

FOREST PRACTICE COMMITTEE

ROAD RULES WORKSHOP HANDOUT

September 10, 2012

PROPOSED RULE SECTIONS 923.4 – 923.6 AND COMMENT SUMMARY

1 Amend § 923.4 [943.4, 963.4]. Construction and Reconstruction for
2 Logging Roads and Landings Road Maintenance.

3 Logging roads and landings shall be constructed or reconstructed in
4 accordance with the approved plan and the following requirements. If
5 a change in designation of logging road classification is made after
6 the plan is approved, the change shall be reported in accordance with
7 14 CCR §§ 1039, 1040, 1090.14, 1092.26 or 1092.27, as appropriate.

8 (a) Logging roads and landings shall be constructed or reconstructed
9 to be hydrologically disconnected from watercourses and lakes to the
10 extent feasible.

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11 (b) Logging roads and landings shall not be constructed or
12 reconstructed where such operations pose a significant risk to public
13 safety.

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14 (c) Logging roads or landings shall not be constructed or
15 reconstructed within 150 feet of the Class I watercourse transition line or
16 100 feet of the Class II watercourse transition line, marshes, wet meadows,
17 or other wet areas, except for logging road watercourse crossings or
18 as specified in the plan.

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19 (d) Logging roads and landings shall not be constructed or
20 reconstructed across unstable areas or connected and non-connected
21 headwall swales except as specified in the Plan and reviewed by a
22 licensed Geologist.

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23 OPTION 2: (c) Logging roads and landings shall not be constructed or
24 reconstructed across unstable areas or connected headwall swales
25 except as specified in the Plan by a certified engineering geologist.

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1 (e) Logging roads and landings shall not be constructed with
2 overhanging banks.

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3 (f) Any tree over 12 inches dbh with more than 25 percent of the root
4 surface exposed by logging road or landing construction shall be
5 felled concurrently with the timber operations.

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6 (1) If feasible, any tree meeting the above criteria within 100
7 meters of a Class I watercourse shall be left onsite, or placed in the
8 watercourse for salmonid habitat enhancement.

9 (g) On slopes greater than 20 percent, fill placement shall conform to
10 the recommendations of a geotechnical engineer and certified engineering
11 geologist, and the exposed surface shall be inspected by the engineering
12 geologist prior to fill placement.

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13 (h) Waste organic material, such as uprooted stumps, cull logs,
14 accumulations of limbs and branches, and unmerchantable trees, shall
15 not be buried in logging road or landing fills. Wood debris or cull
16 logs and chunks may be placed and stabilized at the toe of fill to
17 restrain excavated soil from moving downslope.

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18 (i) Slash and other debris from road construction shall not be
19 bunched against residual trees, which are required for silvicultural
20 or wildlife purposes, nor shall it be placed in locations where it
21 could be discharged into Class I or II watercourses or lakes.

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22 (j) Where constructed fills will exceed three feet in vertical
23 thickness, fill slopes shall be inclined no greater than 50 percent
24 unless acceptable recommendations from a geotechnical engineer are prepared
25 and approved.

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1 OPTION 2: (i) Where constructed fills will exceed three feet in
2 vertical thickness, fill slopes shall be inclined no greater than 67
3 percent.

4 (k) Logging roads or landings shall not be constructed or
5 reconstructed under saturated soil conditions, except that
6 construction may occur on isolated wet spots arising from localized
7 ground water such as springs, provided measures are taken to prevent
8 deposition of sediment in quantities that violate Water Quality Requirements.

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9 (l) Construction or reconstruction of logging roads or landings shall
10 not take place during the winter period unless the approved plan
11 incorporates a complete winter period operating plan pursuant to 14 §
12 CCR 914.7 [934.7, 954.7], subsection (a) that specifically addresses
13 such logging road or landing construction or reconstruction.

14 (m) On slopes greater than 50 percent for greater than 100 lineal
15 feet, fills greater than four feet in vertical height at the outside
16 shoulder of the logging road or landing shall be:

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

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

21 (a) a geotechnical engineer shall establish an optimum moisture
22 content and laboratory maximum density for each soil and rock type that
23 will be used as fill;

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24 (b) field moisture/density tests of the fill shall be performed
25 to check compliance with specified compaction standards;

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1 (c) the geotechnical engineer shall certify compliance with he
2 specified compaction standards, and;

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3 (d) no fill shall be placed on slopes prior to inspection and
4 written approval by the engineering geologist.

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5 (n) Logging roads and landings approved for construction or
6 reconstruction across 100 feet or more of lineal distance on any slope
7 greater than 65 percent or within 100 feet of the boundary of a WLPZ
8 on slopes greater than 50 percent that drain toward the zoned
9 watercourse or lake shall be constructed to the specific construction
10 techniques or measures that are reviewed by a licensed Geologist and
11 as described in the plan.

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12 (o) Fills shall not be constructed on slopes greater than 65 percent
13 and shall only be constructed on slopes that a certified engineering
14 geologist and geotechnical engineer have determined will remain stable with
15 the additional weight of the fill.

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16 (p) Sidecast from logging road and landing construction shall be prohibited
17 in areas where it may cause significant sediment discharge. Excavated
18 material cannot be used as sidecast and can only be used as properly
19 engineered and compacted fill. Any excess excavated material shall be
20 disposed where it can do no harm.

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21 (1) On these slopes adjacent to a Class I watercourse, sidecast
22 shall be end-hauled to an area in conformance with Section 923.4(q).

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

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- (1) Public safety.

(2) Watercourses.

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(r) 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.

Deleted: 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.

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(s) In watersheds with listed anadromous salmonids, no logging roads or landings shall be constructed or reconstructed within 150 feet of the Class I watercourse transition line, 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)].

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(t) 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:

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

(A) Specific provisions for the protection of salmonid habitat shall be identified and described for all logging road construction.

(B) Where cutbank stability is not an issue, as determined by a certified engineering geologist, 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, as determined by a certified engineering geologist, with less than 30 percent slope outside of any WLPZ, EEZ, or ELZ designated for watercourse or lake

1 protection. The Director, with concurrence from other responsible
2 agencies, may waive inclusion of these measures where the RPF can show
3 that slope depressions and other natural retention and detention
4 features are sufficient to control overland transport of eroded
5 material.

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

- 8 (i) If properly engineered, or,
 - 9 (ii) If fills are removed and the slopes recontoured
- 10 prior to the winter period, but only if performed in an area where erosion
11 can not affect water quality or salmonid habitat.

12 (2) During the extended wet weather period, no timber
13 operations shall take place unless the approved plan incorporates
14 a complete winter period operating plan pursuant to 14 CCR §
15 914.7(b)[934.7(b), 954.7(b)]. The winter period operating plan
16 shall specifically address, where applicable, proposed logging
17 road and landing construction, and reconstruction.

18 ~~Logging roads, landings, and associated drainage structures used in a~~
19 ~~timber operation shall be maintained in a manner which minimizes~~
20 ~~concentration of runoff, soil erosion, and slope instability and which~~
21 ~~prevents degradation of the quality and beneficial uses of water~~
22 ~~during timber operations and throughout the prescribed maintenance~~
23 ~~period. In addition those roads which are used in connection with~~
24 ~~stocking activities shall be maintained throughout their use even if~~
25 ~~this is beyond the prescribed maintenance period.~~

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1 ~~(a) The prescribed maintenance period for erosion controls on~~
2 ~~permanent and seasonal roads and associated landings and drainage~~
3 ~~structures which are not abandoned in accordance with 14 CCR 923.8~~
4 ~~[943.8, 963.8] shall be at least one year. The Director may prescribe~~
5 ~~a maintenance period extending up to three years in accordance with 14~~
6 ~~CCR 1050.~~

7 ~~(b) Upon completion of timber operations, temporary roads and~~
8 ~~associated landings shall be abandoned in accordance with 14 CCR 923.8~~
9 ~~[943.8, 963.8].~~

10 ~~(c) Waterbreaks shall be maintained as specified in 14 CCR 914.6~~
11 ~~[934.6, 954.6].~~

12 ~~(d) Unless partially blocked to create a temporary water source,~~
13 ~~waterecourse crossing facilities and drainage structures, where~~
14 ~~feasible, shall be kept open to the unrestricted passage of water.~~
15 ~~Where needed, trash racks or similar devices shall be installed at~~
16 ~~culvert inlets in a manner which minimizes culvert blockage. Temporary~~
17 ~~blockages shall be removed by November 15.~~

18 ~~(e) Before the beginning of the winter period, all roadside berms~~
19 ~~shall be removed from logging roads or breached, except where needed~~
20 ~~to facilitate erosion control.~~

21 ~~(f) Drainage structures, if not adequate to carry water from the~~
22 ~~fifty-year flood level, shall be removed in accordance with 14 CCR~~
23 ~~923.3(d) [943.3(d), 963.3(d)] by the first day of the winter period,~~
24 ~~before the flow of water exceeds their capacity if operations are~~
25 ~~conducted during the winter period, or by the end of timber operations~~
~~whichever occurs first. Properly functioning drainage structures on~~

1 ~~roads that existed before timber operations need not be removed. An~~
2 ~~RPF may utilize an alternative practice, such as breaching of fill, if~~
3 ~~the practice is approved by the Director as providing greater or equal~~
4 ~~protection to water quality as removal of the drainage structure.~~

5 ~~(g) Temporary roads shall be blocked or otherwise closed to normal~~
6 ~~vehicular traffic before the winter period.~~

