

Responsiveness Summary

Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont

This document is a compilation of all public comments received by the Department of Forests, Parks and Recreation on the proposed revisions to the rule entitled Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont (AMPs) and the Department's responses to those comments. The comments and the Department's responses to the comments are organized by section of the Rule. The Proposed Rule language is presented in italic font, followed by the public comments and the Department's response to those comments. Where the Department subsequently revised the Proposed Rule language, the new proposed revised language is provided.

Comments – Section I – Introduction

SECTION I: INTRODUCTION

The "Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont" ("AMPs") were first adopted on August 15, 1987 under the authority of Chapter 47 of Title 10 of the Vermont Statutes Annotated, Water Pollution Control (10 V.S.A. §1251a and 1259(f)). See Code of Vermont Rules 12 020 010. The initial adopted rule provided that "the AMPs are the proper method for the control and dispersal of water collecting on logging roads, skid trails and log landings to minimize erosion and reduce sediment and temperature changes in streams."

Act No. 64 of the Acts of 2015 amended 10 V.S.A. §2622 to require the Commissioner of the Department of Forests, Parks and Recreation to revise by rule the AMPs to ensure that all logging operations on both public and private forestland are designed to prevent or minimize discharges of sediment, petroleum products, and woody debris (logging slash) from entering streams and other waters; improve soil health of forestland; protect aquatic habitat and aquatic wildlife; and prevent erosion and maintain natural water temperature. The purpose of the acceptable management practices is to provide measures for loggers, foresters, and landowners to utilize, before, during, and after logging operations to comply with the Vermont Water Quality Standards and minimize the potential for a discharge from logging operations in Vermont in accordance with 10 V.S.A. §1259.

Pursuant to Section 2-03B.1 of the Vermont Water Quality Standards, there is a presumption that logging operations that are in compliance with the AMPs are also in compliance with the Vermont Water Quality Standards. However, this presumption may

be overcome if a water quality analysis demonstrates that there is a discharge of wastes into waters of the State due to logging.

Additionally, logging operations that are in compliance with the AMPs are exempt from the discharge permit requirements in accordance with 10 V.S.A. §1259(f), the stream alteration permit requirements pursuant to 10 V.S.A. §1021(f), the stormwater permit requirements pursuant to 10 V.S.A. §1264(d)(1)(C), and wetland permit requirements pursuant to 10 V.S.A. §913(a) and Section 6.01 – 6.05 of the Vermont Wetland Rules.

COMMENT:

The following section should be clarified. It is unclear to me whether there is a presumption of compliance or not: "Pursuant to Section 2-03B.1 of the Vermont Water Quality Standards, there is a presumption that logging operations that are in compliance with the AMPs are also in compliance with the Vermont Water Quality Standards. However, this presumption may be overcome if a water quality analysis demonstrates that there is a discharge of wastes into waters of the State due to logging."

Sect. 1 P.3 is critical. An operator is presumed innocent of a discharge unless such discharge is documented. However, the present wording appears to allow the State to prosecute a discharge even if it is not willful. Because certain extreme weather events will cause a discharge despite an operator's best efforts, this section provides a potential for malicious pursuit of an operator. In one case from 30 years ago, the select board of a town argued that the logger had provided inadequate culverts between the landing and the town highway. Because the town highway washed out, they argued that the culvert was manifestly inadequate. The logger's lawyer demonstrated that a "strong cell thundershower" with more than 16" of rain in a 1/2 hour period was the cause of the damage, and that the culverts as installed met all the common guidelines. The AMP formulation needs to continue to be a protocol for reducing conflict; a "force majeure" clause needs to be explicit!

RESPONSE: The Vermont Water Quality Standards provides as follows:

"Section 2-03(B). Use of Management Practices and Planning

1. The requirements of these rules for any activity causing a nonpoint source discharge shall be presumed to be satisfied when the activity:

- (a) Is conducted in accordance with the Accepted Agricultural Practice Rules (6 V.S.A. Chapter 215) or, where required, agricultural best management practices; the Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont; or is conducted in accordance with a best management practice (BMP) for nonpoint source wastes when the best management practice has been adopted as a rule or procedure by the Secretary [of ANR] after public notice and the opportunity for public comment.
- (b) Is consistent with the strategy for managing nonpoint source wastes within any applicable basin plan.

2. Any presumption provided by this section shall be negated when a water quality analysis conducted according to Section 2-01(g) of these rules demonstrates that there is a violation of these rules.”

There is a presumption of compliance with the Vermont Water Quality Standards if the AMPs are fully and appropriately implemented. If there is a discharge and the AMPs are fully and appropriately implemented, the presumption of compliance may be rebutted or negated through conducting a water quality analysis to demonstrate a violation with the Vermont Water Quality Standards.

This language is consistent with the Vermont Water Quality Standards provision and does not need to be changed. Additionally, this language has been in effect for many years and enforcement has occurred consistent with this language. This is not a change in the Rule. This revised Rule clarifies the existing statutory and regulatory framework within which the AMPs function for logging jobs.

Paragraph 3 of Section I identifies an existing provision in the Vermont Water Quality Standards that provides a presumption of compliance if the AMPs are fully and appropriately implemented. There is no element of intent associated with this presumption of compliance. If there is a discharge and the AMPs are fully and appropriately implemented, the presumption of compliance may be rebutted or negated through conducting a water quality analysis to demonstrate a violation with the Vermont Water Quality Standards. This is not a “force majeure” provision. The AMPs must be consistent with the Vermont Water Quality Standards and cannot provide for a force majeure provision.

