

**Board of Forestry and Fire Protection**

**INITIAL STATEMENT OF REASONS**

**“Tethered Operation Amendments, 2020”**

Draft Document

**Board of Forestry and Fire Protection  
Title 14 of the California Code of Regulations  
Division 1.5, Chapter 4,  
Subchapters 4, 5, & 6, Article 4  
Subchapter 7, Articles 2, 6.5, 6.8, and 6.95**

**INTRODUCTION INCLUDING PUBLIC PROBLEM, ADMINISTRATIVE REQUIREMENT, OR OTHER CONDITION OR CIRCUMSTANCE THE REGULATION IS INTENDED TO ADDRESS (pursuant to GC § 11346.2(b)(1))...NECESSITY (pursuant to GC § 11346.2(b)(1) and 11349(a))....BENEFITS (pursuant to GC § 11346.2(b)(1))**

Pursuant to the Z'berg-Nejedly Forest Practice Act of 1973, PRC § 4511, et seq. (FPA) the State Board of Forestry and Fire Protection (Board) is authorized to construct a system of forest practice regulations applicable to timber management on state and private timberlands.

PRC § 4551 requires the Board to “...adopt district forest practice rules... to ensure the continuous growing and harvesting of commercial forest tree species and to protect the soil, air, fish, wildlife, and water resources...” and PRC § 4553 requires the Board to continuously review the rules in consultation with other interests and make appropriate revisions.

Furthermore, PRC § 4551.5 requires that these regulations adopted by the Board “...apply to the conduct of timber operations and shall include, but shall not be limited to, measures for fire prevention and control, for soil erosion control, for site preparation that involves disturbance of soil or burning of vegetation following timber harvesting activities, for water quality and watershed control, for flood control, for stocking, for protection against timber operations that unnecessarily destroy young timber growth or timber productivity of the soil, for prevention and control of damage by forest insects, pests, and disease...”.

The regulations related to harvesting practices and erosion control for tractor operations and cable operations in the Forest Practice Rules (Rules) within the Coast, Northern, and Southern Forest Districts within 14 CCR §§ 914.2 & 914.3, 934.2 & 934.3, and 954.2 & 954.3, respectively, were initially adopted, in their modern incarnation, in 1989 and, aside from some minor amendments, remain largely as they were initially adopted. Since this time, however, both logging practices, and other regulations which govern their operations, have grown and changed in the 31 years following initial adoption.

One of the recent developments in logging practices is the use of cable-winch systems to assist ground-based equipment with timber harvesting on steep slopes, a practice which is often referred to as “tethered logging”. Traditionally, logging operations on steep slopes utilize cable yarding, or cable operations, which involves manual tree falling and cable rigging in difficult terrain, a process which is labor-intensive, costly, and extremely hazardous. Due to these issues surrounding traditional cable operations, available timber operators with the equipment to engage in such operations are becoming more and more scarce, which creates an issue for those property owners or managers who seek to actively manage forested landscapes which are steep.

Tethered logging operations combine the use of ground-based equipment with a cable-tension system in order to increase the machine’s traction to prevent slippage. The increase in traction allows the machine to work on steeper slopes than would otherwise be possible while reducing the ground disturbance of the machine. These systems have been used to increase the operating range of ground-based equipment and reduce the need for hand-fallers and/or cable yarding systems.

The improved traction provided by the cable-winch assistance in tethered operations may provide for improvements in forest health related to soil health and erosion control. One of the key components of forest management is the maintenance of soil productivity and the minimization of soil compaction plays a critical role in the maintenance of such productivity. Soil compaction can contribute to erosion, and may negatively affect environmental quality of aquatic ecosystems and downstream resources. The use of cable-winch systems with heavy ground-based machines can provide for much more evenly distributed, or reduced, ground pressures in certain instances, resulting in potentially reduced soil compaction and reduced degradation of soil productivity.

The **problems** that this proposed action seeks to address is that the existing Rules do not accommodate, or provide any certainty in use of, these Tethered Operations. To be clear, the current Rules do not exclude the use or implementation of tethered operations, instead they are treated as any alternative practice within the rules and additional explanation and justification is generally necessary to implement their uses. Furthermore, provided the ground-cable hybrid nature and general novelty of these systems, some confusion may exist related to how current regulations apply to these systems.

Additionally, many of the existing provisions of the Coast, Northern, and Southern Tractor and Cable Operation regulations within 14 CCR §§ 914.2 & 914.3, 934.2 & 934.3, and 954.2 & 954.3, respectively, are unclear or otherwise redundant, inconsistent, or simply outdated in light of other existing modern forest practice regulations related to ground-based and cable timber operations.

The **purpose** of the proposed action is to: 1) provide for the implementation of specific tethered logging systems for in use timber operations within the Rules and clarify what manner of system is intended for such use in Tethered Operations; 2) improve the

clarity and consistency of certain existing regulations related to harvesting practices and erosion control by using modern and defined terminology and regulations; 3) eliminate redundancy within existing regulations; 4) provide for appropriate disclosure in order to support the enforcement of those purposes described above.

The **effect** of the proposed action is to: 1) provide regulatory certainty around the role and application of tethered logging operations within the Rules; 2) create more straightforward and streamlined requirements for the regulated public surrounding the application of rules related to tractor and cable Timber Operations; 3) provide clarity for the implementation and enforcement of Tractor and Cable Operation regulations.

The **benefit** of the proposed action a regulatory scheme with improved clarity related to the use of tethered operations. Such an improvement in the clarity of use of tethered equipment is likely to lead to an increase in purchasing and utilization of such equipment, which is likely to improve worker health and safety over traditional Cable Operations, as mechanized Timber Operations (such as those used in tethered operations) have injury rates almost seven times lower for mechanized systems as compared to hand-falling and non-mechanized systems<sup>1</sup>.