7 ~~(h) During timber operations, road running surfaces in the logging~~
8 ~~area shall be treated as necessary to prevent excessive loss of road~~
9 ~~surface materials by, but not limited to, rocking, watering,~~
10 ~~chemically treating, asphaltting or oiling.~~

11 ~~(i) Soil stabilization treatments on road or landing cuts, fills, or~~
12 ~~sidecast shall be installed or renewed, when such treatment could~~
13 ~~minimize surface erosion which threatens the beneficial uses of water.~~

14 ~~(j) Drainage ditches shall be maintained to allow free flow of water~~
15 ~~and minimize soil erosion.~~

16 ~~(k) Action shall be taken to prevent failures of cut, fill, or~~
17 ~~sidecast slopes from discharging materials into watercourses or lakes~~
18 ~~in quantities deleterious to the quality or beneficial uses of water.~~

19 ~~(l) Each drainage structure and any appurtenant trash rack shall be~~
20 ~~maintained and repaired as needed to prevent blockage and to provide~~
21 ~~adequate carrying capacity. Where not present, new trash racks shall~~
22 ~~be installed if there is evidence that woody debris is likely to~~
23 ~~significantly reduce flow through a drainage structure.~~

24 ~~(m) Inlet and outlet structures, additional drainage structures~~
25 ~~(including ditch drains), and other features to provide adequate~~
~~capacity and to minimize erosion of road and landing fill and sidecast~~

1 ~~to minimize soil erosion and to minimize slope instability shall be~~
 2 ~~repaired, replaced, or installed wherever such maintenance is needed~~
 3 ~~to protect the quality and beneficial uses of water.~~

4 ~~(n) Permanent watercourse crossings and associated approaches shall be~~
 5 ~~maintained to prevent diversion of stream overflow down the road~~
 6 ~~should the drainage structure become plugged. Corrective action shall~~
 7 ~~be taken before the completion of timber operations or the drainage~~
 8 ~~structure shall be removed in accordance with 14 CCR Section 923.3(d)~~
 9 ~~[943.3(d), 963.3(d)].~~

10 ~~(o) Except for emergencies and maintenance needed to protect water~~
 11 ~~quality, use of heavy equipment for maintenance is prohibited during~~
 12 ~~wet weather where roads or landings are within a WLPZ.~~

13 ~~(p) The Director may approve an exception to a requirement set forth~~
 14 ~~in subsections (b) through (o) above when such exceptions are~~
 15 ~~explained and justified in the THP and the exception would provide for~~
 16 ~~the protection of the beneficial uses of water or control erosion to a~~
 17 ~~standard at least equal to that which would result from the~~
 18 ~~application of the standard rule.~~

20 **Amend § 923.5 [943.5,963.5]. Erosion Control for Logging Roads and**
 21 **Landings-Landing Construction.**

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

24 (a) All logging road and landing surfaces shall be adequately drained
 25 through the use of [logging road surface shaping](#), in combination with the
installation of drainage structures or facilities and shall be

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configurations

1 hydrologically disconnected from watercourses and lakes as illustrated
2 in Technical Rule Addendum No. 5 where significant sediment discharge is
3 present.

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feasible

4 (b) Drainage facilities shall be installed along all logging roads
5 and all landings that are used for timber operations in sufficient
6 number to minimize soil erosion and sediment transport and to prevent
7 deposition of sediment in quantities that violate Water Quality Requirements.

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discharge

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

10 (1) Be adequately sized to transmit runoff.

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

12 (3) Avoid discharge onto unprotected fill.

13 (4) Discharge to erosion resistant material.

14 (5) Be spaced according to the following:

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15 (A) If existing ditch drains are of sufficient number and spacing
16 to adequately capture logging road runoff while not showing excessive
17 movement of sediment or excessive downcutting, then additional drainage
18 shall not be required;

19 (B) If ditch drains are not sufficient to adequately capture
20 logging road runoff, then ditch drains shall be constructed or
21 reconstructed as illustrated in Technical Rule Addendum No. 5.

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adverse impacts to slope
stability

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

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

15 (f) Distances between waterbreaks shall not exceed the following
 16 standards and consider erosion hazard rating and road gradient:

17 MAXIMUM DISTANCE BETWEEN WATERBREAKS

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

1 (g) Where outsloping and rolling dips are used to control surface
2 runoff, the dip in the logging road grade shall be sufficient to
3 capture runoff from the logging road surface. The steepness of cross-
4 slope gradient in conjunction with the logging road or landing
5 gradient and the estimated soil erosion hazard rating shall be used to
6 determine the rolling dip spacing as illustrated in Technical Rule
7 Addendum No. 5 in order to minimize soil erosion and sediment transport
8 and to prevent deposition of sediment in quantities that violate Water
9 Quality Requirements.

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

15 (i) Where logging road and landing surfaces, road approaches, inside
16 ditches and drainage structures cannot be hydrologically disconnected
17 as illustrated in Technical Rule Addendum No. 5, and where there is
18 existing or the potential for deposition of sediment in quantities that
19 violate Water Quality Requirements, necessary and feasible treatments to
20 prevent the discharge will be described in the plan.

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21 (j) All logging roads and landings used for timber operations shall
22 have adequate drainage upon completion of use for the year or by
23 October 15, whichever is earlier. An exception is that drainage
24 facilities and drainage structures do not need to be constructed on
25 logging roads in use during the extended wet weather period provided
that all such drainage facilities and drainage structures are

1 installed prior to the start of rain that generates overland flow off
2 the logging road surface.

3 (k) Where logging road or landing construction or reconstruction
4 takes place during the extended wet weather period, drainage
5 facilities and drainage structures shall be installed and functional
6 concurrent with construction or reconstruction operations.

7 (1) Bare soil on logging road or landing cuts, fills, transported
8 spoils, or sidecast that is created or exposed by timber operations
9 shall be stabilized to the extent necessary to minimize soil erosion
10 and sediment transport and to prevent deposition of sediment in quantities
11 that violate Water Quality Requirements. Sites to be stabilized include,
12 but are not limited to:

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

16 (2) Cut and fills associated with approaches to logging road
17 watercourse crossings of Class I or II waters or Class III waters
18 where an ELZ, EEZ, or a WLPZ is required.

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

21 (m) Soil stabilization measures shall be described in the plan
22 pursuant to 14 CCR 923.5(k)[943.5,963.5], subsection (k) and shall rely
23 on maintenance free protections of proven effectiveness such as armoring with
24 boulders.

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25 (n) Where the natural ability of ground cover within a WLPZ is
inadequate to protect the beneficial uses of water by minimizing soil

1 erosion or by filtering sediments, the plan shall specify protection
2 measures to retain and improve the natural ability of the ground cover
3 to filter sediment and minimize soil erosion.

4 (o) Soil stabilization treatments shall be in place upon completion
5 of operations for the year of use or prior to the extended wet weather
6 period, whichever comes first. An exception is that bare areas
7 created during the extended wet weather period shall be treated prior
8 to the start of rain that generates overland flow, within 10 days or as
9 agreed to by the Director.

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10 OPTION 2: Soil stabilization treatments shall be in place upon completion of
11 operations for the year of use or prior to the extended wet weather period.
12 An exception is that bare areas created during the extended wet weather
13 operating period shall be treated prior to the start of rain that generates
14 overland flow, or within 10 days, whichever is sooner, or as agreed to by the
15 Director.

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16 (p) Overhanging or unstable concentrations of slash, woody debris or
17 soil along the downslope edge or face of landings shall be removed or
18 stabilized when it is located on slopes greater than 65 percent or
19 within 100 feet of the boundary of a WLPZ on slopes greater than 50
20 percent that drain toward the zoned watercourse or lake, or when it may
21 result in significant sediment discharge. Removed materials shall not be
22 placed at disposal sites that could result in deposition of sediment in
23 quantities that violate Water Quality Requirements.

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24 (q) Logging roads to be constructed or to be reconstructed shall be
25 outsloped where feasible and drained with waterbreaks or rolling dips
where the road grade is inclined at seven (7) percent or less in

1 conformance with other applicable Forest Practice Rules. Outsloping of
2 roads may not be feasible in all situations due to safety concerns, timing of
3 use, or expected traffic.

4 (1) In addition to the provisions listed under 14 CCR §
5 923.2(d)(2) [943.2(d)(2), 963.2(d)(2)], all permanent and seasonal
6 logging roads with a grade of 15 percent or greater that extend 500
7 continuous feet or more shall have specific erosion control measures
8 stated in the plan.

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

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12 (1) Within the WLPZ, and within any ELZ or EEZ designated for
13 watercourse or lake protection, treatments to stabilize soils,
14 minimize soil erosion, and prevent deposition of sediment in quantities
15 that violate Water Quality Requirements shall be described in the plan as
16 follows:

Deleted: (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.

17 OPTION 2: (3) Within the WLPZ, and within any ELZ or EEZ designated
18 for watercourse or lake protection, or where significant discharge may
19 extend from beyond the WLPZ, treatments to stabilize soils, minimize
20 soil erosion, and prevent significant sediment discharge shall be
21 described in the plan as follows:

Deleted: 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.

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

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

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

5 (iii) Any other area of disturbed soil that threatens
6 to cause deposition of sediment in quantities that violate Water Quality
7 Requirements.

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8 (B) Where straw mulch is used, the minimum straw coverage
9 shall be 90 percent with a minimum depth of 3 inches, and any treated
10 area that has been reused or has less than 90 percent surface cover
11 shall be treated again by the end of timber operations.