COMMENT: Sect 1 P.4 is also important, in that a logging job conducted according to the AMPs does not require a discharge permit. The highly critical seasonality of logging means that delays to obtain permits could ironically postpone work from a weather situation where no discharge would ever occur to a time frame where a discharge may be highly probable.

RESPONSE: The presumption of compliance in Section 2-03B.1 of the Water Quality Standards provides an exemption from the requirement to obtain a discharge permit for logging operations if the AMPs are fully and appropriately implemented. This does not provide absolute immunity from liability for a discharge. The presumption exists if the AMPs are implemented, but if a discharge occurs, the presumption of compliance may be rebutted or negated through the conduct of a water quality analysis that demonstrates a violation of the Vermont Water Quality Standards.

COMMENT: In paragraph 3 the Introduction says, “However, this presumption may be overcome if a water quality analysis demonstrates that there is a discharge of wastes into waters of the state due to logging.” For all practical purposes in this document we are talking about silt- discoloration- of water leaving the job site, but you do not explain what a “water quality analysis” is, nor do you define the standard, presumably a turbidity standard that would result in a violation. On construction sites in Vermont DEC usually defines this as “visible discoloration” and has set the limit as 25 NTU’s. That is a VERY high standard, given that many streams and rivers in Vermont rarely maintain that standard during any storm event. So, if this is to be the methodology it would be VERY easy for any logging operation to violate these rules after **any** storm event of **any** size despite their best efforts to follow the rules. I think this this what concerns those who see the rules, as you have written them, as aiming logging operations

for failure if adjudicated by a future administration having a more environmentally conservative attitude towards the working forest. **This sentence in the Introduction needs some better explanation and, I would hope, interpretation.**

RESPONSE: The AMPs are adopted under the authority of Chapter 47 of Title 10 of the Vermont Statutes Annotated, the Water Pollution Control Act and in accordance with the Vermont Water Quality Standards, rules also adopted under this statutory authority. The Vermont Water Quality Standards set forth the criteria associated with sediment discharges and water quality analyses. These requirements will not be repeated in the AMPs. Please refer to the Vermont Water Quality Standards.

COMMENT: The old AMP's had a preamble that specifically stated "A violation occurs only if there is a discharge. If no discharge occurs, the logger or landowner cannot be fined or prosecuted for not having the AMP's in place." This is an outcome based approach that we all have been comfortable operating within for decades, even though the specific practices most often read "shall ... ". The outcome approach allowed for the creativity so necessary in dealing with keeping our waters clean when operating within the incredible variability of conditions we work in here in the forests of Vermont.

It should be clear in Section 1 that if a subject harvest area includes the recommended AMP structures and yet there is an observable discharge, then there is no violation of the Rules.

It should be clear in Section 1 that if the recommended AMP structures are NOT in place AND there is NO observable discharge, then there is no violation of the Rules.

It should be noted in Section 1 that compliance with the Rules can be evidenced by a lack of violation. Compliance is an important bridge term associated with the Use Value Appraisal program's association with the AMP's.

RESPONSE: As currently proposed, the AMPs are not mandatory. Section 2-03(B) of the Vermont Water Quality Standards provides a presumption of compliance if the AMPs are appropriately implemented and a discharge still occurs. This does not provide absolute protection from finding a violation of the Vermont Water Quality Standards (VWQS) and Chapter 47 of Title 10 of the Vermont Statutes Annotated. Section 2-03(B) also states that the presumption of compliance may be negated by conducting a water quality analysis in accordance with Section 2-01(g) of the VWQS. However, this rarely occurs. Therefore, the best way to ensure no finding of a violation is to fully and appropriately implement the AMPs on logging jobs in Vermont, because if a discharge does occur, the landowner/logger will obtain the presumption of compliance if the AMPs are appropriately implemented. There is no violation if there is no discharge, regardless of whether the AMPs are appropriately implemented or not.

COMMENT: We appreciate the cross referencing of the presumption of compliance with the Vermont Water Quality Standards ("VWQS") that attaches to logging jobs that are conducted in accordance with the AMPs. However, we are concerned about the possible misinterpretation of the following sentence: "However, this presumption may be overcome if a water quality analysis demonstrates..." Referring to the VWQS, we note that the comparable text there (VWQS, Section 2.03(B) (2)) states: "However, this presumption may be overcome if a water quality analysis conducted according to Section 2-01(g) demonstrates..." (Emphasis added). We request that consideration be given to adding this underlined text to the subject section of the AMPs. The basis for this request is that it is important for both regulated entities and the public to be aware of what the criteria are for a "water quality analysis" that could be used to demonstrate that the presumption of VWQS compliance has been foregone. In other words, a single random grab sample showing elevated turbidity would not be expected to constitute sufficient proof to revoke the presumption.

RESPONSE: The Department will change the third paragraph of the Introduction to incorporate the language from the Vermont Water Quality Standards, section 2-03B.1 as follows:

REVISED PARAGRAPH: Pursuant to Section 2-03B.1 of the Vermont Water Quality Standards, there is a presumption that logging operations that are in compliance with the AMPs are also in compliance with the Vermont Water Quality Standards. However, this any presumption provided by the Vermont Water Quality Standards shall be negated when may be overcome if a water quality analysis conducted according to Section 2-01(g) of the Vermont Water Quality Standards demonstrates that there is a violation of the Vermont Water Quality Standards discharge of wastes into waters of the State due to logging.