**SPECIFIC PURPOSE OF EACH ADOPTION, AMENDMENT OR REPEAL (pursuant to GOV § 11346.2(b)(1)) AND THE RATIONALE FOR THE AGENCY'S DETERMINATION THAT EACH ADOPTION, AMENDMENT OR REPEAL IS REASONABLY NECESSARY TO CARRY OUT THE PURPOSE(S) OF THE STATUTE(S) OR OTHER PROVISIONS OF LAW THAT THE ACTION IS IMPLEMENTING, INTERPRETING OR MAKING SPECIFIC AND TO ADDRESS THE PROBLEM FOR WHICH IT IS PROPOSED (pursuant to GOV §§ 11346.2(b)(1) and 11349(a) and 1 CCR § 10(b)). *Note: For each adoption, amendment, or repeal provide the problem, purpose and necessity.***

The Board is proposing action to amend 14 CCR §§ 895.1, 914, 914.2, 914.6, 934, 934.2, 934.6, 954, 954.2, 954.6, 1034, 1038.2, 1038.4, 1052, 1090.5, 1090.7, 1092.09, 1094.6, and 1094.8, and to repeal 14 CCR §§ 914.3, 934.3, and 954.3.

#### **General Note on the amendment of THP to Plan**

Throughout the proposed action, the defined initialism "THP" (14 CCR § 895) has been replaced with the defined term "Plan". When these regulations were initially adopted, the Timber Harvesting Plan (THP) was one of the only discretionary permits for timber harvesting provided by the Rules. Since that time, numerous discretionary permitting vehicles have been created within regulation, which are identified throughout most of the modern Rules as "Plans". The purpose of amending this term within these provisions is to capture the applicability of the regulations to all discretionary timber

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<sup>1</sup> Bonauto, D.K., Wuellner, S.E., Marcum, J.L., Adams, D.A., 2019. Injury rate comparisons for nonmechanized and mechanized logging operations, Washington State, 2005–2014. *J. Agromed.* 1–10.

harvesting permitting vehicles, not simply the Timber Harvest Plan. This is necessary to clarify the applicability of the regulations and to aid in their implementation and enforcement.

**Amend § 895.1. Definitions.**

The proposed action modifies the definition of “Tractor Operations” to mean any activity associated with Timber Operations which is performed by wheel or track mounted ground-based equipment, including, but not limited to, tractors or skidders. The purpose of this amendment is to provide clarity surrounding the generally colloquial term of “tractors”, as well as the term “skidders”, which may have various interpretations, by identifying that all ground-based equipment which is equipped with wheels or tracks is subject to regulations related to Tractor Operations, and to provide examples of tractors and skidders. This amendment is necessary to add clarity to this definition and to aid in the implementation of those regulations related to this definition.

The proposed action defines the term “Tethered Operations” to mean tractor operations which use synchronized cable winch systems which have been specifically designed or modified by the manufacturer or professional engineer to assist in felling or yarding timber operations. The term “synchronized” is further defined internally as being a mode of operation in which a traction aid winch is operated automatically using pre-set pulling and braking forces to maintain cable tension with the speed of the machine. The purpose of this definition is to specify which types of equipment are subject to the regulations related to tethered operations. These amendments are necessary in order to clarify the types of equipment which are suitable for steep slope operations. The types of equipment included in this definition have been studied and evaluated as “tethered” equipment, the use of which are likely to result in the operational, environmental, and safety benefits described above within this document, while the definition excludes those types of equipment which may use some form of cable-winch for assistance, but do not otherwise provide for those benefits. As described within the definition, the elements of synchronization, designed by qualified parties (the manufacturer or an engineer), are critical components of such benefits.

**Amend §§ 914, 934, and 954. Purposes.**

The proposed action requires that all Timber Operations (defined per 14 CCR § 895.1) be conducted to prevent degradation of the quality and Beneficial uses of water consistent with 14 CCR §§ 916.2, 936.2, and 956.2, as applicable, as well as to prevent degradation of the Beneficial Functions of Riparian Zones, consistent with those cited sections as well. The purpose of these amendments is to provide additionally clarity into how timber operations may achieve those performance requirements, as the cited sections provide guidance on the protection of the Beneficial Uses of Water and Riparian Functions. This is necessary in order to improve the clarity of these provisions.

Additionally, the proposed action requires that all Timber Operations be conducted to maintain site productivity by minimizing disturbance which could lead to soil loss. The purpose of this amendment is to clarify the means by which soil loss should explicitly be

minimized in order to maintain site productivity. This amendment is necessary in order to clarify this requirement for the purposes of implementation and enforcement.

Furthermore, the term “Riparian vegetation” has been replaced with the term “Beneficial Functions of Riparian Zones”, as defined per 14 CCR § 895.1. The purpose of this amendment is to clarify the use of the term by inclusion of defined term. This is necessary in order to provide such clarity to the regulated public in order to aid in the implementation and enforcement of this provision.

Finally, the proposed action eliminates the conclusion of this provision, as it simply reiterates the introductory paragraph and may cause issues with clarity. The introductory paragraph of these sections already provides mandatory conditions of timber operations, which are also addressed by the subsequent sections of the Article and are applicable without the conclusion sentence. Additionally, some of the sections within the Article contain provisions which may be confusing to interpret in the context of this sentence. This amendment is necessary to clarify that, as identified in the remainder of the section, the section applies to all timber operations, and to eliminate any issues with clarity which may result from this sentence.

**Amend §§ 914.2, 934.2, and 954.2. Operations (Renamed from Tractor Operations)**

The proposed amendment eliminates the condition that the section is only applicable to Tractor Operations. The purpose of this amendment is to support the re-structuring of this and the “Cable Operations” sections into a single section which contains requirements, conditions, and provisions regarding to Timber Operations and related to the intent as stated within 14 CCR §§ 914, 934, and 954.

