”). We note that input received from the NCRWQCB would add to this phrase the requirement for “mitigation or corrective actions” when it standard is not met. Also see 14 CCR 923.9.2 (o) for language on corrective actions.

(Staff review 3/22/10)

Status: Edits and options to be considered for June 2010 by FPC. Optional wording includes: “prevent delivery of sediment into a watercourse or lake in quantities that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.”

Wording needed for consistency and clarity of “deleterious quantities” to be resolved in May FPC meeting. See NCRWQCB wording in comment 13A. Note 923.4(p)(3) also needs to be amended to make consistent with proposed change.

Other options detailed in separate but parallel regulatory proposal for “Definitions of Saturate Soils” being considered by FPC in June 2010.

Comment 13A

Re: 916.9(k)(3) and (4) Year-round logging road, landing and tractor road use limitations (page 62, line 21 through page 63, line 5)

The "quantities deleterious to the beneficial uses of water" requires interpretation and has in the past led to disagreements between the agencies and between the public and reviewing agencies. It causes conflict between the differing review and approval standards of the various agencies. The Regional Water Board suggests that the section be amended to prohibit sediment discharges that threaten to violate "Water Quality Requirements" as defined in Regional Board Orders R1-2004-0030 Section I.L and R1-2009-0038 Attachment A:

"Water Quality Requirements' means a water quality objective (narrative or numeric), prohibition, TMDL implementation plan, policy, or other requirement contained in a water quality control plan adopted by the Regional Board and approved by the State Water Board, and all other applicable plans or policies adopted by the Regional Board or State Water Board, including, but not limited to, the State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California."

(State Board/NCRWQCB comments from 2009)

Status: Edits and options to be considered for June 2010 by FPC. Optional wording includes: "prevent delivery of sediment into a watercourse or lake in quantities that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water."

Wording needed for consistency and clarity of "deleterious quantities" to be resolved in May FPC meeting. See NCRWQCB wording in comment 13A. Note 923.4(p)(3) also needs to be amended to make consistent with proposed change.

Other options detailed in separate but parallel regulatory proposal for "Definitions of Saturate Soils" being considered by FPC in June 2010.

Relevant proposed rule section: 923.1 (d)-(h) and 923.2 (f)

Comment 14 Ongoing erosion site assessment: 923.2 (f) limits assessment and remedies for ongoing erosion assessment to ASP watersheds. The RMP and 14 CCR 923.9.2 provides this for other geographic areas. FPC should 1) consider using standards proposed in 923.2 (f) for plans in any watershed (single statewide standard) and 2) make sections proposed in 4/30/10 plead in 923.1 (d)-(h) and 923.2 (f) consistent or condensed.

(Staff review 4/30/10)

Status: to be considered at June FPC meeting. Substantial optional language recommended by stakeholders. See under comment 14 A and 14 B.

Relevant proposed rule section: **923.1(e) and (h) Planning.; 923.2 (f) Design**

Comment 14A Ongoing erosion site assessment: See proposed DFG/CGS edits below:

923.1, 943.1, 963.1 Planning for Logging Roads and Landings

The following standards shall apply to logging roads and landings:

(a) Logging roads and landings shall be planned and located within the context of a systematic layout pattern that considers 14 CCR § 923(b), uses existing logging roads and landings where feasible and appropriate, provides access for fire and resource protection activities, and minimizes the following:

- (1)** Total road mileage.
- (2)** The number of logging road watercourse crossings.
- (3)** Activities near watercourses, lakes, marshes, wet meadows, and other wet areas.
- (4)** Activities across steep areas that lead without flattening to Class I, II, III, or IV watercourses and lakes.
- (5)** Activities on unstable areas or in connected headwall swales.
- (6)** Activities near nesting sites of rare, threatened, or endangered bird species.
- (7)** Activities near significant populations of rare, threatened, or endangered plants.
- (8)** Ground disturbance, cuts, and fills.
- (9)** The potential for affecting surface hydrology, including but not limited to, concentrating or diverting runoff or draining the logging road or landing surface directly into a watercourse or lake.
- (10)** Maintenance needs while being compatible with the logging road classification and long-term road usage.

(b) No logging roads or landings shall be planned for construction or reconstruction in Class I, II, III, or IV watercourses or lakes, within a WLPZ, or in marshes, wet meadows, and other wet areas, except as follows:

- (1)** At existing logging road watercourse crossings.
- (2)** At constructed or reconstructed logging road watercourse crossings approved as part of the Fish and Game Code process (F&GC 1600 et seq.)
- (3)** At logging road watercourse crossings of Class III watercourses that are dry at the time of use.

(c) Logging roads and landings shall be planned and located to avoid unstable areas and connected headwall swales. The Director may approve an exception if those areas are unavoidable and site-specific measures to minimize slope instability due to logging road or landing construction or reconstruction are described and justified in the plan.