COMMENT: The list of stated exemptions that apply to logging jobs conducted in accordance with the AMPs is helpful as a concise articulation of the current statutory framework. However, we also note that there should be a comparable statement of exemption for logging jobs in the context of the NPDES construction phase stormwater permit program that is delegated to Vermont DEC to implement. This exemption has been the longstanding policy of Vermont DEC, and providing such a statement would provide additional clarity to all involved.

RESPONSE: The stormwater permit requirements are included in the list of exemptions.

COMMENT: As noted in the Summary of Key Changes to the Proposed Revisions of the AMP's (sic), provided to interested parties at the rulemaking hearings, Act 64 of 2015 (the Vermont Clean Water Act) states that the rules adopted shall be advisory and not mandatory. As such, clear reference to this distinction should be included in Section 1 of the revised AMP publication.

RESPONSE: Act 64 of 2015 amended 10 V.S.A. §2622 to add a new subsection (b) which requires the Commissioner of the Department of Forests, Parks and Recreation to revise by rule

the AMPs and does state that the revised AMPs shall be advisory, not mandatory. Act 64 also requires the Commissioner to submit a Report on whether the AMPs should be mandatory and how the AMPs would be enforced if mandatory. That Report is entitled A Report and Recommendations on Implementation and Enforcement of Mandatory Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont (2015, Act 64; sec. 50), See <http://legislature.vermont.gov/assets/Legislative-Reports/2016-AMP-Report-1-4-16.pdf>, and was submitted on January 15, 2016. The Legislature did not act on the Report and the AMPs continue to be voluntary. As currently drafted, no change would be required to the proposed language for the revised AMPs regardless of whether the Legislature acts to require mandatory AMPs at some later time.

REVISED INTRODUCTION SECTION:

SECTION 1: INTRODUCTION

The "Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont" ("AMPs") were first adopted on August 15, 1987 under the authority of Chapter 47 of Title 10 of the Vermont Statutes Annotated, Water Pollution Control (10 V.S.A. §1251a and 1259(f)). See Code of Vermont Rules 12 020 010. The initial adopted rule provided that "the AMPs are the proper method for the control and dispersal of water collecting on logging roads, skid trails and log landings to minimize erosion and reduce sediment and temperature changes in streams."

Act No. 64 of the Acts of 2015 amended 10 V.S.A. §2622 to require the Commissioner of the Department of Forests, Parks and Recreation to revise by rule the AMPs. ~~to ensure that all logging operations on both public and private forestland are designed to prevent or minimize discharges of sediment, petroleum products, and woody debris (logging slash) from entering streams and other waters; improve soil health of forestland; protect aquatic habitat and aquatic wildlife; and prevent erosion and maintain natural water temperature.~~ The purpose of the acceptable management practices is to provide measures for loggers, foresters, and landowners to utilize, before, during, and after logging operations to comply with the Vermont Water Quality Standards and minimize the potential for a discharge from logging operations in Vermont in accordance with 10 V.S.A. §1259.

Pursuant to Section 2-03B.1 of the Vermont Water Quality Standards, there is a presumption that logging operations that are in compliance with the AMPs are also in compliance with the Vermont Water Quality Standards. However, this any presumption provided by the Vermont Water Quality Standards shall be negated when may be overcome if a water quality analysis conducted according to Section 2-01(g) of the Vermont Water Quality Standards demonstrates that there is a violation of the Vermont Water Quality Standards discharge of wastes into waters of the State due to logging.

Additionally, logging operations that are in compliance with the AMPs are exempt from the discharge permit requirements in accordance with 10 V.S.A. §1259(f), the stream

alteration permit requirements pursuant to 10 V.S.A §1021(f), the stormwater permit requirements pursuant to 10 V.S.A. §1264(d)(1)(C), and wetland permit requirements pursuant to 10 V.S.A. §913(a) and Sections 6.01 – 6.05 of the Vermont Wetland Rules.

SECTION 4 – APPLICABILITY:

The AMPs apply to all logging operations on public and private lands in Vermont regardless of the purpose of the logging. For example, logging may be conducted for forest management purposes or logging may be conducted for the purpose of clearing land for some other type of land use, such as commercial, residential or electric utility development.

COMMENT: Again, we appreciate the clear statement of applicability. In this instance, however, we recommend striking the word “electric” prior to “utility.” The basis for this suggestion is that clearing for utility corridors can occur for many other types of utility projects, including but not limited to water/sewer, natural gas, etc.

RESPONSE: The word “electric” will be removed.

COMMENT: Presuming the revised AMPs are adopted and implemented, we believe that a clear statement of applicability is needed for projects that are currently permitted. We have prepared Erosion Prevention and Sediment Control (“ESPC”) plans for many projects that are currently permitted (and are in some cases currently under construction) that include language requiring compliance with the AMPs (1987 version). Any such projects should be allowed to continue to completion under the regulatory framework that existed at the time the applicable permit applications were filed.