**Amend §§ 914.2(a), 934.2(a), and 954.2(a)**

The proposed action requires that all Timber Operations be conducted in a manner which complies with 14 CCR §§ 914, 934, and 954. The purpose of this amendment is to clarify that the requirements identified within those sections are applicable to all forms of Timber Operations, not solely Tractor Operations, and to support the restructuring described above. This amendment is necessary in order to clarify this new requirement in order to provide for implementation and enforcement.

**Amend §§ 914.2(b), 934.2(b), and 954.2(b)**

The proposed amendment requires that all heavy equipment which is equipped with a blade shall not operate on skid roads or slopes that are so steep as to require the use of the blade for braking. The purpose of this amendment is to improve the clarity of this provision, as the distinction between “tractors” and “other heavy equipment” was unnecessary and potentially redundant. This is necessary to clarify that this provision applies to all heavy equipment which is equipped with a blade.

**Amend §§ 914.2(c), 934.2(c), and 954.2(c)**

The proposed action eliminates the requirement that existing Tractor Roads be used instead of constructing new Tractor Roads when less damage to the resources specified in 14 CCR §§ 914, 934, or 954 will result. Provided that 14 CCR §§ 914.2(a),

934.2(a), and 954.2(a) require compliance with 14 CCR §§ 914, 934, and 954, respectively, which itself requires minimization of damage to specified resources, this statement is redundant. The purpose of this amendment is to eliminate this redundancy and to rely upon compliance with 14 CCR §§ 914.2(a), 934.2(a), and 954.2(a). This amendment is necessary to clarify the elimination of this redundant statement.

**Amend §§ 914.2(f), 934.2(f), and 954.2(f)**

The proposed amendment introduces a set of limitations on certain Timber Operations. Previously, the provision identified that the limitations were applicable only to Tractor Operations, however some of the provisions are related to all heavy equipment, not simply those tractor operations and would create an inconsistency where the use of heavy equipment may not constitute Tractor Operations. The purpose of the proposed action is to address this inconsistency and clarify that all subsequent provisions are not strictly limited to Tractor Operations, but should be applied as described and appropriate

**Amend §§ 914.2(f)(1), 934.2(f)(1), and 954.2(f)(1)**

The proposed action excludes Tethered Operations from slopes which are steeper than sixty-five percent, or where slopes steeper than fifty percent where the Erosion Hazard Rating is high or extreme. Given that equipment used in Tethered Operations, as defined within the proposed action, are intended to be, and capable of being, operated on steep slopes, the purpose of this amendment is to allow for Tethered Operations to occur in these areas. This amendment is necessary to clarify this allowance for Tethered Operations in order to provide for implementation and enforcement of this provision.

**Amend §§ 914.2(f)(2), 934.2(f)(2), and 954.2(f)(2) (previously (f)(1)(iii))**

The proposed amendment restructures this provision outside of the slope exemptions provided to Tethered Operations within 14 CCR §§ 914.2(f)(1), 934.2(f)(1), and 954.2(f)(1), but does not substantively change the content of this provision. The purpose of this provision is to restrict the operation of all heavy equipment under certain conditions. This amendment is necessary to clarify that Tethered Operations are not exempt from these restrictions.

**Amend §§ 914.2(f)(3), 934.2(f)(3), and 954.2(f)(3) (previously (f)(2))**

The proposed action provides an exception for Tethered Operations on certain slope-based limitations. Given that equipment used in Tethered Operations, as defined within the proposed action, are intended to be, and capable of being, operated on steep slopes, the purpose of this amendment is to allow for Tethered Operations to occur in these areas. This amendment is necessary to clarify this allowance for Tethered Operations in order to provide for implementation and enforcement of this provision.

**Amend §§ 914.2(f)(4), 934.2(f)(4), and 954.2(f)(4) (previously (f)(3))**

The proposed action allows a Registered Professional Forester (RPF) to propose exceptions to the limitations of 14 CCR §§ 914.2(f)(1)-(3), 934.2(f)(1)-(3), or 954.2(f)(1)-(3) if the Plan clearly explains the proposed exception and justifies how the exception

will comply with 14 CCR § 914, 934, or 954, respectively. Previously, the RPF was required to justify why the application of the standard rule was either not Feasible (per 14 CCR § 895.1), or would not comply with 14 CCR §§ 914, 934, or 954, as appropriate. The purpose of this amendment is to clarify the standards of justification which must be met for the proposal of alternative practices to those provisions described. Similar standards of justification, which is reliant upon the RPF to explain how the proposed alternative will satisfy the purpose and intent of the rules, exists elsewhere in the rules, such as within 14 CCR §§ 912.7(d)(1), 916.1, 921.9, 932.7(d)(1), 936.1, 952.7(d)(1), 956.1, and 1051.4(a)(9), and are suitable and appropriate here in order to achieve the goals stated within this provision. This amendment is necessary in order to clarify this standard of justification in order to promote implementation and enforcement of this provision and subsequent alternatives.

Additionally, the proposed action provides that the location of Tractor Roads to be used in the exceptions or alternatives described above must be flagged prior to the pre-harvest inspection, or prior to the start of Timber Operations when no preharvest inspection is required, only when required by the Director. The purpose of this amendment is to provide the Director the discretion to determine, following evaluation of a plan, whether or not tractor roads proposed as exceptions will require flagging. If flagging is required by the Director, there are prescriptive timelines by which that flagging must occur. This amendment is necessary to eliminate potentially unnecessary or overly-burdensome flagging requirements where they may not be necessary, as the previous language required flagging of all such roads.

#### **Amend §§ 914.2(f)(5), 934.2(f)(5), and 954.2(f)(5)**

The proposed action allows Tractor Operations, excluding yarding, from occurring in areas designated for Cable Yarding on slopes up to 50%, with certain specific limitations as described within this section and any other limitations on Tractor Operations which exist throughout the Rules and which may be applicable to any given Timber Operation. Previously, Tractor Operations were prohibited in areas designated for Cable Operations except for certain, specified activities when explained and justified by an RPF, within 14 CCR §§ 914.3(e), 934.3(e), and 954.3(e). The purpose of this amendment is to allow all Tractor Operations, except for Yarding, in those areas where all Tractor Operations are currently allowed, without exception (slopes greater than 50%), save for the other limitations described. This amendment may provide for increased utilization of Tractor Operations, which are significantly more efficient than Cable Operations, to assist and improve the efficiency of those Cable Operations in areas where there is no other environmental sensitivity related to Tractor Operations. This amendment is necessary to clarify both this allowance and the applicability of restrictions on the allowance.