(d) As part of the field examination of classified watercourses and lakes, the RPF or supervised designee shall evaluate areas in and near existing, constructed, and reconstructed logging roads and landings for sensitive conditions, including, but not limited to, unstable and erodible watercourse banks, unstable upslope areas, channels with inadequate flow capacity, changeable channels, overflow channels, flood prone areas, debris jam potential, and riparian zones.

(e CGS Option) The RPF or supervised designee shall evaluate all logging roads and landings in the harvest area and all other logging roads that will be used for timber operations between the harvest area and the first public road for sensitive conditions, including evidence of potential sediment discharge to watercourses or lakes.

For (d) and (e) above:

- (1)** The RPF shall consider these conditions and the measures needed to maintain and restore, to the extent feasible, the functions set forth in 14 CCR § 916.4(b) [936.4(b), 956.4(b)] when planning logging roads and landings.
- (2)** The plan shall identify and disclose such sensitive conditions, including where they may interact with proposed timber operations, that individually or cumulatively, significantly and adversely affect, the beneficial uses of water.
- (3)** The RPF shall describe in the plan feasible protection measures for identified sensitive conditions, which consider the watercourse classification and the location and planned use of all logging roads and landings.
- (4)** Where feasible protection measures are proposed, the RPF shall specify an implementation schedule in the plan.

For CGS Option, Change numbering for the remainder of the section as needed with no additional changes to text.

(e DFG Option) *The RPF or supervised designee shall evaluate logging road and landing surface and drainage conditions for all road segments, cuts, fills and inboard ditches, landings, drainage structures, and drainage facilities within the harvest area and on all other logging roads that will be used for timber operations between the harvest area and the first public road. Field inventory information shall be obtained by an RPF or supervised designee while traversing the road segments. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.*

(f) When selecting feasible alternatives (see 14 CCR §§ 897 and 898) during the planning phase of logging roads and landings, the RPF shall consider the location and planned use of logging roads and landings and whether such logging roads and landings will be abandoned or deactivated.

(g) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, where logging road or landing construction or reconstruction is proposed, the plan shall state the location of, and specifications for, logging road and landing abandonment or other mitigation measures to minimize the adverse effects of long-term site occupancy of the road system within the watershed.

Option 1 In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, where logging road or landing construction or reconstruction is proposed, the plan shall identify:

(1) How the proposed operations will fit into the systematic layout pattern.

(2) What, if any, offsetting mitigation measures, including but not limited to,

abandonment of logging roads and landings, are needed to minimize potential adverse impacts to watersheds from the road system.

DFG Option (h) *In watersheds with listed anadromous salmonids, and in planning watersheds immediately upstream, the RPF shall certify that the assessment conducted pursuant to 923.1(e) and 923.10(g) was completed. The plan shall identify the proposed treatment of all existing or potential sediment sources including drainage structures and facilities that are not functioning or are discharging sediment into watercourses and lakes in quantities that violate Water Quality requirements or result in significant adverse impacts to the beneficial uses of water. The plan shall specify an implementation schedule for treatments. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.*

(i)(e) In watersheds with listed anadromous salmonids no logging roads or landings shall be planned for construction or reconstruction in the CMZ or Core Zone of a Class I watercourse except those listed in 14 CCR § 916.9(e)(1)(A)-(E) [936.9(e)(1)(A)-(E), 956.9(e)(1)(A)-(E)] or pursuant to 14 CCR § 916.9(v) [936.9(v), 956.9(v)].

(j)(h) In watersheds with listed anadromous salmonids within the Inner Zone A and B of flood prone areas of Class I watercourses the following Preferred Management Practices should be considered for inclusion in the plan by the RPF and by the Director:

(1) Constructed and reconstructed logging roads and landings should not be planned for location within these zones.

(2) When feasible, planned use of existing logging roads and landings should be minimized in the flood prone area.

(3) Exceptions include the use of roads and landings to accomplish actions to improve salmonid habitat conditions stated in 14 CCR § 916.9(f)(3)(E)(1) [936.9(f)(3)(E)(1), 956.9(f)(3)(E)(1)].

923.2, 943.2, 963.2 Design and Implementation for Logging Roads and Landings

~~**(f)** In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, as part of the plan the RPF shall:~~

~~**(1)** Identify logging road and landing sites in the logging area, where erosion and sediment production are ongoing during any period of the year and which pose significant risks to the beneficial uses of water.~~

~~**(2)** Assess those sites identified in 14 CCR § 923.2(f)(1) [943.2(f)(1), 963.2(f)(1)] to determine whether feasible remedies exist.~~

~~(3) For sites that pose significant risks to the beneficial uses of water and where feasible remedies exist, the plan shall propose appropriate treatment.~~

DFG Option – Delete (f)

(DFG 4/27/10)

Status: To be considered at June FPC. Edits proposed by DFG/CGS wording above from Tom Spittler in consultation with Curt Babcock.