RESPONSE: The DEC permit, or other regulatory permit, controls whether the 1987 AMP Rule or the new proposed revised AMP Rule applies. Please refer to your specific permit requirements and contact the regulatory agency with questions.

REVISED SECTION 4:

The AMPs apply to all logging operations on public and private lands in Vermont regardless of the purpose of the logging. For example, logging may be conducted for forest management purposes or logging may be conducted for the purpose of clearing land for some other type of land use, such as commercial, residential or ~~electric~~ utility development.

Comments-Section 5 – Definitions

5.2 “AMP (Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont)” means regulations promulgated under the authority of 10 V.S.A. §2622(a) and (b) and 10 V.S.A. §1259(f)

This definition is revised to correct editorial issues.

REVISED DEFINITION:

5.2 “AMP” or “Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont” means ~~regulations promulgated~~ rules adopted under the authority of 10 V.S.A. §2622(a) and (b), ~~and 10 V.S.A. §1259(f), 3 V.S.A. 801(b)(11) and 3 V.S.A. §2853(5).~~

5.4 “At-Grade Ford” means a stream crossing on a truck road that is constructed perpendicular to the stream channel with approaches being properly stabilized with clean stone fill, and there is no change in existing stream channel cross-section and bed elevation except for minor bank grading at the point of the crossing.

COMMENT:

- This description implies that the truck can drive through the water, as long as approaches are stabilized with clean stone. If this is not the intent, this section should be clarified.

AGENCY RESPONSE: That is correct. The construction of at-grade-fords, as described in this AMP, is an acceptable means for crossing streams on truck roads. There are situations in which an at-grade ford is the most appropriate temporary stream crossing on skid trails. The definition has been revised to reflect this.

REVISED DEFINITION:

5.4 “At-Grade Ford” means a stream crossing on a truck road or, where no appropriate alternative exists, a skid trail, that is constructed perpendicular to the stream channel with approaches being properly stabilized with clean stone fill, and there is no change in existing stream channel cross-section and bed elevation except for minor bank grading at the point of the crossing.

5.5 “Broad-based dip” means a drainage structure, usually used on truck roads where grades are less than or equal to 8 percent. They are specifically designed to divert surface runoff from a truck road into a filter area while vehicles maintain normal travel speeds.

AGENCY COMMENT: This definition is revised for clarity, and consistency with other changes made to the Rule.

REVISED DEFINITION:

5.5 **"Broad-based Dip"** means a drainage structure, usually used on truck roads where grades are less than or equal to 8 percent, ~~They are specifically that designed to divert the surface water runoff from a truck road into a filter area while vehicles maintain normal travel speeds.~~

5.8 "Drainage Ditch" means a ditch constructed along a road to collect surface water runoff from the travelled portion of the road and divert it into a filter area.

COMMENT:

- Along a road, trail or landing. This definition should not be limited to "along a road."

AGENCY RESPONSE: The Department agrees the definition should be broader. The number changes due to the change in definition from "Hay-bale check dam" to "Check dam".

REVISED DEFINITION:

5.89 **"Drainage Ditch"** means a ditch constructed along a truck road, skid trail or log landing to collect the surface water runoff from the travelled portion of the road and divert it into a filter area.

5.9 "Drainage Structure" means any type of device, structure or method used to divert surface water runoff from an impervious surface such as a truck road, skid trail or log landing into a drainage ditch or filter area.

COMMENT:

- Include logging slash as a method to divert surface water runoff.

AGENCY RESPONSE: We do not agree that logging slash alone is an effective method for effectively intercepting and diverting surface runoff, but will revise the definition. The number changes due to the change in definition from "Hay-bale check dam" to "Check dam".

REVISED DEFINITION:

5.910 **"Drainage Structure"** means any type of a device, structure or method used to that diverts the surface water runoff from an impervious surface such as a truck road, skid trail or log landing into a drainage ditch or filter area.

AGENCY COMMENT: The numbers of the following definitions have changed as noted:

5.101 **"Filter Area"** means a vegetated area where surface water runoff is diverted and dispersed so that sediment and other pollutants are trapped and retained. A filter area can include or be within a forest buffer.

5.112 **"Forest Buffer"** means an area of forested land adjacent to streams and other waters where forest management practices are modified to protect water quality. The width of the forest buffer shall be in accordance with Table 4.

5.123 **"Forest Canopy"** means a layer or multiple layers of branches and foliage at the top or crown of a forest's trees.

5.13 **"Gully Erosion"** means a form of soil erosion where gullies of six inches deep or more are created by surface water runoff.

COMMENT:

- Add "and longer than 25 feet."

AGENCY RESPONSE: We do not agree. A gully can be of any length. Only the number of the definition has changed.

REVISED DEFINITION:

5.134 **"Gully Erosion"** means a form of soil erosion where gullies of six inches deep or more are created by surface water runoff.

5.14 **"Hay-bale check dam"** means a temporary sediment control structure that is constructed using hay bales to intercept and filter surface runoff to protect water quality in nearby streams and other bodies of water.

COMMENT:

- Should incorporate "Silt Fencing" as well as hay bale check dams.

AGENCY RESPONSE: Silt fences are allowed in the AMPs and are defined in 5.30. The Definition has been deleted and a new definition for "Check dam" has been included.

