**Board of Forestry and Fire Protection**

**Vegetation and Fuels in the WLPZ**

**Title 14 of the California Code of Regulations**

**Division 1.5, Chapter 4,**

**Subchapter 4, 5, & 6**

**§ 916.3, 936.3, 956.3 General Limitations Near Watercourses, Lakes, Marshes, Meadows and Other Wet Areas [All Districts]**

The quality and beneficial uses of water shall not be unreasonably degraded by Timber Operations. During Timber Operations, the Timber Operator shall not place, discharge, or dispose of or deposit in such a manner as to permit to pass into the water of this state, any substances or materials, including, but not limited to, soil, silt, bark, Slash, sawdust, or petroleum, in quantities deleterious to fish, wildlife, or the quality and beneficial uses of water. All provisions of this article shall be applied in a manner which complies with this standard.

**(a)** When there is reasonable expectation that Slash, debris, soil, or other material resulting from Timber Operations, falling or associated activities, will be deposited in Class I and Class II waters below the Watercourse or Lake Transition Line or in Watercourses which contain or conduct Class IV water, those harvest activities shall be deferred until equipment is available for its removal, or another procedure and schedule for completion of corrective work is approved by the Director.

**(b)** Accidental depositions of soil or other debris in lakes or below the Watercourse or Lake Transition Line in waters classed I, II, and IV shall be removed immediately after the deposition or as approved by the Director.

**(c)** The Timber Operator shall not construct or use tractor roads in Class I, II, III or IV Watercourses, in the WLPZ, marshes, wet meadows, and other wet areas unless explained and justified in the plan by the RPF, and approved by the Director, except as follows:

**(1)** At prepared tractor road crossings as described in 14 CCR §§ 914.8(b), 934.8(b), 954.8(b).

**(2)** Crossings of Class III Watercourses that are dry at the time of use.

**(3)** At new and existing tractor road crossings approved as part of the Fish and Game Code process (F&GC § 1600 et seq.).

(4) As provided in Section 916.13.

**(d)** Vegetation, other than commercial species, bordering and covering meadows and wet areas shall be retained and protected during Timber Operations unless explained and justified in the THP and approved by the Director. Soil within the meadows and wet areas shall be protected to the maximum extent possible.

**(e)** Trees cut within the WLPZ shall be felled away from the Watercourse by pulling or other mechanical methods if necessary, or controlled by felling equipment if operating in the WLPZ per Section 916.13, in order to protect the residual vegetation in the WLPZ. Exceptions may be proposed in the THP and used when approved by the Director.

**(f)** Where less than 50% canopy exists in the WLPZs of Class I and II waters before Timber Operations, only sanitation salvage which protects the values described in 14 CCR §§ 916.4(b), 936.4(b), 956.4(b) shall be allowed.

**(g)** Recruitment of large woody debris for instream habitat shall be provided by retaining at least two living conifers per acre at least 16 inches diameter breast high and 50 ft. tall within 50 ft. of all Class I and II Watercourses.

**§ 916.4, 936.4, 956.4 Watercourse and Lake Protection [All Districts]**

**(a)** The RPF or supervised designee shall conduct a field examination and map all lakes and Class I, II, III, and IV Watercourses.

**(1)** As part of this field examination, the RPF or supervised designee shall evaluate areas near, and areas with the potential to directly Impact, Watercourses and lakes for sensitive conditions including, but not limited to, existing and proposed roads, skid trails and Landings, unstable and erodible Watercourse banks, unstable upslope areas, debris jam potential, inadequate flow capacity, migrating channels, overflow channels, flood prone areas, and Riparian zones wherein the values set forth in 14 CCR §§ 916.4, 936.4, 956.4, subsection (b) are impaired. The RPF shall consider these conditions, and those measures needed to maintain, and restore to the extent feasible, the functions set forth in 14 CCR §§ 916.4(b), 936.4(b), 956.4(b) when proposing WLPZ widths and protection measures. The plan shall identify such conditions, including where they may interact with proposed Timber Operations, that individually or cumulatively significantly and adversely affect the beneficial uses of water, and shall describe measures to protect and restore to the extent feasible, the beneficial uses of water. In proposing, reviewing, and approving such measures, preference shall be given to measures that are on-site, or to offsite measures where sites are located to maximize the benefits to the Impacted portion of a Watercourse or lake.