Relevant proposed rule section: **923.1(d) Planning;**

Comment 14B Ongoing erosion site assessment: See proposed Pete Ribar edits to DFG recommendations:

(d) As part of the field examination of classified watercourses and lakes, the RPF or supervised designee shall evaluate ~~areas in and near~~ existing, constructed, and reconstructed logging roads and landings for **areas of potential sediment discharge to** sensitive conditions, including, but not limited to, **adjacent watercourses**, unstable and erodible watercourse banks, unstable upslope areas, channels with inadequate flow capacity, changeable channels, overflow channels, flood prone areas, debris jam potential, and riparian zones.

~~(e CGS Option) The RPF or supervised designee shall evaluate all logging roads and landings in the harvest area and all other logging roads that will be used for timber operations between the harvest area and the first public road for sensitive conditions, including evidence of potential sediment discharge to watercourses or lakes.~~

~~For (d) and (e) above:~~

(PFR 5/3/10)

Status: To be considered at June FPC.

Relevant proposed rule section: **923.1(e) Planning.**

Comment 14C Ongoing erosion site assessment: See proposed Pete Ribar edits to DFG recommendations:

~~(e DFG Option) The RPF or supervised designee shall evaluate logging road and landing surface and drainage conditions for all road segments, cuts, fills and inboard ditches, landings, drainage structures, and drainage facilities within the harvest area and on all other logging roads that will be used for timber operations between the harvest area and the first public road. Field inventory information shall be obtained by an RPF or supervised designee while traversing the road segments. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.~~

(PFR 5/3/10)

Status: To be considered at June FPC.

Relevant proposed rule section: **923.1(h) and (h) Planning.; 923.2 (f) Design**

Comment 14D Ongoing erosion site assessment: See proposed Pete Ribar edits to DFG recommendations:

923.1, 943.1, 963.1 Planning for Logging Roads and Landings

~~**DFG Option (h)** In watersheds with listed anadromous salmonids, and in planning watersheds immediately upstream, the RPF shall certify that the assessment conducted pursuant to 923.1(e) and 923.10(g) was completed. The plan shall identify the proposed treatment of all existing or potential sediment sources including drainage structures and facilities that are not functioning or are discharging sediment into watercourses and lakes in quantities that violate Water Quality requirements or result in significant adverse impacts to the beneficial uses of water. The plan shall specify an implementation schedule for treatments. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.~~

(h) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, as part of the plan the RPF shall:

(1) Identify logging road and landing sites in the logging area, where erosion and sediment production are ongoing during any period of the year and which pose significant risks to the beneficial uses of water.

(2) Assess those sites identified in 14 CCR § 923.2(f)(1) [943.2(f)(1), 963.2(f)(1)] to determine whether feasible remedies exist.

(3) For sites that pose significant risks to the beneficial uses of water and where feasible remedies exist, the plan shall propose appropriate treatment.

923.2, 943.2, 963.2 Design and Implementation for Logging Roads and Landings

~~**(f)** In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, as part of the plan the RPF shall:~~

~~**(1)** Identify logging road and landing sites in the logging area, where erosion and sediment production are ongoing during any period of the year and which pose significant risks to the beneficial uses of water.~~

~~**(2)** Assess those sites identified in 14 CCR § 923.2(f)(1) [943.2(f)(1), 963.2(f)(1)] to determine whether feasible remedies exist.~~

~~**(3)** For sites that pose significant risks to the beneficial uses of water and where feasible remedies exist, the plan shall propose appropriate treatment.~~

(Ribar 5/3/10)

Status: To be considered at June FPC.

Relevant proposed rule section: 923.2 (a)(5) and (f); 923.1 (c) and (d)

Comment 15 Wet weather operations, erosion, unstable areas. During the listing process for these species, NMFS reviewed the FPR and in all cases concluded they do not adequately protect anadromous salmonids or provide for properly functioning habitat conditions (61 FR 56141; 61 FR 56140; 62 FR 24593; 63 FR 13347; 65 FR 6960; 65 FR 36074). In fact, these Federal Register Notices conclude that California's non-Federal forestry practices are significant factors contributing to salmon and steelhead population declines: declines resulting from the degradation, simplification and fragmentation of habitats through the present or threatened destruction, modification, or curtailment of habitat and range, and the inadequacy of existing regulatory mechanisms.

4. All other winter operations and wet weather road and skid trail planning.
5. Road planning, construction, maintenance, and decommissioning.
6. Loss of riparian function and chronic sediment inputs from streamside roads.
7. Unstable areas except for inner gorges.

(Public comment from NMFS in 2008 BOF request letter)

Status: Comments 4., 5. and 6. generally in progress for consideration.

Relevant proposed rule section: 923.1 (c) and (d)

Comment 16 Land forms and unstable areas.