#### **Amend §§ 914.2(h), 934.2(h), and 954.2(h)**

The proposed amendment requires Timber Operators to exercise due diligence to preserve desirable residual trees and seedlings which are required to be retained upon completion of Timber Operations. The purpose of this amendment is to provide additional clarity as to which trees the Timber Operator must use due diligence to not

damage or destroy during Timber Operations. Throughout the Rules, various retention requirements exist depending upon the forest management activity and permit, and this provision requires that those desirable trees which are required for retention be protected from damage or destruction. This amendment is necessary in order to clarify this requirement and to aid in implementation and enforcement of this provision.

Also, the proposed amendment clarifies that the measures taken to protect certain residual trees and seedlings described above should be taken to protect those trees and seedlings from all Timber Operation activities, not only those associated with Tractor Operations. The purpose of this is to clarify that this provision is applicable to all Timber Operations, and is necessary to ensure consistency of application and resource protection.

Finally, the proposed amendment prohibits using the residual trees described above for rub trees, corner blocks, Rigging, or other cable ties unless effectively protected from damage. This provision come form the previous requirement of 14 CCR §§ 914.3(b), 934.3(b), and 954.3(b), which identified these prohibitions for Cable Operations. The purpose of the proposed amendment is to support the restructuring of the tractor and cable operation rule sections into one rule section. This amendment is necessary to clarify and maintain these prohibited activities (and exceptions) to the regulated public which are intended to prevent damage or destruction of residual trees following Timber Operations. Please see the discussion on the repeal of 14 CCR §§ 914.3, 934.3, and 954.3 for additional information.

#### **Amend §§ 914.2(i), 934.2(i), and 954.2(i)**

The proposed amendment repeals a provision which requires that, where Waterbreaks cannot effectively disperse surface runoff, other Erosion Controls shall be installed as needed. This provision substantively exists within 14 CCR §§ 914.6(f) ,934.6(f), and 954.6(f), within a section related to Waterbreaks, and its inclusion within 14 CCR §§ 914.2, 934.2, and 954.2 is redundant and unnecessary. The purpose of this amendment is to eliminate this redundancy and improve the clarity of all affected rule sections. This amendment is necessary to promote such clarity.

#### **Amend § 954.2(j) and (k)**

The proposed amendment repeals prescriptive limitations on mechanical site preparation in the Southern Forest District, as well as the process for proposing exceptions to those limitations. Provided that other provisions of the Rules contain requirements for site preparation (Article 5), and watercourse and lake protection (Article 6) which are intended to protect forest resources, and the other provisions within 14 CCR § 954.2 which allow other harvesting operations on slopes steeper than those identified within 14 CCR § 954.2(j), these additional restrictions are unnecessary for the protection of forest resources in Southern Forest District. Furthermore, in reviewing the issue, the Board and the Department have found that a large portion of Plans submitted in the Southern Forest District propose exceptions to these limitations which are consistent with other portions of the rules (Articles 5 and 6) and there have been no issues with damage to resources as a result of the implementation of those plans. The



purpose of the proposed action is to eliminate these restrictions and the amendment is necessary to clarify this elimination.

### **Repeal §§ 914.3, 934.3, and 954.3. Cable Yarding**

The proposed amendment repeals the sections which provide standards applicable to Cable Yarding in the Coast, Northern, and Southern Forest Districts. Subsections (a), (c), and (d) all provide performance-based requirements to protect residual trees from Cable Yarding. The restructuring contained within the proposed action provides similar requirements for the protection of residual trees within 14 CCR § 914, 914.2(a), 914.2(h), 934, 934.2(a), 934.2(h), 954, 954.2(a), and 954.2(h) for all Timber Operations (including Cable Yarding operations). The purpose of the elimination of these subsections in 14 CCR §§ 914.3, 934.3, and 954.3 is to eliminate any redundancy within the regulations and is necessary to clarify that the goals of protecting residual trees from damage is applicable to all Timber Operations.

Subsection (b) includes explicit prohibitions against certain cable-yarding specific activities (except in specified conditions), which are retained within 14 CCR §§ 914.2(h), 934.2(h), and 954.2(h). The purpose of the elimination within this section is to support the restructuring of this proposed action and is necessary to eliminate redundancy within the provisions and provide clarity within the regulations.

Subsection (e) prohibits Tractor Operations in those areas designated for Cable Yarding, except for certain activities when explained and justified. The amendments to 14 CCR §§ 914.2(f)(5), 934.2(f)(5), and 954.2(f)(5) render these prohibitions obsolete and the purpose of their removal within this subsection is to support those revisions and are necessary to clarify these revised prohibitions and conditions.

### **Amend §§ 914.6(b), 934.6(b), and 954.6(b)**

The proposed amendment excludes Tractor Roads used in Tethered Operations on slopes greater than 50% and those used in Tethered Operations on slopes less than 50% percent where Slash or other vegetative material is used to minimize disturbance as described within subsection (c), from the requirement to construct Waterbreaks concurrently with the construction of firebreaks and immediately upon conclusion of use of Tractor Roads. The purpose of this amendment is to clarify that this requirement is not applicable in these instances because where Tethered Operations on slopes greater than 50% are proposed in a Plan, the RPF must explain provide site-specific treatments, rather than the standard prescriptive treatments, for those Tractor Roads in a manner which will comply with 14 CCR §§ 914, 934, or 954, as appropriate, as described within 14 CCR §§ 914.6(d), 934.6(d), and 954.6(d), and these treatments may or may not include the construction of Waterbreaks. Additionally, the purpose of this amendment is to clarify that this requirement is not applicable to those treatments which utilize the packing of Slash or other vegetative material, as described within 14 CCR §§ 914.6(c), 934.6(c), and 954.6(c), as no waterbreaks are required to be constructed on those Tractor Roads. These amendments are necessary in order to clarify these requirements in order to promote implementation and enforcement of these provisions.