REVISED DEFINITION:

5.714 "Hay bale Check Dam" means a small barrier constructed in a drainage structure, its outlet or in a small gully or other watercourse to decrease the water flow velocity, minimize channel scour and promote deposition of sediment. A check dam creates a small sediment basin. Check dams may be constructed of hay bales or other stable and semi-porous material. A temporary sediment control structure that is constructed using hay bales to intercept and filter surface runoff to protect water quality in nearby streams and other bodies of water.

5.18 "Logging Equipment" means equipment, implements, accessories, and contrivances used directly and principally in the cutting or removal of timber or other solid wood forest products including, but not limited to machinery used for bucking, bunching, debarking, de-limbing, felling, forwarding, loading, piling, skidding, topping, and yarding operations performed on timber; and chain saws used for commercial logging.

COMMENT:

- Within the revised section 6.7.3 regarding forest buffers, requires that no logging equipment be used within 25 feet of the stream bank. Using the definition of the "logging equipment," this will remove this area from -any- logging activities. I would recommend that section 6.7.3 be revised to state, more clearly the implications of this section. I'm under the impression, that skidders, trucks would not be allowed, but cutting is still allowed within this 25' buffer. Or, if I am mistaken, and no logging equipment, including saws, chains or other implements is to be operated in the 25' margin, state this more explicitly; 'no logging activities will be allowed to occur'. This would also infer that this area of land be enrolled in Current Use as Forest Riparian Buffers. If the latter is the correct understanding, I find this onerous and excessive. Streams, including intermittent streams are numerous and diverse, including many that are not "blue-line streams". Surveying for, mapping and creating mapped buffers for the Current Use Program can create quite a workload for enrollment and does not improve management of the resource proportionately.

AGENCY RESPONSE: This definition will be modified to clarify the AMP requirements. The Department did not intend to prohibit the use of chainsaws or cutting of trees by harvesters in the 25-foot buffer adjacent to a stream; the intent of this AMP is to prohibit the driving of logging equipment and other machinery in the 25-foot buffer, except as necessary to construct, maintain, repair and remove stream crossing structures and to cross streams during logging. The intent of AMP 6.7.3 is to minimize soil disturbance within 25 feet of streams and other waters by prohibiting the use of logging equipment that you would drive into and within the 25-foot buffer area, including using or driving horses. This does not prohibit extracting trees from within the 25-foot buffer area in a manner

otherwise consistent with buffer requirements. This is consistent with the existing AMP rule.

REVISED DEFINITION: 5.18 *“Logging Equipment”* means equipment, implements, accessories, and contrivances used directly and principally in the cutting or removal of timber or other solid wood forest products, ~~including, but not limited to machinery used for bucking, bunching, debarking, de-limbing, felling, forwarding, loading, piling, skidding, topping, and yarding operations performed on timber; and chain saws used for commercial logging.~~ Logging equipment also includes equipment used to construct, maintain or install infrastructure necessary to and associated with the logging operation.

5.19 *“Logging Slash”* means any residual tree material, whole or part, including leaves, bark, wood and root tissue, that is created as a result of a logging operation.

COMMENT:

- Change to read “means any residual woody tree material, whole or part, including leaves, bark, wood and root tissue that is created as a result of a logging operation.” Change in definition helps to clarify AMP 6.5.1 and more closely aligns with the use in the “Introduction” paragraph 2.

AGENCY RESPONSE: The definition has been modified, but the term “woody” is not added as “logging slash” includes other material that is not “woody” material.

REVISED DEFINITION: 5.19 *“Logging Slash”* means any residual tree material, whole or part, including leaves, needles, bark, wood and root tissue, that is created as a result of a logging operation.

5.21 *“Perennial Stream”* means a watercourse or portion, segment or reach of a watercourse, generally exceeding 0.5 square miles in watershed size, in which surface flows are not frequently or consistently interrupted during normal seasonal low flow periods. Perennial streams that begin flowing subsurface during low flow periods, due to natural geologic conditions, remain defined as perennial. All other streams, or stream segments of significant length, shall be termed intermittent. A perennial stream shall not include the standing waters in wetlands, lakes, and ponds.

COMMENT:

- The definitions of the various types of streams are confusing. The definition of “Stream” includes “perennial flow”, but a “Perennial Stream” has a flow which is “not frequently or consistently interrupted”. These are inconsistent. The definition of an “Intermittent

Stream" refers to a "well-defined channel" but this language is lacking in the definitions of "Perennial Stream" and "Stream."

AGENCY RESPONSE: The definition in the proposed revised rule is the same definition adopted by the Department of Environmental Conservation in the Vermont Stream Alteration Rule and, accordingly, will not be changed. We will however pass this information on to DEC for their consideration in future rule revisions.

5.26 "**Rut**" means a depression in a skid trail, logging road, log landing made by the passage of a vehicle or equipment.

COMMENTS:

- Further define a rut as being 12 inches or more deep and at least 10 feet in length.
- We suggest that this definition is excessively broad and more importantly, unparalleled in comparable AMP/BMP manuals. Any time a machine moves in the woods there is some level of soil compaction and hence depression. By setting the rut definition so broadly, these proposed changes would leave the State little recourse when any complaint about rutting is presented. To expect no depressions, or complete smoothing of any depressions post-harvest would necessitate changing the Economic Impact Statement of the proposed amendment. This definition would also read more clearly if you inserted the word "or" before "log landing" because otherwise the list reads as incomplete.
- Some reasonable measurements are needed that allow the AMPs to address truly significant rutting that has the potential to create erosion and effect water quality.