The T/I Rules seem to be overly focused on using riparian zones as a primary means for buffering aquatic habitat for anadromous salmonids from effects of timber operations. While we agree that such zones can be very effective in many instances, we are concerned that there is not adequate recognition of landforms and processes that are inherently sources of significant sediment pulses (e.g. debris flows) that can overwhelm watercourse and lake buffering capability and produce valley-bottom deposits that continue to leak into the stream for many decades. We recommend the T/I Rules be amended to address these deficiencies. We also recommend that a thorough review of the scientific literature be performed to better understand how to manage forest land where these landforms and processes are present.

(Public comment from 2008 BOF request letter)

Status: Comments not yet considered/reviewed in FPC.

Comment 17 Consistency with CWA: Erosion offsets, “threaten to cause” and “deleterious”

Road Use, Winter Period Operations, Soil Stabilization, and Erosion Sites

Several of the proposed rules on these topics use language that is inconsistent with Water Board requirements. Under State and federal anti-degradation Policies (which are binding on State agencies) only a Regional Water Board can authorize any diminution of water quality where it is currently better than water quality standards; this is not within BOF or CalFire purview. Pursuant to Clean Water Act 303(d), the goal for sediment-impaired waters is to recover water quality to the point the waters can be delisted. TMDL implementation plans to achieve this goal are required by federal regulations to provide a factor of safety to ensure that any new anthropogenic sediment discharges are more than offset by sediment discharge reductions. These requirements set a much higher standard than does the CEQA standard of avoiding “significant” impact (i.e., just don’t make things much worse).

Under the proposed Rule package, visibly turbid water could be allowed to enter a watercourse from a logging road, etc., if: i) it did not “cause a turbidity increase” in receiving waters, ii) it did not cause a “visible turbidity increase”, or iii) it was not “in quantities deleterious to the beneficial uses of water”. Water Boards have become increasingly uncomfortable with the latter standard. It causes conflict between the differing review and approval standards applied by CalFire (i.e., mostly CEQA) and the Water Boards (i.e., anti-degradation policies and Clean Water Act requirements).

We suggest two approaches to this issue. First, we recommend that language be added to the pertinent subsections that, consistent with the new proposed intent language in 916, prohibits discharges which threaten to cause violation of applicable

legal requirements. Second, we recommend that subsection 916.9 (o) be amended to require an RPF, upon finding that such a discharge could occur as a result of proposed timber operations, to develop and propose measures to offset them by an equal or greater amount in order to comply with Water Board requirements. These could be the same measures required by a Water Board Erosion Control Plan.

(State Board/NCRWQCB comments from 2009)

Status: Edits and options to be considered for June 2010 by FPC. Optional wording includes: “prevent delivery of sediment into a watercourse or lake in quantities that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.”

Wording needed for consistency and clarity of “deleterious quantities” to be resolved in May FPC meeting. See NCRWQCB wording in comment 13A. Note 923.4(p)(3) also needs to be amended to make consistent with proposed change.

Other options detailed in separate but parallel regulatory proposal for “Definitions of Saturate Soils” being considered by FPC in June 2010.

Comment on 916.9 (o) has not yet been considered and will be addressed in June FPC.

Relevant proposed rule section: Any section that uses term "significant or deleterious"

Comment 18 Consistency with CWA: Threshold of visible turbidity and consistency with Basin Plans

Re: 916.9(k)(1) and (2) Year-round logging road, landing and tractor road use limitations (page 62, lines 15 through 20)

The threshold of visibly turbid water that may cause a turbidity increase in receiving waters is an inappropriate standard. The described conditions don't merely "threaten" to violate the applicable Basin Plan water quality standards, they are a violation of those standards. The threshold does not give adequate warning of when a Basin Plan violation may be imminent. Instead, they represent conditions where a violation has already occurred. The Regional Water Board recommends that the section be amended to prohibit sediment discharges that threaten to violate applicable legal requirements.

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(State Board/NCRWQCB comments from 2009)

Winter Road Operations

As written, the proposed T/I rules would allow the discharge of visibly turbid water to a watercourse, in violation of existing Basin Plan prohibitions and water quality standards. In other words, the thresholds defined as indications of when "saturated soil conditions" exist do not give adequate warning of when a Basin Plan violation may be imminent. Instead, they represent conditions where a violation has already occurred. Regional Water Board staff recommend that thresholds with clear indicators of when a violation may be imminent, instead of when it has already occurred, be developed and implemented.

(State Board/NCRWQCB comments from 2009)

Status: Edits and options to be considered for June 2010 by FPC. Optional wording includes: "[prevent delivery of sediment into a watercourse or lake in quantities that violate Water Quality Requirements or result in significant adverse impacts to the beneficial uses of water.](#)"

Wording needed for consistency and clarity of "deleterious quantities" to be resolved in May FPC meeting. See NCRWQCB wording in comment 13A. Note 923.4(p)(3) also needs to be amended to make consistent with proposed change.

Other options detailed in separate but parallel regulatory proposal for "Definitions of Saturate Soils" being considered by FPC in June 2010.