12 (C) Where slash mulch is packed into the ground surface
13 through the use of a tractor or equivalent piece of heavy equipment
14 the minimum slash coverage shall be 75 percent with a minimum depth of
15 3 inches.

16 OPTION 2: (C) Where slash mulch is packed into the ground
17 surface through the use of a tractor or equivalent piece of heavy
18 equipment minimum slash surface (added) coverage shall be 75% with a minimum
19 ground contact in order to be as effective as mulch. (D) For areas disturbed

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20 outside of the extended wet weather period, treatment shall be
21 completed prior to the start of any rain that causes overland flow
22 across or along the disturbed surface that could result in deposition of
23 sediment in quantities that violate Water Quality Requirements.

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24 (E) For areas disturbed during the extended wet weather
25 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

1 Weather Service or within 10 days of disturbance, whichever is
2 earlier.

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

9 ~~Landings shall be constructed according to the following standards:~~

10 ~~(a) On slopes greater than 65%, no fill shall be placed and sidecast~~
11 ~~shall be minimized to the degree feasible. The Director may approve an~~
12 ~~exception if, site specific measures to minimize slope instability,~~
13 ~~soil erosion, and discharge of concentrated surface runoff are~~
14 ~~described and justified in the THP.~~

15 ~~(b) On slopes greater than 50%, fills greater than 4 ft. in vertical~~
16 ~~height at the outside shoulder of the landing shall be: 1) constructed~~
17 ~~on a bench that is excavated at the proposed toe of the fill and is~~
18 ~~wide enough to compact the first lift, and 2) compacted in~~
19 ~~approximately 1 ft. lift from the toe to the finished grade. The RPF~~
20 ~~or supervised designee shall flag the location of this bench or the~~
21 ~~RPF shall provide a description of the bench location (narrative or~~
22 ~~drawing) in the THP for fills meeting the above criteria, where the~~
23 ~~length of landing section is greater than 100 feet. The RPF may~~
24 ~~propose an exception in the THP and the Director may approve the~~
25 ~~exception where it is justified that the landing will be stabilized.~~

1 ~~(c) Waste organic material, such as uprooted stumps cull logs,~~
2 ~~accumulations of limbs and branches, or unmerchantable trees, shall~~
3 ~~not be buried in landing fills. Wood debris or cull logs and chunks~~
4 ~~may be placed and stabilized at the toe of landing fills to restrain~~
5 ~~excavated soil from moving downslope.~~

6 ~~(d) Constructed landings shall be the minimum in width, size, and~~
7 ~~number consistent with the yarding and loading system to be used.~~
8 ~~Landings shall be no larger than one half acre (.202 ha) unless~~
9 ~~explained and justified in the THP.~~

10 ~~(e) No landing construction shall occur under saturated soil~~
11 ~~conditions that may produce sediment in quantities sufficient to cause~~
12 ~~a visible increase in turbidity of downstream waters in receiving~~
13 ~~Class I, II, III or IV waters or that violate Water Quality~~
14 ~~Requirements.~~

15 ~~(f) The following specifications shall be met upon completion of~~
16 ~~timber operations for the year or prior to October 15, whichever~~
17 ~~occurs first:~~

18 ~~(1) Overhanging or unstable concentrations of slash, woody debris and~~
19 ~~soil along the downslope edge or face of the landings shall be removed~~
20 ~~or stabilized when they are located on slopes over 65% or on slopes~~
21 ~~over 50% within 100 ft. of a WLPZ.~~

22 ~~(2) Any obstructed ditches and culverts shall be cleaned.~~

23 ~~(3) Landings shall be sloped or ditched to prevent water from~~
24 ~~accumulating on the landings. Discharge points shall be located and~~
25 ~~designed to reduce erosion.~~

1 ~~(4) Sidecast or fill material extending more than 20 feet in slope~~
2 ~~distance from the outside edge of the landing and which has access to~~
3 ~~a watercourse or lake shall be seeded, planted, mulched, removed or~~
4 ~~treated as specified in the THP to adequately reduce soil erosion.~~

5 ~~(5) Sidecast or fill material extending across a watercourse shall be~~
6 ~~removed in accordance with standards for watercourse crossing removal~~
7 ~~set forth in 14 CCR 923.3 (d).~~

8 ~~(g) On slopes greater than 35%, the organic layer of the soil shall~~
9 ~~substantially removed prior to fill placement.~~

10 ~~(h) When landings are constructed after October 15 they shall be~~
11 ~~adequately drained concurrent with construction operations and shall~~
12 ~~meet the requirements of (f)(1) through (f)(4) of this subsection upon~~
13 ~~completion of operations at that landing.~~

14 ~~(i) The RPF may propose and the Director may approve waiver of~~
15 ~~requirements in (f)(1) through (f)(4) of this subsection if the~~
16 ~~Director finds they are not necessary to minimize erosion or prevent~~
17 ~~damage to downstream beneficial uses. The Director may also approve an~~
18 ~~exception to the October 15th date for treatment of slash and debris,~~
19 ~~including the practice of burning.~~

20
21 **Amend § 923.6 [943.6, 963.6]. Use of Logging Roads and Landings**

22 **Conduct of Operations on Roads and Landings.**

23 The following use standards shall apply to logging roads and
24 landings:

25 (a) Logging roads and landings shall be used in a manner that is
consistent with their design and construction specifications.

1 (b) Logging roads and landings shall not be used during any time of
2 the year when operations may result in deposition of sediment in
3 quantities that violate Water Quality Requirements, to watercourse or lakes,
4 except in emergencies to protect the road, to reduce erosion, to
5 protect water quality, or in response to public safety needs.

Deleted: significant sediment discharge

6 (c) Log hauling or other heavy equipment uses shall be limited to
7 logging roads and landings which are hydrologically disconnected from
8 watercourses as illustrated in Technical Rule Addendum No. 5 and exhibit a
9 stable operating surface. Use may occur on limited segments of roads
10 or landings that do not exhibit a stable operating surface when the
11 road segment or landing is completely, and at all times,
12 hydrologically disconnected from a watercourse to the extent feasible
13 as illustrated in Technical Rule Addendum No. 5, and equipment can operate
14 under its own power.

Deleted: to the extent feasible

15 OPTION 2: (c) During the extended wet weather period, log hauling or other
16 heavy equipment use shall be limited to logging roads and landings which are
17 hydrologically disconnected from watercourses to the extent feasible and
18 exhibit a stable operating surface in conformance with (b) above. Routine
19 use of roads and landings may occur on limited segments of roads or landing
20 that do not exhibit a stable operating surface when the road segment is
21 completely, and at all times, hydrologically disconnected from a watercourse
22 shall not take place when, due to general wet conditions, and equipment
23 cannot operate under its own power.

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24 (d) When burning permits are required pursuant to PRC § 4423, logging
25 roads and landings that are in use shall be kept in passable condition
for fire trucks.

1 (e) All roadside berms that impede logging road drainage, create logging
2 road surface flow or lead to hydrologic connection shall be removed or
3 breached before the beginning of the winter period, if retention of the
4 berms will result in significant sediment discharge.

Deleted: with the exception of berms needed for erosion control

5 (f) Temporary roads shall be blocked or otherwise closed to standard
6 production four-wheel drive highway vehicles prior to the winter
7 period.

8 (g) Logging roads and landings used for log hauling or other heavy
9 equipment uses during the winter period shall only occur on a stable
10 operating surface and be surfaced with rock to a depth and quantity
11 sufficient to maintain such a surface unless the timber harvest plan
12 explains and justifies why surfacing with rock is not necessary. Use is
13 prohibited on roads that are not hydrologically disconnected to the
14 extent feasible as illustrated in Technical Rule Addendum No. 5 or exhibit
15 saturated soil conditions. Exceptions may be proposed by the RPF, when
16 locations are disclosed and justified in the THP, consistent with 14
17 CCR 923.6 (c), and approved by the Director.

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18 OPTION 2: Logging roads and landings used for log hauling or other heavy
19 equipment uses during the winter period may occur during hard frozen
20 conditions or shall, occur on a stable operating surface and, be surfaced
21 with rock where necessary, to a depth and quantity sufficient to maintain
22 such a stable operating surface. Such use is prohibited on roads that are
23 not hydrologically disconnected to the extent feasible and exhibit saturated
24 soil conditions, or as specified in (b) above. Exceptions may be proposed by
25 the RPF, when locations are disclosed and justified in the THP, consistent

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1 with 14 CCR 923.6(c), and approved by the Director pursuant to 14 CCR 923
2 [943, 963] subsection (c).

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3 (h) Concurrent with ~~and immediately upon completion of use for~~ log
4 hauling or other heavy equipment uses, all road approaches to logging
5 road watercourse crossings shall be treated for erosion control as
6 needed to minimize soil erosion and sediment transport and to prevent
7 deposition of sediment in quantities that violate Water Quality Requirements.

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8 (i) Concurrent with ~~and immediately upon completion of use for~~ log
9 hauling or other heavy equipment uses, all traveled surfaces of
10 logging roads in a WLPZ, and ELZ or EEZ designated for watercourse or
11 lake protection, shall be treated for erosion control as needed to
12 minimize soil erosion and sediment transport and to prevent deposition
13 of sediment in quantities that violate Water Quality Requirements.