**(2)** As part of this field examination, the RPF or supervised designee shall map the location of spawning and rearing habitat for anadromous salmonids, and the condition of the habitat shall be evaluated using habitat typing that at a minimum identifies the pool, flatwater, and riffle percentages. The opportunity for habitat restoration shall be described within the plan for each Class I Watercourse, and for each Class II Watercourse that can be feasibly restored to a Class I.

**(3)** The mapping of conditions identified in subsection (a)(1) and (a)(2) above, and their protective measures, shall be sufficiently clear and detailed to permit the Director and the other review team representatives to evaluate the potential environmental Impacts of Timber Operations, the proposed mitigation measures and the proposed restoration measures.

**(4)** The mapping of conditions identified in subsection (a)(1) and (a)(2) above, and their protective measures, shall be sufficiently clear and detailed to provide direction and clear guidance to the Timber Operator.

**(5)** The mapping of conditions identified in 14 CCR §§ 916.4, 936.4, 956.4 subsections (a)(1) and (a)(2), and their protective and restoration measures, should be done at a scale of 1:2,400. In site-specific cases, the mapping of critical locations of corrective work and logging operation Impacts shall be done at a scale of at least 1:240 when the Director determines it is necessary to evaluate the plan.

**(6)** One set of photocopies of recent stereo aerial photographs of the plan area may be required by the Director.

**(7)** As part of this field examination the RPF or supervised designee may examine Watercourse and Lake Protection Zones for stand and vegetative conditions that may contribute to the spread of wildfire.

**(b)** The standard width of the WLPZ and/or the associated basic protection measures shall be determined from Table I (14 CCR §§ 916.5, 936.5, 956.5) or §§ 916.4(c), 956.4(c), 956.4(c), and shall be stated in the plan. A combination of the Rules, the plan, and mitigation measures shall provide protection for the following:

**a.** Water temperature control.

**b**. Streambed and flow modification by large woody debris.

**c.** Filtration of organic and inorganic material.

**d.** Upslope stability.

**e.** Bank and channel stabilization.

**f.** Spawning and rearing habitat for salmonids

**g.** Vegetation structure diversity for fish and wildlife habitat, possibly including but not limited to:

**1.** Vertical diversity

**2.** Migration corridor

**3.** Nesting, roosting, and escape

**4.** Food abundance

**5.** Microclimate modification

**6.** Snags

**7.** Surface cover

Consideration for the effective treatment of surface and ladder fuels, and the vertical and horizontal continuity of canopy cover may be made in WLPZs to be treated under Section 916.13

**(1)** Measures and the appropriate zone widths for the protection of the State's waters which have been taken from Table I (14 CCR 916.5, 936.5, 956.5) or developed under §§ 916.4(c), 936.4(c), 956.4(c) shall be stated in the THP.

**(2)** All Timber Operations shall conform to the marking, flagging and other identification of protective measures specified in CCR §§ 916.4, 936.4, 956.4, and 916.5, 936.5, 956.5 and the THP. Conformance shall be determined based on the evaluation of no less than a 200 foot lineal segment of each Watercourse or lake.

**(3)** The width of the WLPZ shall be measured along the surface of the ground from the Watercourse or Lake Transition Line or in the absence of Riparian vegetation from the top edge of the Watercourse bank

 **(4)** Slopes shall be measured in percent for the proposed WLPZ. If topography within the proposed WLPZ is variable, segments of the proposed WLPZ should be segregated by slope class as indicated in Table I, 14 CCR §§ 916.5, 936.5, 956.5.