Relevant proposed rule section: 923.1 Planning

Comment 19: Avoid or Minimize on unstable areas

(Pg 39) Clarify whether a condition is to be avoided or minimized. For example on page 39, (5) the plead states that activities in unstable areas and headwall swales should be minimized. On page 40 the plead states that roads and landings shall avoid unstable areas and headwall swales.

(Laing 3/5/10)

Status: not yet directly addressed

Relevant proposed rule section: 923.1 Planning

Comment 20: Clarity on Intent of “reduce roads”

(Pg 39) Plead states that roads shall be located in order to reduce total road mileage. Is this a road density requirement?

(Laing 3/5/10)

Status: not yet addressed

Relevant proposed rule section:923.5 (c) Erosion control

Comment 21: Ditch standards for erosion control

(Pg 52) Specific erosion control measures and design criteria for inboard ditches need to be identified, including rocking requirements and routing of inboard ditches uphill from the crossing.

(Laing 3/5/10)

Status: not yet directly addressed. Will be addressed at the June FPC when surface stabilization measures are discussed.

Relevant proposed rule section:923.11 Watercourse crossings Design and Implementation

Comment 22: Removal of obsolete culverts. (Pg 71) Criteria for removal of obsolete culverts need to be developed. Design criteria and method of analysis needs to be defined for new or replacement culverts including fish passage considerations.

(Laing 3/5/10)

Status: not yet directly addressed.

Relevant proposed rule section: 923.6 Road Use

Comment 23 Permission to use private roads

According to CDF staff, no rule, regulation or policy would prevent > CDF from approving a timber harvest plan that utilizes private > property as a log haul route, over the objection of the private > property owner. If true, the new road rules need to specify that a > timber operator must use public roads or private roads to which they > hold an easement or a right of way agreement. Because CDF's board is > comprised of three members who are also employed by timber operators, > CDF may have an obligation to explicitly state rules for a timber > operator's use of private property in order to preclude the > possibility of CDF appearing complicit in actions of trespass for and > on behalf of the board members. If it pleases the road policy > committee, I will be happy to discuss specific cases or provide any additional information that they may request.

(Dave Clark 4/5/10)

Status: Initially discussed at May FPC. Initial response by FPC was plans should not be disapproved because there are not disclosed and bona fide legal rights of way provided. FPC asked CAL FIRE to state its plan review policy on addressing plans submitted with bonafide right way disclosed.

Erosion Relevant proposed rule section:1034 (ii) (5) (A) Mapping

Comment 24: Roads >20%

(Pg 92) Specific erosion control measures on roads with slopes of 20%, 500 ft. in length need to be defined in the plead of March 3.
(Laing 3/5/10)

Status: not yet directly addressed.

Relevant proposed rule section: 1092.9 (6)(E) PTHP content Planning

Comment 25: Ditch Length

(Pg 103) The maximum allowable ditch drainage length in the rule plead is 300 ft. versus the SRP recommendation of 100 ft.
(Laing 3/5/10)

Status: not yet directly addressed.

Relevant proposed rule section: 895.1 Definitions

Comment 26 Definitions

Inside Ditch Hydraulic Capacity means the ability of an inboard ditch to contain flow from a runoff event without overflowing to the road surface or substantially downcutting the inboard ditch.

(DFG comment 4/27/10)

Status: not yet directly addressed.

Comment 27 Definitions

Road approach means the logging road surface area from the watercourse channel or crossing to the nearest functional drainage structure or facility, but not less than 50 feet; or the area from the watercourse channel to the first high point on the road where road surface drainage flows away from the watercourse. Crossings have two road approaches.

(DFG comment 4/27/10)

Road approach means the logging road surface area from the watercourse channel or crossing to the nearest drainage structure or facility, but not less than 50 feet; or the area from the watercourse channel to the first high point on the road where road surface drainage flows away from the watercourse. Crossings have two road approaches.

(PFR comment 5/3/10)

Status: not yet directly addressed.

Comment 28 Definitions

Road Maintenance means activities involving manipulation of the logging road prism to maintain stable operating surfaces, functioning logging road drainage facilities and structures, and stable cutbanks and fill slopes. Examples of road maintenance include shaping and/or rocking a road surface; installation and maintenance of rolling and critical dips; restoring functional capacity of inboard ditches, cross drains, or culverts; and repairing water bars.

(DFG comment 4/27/10)

Road Maintenance means activities involving manipulation of the logging road prism to maintain stable operating surfaces, functioning logging road drainage facilities and structures, and stable cutbanks and fill slopes. *Examples of road maintenance include shaping and/or rocking a road surface; outsloping, installation and maintenance of rolling and critical dips; restoring functional capacity of inboard ditches, cross drains, or culverts; and repairing water bars.*

(PFR comment 5/3/10)

Status: not yet directly addressed.

Comment 29 Definitions

Road Prism means all parts of a road including cut banks, ditches, road surfaces, road shoulders, and road fills.

(DFG comment 4/27/10)

Status: not yet directly addressed.

Comment 30 Definitions

Scour means the process of erosion by flowing water.