AGENCY RESPONSE: The Department will change the definition of "Rut," however, it will be kept broad. Even with efforts to minimize rutting, some level of rutting is normal and expected. However, to limit erosion and sediment runoff to waters, even normal rutting may require attention during or post-harvest. The potential for ruts to channel water and hasten erosion or discharge to streams is a function of soil and bedrock conditions, rut characteristics and slope and proximity to surface water. Even very shallow ruts down to bedrock and within a stream buffer present significant erosion risks. For this reason, the Department is keeping the definition of "Rut" broad, but to limit the need to smooth ruts that present little risk of erosion, the Department is adding specificity in AMP 6.4.1 to address how and where ruts need to be smoothed.

REVISED DEFINITION:

5.26 "**Rut**" means a depression in a skid trail, logging road, log landing made by the soils of the forest floor or depressions in dirt roads or skid trails made from the passage of any a vehicles or logging equipment.

5.29 ***“Silt fence”*** means a temporary sediment control device used to intercept and filter surface runoff to protect water quality in nearby streams and other bodies of water.

AGENCY COMMENT: This definition is revised to be consistent with other changes made in this Rule.

REVISED DEFINITION:

5.29 ***“Silt Fence”*** means a temporary sediment control device used to intercept and filter the surface water runoff to protect water quality in nearby streams and other ~~bodies of waters~~.

5.31 ***“Stream”*** means the full length and width, including the bed and banks, of any watercourse, including rivers, streams, creeks, brooks, and branches, which experience perennial flow. *“Stream” does not include ditches or other constructed channels primarily associated with land drainage or water conveyance through or around private or public infrastructure.*

COMMENTS:

- The definitions of the various types of streams are confusing. The definition of “Stream” includes “perennial flow”, but a “Perennial Stream” has a flow which is “not frequently or consistently interrupted”. These are inconsistent. The definition of an “Intermittent Stream” refers to a “well-defined channel” but this language is lacking in the definitions of “Perennial Stream” and “Stream.”
- This expansive definition is so broad that it includes basically anything that will “experience perennial flow”. The use of this overly broad definition will cause impacts across the forest that will unnecessarily limit normal forest harvesting operations. The economic impact of this was not investigated.

AGENCY RESPONSE: The definition for “Stream” in the proposed rule is the same definition adopted by the Department of Environmental Conservation in the Vermont Stream Alteration Rule and will not be changed. This definition does not expand or change AMP jurisdiction or requirements related to streams and thus would not impose additional economic impact.

5.35 ***“Temporary Stream Crossing Structure”*** means a stream crossing structure such as a bridge, culvert, pole ford or brushed-in crossing that is installed in a stream channel. *Temporary stream crossing structures must be removed after logging is completed.*

COMMENT:

- For clarification, re-word the first sentence to read means a stream crossing structure such as a bridge, culvert, pole ford or brushed-in crossing that is installed in or over a stream channel.

AGENCY RESPONSE: We agree with this proposed change. We also added clarification for when the temporary stream crossing structure must be removed.

REVISED DEFINITION: 5.35 *“Temporary Stream Crossing Structure”* means a ~~stream crossing structure~~ a bridge, culvert, pole ford or brushed-in crossing that is temporarily installed in or over a stream channel. Temporary stream crossing structures shall ~~must~~ be removed after logging is completed or after a period of one year after installation, whichever is less.

5.37 *“Top-of-Streambank”* means the crest of a streambank.

COMMENTS:

- This definition is unclear. Reference could be made to the edge of the scoured channel, which might be clearer. As this is the starting point to measure the width of the buffer, it is an important definition.
- Does this mean the top of the scoured surface of the channel? The definition does not make it clear what the top of the streambank is.

AGENCY RESPONSE: We will provide for more clarity in this definition.

REVISED DEFINITION: 5.37 *“Top-of-bank streambank”* means the location up-slope from the scoured channel of a stream, or shoreline of other waters, where an abrupt change of slope occurs.

5.39 *“Turn-up”* means a method used on skid trails to divert surface runoff from a skid trail into a filter area.

AGENCY COMMENT: This definition has been revised for clarity and to be consistent with other changes made to this Rule.

REVISED DEFINITION:

5.39 **“Turn-up”** means a method of construction of a downhill skid trails used on skid trails ~~to that~~ diverts the surface water runoff from a skid trail ditches and road or trail surfaces into a filter area by turning the skid trail up the hill a short distance then turning downhill again.

5.40 **“Waterbar”** means a mound of soil excavated across the width of a skid trail or truck road to divert surface runoff from side ditches and road surfaces into a filter area.