**(5)** If requested by either party, and after on-the-ground inspection, the RPF and the Director may increase or decrease the width of a proposed WLPZ. A decrease shall not exceed 25 percent of the width as determined by the procedure prescribed in Sections 14 CCR §§ 916.4(c), 936.4(c), 956.4(c), and 916.5, 936.5, 956.5. Such changes in zone width shall be based on considerations of soil, slope, climatic factors, biologic, hydrologic, and geologic values listed in §§ 14 CCR 916.4(b), 936.4(b), 956.4(b), silvicultural methods, Yarding systems, road location, and Site Preparation activities. In no case shall the width be adjusted to less than 50 feet for Class I and II waters. Where soil surfaced roads exist within the standard WLPZ, no in-lieu reduction of WLPZ width shall be approved.

**(6)** Within the WLPZ, at least 75% surface cover and undisturbed area shall be retained to act as a filter strip for raindrop energy dissipation, and for wildlife habitat. This percentage may be adjusted to meet site specific conditions when proposed by the RPF and approved by the Director, ~~or~~ where Broadcast Burning is conducted under the terms of a project type burning permit and in compliance with 14 CCR §§ 915.2(b), 935.2(b), 955.2(b), or where fuel reduction treatments in the WLPZ are being conducted pursuant to 916.13

**(c)** The protection and WLPZ widths for Class III and Class IV waters shall prevent the degradation of the downstream beneficial use of water and shall be determined on a site-specific basis.

**(1)** Where operations occur adjacent to Class III Watercourses, the RPF shall designate in the THP an equipment limitation zone (ELZ) of at least 25 feet where sideslope steepness is less than 30% and at least 50 feet where sideslope steepness is 30% or greater unless explained and justified otherwise in the THP and approved by the Director. Class III Watercourses within logging areas where the EHR is Low and the slopes are less than 30% shall not require an ELZ unless proposed by the RPF or required by the Director. The RPF shall describe the limitations on the use of heavy equipment in the THP. Where appropriate to protect the beneficial uses of water, the RPF shall describe additional protection measures, which may include surface cover retention, vegetation protection and timber falling limitations. The location of the areas of heavy equipment use in any ELZ shall be clearly described in the plan, or flagged or marked on the ground before the preharvest inspection. When necessary to protect the beneficial use of water, the RPF shall designate and the Director may require a WLPZ for Class III and Class IV waters or an ELZ for Class IV waters.

**(2)** The width of the WLPZ for Class III and IV waters shall be determined from on-site inspection. Minimum protective measures required when Class III and Class IV protection zones are necessary are contained in Table I 14 CCR §§ 916.5, 936.5, 956.5.

**(3)** Soil deposited during Timber Operations in a Class III Watercourse other than at a temporary crossing shall be removed and debris deposited during Timber Operations shall be removed or stabilized before the conclusion of Timber Operations, or before October 15. Temporary crossings shall be removed before the winter period, or as approved by the Director.

**(4)** When approved by the Director on an individual plan basis as provided in Section 14 CCR §§ 916.4(c)(1), 936.4(c)(1), 956.4(c)(1) Class IV waters shall be exempted from required protection when such protection is inconsistent with the management objectives of the owner of the manmade Watercourse.

**(d)** Heavy equipment shall not be used in timber falling, Yarding, or Site Preparation within the WLPZ unless such use is explained and justified in the THP and approved by the Director.

**(e)** Flagging for heavy equipment use within the WLPZ adjacent to Class I waters and for all tractor road Watercourse crossings of all Watercourses must be completed before the preharvest inspection if one is conducted or start of operations, whichever comes first. Flagging for heavy equipment use within the WLPZ adjacent to Class II, III and IV waters may be done at the option of the RPF or as required by the Director on a site-specific basis.

**(f)** Subsection (d) does not apply to (1)-(4) below. Subsection (e) does not apply to (2)-(4) below.

**(1)** At prepared tractor road crossings as described in §§ 914.8(b), 934.8(b), 954.8(b).

**(2)** Crossings of Class III Watercourses which are dry at the time of Timber Operations.

**(3)** At existing road crossings.

**(4)** At new tractor and road crossings approved as part of the Fish and Game Code Process (F&GC 1600 et seq.).

(5) For fuel reduction operations conducted in the WLPZ under Section 916.13.