(DFG comment 4/27/10)

Status: not yet directly addressed.

Comment 31 Definitions

Sediment Filter Strip means a structure or vegetation that substantially prevents concentration, transport, and delivery of sediment to a watercourse or lake by reducing velocity and filtering water through features such as gradual slopes treated with vegetation, gentle slopes, woody debris and mulch or settling basins.

(DFG comment 4/27/10)

Comment 31A Definitions

Sediment Filter Strip means a **topographic feature, structure, vegetation, or surface cover** that substantially prevents concentration, transport, and delivery

of sediment to a watercourse or lake by reducing velocity and filtering water through features such as gradual slopes treated with vegetation, gentle slopes, woody debris and mulch or settling basins.

(PFR comment 5/3/10)

Status: not yet directly addressed.

Relevant proposed rule section: 923.4 Construction

Comment 32

923.4, 943.4, 963.4 Construction and Reconstruction for Logging Roads and Landings

Logging roads and landings shall be constructed or reconstructed in accordance with the approved plan and the following requirements. If a change in designation of logging road classification is made after the plan is approved, the change shall be reported in accordance with 14 CCR §§ 1039, 1040, 1090.14, 1092.26 or 1092.27, as appropriate.

- (a) Logging roads and landings shall not be constructed or reconstructed where such operations pose a significant risk to public safety.
- (b) Logging roads or landings shall not be constructed or reconstructed in Class I, II, III, or IV watercourses or lakes, the WLPZ, marshes, wet meadows, or other wet areas, except for logging road watercourse crossings or as specified in the plan.
- (c) Logging roads and landings shall not be constructed or reconstructed across unstable areas or connected headwall swales.
- (d) Logging roads and landings shall not be constructed with overhanging banks.
- (e) Any tree over 12 inches dbh with more than 25 percent of the root surface exposed by logging road or landing construction shall be felled concurrently with the timber operations.
- (f) On slopes greater than 40 percent, the organic layer of the soil shall be removed prior to fill placement.
- (g) Waste organic material, such as uprooted stumps, cull logs, accumulations of limbs and branches, and unmerchantable trees, shall not be buried in logging road or landing fills. Wood debris or cull logs and chunks may be placed and stabilized at the toe of fill to restrain excavated soil from moving downslope.
- (h) Slash and other debris from road construction shall not be bunched against residual trees, which are required for silvicultural or wildlife purposes, nor shall it be placed in locations where it could be discharged into Class I or II watercourses or lakes.
- (i) Where constructed fills will exceed three feet in vertical thickness, fill slopes shall be inclined no greater than 65 percent.
- (j) Logging roads or landings shall not be constructed or reconstructed under saturated soil conditions, except that construction may occur on isolated wet spots arising from localized ground water such as springs, provided measures are taken to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.
- (k) Construction or reconstruction of logging roads or landings shall not take place during the winter period unless the approved plan incorporates a complete winter period operating plan pursuant to 14 § CCR 914.7(a) [934.7(a), 954.7(a)] that specifically addresses such logging road or landing construction or reconstruction.
- (l) On slopes greater than 50 percent for greater than 100 lineal feet, fills greater than four feet in vertical height at the outside shoulder of the logging road or landing shall be:

(1) Constructed on a bench that is excavated at the proposed toe of the fill and is wide enough to compact the first lift.

(2) Compacted in approximately one-foot lifts from the toe to the finished grade or retained by an engineered structure.

(m) Logging roads and landings shall not be constructed or reconstructed across 100 feet or more of lineal distance on any slope greater than 65 percent or within 100 feet of the boundary of a WLPZ on slopes greater than 50 percent that drain toward the zoned watercourse or lake unless specific construction techniques or measures are described in the plan.

(n) Fills shall not be constructed on slopes greater than 65 percent.

(o) On slopes greater than 65 percent, sidecast from logging road and landing construction shall be minimized to the degree feasible.

(p) Excess material transported from logging road or landing construction or reconstruction shall be deposited and stabilized in a manner and in areas that avoid potential adverse impacts to:

(1) Public safety.

(2) Areas that could deliver sediment into a watercourse or lake in quantities deleterious to the quality and beneficial uses of water.

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

(r) In watersheds with listed anadromous salmonids, no logging roads or landings shall be constructed or reconstructed within the CMZ or Core Zone of a Class I watercourse except for those listed in 14 CCR § 916.9(e)(1)(A)-(F) [936.9(e)(1)(A)-(F), 956.9(e)(1)(A)-(F)] or pursuant to 14 CCR § 916.9(v) [936.9(v), 956.9(v)].

(s) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, the following shall apply:

(1) On slopes greater than 50 percent that have access to a watercourse or lake:

(A) Specific provisions shall be identified and described for all logging road construction.