Additionally, the proposed action requires construction of Waterbreaks to occur immediately upon the conclusion of use of certain Logging Roads. The purpose of this amendment is to clarify the term “roads”, as being Logging Roads as defined by 14 CCR § 895.1, which is necessary to provide improved clarity of the provision to the regulated public.

**Amend §§ 914.6(c), 934.6(c), and 954.6(c)**

The proposed amendment requires Tractor Roads which are used in Tethered Operations on slopes of less than 50% must have Waterbreaks installed to pre-existing standards, or must be packed with Slash or other vegetative material in a manner which minimizes disturbance which could lead to soil loss from those Tethered operations and in a manner which complies with 14 CCR §§ 914, 934, and 954. Purpose of the use of these preexisting standards for Waterbreak construction is to promote protection of forest resources, and these preexisting standards are suitable and appropriate here to provide adequate protection of those forest resources provided that they are being applied to operations which of a similar scope, but with increased traction, to those for which they were initially applied. The purpose of requiring, alternatively, the packing of slash or other vegetative material on Tractor Roads concurrently with Tethered Operations is, similarly, to protect forest resources. The practice of packing Tractor Roads with such material has been utilized throughout the state for a number of years as an alternative practice during timber operations which minimize ground disturbance (i.e. shovel logging operations), and provided the improved traction and resulting reduced ground disturbance created from equipment used in Tethered Operations, this practice is appropriate and suitable here, provided that it occurs in a manner which complies with the stated requirements to minimize disturbance which could lead to soil loss and comply with 14 CCR §§ 914, 934, or 954, as appropriate. This amendment is necessary to clarify these standards for the implementation and enforcement of these provisions.

**Amend §§ 914.6(d), 934.6(d), and 954.6(d)**

The proposed amendment requires that, when Tethered Operations on slopes greater than 50% are proposed in a Plan, an RPF must explain how Tractor Roads used in those operations will be treated in order to minimize disturbance which could lead to soil loss and comply with 14 CCR §§ 914, 934, or 954, as appropriate. The purpose of this amendment is to require the RPF to make site-specific evaluations on the treatment of those Tractor Roads in order to comply with the provisions of 14 CCR §§ 914, 934, or 954, which are intended to minimize damage and provide for resource protection. RPFs are uniquely qualified to prescribe such treatments, provided that they alone are licensed to engage in the “...evaluation and mitigation of impacts from forestry activities”, per PRC § 753 of the Professional Foresters Law. These proposed treatments are then reviewed by the Director, consistent with the review processes described within the FPA and Rules in order to determine adequate resource protection. This amendment is necessary to clarify this requirement of establishing such treatments.

**Amend §§ 914.6(f), 934.6(f), and 954.6(f) (Previously (d))**

The proposed amendment requires that Tractor Roads which are used in Tethered Operations on slopes greater than 50% which are so deeply cut as to divert and carry water away from natural drainage patterns for more than 100 feet must have Waterbreaks installed on them at one hundred foot intervals, or other appropriate measures as specified in a Plan. This prescriptive requirement had previously existed for Cable Roads, which are generally conducted on slopes greater than 50%, and it is appropriate and suitable for Tethered Operations as well. The purpose of the amendment is to provide a prescriptive requirement for Tractor Road treatment on steep slope (>50%) Tethered Operations should a proposed treatment fail to prevent the diversion of water away from natural drainage patterns for over 100 feet in order to provide for the protection of forest resources. This amendment is necessary to clarify this requirement.

**Amend §§ 914.6(h), 934.6(h), and 954.6(h) (Previously (f))**

The proposed amendment requires that certain provisions related to Waterbreak location and construction be applied to all Waterbreaks, not simply those associated with roads and skid trails. The purpose of this amendment is to ensure that the resource protection goals of 14 CCR §§ 914, 934, and 954 are achieved for all waterbreak applications, not simply those constructed on roads and skid trails. This amendment is necessary to clarify this requirement in order to ensure clear and consistent implementation and enforcement of these provisions.

**Amend §§ 1034(n)(2)(A)&(B) and 1092.09(m)(2)(A)&(B)**

The proposed amendments provides that a Timber Harvest Plan (1034) or Programmatic Timber Harvest Plan (1092.09) disclose the type of yarding, and specify that Tethered and Non-Tethered yarding systems are sub-groups within the “Tractor, skidder, forwarder” group. The purpose of this amendment is to clarify the requirement to disclose Tethered Operations within these documents, where other methods of logging are identified explicitly in order to introduce clarity within these provisions. It should be noted that other requirements of certain permitting vehicles require disclosure of yarding/logging methods, but do not cite, or “group” those methods explicitly to potentially introduce a lack of clarity as may be created without the proposed amendment in these sections. This disclosure is necessary in order to promote the enforcement of regulations related to Tethered Operations by those reviewing these Plans.

**Amend §§ 1034(x)(17), 1038.2(j), 1038.4(l), 1052(a)(4), 1090.5(w)(17), 1090.7(n)(16), 1092.09(l)(12), 1094.6(e)(17), 1094.8(u)(17)**

The proposed amendment requires that, on existing maps which are required for the permitting of various Timber Operations, the boundaries of any areas where Tractor Operations are proposed for use on areas designated for Cable Yarding must be shown. The purpose of this amendment is to require disclosure of such areas to the Department and is necessary to provide for the enforcement of the prescriptive limitations of Tractor Operations in such areas in order to ensure the adequate protection of forest resources.