COMMENTS:

- Add “slash, poles or other natural material placed or excavated...” to define a waterbar.
- Very important to allow for other proven methods to be used as waterbars. This will keep cost down and create less disturbance to the site.
- A good example of a very badly defined term in the rules is that for a “Waterbar”. The FPR definition describes, “a mound of soil excavated...” This is a very limited concept for a simple diversion device and not the best or cheapest way to stop road or trail erosion. But if a logger uses any other way to construct a Waterbar, and it fails for whatever reason, he could be prosecuted if the water leaving the site fails the “water quality analysis” All the nice drawings in the eventual manual that don’t involve the “mound of soil excavated” concept would not be in accordance with the rules...A better definition, which is not so prescriptive, and allows a more performance- oriented approach to the concept would be, “the construction of an artificial, self-draining channel, using any material, which crosses the width of a skid trail or truck road to divert surface runoff from side ditches and road surfaces into a filter area”. This definition would allow the use of logs, soil (although these are very temporary in a working environment), or any number of other materials in the construction of the device. And the sketches in your eventual manual could then outline the different possibilities without any problems with meeting the rules...There are several other “definitions” that need to be broadened (or clarified) to allow the logging community to use imaginative means in the performance of their work, including “hay bale check dam” (why hay bales? Why not just check dam?), “pole ford”, and “turn-up”- that last one needing a more understandable word than “method” to define what’s being accomplished...

AGENCY RESPONSE: We do not agree that logging slash, in and of itself, is an effective method for intercepting and diverting surface runoff on skid trails and truck roads, but will revise the definition to allow use of materials other than just soil and clarify that the structure must achieve the purpose of diverting surface water runoff to be in compliance with the AMPs.

REVISED DEFINITION: 5.40 **“Waterbar”** means a type of drainage structure constructed a mound of soil excavated across the width of a skid trail or truck road that ~~to~~ diverts the surface water runoff from side ditches and road or trail surfaces into a filter area.

“Stabilized” definition?

COMMENT:

- Provide a definition for “stabilized”

AGENCY RESPONSE: A definition for “soil stabilization” is not required as accepted soil stabilization techniques are outlined in the various AMPs.

“Waterway area” definition?

COMMENT: Need to define “waterway area” in Table 2

AGENCY RESPONSE: The heading in Table 2 has been revised to delete the term “waterway area.” Please see Table 2.

Comments-Section 6 – Acceptable Management Practices

GENERAL COMMENTS: The Department received many comments stating that the use of the term “shall” should be deleted and the term “should” should be inserted.

RESPONSE: The Department disagrees. The use of the term ‘shall’ is necessary when and if the department were to pursue enforcement action when a discharge occurs and AMPs were not appropriately implemented. The use of the term “should” provides for additional discretion in implementation. Where there is a need to consider ground conditions that may require a slight deviation from implementation in strict compliance with the AMPs as written, e.g. distance between waterbars cannot be maintained due to the presence of ledge, we have included such language to allow for variable ground conditions and still achieve compliance with implementation of the AMPs.

6.1 Truck Roads – Practices to be Applied During Logging

6.1.1 Permanent and temporary truck roads shall not exceed 10 percent grade. Where no reasonable alternative exists, a steep section of no more than 15 percent grade is allowed but shall not exceed 300 feet in length.

COMMENTS:

- Change "shall" to "should" in the first sentence. 6.1.1
- This is quite a change from the previous version. It also leaves quite a grey area. So trails cannot exceed 10%, but if necessary can be 15% for up to 300 feet. What about a road that is 12%? How far can this be, also 300 feet or a longer distance because it is a lesser grade. What if the grade is 16% for 100 feet? Or is the section is 15% and 400 feet. Can this road not be used? I think this section leaves a lot of open ended questions, and there should not be a cap on the grade, but more of a strong suggestion.
- Change to read "Permanent and temporary truck roads should not exceed 10 percent grade. Where no reasonable alternative exists, a steep section is allowed but should not exceed 300 feet in length."
- There appear to be conflicts between the writing of permissible road grades in 6.1 through 6.3, and the grades shown on Table 1 (6.11). The table has grades of 30% and 40 % but the "allowable" language in 6.1-6.3 has limits well below these, generally 15 and 25%. It would be easy to simply eliminate the higher slopes but we all know they exist and that they used to be in the old table. Grades were further restricted in your new guidance and there is no explanation as why these added restrictions were made. The new restrictions would make my gravel driveway, which I use as a logging road, illegal. The need for these added restrictions is not justified based on why FPR was told to make the rules tighter. If a logger can make a steeper trail and NOT cause erosion because of an innovative way to solve the problem FPR shouldn't be making rules on the slopes. You already have a way to enforce based on the water quality analysis...FPR truly needs to make these "should-type" guidelines, not "shalls" with the warning that the higher slopes would require significantly more design input, effort in construction, and maintenance effort than lower slopes, and that water quality and erosion violations would likely occur much more often without added attention.
- Slope of truck road an issue- towns are already over that.
- The 12/12 draft stated "Grades on permanent truck roads should not exceed 15 percent. Short, steep sections over 15 percent grade shall not exceed 300 feet in length." Why was "should" replaced with "shall" and 15% dropped to 10%?
- Raising the permissible grade for truck roads from 10% to 15% for short stretches recognizes the realities encountered in the field and provides needed flexibility in road location.

- This is a new addition and will potentially limit access to the point of making some forest land unmanageable.
- The term "shall" should be replaced with "should" in two places. There should be language to provide for pre-existing corridors to be grandfathered where there is no reasonable alternative route.

AGENCY RESPONSE: The intent of this AMP is to prevent discharges by putting a reasonable cap on maximum grade allowed for truck roads in an effort to reduce the potential for soil erosion and sedimentation. The existing AMP does not have a cap. The existing AMP states that any grade greater than 10% is allowable for up to 300 feet. The allowance for up to 15% grade for a distance of 300 feet will allow for short steeper sections with a levelling off area to reduce grade and velocity of any surface water runoff. We have included new language to address physical constraints that may require greater grades, but only to the extent necessary and only for the minimum distance required.