Deleted: 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:

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

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17 (1) Existing logging roads or landings shall not be used within
18 the CMZ of a Class I watercourse except as listed in 14 CCR § 916.9
19 916.9 [936.9, 956.9] subsection (e)(1)(A)-(F) or pursuant to 14 CCR §
20 916.9(v) [936.9(v), 956.9(v)].

21 (2) When feasible, minimize use of existing logging roads and
22 landings located within Inner Zones A and B of flood prone areas.
23 Exceptions include the use of roads and landings to accomplish actions
24 to improve salmonid habitat conditions stated in 14 CCR § 916.9
25 916.9(f)(3)(E)(1.) [936.9(f)(3)(E)(1.), 956.9(f)(3)(E)(1.)]

Deleted: (3) Concurrent with use for log hauling or other heavy equipment uses, all road approaches to logging road watercourse crossings shall be treated for erosion control as needed to minimize soil erosion and sediment transport and to prevent significant sediment discharge to watercourses or lakes.

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~~(3) No timber operations shall take place during the extended wet weather period unless the approved plan incorporates a complete winter period operating plan pursuant to 14 CCR § 914.7(b) [934.7(b), 954.7(b)]. The winter period operating plan shall specifically address, where applicable, proposed logging road and landing use.~~

~~(4) Grading of logging roads or landings to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.~~

~~Routine use and maintenance of roads and landings shall not take place when, due to general wet conditions, equipment cannot operate under its own power. Operations may take place when roads and landings are generally firm and easily passable or during hard frozen conditions. Isolated wet spots on these roads or landings shall be rocked or otherwise treated to permit passage. However, operations and maintenance shall not occur when sediment discharged from landings or roads will reach watercourses or lakes in amounts deleterious to the quality and beneficial uses of water. This section shall not be construed to prohibit activities undertaken to protect the road or to reduce erosion.~~

Amend § 923.7, 943.7, 963.7 Maintenance and Monitoring for Logging Roads and Landings Licensed Timber Operator Responsibility for Roads and Landings

The following maintenance and monitoring standards shall apply to logging roads and landings:

Deleted: (4) Concurrent with use for log hauling or other heavy equipment uses, all traveled surfaces of logging roads in a WLPZ, and ELZ or EEZ designated for watercourse or lake protection, shall be treated for erosion control as needed to minimize soil erosion and sediment transport and to prevent significant sediment discharge to watercourses or lakes.

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operating plan pursuant to 14 § CCR 914.7 [934.7, 954.7], subsection (a) that specifically addresses such logging road or landing construction or reconstruction.’ The next referenced rule section describes the limitations on timber operations in the winter period, the contents of the winter operating plan, and optional measures in-lieu of a winter operating plan. I suggest removing this rule subsection.

Comment L10-15: § 923.3(c)(2)

“For amended Rule 14 CCR 923.3 (c) (2), page 42. Change the minimum distance of a road to a Class I WLPZ from 100 ft. on a 50% slope to a minimum of 250 ft. from the watercourse as measured to the watercourse transition line (WTL). Besides changing the distance from a road to a watercourse, the rules should also describe appropriate distances to the watercourse for slopes other than 50%. A possible guide for this is shown in the Weaver and Hagans Handbook for Forest and Ranch Roads on page 14 “Recommended minimum widths of buffer strips between wild land roads and streams.”

Comment L9-25: § 923.3(d)

“Do the requirements for flagging roads also encompass the special requirements listed above on that same page in (1) steep slopes and (2) close to WLPZ? This is unclear. There is also a provision for exceptions, which may not be necessary. Also the rest of that paragraph (lines #10 to 14) is very difficult to understand. This is too complicated and wordy.”

§ 923.4 [943.4, 963.4]. Construction and Reconstruction for Logging Roads and Landings Road Maintenance.

Comment L5-18: Insert reference to hydrologic disconnection in this section.

“NMFS is aware the constructed and reconstructed roads are intended to be constructed specific to the design specifications in 923.2 which require hydrologic disconnection of roads. However, the constructed/reconstructed road in some cases can be different than what was intended to be designed. In which case, the RRN should have consequences for the deviation especially if the constructed/reconstructed product is unintentionally hydrologically connected. In reviewing the Construction and Reconstruction chapter (923.4) there does not appear to be a section which requires roads to be constructed/reconstructed in accordance with their intended design in accordance with 923.2 or to be hydrologically disconnected. Therefore, NMFS recommends the hydrologic disconnection standard should be inserted in 923.4.”

Comment L9-26: § 923.4

“The sentence ‘If a change in designation...’ is redundant. That pertains to the rules regarding amending the plan. There is no need to have rule language telling you to go to another section of the rules, another redundancy created by the construct that all rules pertaining to roads were taken out of their original context and had to be put in to this article, even if the rule here tells you to go back to the old rule.”

Comment L17-17: § 923.4(b)

“It would be beneficial to have the FSOR clearly explain that the ‘as specified in the plan’ portion of this sentence allows for the construction or reconstruction of logging roads and landings in WLPZs, etc.”

Comment L6-12: § 923.4(c)

“See comment above in 923.2 (a) (2) regarding connected and non-connected swales.”

Plead language should read: "Logging roads and landings shall not be constructed across unstable areas or on connected and non connected headwall swales." Also, "road and landing construction across unstable areas shall be reviewed by a Certified Engineering Geologist."

Comment L8-13: § 923.4(c)

"Unstable areas" are a common theme in the Road Rules, and as explained in the comments of CEG Ray Waldbaum (pgs. 2-3), such areas must be identified and assessed by a professional geologist: "in the State of California, RPFs are not qualified to address issues of geologic stability and any attempt to do so constitutes illegal, unlicensed practice of geology. Therefore, the rules must be changed to make this point clear." In order for the Road Rules package to be clear about this highly important issue, the Rules must add statements which make explicit that the identification and assessment of unstable areas can only be conducted by a certified engineering geologist. This should occur in the following instances (edits are underlined):

Rule 923.4(c): "Logging roads and landings shall not be constructed or reconstructed across unstable areas or connected headwall swales except as specified in the Plan by a certified engineering geologist."

Comment L8-21: § 923.4(f)

"Rule 923.4(f) states that "On slopes greater than 40 percent, the organic layer of the soil shall be removed prior to fill placement."

As explained in the comments of CEG Ray Waldbaum (p. 6), "This is an inappropriate soil removal standard because all soil on slopes steeper than 20 percent is generally subject to downslope movement called 'creep'. Even the upper, weathered bedrock below the soil is often severely creep affected and unsuitable for support of fill. Where fill is placed on creep prone soil and/or weathered bedrock the added weight of the fill will accelerate the creep and cause tension cracks to form in the fill. These cracks will then act as conduits for water that can further destabilize the fill, causing failure."

To address these issues, Rule 923.4(f) should be edited to read, "On slopes greater than 20 percent, fill placement shall conform to the recommendations of a geotechnical engineer and certified engineering geologist, and the exposed surface shall be inspected by the engineering geologist prior to fill placement."

Comment L8-22: §§ 923.4(i), 923.13(d)

"Rule 923.4(i) states that "Where constructed fills will exceed three feet in vertical thickness, fill slopes shall be inclined no greater than 65 percent." Similarly, Rule 923.13(d) states that "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)."

As explained by CEG Ray Waldbaum in his comments (p. 6), "Fill slope gradient can be expressed as a percent, angle, or horizontal to vertical distance ratio. A 65% fill has an angle of 33 1/2 degrees from the horizontal and a ratio of 1 1/2 horizontal to 1 vertical. Fills were commonly constructed at this gradient through the decade of the 1970s, however their performance was often unsatisfactory. As a result, the generally accepted (California Grading Code) maximum fill slope gradient is now 50% (26 degrees, 2:1) unless measures are taken to increase the strength of the fill material like inter layering of geotextile fabric. Avoiding over steepened fill slopes is even more important in logging road construction than in grading for urban uses because logging road fills will be expected to never fail although they are not landscaped, inspected or maintained the way urban fills are. Thus, logging road fill slopes should not exceed 50% (26 degrees, 2:1) unless acceptable recommendations from a geotechnical engineer are prepared and approved by the regulatory authorities."

Rule 923.4(i) should therefore be edited to read “Where constructed fills will exceed three feet in vertical thickness, fill slopes shall be inclined no greater than 50 percent unless acceptable recommendations from a geotechnical engineer are prepared and approved.”

And Rule 923.13(d) should therefore be edited to read “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 50 percent (2:1, horizontal to vertical) unless acceptable recommendations from a geotechnical engineer are prepared and approved.”

Comment L17-18: § 923.4(i)

“The most common recommended steepness for fill slopes is 1½ to 1 which equates to 67%, not 65%.

‘(i) Where constructed fills will exceed three feet in vertical thickness, fill slopes shall be inclined no greater than ~~65~~ 67 percent.’”

Comment L9-27: § 923.4(j)-(k)

“Prohibition of construction during saturated soil conditions and during the winter period: There needs to be a connection between this requirement and water quality standards. The FPR’s were just changed in 2010 to allow operations on saturated soils when there is no impact on water quality. With this proposed wording, there is no nexus between the road construction prohibition and water quality. (e.g., during dry, rainless periods, or Modoc Plateau and East-side Sierra where often the biggest problem is lack of water, not too much water.) These prohibitions should be removed, then evaluated on a plan-by-plan basis.”

Comment L8-23: § 923.4(l)(2)

“Rule 923.4(l)(2) states that “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: . . . Compacted in approximately one-foot lifts from the toe to the finished grade or retained by an engineered structure.”