**§ 916.5, 936.5, 956.5 Procedure for Determining Watercourse and Lake Protection Zone (WLPZ) Widths and Protective Measures [All Districts]**

The following procedure for determining WLPZ widths and protective measures shall be followed:

**(a)** The following information shall be determined from field investigation:

**(1)** The location of all lakes and Watercourses including man made Watercourses.

**(2)** The existing and restorable beneficial uses of the waters to be protected as identified in subsection (1) above.

**(3)** The side slope classes for the individual class of waters to be protected (e.g. < 30%, 30-50%, >50%), where side slope is measured from the Watercourse or Lake Transition Line to a point 100 feet upslope from the Watercourse or Lake Transition Line, or, in the absence of Riparian vegetation, from the top of the Watercourse bank where slope configurations are variable, a weighted average method shall be used to determine sideslope percent.

**(b)** The beneficial uses noted from the field investigations in subsection (a) shall be compared to the characteristics or key beneficial uses listed in Row 1 of Table I (14 CCR §§ 916.5, 936.5, 956.5) to determine the water classes (e.g. I, II, III, IV, Row 2).

**(c)** The standard protection zone width differentiated by slope classes determined in Subsection (a) are shown in Rows 4-7, Table I (14 CCR 916.5 [936.5, 956.5]). These widths may be modified as stated in 14 CCR §§ 916.4(b)(5), 936.4(b)(5), 956.4(b)(5).

**(d)** The alphabetical letter designations A through I in Rows 4-7, Table 1 14 CCR §§ 916.5, 936.5, 956.5, and described in subsection (e) to Table I indicate the standard protective measures to be applied to the classes of water as determined in subsection (b) above.

**(e)** The letter designations shown in the "Protective Measures and Widths" column in Table I correspond to the following:

**"A"** WLPZ shall be clearly identified on the ground by the RPF who prepared the plan, or supervised designee, with paint, flagging, or other suitable means prior to the preharvest inspection. For nonindustrial timber management plans, sample identification of the WLPZ prior to the preharvest inspection may be allowed. The sample shall be based upon a field examination and be consistent with the applicable provisions of 14 CCR §§ 916.4, 936.4, 956.4 and 916.5, 936.5, 956.5, representing the range of conditions found within the WLPZ. The Director shall determine if the sample identification is adequate for plan evaluation during the preharvest inspection. If sample identification is allowed, the remaining WLPZ shall be identified by an RPF or supervised designee prior to the start of Timber Operations within or adjacent to the WLPZ. The RPF shall notify the Department when the WLPZ has been identified.

"**B**" WLPZ shall be clearly identified on the ground by an RPF or supervised designee, with paint, flagging, or other suitable means, prior to the start of Timber Operations. In watersheds with listed anadromous salmonids, on the ground identification of the WLPZ shall be completed prior to the preharvest inspection. For all NTMPs and WFMPs, sample identification of the WLPZ prior to the preharvest inspection may be allowed. The sample shall be based upon a field examination and be consistent with the applicable provisions of 14 CCR §§ 916.4, 936.4, 956.4 and 916.5, 936.5, 956.5, representing the range of conditions found within the WLPZ. The Director shall determine if the sample identification is adequate for Plan evaluation during the preharvest inspection. If sample identification is allowed, the remaining WLPZ shall be identified by an RPF or supervised designee prior to the start of Timber Operations within or adjacent to the WLPZ. The RPF shall notify the Department when the WLPZ has been identified.

**"C"** In site-specific cases, the RPF may provide in the plan, or the Director may require, that the WLPZ be clearly identified on the ground with flagging or by other suitable means prior to the start of Timber Operations.