(B) Where cutbank stability is not an issue, logging roads may be constructed as a full-benched cut (no fill). Spoils not utilized in logging road construction shall be disposed of in stable areas with less than 30 percent slope outside of any WLPZ, EEZ, or ELZ designated for watercourse or lake protection. The Director, with concurrence from other responsible agencies, may waive inclusion of these measures where the RPF can show that slope depressions and other natural retention and detention features are sufficient to control overland transport of eroded material.

(C) Logging roads may be constructed with balanced cuts and fills:

(i) If properly engineered, or,

(ii) If fills are removed and the slopes recontoured prior to the

winter period.

(3) 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(a) [934.7(a), 954.7(a)] that specifically addresses, where applicable, proposed logging road or landing construction, reconstruction.

(4) No road or landing construction, reconstruction, or decommissioning shall be undertaken during the extended wet weather period, or at any time outside this period when saturated soil conditions exist, except on hydrologically disconnected road segments.

(DFG comment 4/27/10)

Status: not yet directly addressed.

Relevant proposed rule section: 923.5. Erosion

Comment 33 Standard for surface erosion prevention

923.5, 943.5, 963.5 Erosion Control for Logging Roads and Landings

The following erosion control standards shall apply to logging roads and landings:

(a) All logging road and landing surfaces shall be adequately drained through the use of surface geometry configurations in combination with the installation of drainage facilities or ditch drains.

(b) Drainage facilities or ditch drains shall be installed along all logging roads and all landings that are used for timber operations in sufficient number to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.

(c) Ditch drains, associated necessary protective structures, and other features associated with the ditch drain shall:

(1) Be adequately sized to transmit runoff.

(2) Minimize erosion of logging road and landing surfaces.

(3) Avoid discharge onto fill.

(4) Drain to stable sediment filter strips.

(5) Minimize potential adverse impacts to slope stability.

(d) Waterbreaks and rolling dips installed across logging roads and landings shall be of sufficient size and number and be located to drain to stable sediment filter strips and avoid collecting and discharging concentrated runoff onto fills, erodible soils, unstable areas, and connected headwall swales.

(e) Where logging roads or landings do not have permanent and adequate drainage, and where waterbreaks are to be used to control surface runoff, the waterbreaks shall be cut diagonally a minimum of six inches into the firm roadbed and shall have a continuous firm embankment of at least six inches in height immediately adjacent to the lower edge of the waterbreak cut. On logging roads that have firmly compacted surfaces, waterbreaks may be installed by hand methods and need not provide the additional six-inch embankment provided the waterbreak ditch is constructed so that it is at least six inches deep and six inches wide on the bottom and provided there is ample evidence based on slope, material, amount of rainfall, and period of use that the waterbreaks so constructed will be effective in diverting water flow from the logging road surface without the embankment.

(f) **Option 1:** Distances between waterbreaks shall not exceed the standards specified in 14 CCR § 914.6(c) [(934.6(c), 954.6(c)]. **Option 2:** Distances between waterbreaks shall not exceed the following standards:

MAXIMUM DISTANCE BETWEEN WATERBREAKS

<u>Estimated</u>	<u>Logging Road</u>	<u>Gradient in Percent</u>	
<u>Hazard</u>	<u>10 or less</u>	<u>11-25</u>	<u>>25</u>
<u>Rating</u>	<u>Feet</u>	<u>Feet</u>	<u>Feet</u>
Extreme	100	75	50
High	150	100	75
Moderate	200	150	100
Low	300	200	150)

(g) Where outsloping and rolling dips are used to control surface runoff, the dip in the logging road grade shall be sufficient to capture runoff from the logging road surface. The steepness of cross-slope gradient in conjunction with the logging road or landing gradient and the estimated soil erosion hazard rating shall be used to determine the rolling dip spacing in order to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water.

(h) Drainage facilities and ditch drains shall discharge into vegetation or rock wherever possible. Where erosion-resistant material is not present, slash, rock, or other energy dissipating material shall be installed below the drainage facility or drainage structure outlet.

(i) All logging roads and landings used for timber operations shall have adequate drainage upon completion of use for the year or by October 15, whichever is earlier. An exception is that drainage facilities and drainage structures do not need to be constructed on logging roads in use during the extended wet weather period after October 15 provided that all such drainage facilities and drainage structures are installed prior to the start of rain that generates overland flow.

(j) Where logging road or landing construction or reconstruction takes place from October 15 to May 4 during the extended wet weather period, drainage facilities and drainage structures shall be installed concurrent with construction or reconstruction operations.

(k) Bare soil on logging road or landing cuts, fills, transported spoils, or sidecast that is created or exposed by timber operations shall be stabilized to the extent necessary to minimize soil erosion and sediment transport and to prevent the discharge of sediment into watercourses and lakes in quantities deleterious to the beneficial uses of water. Sites to be stabilized include, but are not limited to:

(1) Sidecast or fill exceeding 20 feet in slope distance from the outside edge of a logging road or a landing that has access to a watercourse or lake.

(2) Approaches to logging road watercourse crossings of Class I or II waters or Class III waters where an ELZ, EEZ, or a WLPZ is required.