As explained by CEG Ray Waldbaum in his comments (p.7-8), “Critically important specifications are missing in this specification: the degree of compaction, who will test the fill to verify adequate moisture content and compaction, and who will certify that the fill was compacted in accordance with the minimum requirements. These omissions should be remedied by: 1 Requiring that a geotechnical engineer establish an optimum moisture content and laboratory maximum density for each soil and rock type that will be used as fill. 2. Requiring that the geotechnical engineer’s representative perform field moisture/density tests of the fill to check compliance with specified compaction standards, and 3. Requiring the geotechnical engineer to certify compliance with specified compaction standards. Without these standards, tests and certifications, the requirement that fill be ‘compacted’ has no meaning.” Moreover, these issues are relevant to slopes less than 50 percent.

To remedy the problem, Rule 923.4(l)(2) should be edited to read “Fills greater than four feet in vertical height at the outside shoulder of the logging road or landing shall be: . . .Compacted in approximately one-foot lifts from the toe to the finished grade or retained by an engineered structure. (a) a geotechnical engineer shall establish an optimum moisture content and laboratory maximum density for each soil and rock type that will be used as fill; (b) field moisture/density tests of the fill shall be performed to check compliance with specified compaction standards, (c) the geotechnical engineer shall certify compliance with he specified compaction standards, and (d) no fill shall be placed on slopes prior to inspection and written approval by the engineering geologist.”

Comment L8-24: § 923.4(n)

“Rule 923.4(n) states that “Fills shall not be constructed on slopes greater than 65 percent.” Fills, however, should not be constructed on any slope unless it is known to be a stable slope that will remain stable with the additional weight of the fill.

Therefore, Rule 923.4(n) should be edited to read, “Fills shall not be constructed on slopes greater than 65 percent, and shall only be constructed on slopes that a certified engineering geologist and geotechnical engineer have determined will remain stable with the additional weight of the fill.”

Comment L8-25: § 923.4(o)

Rule 923.4(o) states that “On slopes greater than 65 percent, sidecast from logging road and landing construction shall be minimized to the degree feasible.”

Because sidecast is unstable and presents a danger of mass failure and erosion, Rule 923.4(o) should be changed to read, “Sidecast from logging road and landing construction shall be prohibited in areas where it may cause significant sediment discharge. Excavated material cannot be used as sidecast and can only be used as properly engineered and compacted fill. Any excess excavated material shall be disposed where it can do no harm.”

Comment L17-19: § 923.4(o)

“There are places on the landscape where careful placement of sidecast does not pose a risk to public trust resources (for example roads without proximity to watercourses). We suggest amending the language in the new 923[943,963].2(a)(7) to require the plan to specify where sidecast is to be placed and then have this subsection (o) simply state that treatment of sidecast shall be consistent with the plan.”

Comment L4-13: § 923.4(p)(2)

“This section does not follow from 923.4(p). It appears that the intent is to prevent adverse impacts to a watercourse as a result of sediment discharge from placed excess material, but the section, as written, prevents adverse impacts to the *area* where the material is deposited.

Regional Water Board staff suggest revising lines 21, “(2) ~~Areas that could deliver significant sediment discharge~~ Watercourses.”

Comment L1-35: §§ 923.4(q), 923.13(j)

“These subdivisions require the registered professional forester to amend the plan, if necessary, to identify changed circumstances related to logging roads, landings and logging road watercourse crossings. This is already required by 14 CCR §§ 1039 and 1040, so it should not be required here. CAL FIRE suggests deleting it.

Suggested text for 923.4(q) is: “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.~~”

Suggested text for 923.13(j) is: “Where conditions are encountered during logging road watercourse crossing 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.”~~

Comment L9-28: § 923.4(r)

“This is the same as page 31, item #9, except that section references ‘planning,’ this one references ‘construction.’ It should be obvious that if a road is not ‘planned’ (and approved in the plan), it cannot be ‘constructed.’ This is somewhat duplicative.”

Comment L4-14: § 923.4(s)(1)(B)

“Spoils not utilized in logging road construction should be disposed outside of any WLPZ, EEZ, or ELZ designated for watercourse or lake protection regardless of the presence or absence of listed species. Potential impacts to the beneficial uses of water from road systems do not occur only in watersheds with listed anadromous salmonids. Water Quality Objectives apply to all waters of the state, regardless of whether listed species are known to be present. The current wording may exclude watersheds that are listed as water quality impaired under Section 303(d) of the Federal Clean Water Act. Additionally, it is important to acknowledge that water runs downhill, and what happens above the limit of anadromy affects the downstream receiving waterbodies.”

Comment L8-14: § 923.4(s)(1)(B)

“‘Unstable areas’ are a common theme in the Road Rules, and as explained in the comments of CEG Ray Waldbaum (pgs. 2-3), such areas must be identified and assessed by a professional geologist: “in the State of California, RPFs are not qualified to address issues of geologic stability and any attempt to do so constitutes illegal, unlicensed practice of geology. Therefore, the rules must be changed to make this point clear.” In order for the Road Rules package to be clear about this highly important issue, the Rules must add statements which make explicit that the identification and assessment of unstable areas can only be conducted by a certified engineering geologist. This should occur in the following instances (edits are underlined):

Rule 923.4(s): “On slopes greater than 50 percent that have access to a watercourse or lake:...Where cutbank stability is not an issue, as determined by a certified engineering geologist, 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, as determined by a certified engineering geologist, with less than 30 percent slope outside of any WLPZ, EEZ, or ELZ designated for watercourse or lake protection.”

Comment L6-13: § 923.4(s)(1)(C)

“This section of the plead refers to ASP watersheds where slopes are greater than 50%. Can a road be constructed on a slope greater than 50% and is side casting allowed on slopes above 50%?”

Comment L8-26: § 923.4(s)(1)(C)

“Rule 923.4(s)(1)(C) states that “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.”

As explained by CEG Ray Waldbaum (p.8), “Once fill has been placed on a slope, any effort to remove that fill mass will result in a soil or bedrock surface that is devoid of any vegetative cover and is highly susceptible to erosion. Effective erosion prevention measures will then be required to prevent erosion from damaging water quality or salmonid habitat. There is no quick way to

permanently make a bare slope erosion-proof other than armoring with rip rap, and even that method does not prevent piping of eroded soil. Thus, the concept of removing a fill where erosion may affect habitat does not appear feasible.”

Rule 923.4(s)(1)(C) should therefore be edited to state that “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 but only if performed in an area where erosion can not affect water quality or salmonid habitat.”

Comment L1-36: §§ 923.4(s)(2), 923.6(h)(5), 923.13(n)

“These subsections state that no timber operations shall occur during the extended wet weather period unless the plan incorporates a winter operating plan that addresses logging road, landing and logging road watercourse crossing construction, reconstruction and use. They are written such that falling, yarding, and hauling appear to be prohibited during the extended wet weather period if the winter operating plan does not address logging road, landing and logging road watercourse crossing construction, reconstruction and use. The rules also reference the incorrect subdivision of 14 CCR § 914.7. CAL FIRE suggests amending them to clarify that the winter period operating plan needs to address logging road, landing and logging road watercourse crossing construction, reconstruction and use, if applicable.

Suggested text for 923.4(s)(2) is: “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)]. The winter period operating plan shall ~~subsection (a) that~~ specifically addresses, where applicable, proposed logging road and ~~or~~ landing construction and ~~reconstruction.~~”

Suggested text for 923.6(h)(5) is: “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)]. The winter period operating plan shall ~~subsection (a) that~~ specifically addresses, where applicable, proposed logging road and ~~or~~ landing use.”

Suggested text for 923.13(n) is: “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)]. ~~subsection (a) that~~ The winter period operating plan shall specifically addresses, where applicable, proposed logging road watercourse crossing construction or reconstruction. Where logging road watercourse crossing construction or reconstruction is proposed an implementation schedule shall be specified.”

§ 923.5 [943.5,963.5]. Erosion Control for Logging Roads and Landings Landing Construction.

Comment L4-15: § 923.5(a) and (i)

“The Regional Water Board staff strongly support hydrologic disconnection of logging road and landing surfaces from watercourses and lakes and necessary treatments where they cannot be hydrologically disconnected.”

Comment L5-1: § 923.5(a)

“NMFS considers this to be a substantively new rule in the CFPRs.

If properly implemented and enforced, NMFS anticipates this specific rule section will reduce the magnitude of the known effects from forest roads caused by alterations in sediment loading, channel morphology, hydrology, and surface erosion. This standard has been identified as a recovery action in several NMFS' documents including the most recent 5-year status reviews for Central California Coast (CCC) coho salmon, Central Coast (CC) Chinook salmon, North Coast (NC) steelhead and CCC steelhead as well as draft recovery plans for CCC and Southern Oregon/Northern California Coast (SONCC) coho salmon; NC, CCC, and Central Valley (CV) steelhead; and CC, Sacramento River and CV Spring Chinook salmon. Adopting this rule, in its current form, is a critical step towards reducing the adverse effects of logging roads and landings as well as contributing to the recovery of these listed anadromous salmonids.