### **Non-Substantive Amendments**

1. Capitalized and utilized terms defined pursuant to 14 CCR § 895.1 and this Article throughout the amendments where appropriate.
2. Made lower-case terms which were capitalized but not proper-nouns or undefined within applicable regulation or are not used consistent with their regulatory definition.
3. Re-structured existing regulatory structure to promote simple and more logical regulatory structure.
4. Included written and Arabic numbers where they exist.
5. Improved grammar and spelling throughout.

### **ECONOMIC IMPACT ANALYSIS (pursuant to GOV § 11346.3(b)(1)(A)-(D) and provided pursuant to 11346.3(a)(3))**

The effect of the proposed action is to: 1) provide regulatory certainty around the role and application of tethered logging operations within the Rules; 2) create more straightforward and streamlined requirements for the regulated public surrounding the application of rules related to tractor and cable timber operations; 3) provide clarity for the implementation and enforcement of tractor and cable operation regulations.

There is one minor mapping requirement included within the proposed action, however it is an element of larger and more complex mapping requirements which are already extant for various permitting mechanisms. Furthermore, the mapping requirement is only applicable for those conducting Tethered Operations within Cable Operations, a practice which previously would have required significant explanation and justification and created an equal, or potentially larger impact than the modified regulations and mapping requirement. There are no economic impacts associated with this requirement.

### **Creation or Elimination of Jobs within the State of California**

The proposed action does not mandate any action on behalf of the regulated, it simply clarifies how new technologies may be integrated into existing forest practice. There are no new costs associated with this. No creation or elimination of jobs will occur.

### **Creation of New or Elimination of Businesses within the State of California**

The regulatory amendments as proposed represent a continuation of existing forest practice regulations and are intended to guarantee certainty in their application. Given that the businesses which would be affected by these regulations are already extant, it is expected that proposed regulation will neither create new businesses nor eliminate existing businesses in the State of California.

### **Expansion of Businesses Currently Doing Business within the State of California**

The regulatory amendments as proposed represent a continuation of existing forest practice regulations and are intended to guarantee certainty in their application. The proposed regulation will not result in the expansion of businesses currently doing business within the State.

### **Benefits of the Regulations to the Health and Welfare of California Residents, Worker Safety, and the State's Environment**

The benefit of the proposed action a regulatory scheme with improved clarity related to the use of tethered operations. Such an improvement in the clarity of use of tethered equipment is likely to lead to an increase in purchasing and utilization of such equipment, which is likely to improve worker health and safety over traditional cable operations.

### **Business Reporting Requirement (pursuant to GOV § 11346.5(a)(11) and GOV § 11346.3(d))**

The proposed regulation does not require a business reporting requirement.

### **STATEMENTS OF THE RESULTS OF THE ECONOMIC IMPACT ASSESSMENT (EIA)**

The results of the economic impact assessment are provided below pursuant to **GOV § 11346.5(a)(10)** and prepared pursuant to **GOV § 11346.3(b)(1)(A)-(D)**. The proposed action:

- Will not create jobs within California (GOV § 11346.3(b)(1)(A)).
- Will not eliminate jobs within California (GOV § 11346.3(b)(1)(A)).
- Will not create new businesses (GOV § 11346.3(b)(1)(B)).
- Will not eliminate existing businesses within California (GOV § 11346.3(b)(1)(B)).
- Will not affect the expansion or contraction of businesses currently doing business within California (GOV § 11346.3(b)(1)(C)).
- Will yield nonmonetary benefits (GOV § 11346.3(b)(1)(D)). For additional information on the benefits of the proposed regulation, please see anticipated benefits found under the "Introduction Including Public Problem, Administrative Requirement, or Other Condition or Circumstance the Regulation is Intended to Address".

### **TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENT RELIED UPON (pursuant to GOV SECTION 11346.2(b)(3))**

The Board of Forestry and Fire Protection relied on the following list of technical, theoretical, and/or empirical studies, reports or similar documents to develop the proposed action:

1. Evanson, T., Amishev, D., Parker, R., and Harrill, H. An evaluation of a ClimbMAX Steep Slope Harvester in Maungataniwha Forest, Hawkes Bay. Future Forest Research. Task No: F2005, Report No: H013, Milestone Number: 1.1.4.State of California Senate Bill 901 (2018)
2. Chase, C.W., Reiter, M., Homyack, J.A., Jones, J.E., and Sucre, E.B. 2019. Soil disturbance and stream-adjacent disturbance from tethered logging in Oregon and Washington. Forest Ecology and Management. 454. Doi: 10.1016/j.foreco.2019.117672