(3) Bare areas exceeding 800 continuous square feet within a WLPZ.

(l) 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.

(m) Where the natural ability of ground cover within a WLPZ is inadequate to protect the beneficial uses of water by minimizing soil erosion or by filtering sediments, the plan shall specify protection measures to retain and improve the natural ability of the ground cover to filter sediment and minimize soil erosion.

(n) Soil stabilization treatments shall be in place upon completion of operations for the year of use or prior to October 15 the extended wet weather operating period, whichever comes first. An exception is that bare areas created after October 15 during

the extended wet weather operating period shall be treated within 10 days or as agreed to by the Director.

(o) Overhanging or unstable concentrations of slash, woody debris or soil along the downslope edge or face of landings shall be removed or stabilized when it is located on slopes greater than 65 percent or within 100 feet of the boundary of a WLPZ on slopes greater than 50 percent that drain toward the zoned watercourse or lake. Removed materials shall not be placed at disposal sites that could discharge into a watercourse or lake in quantities deleterious to the beneficial uses of water.

(p) In watersheds with listed anadromous salmonids and in planning watersheds immediately upstream of, and contiguous to, any watershed with listed anadromous salmonids, the following shall apply:

(1) Constructed and reconstructed logging roads shall be outsloped where feasible and drained with waterbreaks or rolling dips (where the road grade is inclined at seven (7) percent or less) in conformance with other applicable Forest Practice Rules.

(2) In addition to the provisions listed under 14 CCR § 923.2(d)(2) [943.2(d)(2), 963.2(d)(2)], all permanent and seasonal logging roads with a grade of 15 percent or greater that extend 500 continuous feet or more shall have specific erosion control measures stated in the plan.

(3) Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into watercourses or lakes in quantities deleterious to aquatic species or the quality and beneficial uses of water, or that threaten to violate applicable water quality requirements shall be described in the plan as follows:

(A) In addition to the requirements of subsections (k)-(o), soil stabilization is required for the following areas:

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

(ii) Disturbed logging road and landing cut banks and fills, and

(iii) Any other area of disturbed soil that threatens to discharge sediment into water in quantities deleterious to the quality and beneficial uses of water.

(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 packed into the ground surface through the use of a tractor or equivalent piece of heavy equipment the minimum slash coverage shall be 75 percent .

(D) For areas disturbed from May 1 to October 15 outside of 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 deliver sediment into a watercourse or lake in quantities deleterious to the beneficial uses of water.

(E) For areas disturbed from October 15 to May 1 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.

(F) Where the natural ability of ground cover is inadequate to protect the beneficial uses of water by minimizing soil erosion or by filtering sediments within any ELZ or EEZ designated for watercourse or lake protection, the plan shall specify protection measures to retain and improve the natural ability of the ground cover to filter sediment and minimize soil erosion.

(4) The following erosion control shall be completed:

(A) Logging road approach surfaces on the following shall consist of high-quality, durable, compacted rock or paving: (i) permanent roads, (ii) seasonal roads crossing Class I watercourses, (iii) roads used for hauling (logs, rock, heavy equipment) during the extended wet weather period.

(B) Logging road approach surfaces on the following shall be treated with either: rock, slash, seed and straw mulch, seed and stabilized straw, or seed and slash: (i) all seasonal roads used for hauling in the current year, (ii) all seasonal roads used during the extended wet weather period for purposes other than hauling.

(C) Logging road approaches to temporary crossings shall be stabilized ~~rocked~~ and maintained ~~as needed~~ after crossing removal to avoid rutting or pumping fines during administrative use after removal.

(D) Logging road approach ditches exhibiting downcutting ~~along the following~~ shall be lined with high-quality, durable rock, installed with erosion control materials or structures to manufacturers specifications, or treated with other effective means as described in the plan, in the following locations: (i) permanent logging roads, (ii) seasonal roads crossing Class I watercourses, (iii) logging roads used for hauling during the extended wet weather period.

(E) Logging road approach ditches shall be treated to minimize sediment transport in the following locations: (i) seasonal logging roads used for hauling in the current year, (ii) seasonal logging roads used during the extended wet weather period for purposes other than hauling.

(5) All segments of hydrologically connected logging roads in Class I and Class II WLPZs shall exhibit a ~~rocked or paved~~ stable operating surface. The surface shall consist of high quality, durable, compacted rock, or paving. The road surface and base shall be maintained to avoid generation of fines during use.

(DFG comment 4/27/10)

Status: not yet directly addressed.

Appendix:

Entity that raised issue/comment:

Public comment Mike Laing dated 3/10 and 4/10
Public comment from 2008 BOF T/I request letter
DFG comments 2/10, 3/30/10 and 4/30/10.
RRTF matrix 3/2/10
Staff review 3/22/10
State Board/NCRWQCB, comments from 2009 and 4/30/10
CGS, Tom Spittler 4/30/10
Pete Ribar, 5/3/10
CAL FIRE 4/10