In the past, NMFS raised several concerns regarding the language "to the extent feasible" because this language is often ambiguous, and unenforceable. However, NMFS believes this language is acceptable given its context. NMFS also believes this language sets a higher standard than what was required under the current CFPRs. The current CFPRs only have a performance operating standard regarding sediment discharge by stating in 923.6 "operations and maintenance shall not occur when sediment discharged from landings or roads will reach watercourses or lakes in amounts deleterious to the quality and beneficial uses of water." While this performance standard remains important, it alone is not adequate to reduce the effects of logging roads. 923.5(a) in the RRN sets a more prescriptive road drainage standard for logging roads that not only further reduces the adverse effects of the road caused by traffic; but also potentially reduces sediment delivery during the winter when the road isn't being used. The RRN includes the prescriptive based standard and performance based standard which in combination should effectively reduce the adverse effects of logging roads caused by traffic and when the road isn't being used. NMFS finds these standards to be adequate and encourages the BOF to adopt 923.5(a) in its current form, which has been the hallmark of this regulatory package since the March 2010 Forest Practice Committee meeting."

Comment L5-7: § 923.5(a) Restrict ditch drainage into a watercourse to no more than 100 feet.

"The RRN does not provide, with great certainty, that logging roads and landings will not have ditch drainages that extend beyond 100 feet before draining to a water course. Ditch drain length to a watercourse is an important predictor of erosion potential, though not as important as the slope of the ditch (Luce and Black 1999). As mentioned earlier, the erosion site assessment in 923.1(d) requires the RPF to consider both of these factors in determining appropriate protection measures. In addition, 923.5(a) should be implemented in such a way that minimizes the length of the road approach, and thus ditch drains, to the extent feasible. Therefore, 923.1(d) and 923.5(a) should address NMFS concerns regarding ditch drains that are 100ft."

Comment L5-14: § 923.5(a)

"During the January 20th workshop, industry representatives raised a number of concerns regarding 923.5(a) and the costs associated with the hydrologic disconnection of logging roads. However, existing literature (Furniss *et al.* 1999) provides a number of examples for treatments that are intended to be "simple, inexpensive and effective in reducing road effects and risks to water quality and aquatic habitats." The BOF should work with CalFire, CGS, DFG, and the Regional Water Quality Control Boards to develop guidelines for RPFs and LTOs that better describe techniques for implementing 923.5(a) in a feasible and effective way."

Comment L16-3: § 923.5(a)

"The second section of this rule package that merits further discussion relates to § 923.5, Erosion Control for Logging Roads and Landings. Under § 923.5 (a) the following language is found: "All logging road and landing surfaces shall be adequately drained through the use of surface geometry configurations in combination with the installation of drainage structures or facilities and

shall be hydrologically disconnected from watercourses and lakes ***to the extent feasible*** (emphasis added).

A range of possible, and potentially costly, recommendations could be required by a reviewing agency when this rule ends with 'to the extent feasible.' For example, a well intentioned landowner could install a ditch relief culvert 200 feet from a watercourse crossing to prevent significant sediment discharge from entering a watercourse. A reviewing agency could interpret this rule to mean a second ditch relief culvert should be installed 50 feet from the watercourse crossing even if there is no risk of significant sediment discharge. The reviewing agency would certainly have a case for an additional ditch relief culvert if this risk is present.

For these reasons, it may be prudent to revise § 923.5 to state 'All logging road and landing surfaces shall be adequately drained through the use of surface geometry configurations in combination with the installation of drainage structures or facilities and shall be hydrologically disconnected from watercourses and lakes where significant sediment discharge is present.'"

Comment L14-11: § 923.5(b)

"For subsection (b), page 52, lines 1-4, the plead should be modified as follows:

'Drainage facilities and structures shall be installed'

This requirement establishes a performance standard for preventing adverse sediment when conducting erosion control operations. The rationale for this change is that both drainage facilities (e.g. waterbreaks and rolling dips) and drainage structures (e.g. ditch drains) need be installed in a sufficient number to achieve the specific result. While waterbreaks have a spacing table (subsection (f)), ditch drains (ditch relief culverts) do not; so this requirement is in addition to providing adequate drainage specified under subsection (a). The erosion site assessment also specifies appropriate factors to consider when proposing appropriate and effective measures."

Comment L1-37: § 923.5(c)

"CAL FIRE staff note that implementation of the current rule pertaining to ditch drain spacing is inconsistent and in some cases results in impacts to the road surface, slope stability, fill stability and watercourses. Designating minimum spacing for ditch drains could relieve the problem, but technical guidance in the form of a technical rule addendum would be better. Such an addendum could guide the licensed timber operator in the effective installation of ditch drains. CAL FIRE has begun to develop this technical rule addendum. Work is on-going and involves other agency staff and private sector users. CAL FIRE suggests amending the subdivision to mention that ditch drains must be constructed and reconstructed in consideration of the technical rule addendum.

Suggested text is: "Ditch drains, associated necessary protective structures, and other features associated with the ditch drain shall: (1)...(5) Be spaced according to the following: (A) If existing ditch drains are of sufficient number and spacing to adequately capture logging road runoff while not showing excessive movement of sediment or excessive downcutting, then additional drainage shall not be required; (B) If ditch drains are not sufficient to adequately capture logging road runoff, then ditch drains shall be constructed or reconstructed as illustrated in Technical Rule Addendum No. 5."

Comment L1-38: § 923.5(c)(3)

"This paragraph requires ditch drains to avoid discharge onto fill. This is a difficult standard to meet, and CAL FIRE anticipates consistent difficulties enforcing this. To make this paragraph more applicable to the type of fill that needs protection, CAL FIRE suggests stating that it applies to unprotected fill.

Suggested text is: “Avoid discharge onto unprotected fill.””

Comment L9-29: § 923.5(a),(c),(d),(i)

“(a)What does ‘surface geometry configurations’ mean? Is this a term that is familiar to foresters and LTOs?. The rule says that all shall be hydrologically disconnected to the extent feasible. How much road work will then need to be done on each logging road?

(c) Ditch drains may need to be reconfigured on many of the logging roads on a given plan. Even functioning drains will probably have to have their outlets worked on to avoid discharge onto fill, or into erosion resistant material (rock).

(d) Must avoid discharge onto ‘erodible soils.’ What if in an erosive area, (granitic soils)? Must rock or slash be imported and placed at each outlet, regardless of where located on the slope or proximity to a watercourse?

(i) All areas must be hydrologically disconnected on logging roads. If not, must be treated, but if you cannot hydrologically disconnect, how to treat? Rock, sediment catchment basins etc. would have to be installed.”

Comment L17-20: § 923.5(e)

“We assume outsloping qualifies as permanent drainage. If that is the case, it would be beneficial to provide clarification of this fact in the FSOR.”

Comment L17-21: § 923.5(f)

“We are once again assuming that waterbreaks are not necessary for outsloped roads since outsloping is permanent drainage. Clarification of this would also be beneficial in the FSOR.”

Comment L1-39: § 923.5(g)

“This subdivision addresses rolling dip spacing, which will be addressed in the previously-discussed technical rule addendum. Such an addendum could guide the licensed timber operator in the effective installation of rolling dips. CAL FIRE has begun to develop this technical rule addendum. Work is on-going and involves other agency staff and private sector users. CAL FIRE suggests amending the subdivision to mention that rolling dip spacing should be determined in consideration of the technical rule addendum.

Suggested text is: “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 as illustrated in Technical Rule Addendum No. 5 in order to minimize soil erosion and sediment transport and to prevent significant sediment discharge.””

Comment L17-22: § 923.5(h)

“This rule section is confusing since the first sentence implies discharge where possible but then the next sentence mandates the placement of energy dissipating material below the drainage facility regardless of potential impacts to watercourses. This could be a costly requirement without any additional protection to public trust resources if the drainage facility has no potential to impact a watercourse or lake. Energy dissipating material should only be required to be placed below a drainage facility if it is necessary to prevent significant sediment discharge.”

Comment L3-7: § 923.5(i)

"During the Mendocino County Road Rules, 2011, Field Trip 1 site visit on January 19th and 20th, 2012, the newly constructed road field tour raised several questions about the adequacy of road surface and approach treatment during at least the first winter storms (see enclosed photos of erosive features). As mentioned above, in either highly roaded watersheds, or when the length of newly constructed or reconstructed roads exceeds the amount of abandoned roads by 2-3 times, we believe prescriptive-based seasonal road approach treatments (including erosive ditch lines) are best for addressing cumulative sediment impacts."

Comment L1-40: § 923.5(j)

"This subdivision could be clearer relative to where the generation of overland flow occurs as it relates to the installation of drainage structures and facilities. CAL FIRE suggests amending the rule language to clarify where overland flow is a concern.

Suggested text is: "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 provided that all such drainage facilities and drainage structures are installed prior to the start of rain that generates overland flow off the logging road surface."

Comment L9-30: § 923.5(j)

"...start of rain that generates overland flow...' This wording could be interpreted many different ways. Current FPR's, including Winter Operations Plan, adequately addresses this situation."

Comment L9-32: § 923.5(k)

"There is no connection between the need for concurrently constructing drainage structures during the extended wet weather period and impacts. Again, this can be adequately addressed in the Winter Operating Plan, with extensive requirements already in the current FPR's."

Comment L8-27: § 923.5(l)

Rule 923.5(l) states that "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 significant sediment discharge."

As explained by CEG Ray Waldbaum (p.8), "Bare soils are highly erodible and only maintenance free protections of proven effectiveness, for example armoring with boulders, should be considered."

Therefore, 923.5(m) should be edited to add "Soil stabilization measures shall be described in the plan pursuant to 14 CCR 923.5 [943.5,963.5], subsection (k) and shall rely on maintenance free protections of proven effectiveness such as armoring with boulders."