3. Green, P.Q. 2019. Insight into the Productivity, Cost and Soil Impacts of Cable-assisted Harvester-forwarder Thinning in Western Oregon. Unpublished Master's Thesis, Oregon State University. 48 pp.
4. Sessions, J., Leshchinsky, B., Chung, W., Boston, K., and Wimer, J. Theoretical Stability and Traction of Steep Slope Tethered Feller-Bunchers. *Forest Science*. 63(2): 192-200. doi: 10.5849/forsci.16-069
5. Petitmermet, J., Sessions, J., Bailey, J., and Zamora-Cristales, R. 2019. Cost and Productivity of Tethered Cut-to-Length Systems in a Dry-Forest Fuel-Reduction Treatment: A Case Study. *Forest Science*. 65(5): 581-592. doi: 10.1093/forsci/fxz010
6. Petitmermet, J.H., Fried, J.S., and Sessions, J. 2019. Estimating Biomass Availability and Cost When Implementing Forest Restoration with Tethered Harvest Systems. *Journal of Forestry*. 117(4): 323-339. doi: 10.1093/jofore/fvz033
7. Hwang, K., Han, H.S., Marshall, S.E., and Page-Dumroese, D.S. 2018. Amount and Location of Damage to Residual Trees from Cut-to-Length Thinning Operations in a Young Redwood Forest in Northern California. *Forests*. 9(352). Doi: 10.3390/f9060352
8. Garland, J., Belart, F., Crawford, R., Chung, W., Cushing, T., Fitzgerald, S., Green, P., Kincl, L., Leschinsky, B., Morrissette, B., Sessions, J., and Wimer, J. Safety in steep slope logging operations. *Journal of Agromedicine*. Doi: 10.1080/1059924X.2019.1581115
9. Visser, R. and Harrill, H. 2017. Cable Yarding in North America and New Zealand: A Review of Developments and Practices. *Croatian Journal of Forest Engineering*. 38(2): 209-217.
10. Cavalli, R. and Amishev, D. 2017. Steep Terrain Forest Operations – Challenges, Technology Development, Current Implementation, and Future Opportunities. Presentation to the Joint Regional Meeting of IUFRO RG3.03.00 and RG3.06.00 in Asia. Matsuyama and Kochi, Japan: July 24th-28th, 2017.
11. Leslie, C. 2019. Productivity and Utilisation of Winch-Assist Harvesting Systems: Case Studies in New Zealand and Canada. Unpublished Master's Thesis, University of Canterbury. 71 pp. plus appendices.
12. Visser, R. and Stampfer, K. 2015. Expanding Ground-based Harvesting onto Steep Terrain: A Review. *Croatian Journal of Forest Engineering*. 36(2): 321-331.

13. Zamora-Cristales, R., Adams, P.W., and Sessions, J. 2014. Ground-Based Thinning on Steep Slopes in Western Oregon: Soil Exposure and Strength Effects. *Forest Science*. 60(5): 1014-1020. Doi: 10.5849/forsci.12-525.
14. Allen, M.M. 1998. Soil Compaction and Disturbance Following a Thinning of Second-Growth Douglas-fir with a Cut-to-Length and a Skyline System in the Oregon Cascades. Unpublished master's thesis, Oregon State University. 105 pp.
15. Allen, M.M., Taratoot, M., and Adams, P.W. 1999. Soil compaction and disturbance from skyline and mechanized partial cuttings for multiple resource objectives in western and northeastern Oregon, U.S.A. p. 107-117 in: J. Sessions and W. Chung (eds.), *Proceedings of the International Mountain Logging and 10th Pacific Northwest Skyline Symposium*, 28 March-1 April 1999, Corvallis, Oregon. Forest Engineering Dept., Oregon State University, Corvallis.
16. Garren, A.M., Bolding, M.C., Aust, W.M., Moura, A.C., and Barrett, S.M. 2019. Soil Disturbance Effects from Tethered Forwarding on Steep Slopes in Brazilian Eucalyptus Plantations. *Forests*. 10(721). Doi: 10.3390/f10090721
17. Worrell, W.C., Bolding, M.C., and Aust, W.M. 2011. Potential Soil Erosion following Skyline Yarding versus Tracked Skidding on Bladed Skid Trails in the Appalachian Region of Virginia. *Southern Journal of Applied Forestry*. 35(3): 131-135. Doi: 10.1093/sjaf/35.3.131
18. Johnson, L.R., Lippke, B., Marshall, J.D., and Cornick, J. 2005. Life-cycle Impacts of Forest Resource Activities in the Pacific Northwest and Southeast United States. *Wood and Fiber Science*. 37: 30-46.
19. Nailon, T., Rappin, C. 2019. Best Management and Operating Practices for Steep Slope Machine Logging (Revised 2019). Technical Report Number 98-02-2019. June 2019. Safety and Health Assessment and Research for Prevention Program, Washington State Department of Labor & Industries.
20. New Zealand Ministry for Primary Industries, Forest Growers Research. Steep Land Harvesting Programme Final Summary Report. 30 September 2017.
21. Chung, W., Garrelts, B.. Tethered Logging in Southwest Oregon – Research Perspective (Presentation).
22. Boswell, B., Amishev, D., Hunt, J.. Best Management Practices for Winch-Assist Equipment – Evolving Document. January 2018. FP-Innovations.

23. Section 6.4, New Zealand Accepted Code of Practices – Winch Assist Rules. 2012.

24. Section 3.29. ISO/DIS 19472-2(en) (DRAFT), accessed online June 3, 2020.

**REASONABLE ALTERNATIVES TO THE PROPOSED ACTION CONSIDERED BY THE BOARD, IF ANY, INCLUDING THE FOLLOWING AND THE BOARD'S REASONS FOR REJECTING THOSE ALTERNATIVES (pursuant to GOV § 11346.2(b)(4)(A) and (B)):**

- **ALTERNATIVES THAT WOULD LESSEN ANY ADVERSE IMPACTS ON SMALL BUSINESS AND/OR**
- **ALTERNATIVES THAT ARE LESS BURDENSOME AND EQUALLY EFFECTIVE IN ACHIEVING THE PURPOSES OF THE REGULATION IN A MANNER THAT ENSURES FULL COMPLIANCE WITH THE AUTHORIZING STATUTE OR OTHER LAW BEING IMPLEMENTED OR MADE SPECIFIC BY THE PROPOSED REGULATION**

Pursuant to **GOV § 11346.2(b)(4)**, the Board must determine that no reasonable alternative it considers, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.

**Alternative 1: No Action Alternative**

The Board considered taking no action, but this alternative was rejected because it would not address the problem.

**Alternative #2: Make regulation less prescriptive**

This action would replace the existing prescriptive standards for Tractor and Cable Operations with performance-based regulations. This action would create issues related to the preservation of environmental quality with regards to the ministerial permitting of certain timber harvesting operations and could lead to issues of clarity surrounding implementation and enforcement of the regulations. This alternative may reduce clarity and consistency with other portions of the rules which rely upon the existence of the current operational limitations in order to ensure that forest resources are preserved.