**"D"** To ensure retention of shade canopy filter strip properties of the WLPZ and the maintenance of a multi-storied stand for protection of values described in 14 CCR §§ 916.4(b), 936.4(b), 956.4(b), residual or harvest trees shall be marked, including a base mark below the cut-line within the WLPZ by the RPF, or supervised designee. Outside of watersheds with listed anadromous salmonids, sample marking prior to the preharvest inspection is satisfactory in those cases where the Director determines it is adequate for Plan evaluation. When sample marking has been used, the remaining WLPZ shall be marked in advance of falling operations by the RPF, or supervised designee. In watersheds with listed anadromous salmonids, trees shall be marked in advance of the preharvest inspection. For all NTMPs and WFMPs, sample marking of the WLPZ prior to the preharvest inspection may be allowed. The sample shall be based upon a field examination and shall be consistent with the applicable provisions of 14 CCR §§ 916.4, 936.4, 956.4 and 916.5, 936.5, 956.5, representing the range of conditions found within the WLPZ. The Director shall determine if the sample mark is adequate for Plan evaluation during the preharvest inspection. If sample marking is allowed, the remaining WLPZ shall be marked by an RPF, or supervised designee, prior to the start of Timber Operations within or adjacent to the WLPZ. The RPF shall notify the Department when the WLPZ has been identified.

**"E"** To ensure retention of shade canopy filter strip properties of the WLPZ and the maintenance of a multi-storied stand for protection of values described in 14 CCR §§ 916.4(b), 936.4(b), 956.4(b), residual or harvest trees shall be marked, including a base mark below the cut line, within the WLPZ by the RPF or supervised designee. Outside of watersheds with listed anadromous salmonids, tree marking shall be done prior to timber falling operations. In watersheds with listed anadromous salmonids, trees shall be marked in advance of the preharvest inspection. For all NTMPs and WFMPs, sample marking of the WLPZ prior to the preharvest inspection may be allowed. The sample shall be based upon a field examination and shall be consistent with the applicable provisions of 14 CCR §§ 916.4, 936.4, 956.4 and 916.5 936.5, 956.5, representing the range of conditions found within the WLPZ. The Director shall determine if the sample mark is adequate for Plan evaluation during the preharvest inspection. If sample marking is allowed, the remaining WLPZ shall be marked by an RPF or supervised designee prior to the start of Timber Operations within or adjacent to the WLPZ. The RPF shall notify the Department when the WLPZ has been identified.

**"F"** Residual or harvest tree marking within the WLPZ may be stipulated in the THP by the RPF or required by the Director in site-specific cases to ensure retention of filter strip properties or to maintain soil stability of the zone. The RPF shall state in the THP if marking was used in these zones.

**"G"** Excepting fuel treatment operations to minimize the impact of high severity wildfire pursuant to 916.13, ~~To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values,~~ at least 50% of the overstory and 50% of the understory canopy covering the ground and adjacent waters shall be left in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of operations to protect water temperature, filter strip properties, upslope stability, and fish and wildlife values. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Species composition may be adjusted consistent with the above standard to meet on-site conditions when agreed to in the THP by the RPF and the Director.

**"H"** At least 50% of the understory vegetation present before Timber Operations shall be left living and well distributed within the WLPZ to maintain soil stability. This percentage may be adjusted when conducting fuel treatments par Section 916.13, or to meet on-site conditions when agreed to in the THP by the RPF and the Director. Unless required by the Director, this shall not be construed to prohibit Broadcast Burning with a project type burning permit for Site Preparation.

**"I"** To protect water temperature, filter strip properties, upslope stability, and fish and wildlife values, at least 50% of the total canopy covering the ground shall be left in a well distributed multi-storied stand configuration composed of a diversity of species similar to that found before the start of operations excepting fuel treatment operations to minimize the impact of high severity wildfire pursuant to 916.13. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Due to variability in Class II Watercourses these percentages and species composition may be adjusted to meet on-site conditions when agreed to by the RPF and the Director in the THP

**§ 916.5, 936.5, 956.5 Procedures for Determining Watercourse and Lake Protection Zone Widths and Protective Measures [All Districts]**