Comment L17-23: § 923.5(l)

"The language 'minimize soil erosion and sediment transport' appears to come from existing ASP 916 [936,956].9(k)(3) and (4). However, those two subsections only apply to logging road watercourse crossing approaches and logging roads in a WLPZ or ELZ or EEZ designated for watercourse protection. The language in the rule package expands the minimize soil erosion and sediment transport standard to all logging roads and landings, regardless of their proximity to watercourses. This could be a very costly diversion of resources (\$) if landowners are forced to

minimize erosion way up on the hillside away from an area which could impact watercourses. However, the use of the term ‘and’ (last occurrence) seems to indicate that stabilization is not required along portions of road well away from watercourses since it would not be necessary to prevent significant sediment discharge. If that is the intent, then the part of the sentence ‘to minimize soil erosion and sediment transport’ could be deleted, eliminating confusion and properly focusing efforts on stabilizing areas which could impact watercourses.”

Comment L9-31: § 923.5(l)

“The stabilization requirements for cuts and fills, and bare areas on road approaches or in WLPZ’s are too open, and could require stabilization of large areas. These should be addressed on a plan-by-plan basis.”

Comment L6-14: § 923.5(l)(1)

“Change plead to “direct or indirect access”. Danny Hagans also cautioned about the importance of side cast control. He reported that few slope failures occur on slopes of 50% or less and that there should be no side casting on slopes greater than 50%.”

Comment L9-33: § 923.5(m)

“Does this rule refer to 923.5(k) erroneously? They don’t seem to be related.”

Comment L14-12: § 923.5(m)

“Also under 923.5 subsection (m) on page 55 line 7, the soil stabilization rule reference should be (l) and not (k). Similarly, 923.5 subsection (q)(3)(A) on page 56, line19 should reference subsection (l) not (k). The numbering of subsections got out of sequence when subsection (i) regarding hydrologic disconnection was added to the package.”

Comment L1-41: § 923.5(o)

“The rule states that bare areas created during the extended wet weather period shall be treated within ten days or as agreed to by the Director. CAL FIRE recommends the BOF consider using the standard, “prior to the start of rain that generates overland flow,” in addition to the proposed one, since substantial precipitation can occur in 10 days.

Suggested text is: “Soil stabilization treatments shall be in place upon completion of operations for the year of use or prior to the extended wet weather operating period, whichever comes first. An exception is that bare areas created during the extended wet weather operating period shall be treated prior to the start of rain that generates overland flow, within 10 days or as agreed to by the Director.”

Comment L2-3: § 923.5(o), 923.14(b)(3)

“CGS suggests modifying sections 923.5(o) and 923.14(b)(3) to make them consistent with section 923.5(j) and other sections that relate to erosion control during the extended wet weather period. Specifically, CGS suggests adding the bold and italicized text to 923.5(o) [943.5(o), 963.5(o)], as shown below:

923.5(o) Soil stabilization treatments shall be in place upon completion of operations for the year of use or prior to the extended wet weather period. An exception is that bare areas created during the extended wet weather operating 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.

CGS suggests replacing the word “after” with “during” and adding the bold and italicized text to 923.14(b)(3) [943.14(b)(3), 963.14(b)(3)], as shown below:

923.14(b)(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 ~~after~~ **during** the extended wet weather operating 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.

Another alternative for the above two rule sections would be to use “**prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service**” instead of “**prior to the start of rain that generates overland flow**”. Both terms are used in the rule package.”

Comment L9-34: § 923.5(o)

“Again, ‘extended wet weather period.’ This should be either ‘winter’ period, or as prescribed in the plan. An exception is possible as described later in section ‘o.’”

Comment L2-4: § 923.5(p)

“CGS suggests modifying section 923.5(p) to be consistent with sections 923.5(g) and 935.5(l) which relate to erosion controls to prevent “*significant sediment discharge*”. CGS suggests adding the bold and italicized text to 923.5(p) [943.5(p), 963.5(p)], as shown below:

923.5(p) 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, **or when it may result in significant sediment discharge.**”

Comment L2-5: § 923.5(q)(1)

“To be consistent with the rule theme of “*hydrologic disconnection*”, and as discussed in CalFire’s suggested addition of Technical Rule Addendum 5 relating to Hydrologic Disconnection”, CGS suggests making section 923.5(q)(1) [943.2(q)(1), 963.5(q)(1)] applicable for all roads rather than just those with listed anadromous salmonids. CGS also suggests adding an additional sentence to the section for clarity.

The suggested modified section would read as shown below, with the new suggested text in strikethrough and bold italicized text:

~~923.5(q)(1)(xx)~~ 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. ***Outsloping of roads may not be feasible in all situations due to safety concerns, timing of use, or expected traffic.***”

Comment L2-6: § 923.5(q)(2)

“To be consistent with the rule theme of “*hydrologic disconnection*”, and as discussed in CalFire’s suggested addition of Technical Rule Addendum 5 relating to Hydrologic Disconnection, CGS suggests making section 923.5(q)(2) [943.5(q)(2), 963.5(q)(2)] applicable for all roads rather than just those with listed anadromous salmonids. The suggested modified section would read as shown below, with a new suggested placeholder subsection in bold italicized text:

~~923.5(q)(2)(xx)~~ 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.”

Comment L6-15: §§ 925.5(q)(1), (2)

“Remove the requirement that outsloping and rolling dips be installed on roads of 7% or less. Instead, use the guidance in the Weaver and Hagans Handbook, table 18, Table of Rolling Dip Dimensions, which shows rolling dip details for road grades up to 12%. Also, in (2), the allowable road grade of 15% should be questioned. Steep grades of this nature are difficult for log trucks to negotiate and can result in wheel spinning and road damage during wet weather hauling.”

Comment L6-16: § 923.5(q)(3)(C)

“Line 7 should be changed to read “minimum slash surface (added) coverage shall be 75% with a minimum ground contact in order to be as effective as mulch. Note that on the field trip we observed slash coverage on the Dunlap Camp Road 54 where there was considerable space between the ground and the branches of the slash. The slash (tree limbs) need to be compressed into the soil with a tractor to make a barrier to water flowing across the ground.”

Comment L8-28: § 923.5(q)(3)(C)

“Rule 923.5(q)(3)(C) should be edited to add the following in order to be effective: “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 with a minimum 75% ground contact.””

§ 923.6 [943.6, 963.6]. Use of Logging Roads and Landings Conduct of Operations on Roads and Landings.

Comment L5-3: § 923.6(c), (g), (h)

“The revisions to these rule sections which occurred following the NMFS comment letter [letter to Board dated April 26, 2011] are sufficient to address the concerns with log hauling during the wet weather period, provided that 923.5(a), 923.1(d) *et. seq.*, 923.6(c) (g) and 923.6(h) are adopted.

These particular rule sections are consistent with specific minimization measures recommended in the most recent 5-year status reviews for SONCC and CCC coho salmon, CCC and NC steelhead. Adopting this rule is a critical step towards reducing the adverse effects of logging roads and landings.”

Comment L9-35: § 923.6(c)

“Use of roads that are ‘hydrologically disconnected from watercourses to the extent feasible and exhibit a stable operating surface.’ This can be interpreted a number of ways. Legacy roads that are ‘hydrologically connected’ may not be used unless they are reconstructed to make them more ‘disconnected.’ The word ‘... and...’ between the two clauses means that both situations must be met to haul logs. The latter part of this same paragraph makes a strange exception to the ‘stable operating surface’ requirement. This entire paragraph needs to be struck, then re-worded to conform to recent changes made to the FPR’s that provided for operations on ‘saturated soil conditions.’

This section highlights the question of whether roads can be used at any time if not hydrologically disconnected. The definition of hydrologic disconnectivity does not include any descriptions of

actual moisture conditions at the time of use, so does not distinguish between using a spur road in the summer dry season vs. in November. This rule assumes wet weather conditions and ignores typical dry weather situations where there is virtually zero chance of sediment movement.”

Comment L10-16: § 923.6(c)

“Amended rule 14 CCR 923.6(c) lines 19-25 page 60 would allow for log hauling and other heavy equipment operations on limited roads and landings segments when they do not exhibit a stable operating surface so long as such segments are hydrologically disconnected and equipment is capable of operating under its own power. This approach runs contrary to the precautionary approach that we recommend the Board apply in these regulations. This rule section should be modified to include an explanation and justification for why the use of roads when stable operating surfaces exists is necessary, and how slope and road prism stability will be maintained throughout and following operations.”

Comment L14-13: § 923.6(c)

“During the road rule field trip in Fort Bragg it became clear that the proposed rule language in the plead needed to be significantly modified to address operational timing and expense issues. While this requirement is currently in effect year-round in ASP watersheds per 14 CCR 916.9(k)(2) for log hauling, it is proposed to be expanded statewide and also to include other heavy equipment uses (e.g. equipment transport, road graders, backhoes, dump trucks etc.). The existing ASP rule requirement often results in significant upfront expense before income generating activities can take place (i.e. log hauling). Also because the erosion site assessment (923.1(d) includes appurtenant roads where treatment sites are often spread-out over several miles or more this proposed rule potentially eliminates access for normal road maintenance activities until hydrologic disconnection work (e.g. installation of ditch drains/rolling dips, rocking) is completed. Proposed changes address modifications related to timing, operational considerations and incorporates some elements of existing rules 923.1(j), 916.9(k)(2) and 923.6, pages 125, 94 and 129 respectively in the 2012 FPRs.