**Alternative #3: Proposed Action**

Alternatives 1 and 2 would not be more effective or equally effective while being less burdensome or impact fewer small businesses than the proposed action. Specifically, alternatives 1 and 2 would not be less burdensome and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing statute or other law being implemented or made specific by the proposed regulation.



Additionally, alternatives 1 and 2 would not be more effective in carrying out the purpose for which the action is proposed and would not be as effective and less burdensome to affected private persons than the proposed action or would not be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law than the proposed action. Further, none of the alternatives would have any adverse impact on small businesses.

**Prescriptive Standards versus Performance Based Standards (pursuant to GOV §§11340.1(a), 11346.2(b)(1) and 11346.2(b)(4)(A)):**

Pursuant to **GOV §11340.1(a)**, agencies shall actively seek to reduce the unnecessary regulatory burden on private individuals and entities by substituting performance standards for prescriptive standards wherever performance standards can be reasonably expected to be as effective and less burdensome, and that this substitution shall be considered during the course of the agency rulemaking process.

The proposed action is as prescriptive as necessary to address the problem, and contain a mix of performance-based and prescriptive requirements. Current forest practice rules surrounding tractor and cable timber operations are based in prescriptive minimum requirements for the protection of the states forest resources, which are necessary in order to accommodate for the various levels of individual project review which occurs for various permitting vehicles for timber operations. The prescriptive regulations proposed in this action are necessary in order to provide adequate clarity within the regulations.

Pursuant to **GOV § 11346.2(b)(1)**, the proposed action does not mandate the use of specific technologies or equipment.

Pursuant to **GOV § 11346.2(b)(4)(A)**, the abovementioned alternatives were considered and ultimately rejected by the Board in favor of the proposed action. The proposed action does not mandate the use of specific technologies or equipment, but does prescribe specific actions.

**FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE RELIED UPON TO SUPPORT INITIAL DETERMINATION IN THE NOTICE THAT THE PROPOSED ACTION WILL NOT HAVE A SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS (pursuant to GOV § 11346.2(b)(5))**

The fiscal and economic impact analysis for these amendments relies upon contemplation, by the Board, of the economic impact of the provisions of the proposed action through the lens of the decades of experience practicing forestry in California that the Board brings to bear on regulatory development.

The proposed action will not have a statewide adverse economic impact directly affecting businesses. The proposed action does not mandate any action on behalf of those conducting timber operations, it simply clarifies how new technologies may be integrated into existing forest practice. There is one minor mapping requirement included within the proposed action, however it is a minor portion of larger and more

complex mapping requirements which are already extant for various permitting mechanisms and any cost associated with this requirement is negligible.

**DESCRIPTION OF EFFORTS TO AVOID UNNECESSARY DUPLICATION OR CONFLICT WITH THE CODE OF FEDERAL REGULATION (pursuant to GOV § 11346.2(b)(6))**

The Code of Federal Regulations has been reviewed and based on this review, the Board found that the proposed action neither conflicts with, nor duplicates Federal regulations. There are no comparable Federal regulations related to conducting Timber Operations on private, state, or municipal forest lands.

**POSSIBLE SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS AND MITIGATIONS CEQA**

CEQA requires review, evaluation and environmental documentation of potential significant environmental impacts from a qualified Project. Pursuant to case law, the review and processing of Plans has been found to be a Project under CEQA.

Additionally, the Board's rulemaking process is a certified regulatory program having been certified by the Secretary of Resources as meeting the requirements of PRC § 21080.5.

While certified regulatory programs are excused from certain procedural requirements of CEQA, they must nevertheless follow CEQA's substantive requirements, including PRC § 21081. Under PRC § 21081, a decision making agency is prohibited from approving a Project for which significant environmental effects have been identified unless it makes specific findings about alternatives and mitigation measures

Further, pursuant to PRC § 21080.5(d)(2)(B), guidelines for the orderly evaluation of proposed activities and the preparation of the Plan or other written documentation in a manner consistent with the environmental protection purposes of the regulatory program are required by the proposed action and existing rules.

The proposed action would be an added element to the state's comprehensive Forest Practice Program under which all commercial timber harvest activities are regulated. The Rules which have been developed to address potential impacts to forest resources, including both individual and cumulative impacts, project specific mitigations along with the Department oversight (of rule compliance) function expressly to prevent the potential for significant adverse environmental effects.

The proposed action utilizes largely extant prescriptive requirements for timber operations to regulate the emergent practice of tethered operations, which have the potential for similar, though reduced, impacts of known regulated timber harvesting methods. The proposed action imposes prescriptive requirements on Tethered Operations which are a continuation of the existing prescriptive requirements on Tractor Operations, where slopes are less than fifty percent. Outside of that instance, the

regulations rely upon the plan preparation and review process to ensure the absence of significant environmental impact from proposed operations.

Plans, and other regulatory mechanisms which permit timber operations, contain a mix of project relevant avoidance and mitigation measures to reduce the risk for potential significant adverse effects.

State representatives review every Plan to determine if a Project will have a significant adverse environmental impact. Prior to making a decision of approval or denial, the review team (the Director) often supplements the information provided by the RPF and the plan submitter when necessary to ensure that all relevant information is considered. The review team (the Director) has broad discretion to request the necessary information be provided to the Department and responsible agencies to facilitate review and development of appropriate mitigation measures to ensure that the Project will not cause a significant adverse environmental impact. Local and federal agency representatives are also involved in the review process.

Pursuant to 14 CCR § 896(a), it is the Board's intent that no Plan shall be approved which fails to adopt feasible mitigation measures or alternatives from the range of measures set out or provided for in the Rules which would substantially lessen or avoid significant adverse impacts which the activity may have on the environment

Once Plans are approved, state representatives continue with compliance inspections of approved Plans until the conclusion of the Plan's lifespan. Where the Rules or approved Plan provisions have been violated, specified corrective and/or punitive enforcement measures, including but not limited to financial penalties, are imposed upon the identified offender(s).

In summary, the proposed action does not have the potential to result in significant adverse environmental effects.