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| **Procedures for Determining Watercourse and Lake Protection Zone Widths and Protective Measures** |
| Water Class Characteristics or Key Indicator Beneficial Use | 1. Domestic supplies, including springs, on site and/or within 100 feet downstream of the operations area and/or
2. Fish always or seasonally present onsite, includes habitat to sustain

fish migration and spawning. | 1. Fish always or seasonally present offsite within 1000 feet downstream and/or
2. Aquatic habitat for nonfish aquatic species.
3. Excludes Class III waters that are tributary to Class I waters.
 | No aquatic life present, Watercourse showing evidence of being capable of sediment transport to Class I and II waters under normal high water flow conditions after completion of Timber Operations. | Man-made Watercourses, usually downstream, established domestic, agricultural, hydroelectric supply or other beneficial use. |
| Water Class | Class I | Class II | Class III | Class IV |
| Slope Class (%) | Width Feet | Protection Measure | Width Feet | Protection Measure | Width Feet | Protection Measure | Width Feet | Protection Measure |
| [see 916.4(c)][see 936.4(c)][see 956.4(c)] | [see 916.4(c)][see 936.4(c)][see 956.4(c)] |
| <30 | 75 | BDG | 50 | BEI | See CFH | See CFI |
| 30-50 | 100 | BDG | 75 | BEI | See CFH | See CFI |
| >50 | 1502 | ADG | 1003 | BEI | See CFH | See CFI |
| 1 - See Section 916.5(e) for letter designations application to this table. 2 – Subtract 50 feet width for cable Yarding operations.3 – Subtract 25 feet width for cable Yarding operations. |

**§ 916.13, 936.13, 956.13 Fuel Treatment in WLPZs [All Districts]**

Harvest operations, including the use of heavy equipment for felling and yarding may be conducted within WLPZs as necessary to reduce the potential impact of high severity wildfire to water quality, soils, and fish and wildlife habitat, in accordance with the following conditions:

(a) The RPF shall describe in the plan the specific aspects of vegetation and fuels treatment, including timing, to reduce fuels within the WLPZ.

(b) Areas of heavy equipment use within a WLPZ shall be identified in the Plan.

(c) Heavy equipment operations in the WLPZ are limited to tracked equipment unless explained and justified by the RPF and approved by the Director.

(d) Tractor roads shall be planned to minimize soil disturbance. Tractor roads shall be clearly flagged prior to operations.

(e) Equipment may not operate at any time of year when soils are saturated.

(f) Equipment may not operate within unstable areas, within the Watercourse Transition Line, in flood-prone areas, on poorly drained soils, or in Wet Meadows or Other Wet Areas.

(g) Heavy equipment is limited to slopes of less than 40% except for Tethered Operations conducted as per §914 et seq.

(h) The minimum stocking standards within the operating area shall be those found in 14 CCR 912.7 [932.7, 952.7], and be met immediately after harvest.]

(i) Sufficient canopy along Class I and Class II watercourses shall be retained to provide for water temperature control. Minimum post treatment canopy closure of dominant and codominant trees shall be 40% for east side pine forest types; 60% for coastal redwood and Douglas–fir forest types; and 50% percent for mixed conifer and all other forest types.

(j) To provide for water temperature control, erosion protection, and recruitment of large woody debris, an EEZ shall be delimited ten (10) to twenty-five (25) feet as measured from the Watercourse Transition Line. The width of this zone shall be based on site aspect, geology, and slope.

(k) All Slash shall be lopped, removed, chipped, piled and burned, or otherwise treated to achieve a maximum post-harvest depth of eighteen (18) inches above the ground within forty-five (45) days from the start of Timber Operations except for the burning of piles, which shall be accomplished not later than April 1 of the year following their creation, or for piles created on or after September 1, not later than April 1 of the second year following creation .

(l) The maximum length of fuel treatment operations that include heavy equipment use for felling and yarding within a WLPZ shall be four hundred (400) meters. No other fuel treatment operations under 916.13 shall occur on the same Planning Watershed within two hundred (200) meters and within twice the length of the fuel treatment operation within five (5) years of treatment.

(m) Except within constructed or reconstructed Temporary Road prisms, only trees less than thirty-six (36) inches in stump diameter, measured eight (8) inches above ground level, may be removed.

(n) The QMD of trees greater than eight (8) inches dbh in the pre-harvest Harvest Area shall be increased in the post-harvest stand.

(o) The above method for Fuel Treatment in the WLPZ shall sunset on January 1, 2030 pending further evaluation of the impacts of these measures on wildfire impacts in WLPZs, the beneficial uses of water, and other impacts to the environment.