Therefore I strongly advocate modification of subsection (c) as follows: ‘During the extended wet weather period, log hauling or other heavy equipment use shall be limited to logging roads and landings which are hydrologically disconnected from watercourses to the extent feasible and exhibit a stable operating surface in conformance with (b) above. Routine use of roads and landings may occur on limited segments of roads or landing that do not exhibit a stable operating surface when the road segment is completely, and at all times, hydrologically disconnected from a watercourse shall not take place when, due to general wet conditions, and equipment cannot operate under its own power.’

These modifications ensure that hydrologic disconnection to the extent feasible is established earlier in the fall and spring (i.e. October 15 to May 1; potentially wetter timeframes). This allows for normal road maintenance operations to proceed and facilitates income generating log hauling when in conformance with the performance standard of subsection (b).”

Comment L17-24: § 923.6(c)

“Subsection (c) is not necessary since subsection (b) addresses this issue by relying upon the significant sediment discharge standard. If the subsection is retained, we suggest the additional language to make the language consistent with other places in the rule package that the phrase is used.

(c) Log hauling or other heavy equipment uses shall be limited to logging roads and landings which are hydrologically disconnected from watercourses and exhibit a stable operating surface. Use may occur on limited segments of roads or landings that do not exhibit a stable operating

surface when the road segment or landing is completely, and at all times, hydrologically disconnected from a watercourse to the extent feasible and equipment can operate under its own power.”

Comment L9-36: § 923.6(d)

“The requirement to keep roads open during the fire season is found already in FPR 918.3, page 106 of the current rulebook. The road rules will remove 918.3. 918 is the Article pertaining to Fire Prevention. This provision fits better in 918 than in 923.”

Comment L1-42: § 923.6(e)

“This subdivision addresses the removal and breaching of berms. Some berms may not need to be removed or breached. CAL FIRE believes the language should be amended to clarify this matter.

Suggested text is: “All roadside berms that impede logging road drainage, create logging road surface flow or lead to hydrologic connection shall be removed or breached before the beginning of the winter period, with the exception of berms needed for erosion control.”

Comment L17-25: § 923.6(e)

“We suggest the change in language to prevent unnecessary soil disturbance and costs near berms that do not have the potential to result in significant sediment discharge.”

(e) All roadside berms shall be removed or breached before the beginning of the winter period, with the exception of berms needed for erosion control if retention of the berms will result in significant sediment discharge.”

Comment L9-37: § 923.6(f)

“Blocking of temporary roads prior to winter period. Is this old language; is it consistent with ‘abandonment,’ ‘deactivation,’ and other timing issues for use of roads? Should this read ‘deactivated’ or ‘abandoned?’ Per 923.8 ‘All temporary roads... shall be deactivated prior to the winter operating period...,’ so seems redundant.”

Comment L6-17: § 923.6(g)

“This section of the plead states: ‘Logging roads and landings used for log hauling or other heavy equipment uses during the winter period shall occur on a stable surface and *where necessary* surfaced with rock to a depth and quantity to maintain such a surface. Use is prohibited on roads that are not hydrologically disconnected and exhibit saturated soil conditions.’

This section of the plead needs some clarification and raises the following questions:

1. Would native surfaced roads be used in the winter for log hauling?
2. If so, would crossings on native surface roads be rocked or would the rock be applied once the rain begins to make the surface saturated and not a stable operating surface? It would seem to us that the rock should be applied before the rain begins in order to avoid the need to perform the work at the last minute before the rain begins.
3. The NOAA letter to the BOF on 4/29/2011 from Rod McInnis, NOAA Regional Administrator, dealt with this issue and recommended the term “where necessary” be eliminated because it is ill defined. We agree.
4. The NOAA letter also stated that if it is the intent of the landowner to apply rock, then the plan should show the specific locations i.e. WLPZ’s, road approaches within WLPZ’s, ELZ’s, EEZ’s where rock will be applied.

5. Lastly, could a road with saturated soil conditions ever be considered a stable operating surface?"

Comment L8-29: § 923.6(g)

"Rule 923.6(g) should be edited to read "Logging roads and landings used for log hauling or other heavy equipment uses during the winter period shall occur on a stable operating surface and, ~~where necessary,~~ surfaced with rock to a depth and quantity sufficient to maintain such a surface unless the timber harvest plan explains and justifies why surfacing with rock is not necessary." This edit will not change the intent of the Rule, but will ensure that the currently ambiguous term "where necessary" is given context."

Comment L9-38: § 923.6(g)

"Use of roads are prohibited during Winter Period that are not hydrologically disconnected. Again, this is the function of the Winter Operating Plan. There should be no general prohibition here."

Comment L10-17: § 923.6(g)

"Amended rule 14 CCR 923.6(g) lines 10-17 page 61 provides that logging roads and landings used for log hauling or heavy equipment during the winter period shall occur on a stable operating surface, and *where necessary*, surfaced with rock to a depth and quantity sufficient to maintain the surface. The modifier, *where necessary*, does not meet a precautionary standard. Rocking of running surfaces to be used by log trucks and other heavy equipment during the winter period must be required in order to ensure the stability of the surface.

... lines 15-17 page 61 also provides that the RPF may propose exceptions to aforementioned provisions at specific locations as explained and justified in the plan. Thus the RPF may propose an exception to conducting operations on a stable operating surface, on rocked roads, or on hydrologically disconnected road segments during the winter period. These exceptions substantially weaken the effectiveness of the proposed rule, and leave chasms of room for debate and disagreement. A precautionary approach would be to prohibit operations of log trucks and heavy equipment during the winter period when any of these conditions exist."

Comment L14-14: § 923.6(g)

"This rule subsection addresses both winter period log hauling and heavy equipment uses. We recommend a modification to the second sentence in order to improve clarity and consistency with existing rules while expanding scope to other heavy equipment uses during this operational period (i.e. a subset of the extended wet weather period) as follows:

'Logging roads and landings used for log hauling or other heavy equipment uses during the winter period may occur during hard frozen conditions or shall, occur on a stable operating surface and, be surfaced with rock where necessary, to a depth and quantity sufficient to maintain ~~such~~ a stable operating surface. Such Use is prohibited on roads that are not hydrologically disconnected to the extent feasible and exhibit saturated soil conditions, or as specified in (b) above. Exceptions may be proposed by the RPF, when locations are disclosed ~~and justified~~ in the THP, ~~consistent with 14 CCR 923.6(c), and approved by the Director pursuant to 14 CCR 923 [943, 963] subsection (c).~~"

Comment L17-26: § 923.6(g)

"Subsection (g) is not necessary since subsection (b) addresses this issue by relying upon the significant sediment discharge standard. If the subsection is retained, we suggest the

additional language to make the language consistent with other places in the rule package that the phrase is used.

(g) Logging roads and landings used for log hauling or other heavy equipment uses during the winter period shall occur on a stable operating surface and, where necessary, surfaced with rock to a depth and quantity sufficient to maintain such a surface. Use is prohibited on roads that are not hydrologically disconnected from watercourses to the extent feasible and exhibit saturated soil conditions. Exceptions may be proposed by the RPF, when locations are disclosed and justified in the THP, consistent with 14 CCR 923.6 (c), and approved by the Director.

Comment L10-18: § 926.3(h)(2)

“Amended rule 14 CCR 923.6(h)(2) line 25 page 61 provides that *when feasible* use of existing logging roads and landings within Inner Zones A and B of the flood prone area should be avoided. The modifying language *when feasible* should simply be deleted. Furthermore a provision should be added to this subsection requiring the RPF to explain and justify why use of roads and landings in the flood prone area is necessary, and why alternative routes are not equally feasible.”

Comment L4-16: § 923.6(h)(3) and (4)

“Approaches to watercourse crossings and traveled surfaces within protection zones should be treated as needed for erosion control to prevent or minimize soil erosion and delivery to a watercourse regardless of the presence of listed species. Potential impacts to the beneficial uses of water from road approaches and traveled surfaces do not occur only in watersheds with listed anadromous salmonids. Water Quality Objectives apply to all waters of the state, regardless of whether listed species are known to be present. The current wording may exclude watersheds that are listed as water quality impaired under Section 303(d) of the Federal Clean Water Act.

Regional Water Board staff suggest relocating 923.6(h)(3) and 923.6(h)(4) to 923.6(h) and 923.6(i), and renumbering 923.6(h) to 923.6(j).”

Comment L6-18: §§ 923.6(h)(3) and (4)

“The current plead requires all road approaches to crossings to be treated for erosion control etc.

Change this requirement to “Concurrent with and immediately upon completion of log hauling or other heavy equipment uses, all road approaches to logging road crossings shall be treated for erosion control”. This will insure that all treatments, drainage structures etc. are operational and undamaged when the last piece of heavy equipment exits the site.”

Comment L10-19: § 923.6(h)(3)

Finally, 14 CCR 923.6(h)(3) lines 4-8 page 52 provides that logging road watercourse crossing approaches shall be treated *as needed* concurrent with log hauling or other heavy equipment use to minimize soil erosion and significant sediment discharge. The modifier language *as needed* substantially weakens the effectiveness of the rule and leaves large amounts of room for interpretation, misinterpretation and debate. Application of the precautionary principle in this instance would dictate a hard-and-fast requirement to treat all watercourse crossing approaches concurrent with any use of log trucks or other heavy equipment.

Comment L17-27: § 923.6(h)(3-4)

“Our comments above [Comment L17-23] also apply to this section of the rule package.”