PROPOSED RULE CHANGE:

6.1.1 Permanent and temporary truck roads shall not exceed 10 percent grade. Where no reasonable alternative exists, a ~~steep steeper section of no more than 15~~ exceeding 10 percent grade is allowed but shall not exceed 300 feet in length and shall be the minimum grade and length necessary due to physical constraints, property boundaries and ground conditions.

6.1.2 Drainage structures on permanent and temporary truck roads shall be correctly installed to divert surface water runoff into road ditches or filter areas. Drainage structures shall be spaced at intervals according to Table 1 where rock and ledge allows.

COMMENTS:

- Replace "shall" with "should."
- The term "shall" should be replaced by "should" in two places and "rock and ledge permit" should be replaced by "conditions permit".

AGENCY RESPONSE: We do not agree that "conditions permit" is a better choice of words in determining physical constraints for installing drainage structures on permanent and temporary truck roads, but will make some modifications.

PROPOSED RULE CHANGE: 6.1.2 Drainage structures on permanent and temporary truck roads shall be correctly installed to divert the surface water runoff into road ditches or filter areas. Drainage structures shall be spaced at intervals according to Table 1 where existing soil, rock and ledge conditions allows.

6.1.3 Water entering a permanent or temporary truck road shall be moved under and away from the road and into a filter area. Culverts used for ditch drainage on truck roads shall be at least 15 inches in diameter, correctly installed to divert ditch water into a filter area and spaced according to Table 1 where rock and ledge allows.

COMMENTS:

- First sentence - This seems to conflict with the use of "At Grade Fords" where water is not moved under the road.
- In all instances, replace "rock and ledge" with "topography." There are many places where high side banks prevent proper spacing.
- I agree there should be a minimum culvert size on permanent truck roads to maintain water quality and minimize the chance of a failure leading to sedimentation. But why 15"? Was this chosen based on the state lands minimum of 15"? I propose the minimum size to be 12". There are many occasions where a 12" culvert would work fine, and in some instances is oversized if the stream is merely an ephemeral. In some cases, there is also not enough material to cover a 15" culvert, necessitating material to be trucked in, which could put an undue financial burden on a small logging job.
- Replace "shall" with "should."
- The term "shall" should be replaced by "should" and "rock and ledge permit" should be replaced by "conditions permit".

AGENCY RESPONSE: This AMP provides direction for spacing and minimal sizing of ditch drainage culverts on truck roads. Spacing and sizing requirements remain unchanged from the existing AMP rule. We do not agree that "topography" is a better choice of words in determining physical constraints for installing waterbars, but will modify.

PROPOSED RULE CHANGE: 6.1.3 Water entering a permanent or temporary truck road shall be moved under and away from the road and into a filter area. Culverts used for ditch drainage on truck roads shall be at least 15 inches in diameter, correctly installed to divert ditch water into a filter area and spaced according to Table 1 where existing soil, rock, and ledge and road bed conditions allows.

6.1.4 Drainage ditches along permanent and temporary truck roads shall not terminate directly into streams or other waters. On approaches to stream crossings, ditches shall be turned out into a filter area a minimum of 25 feet away from the top of the streambank.

COMMENTS:

- Given the definition of stream which seems to exclude scoured channels with ephemeral flow, this should be changed to "...shall not terminate directly into any scoured channel, regardless of the presence or absence of flow." The reason for my suggestion is that once sediment gets into a scoured channel there is 100% sediment delivery downstream to a perennial stream channel.
- Change "shall" to "should" in second sentence. While this is an appropriate practice, which I support, it is one of the most frequently encountered defects in existing roads. If AMP's are to be required on UVA properties, almost all with a truck roads will have remediation projects involving new culverts, turn outs and excavation. In this case, an incremental improvement, perhaps limiting this to new construction, would likely be more successful than the "shall" language. Many town roads are out of compliance with this practice.
- Define "other waters."
- The term "shall", should be replaced by "should".

AGENCY RESPONSE: This AMP prescribes how to manage ditch water on approaches to stream crossings. The 1987 AMP only stated that "drainage ditches shall not terminate where they will feed water directly into streams or other surface waters" but it did not prescribe how to manage the ditch water to prevent sedimentation. This AMP requires that ditch water be diverted into a filter area or forest buffer to prevent sedimentation and discharge into streams and waters. We did change the term "streambank" to "top of bank" consistent with the definition change for 5.37 above.

PROPOSED RULE CHANGE: 6.1.4 Drainage ditches along permanent and temporary truck roads shall not terminate directly into streams or other waters. On approaches to stream crossings, ditches shall be turned out into a filter area a minimum of 25 feet away from the top of bank ~~the streambank~~.

6.2 Truck Roads - Practices to be Applied Immediately After Logging

6.2.1 Waterbars on temporary truck roads shall be correctly installed to divert surface water runoff into a filter areas and shall be spaced at intervals according to Table 1 where rock and ledge allows.

COMMENTS:

- Change "shall" to "should."
- 2nd line "water runoff into a filter areas"-a is singular, areas is plural
- Change "shall" to "should" in the first sentence.
- The term "shall" should be replaced by "should" and "rock and ledge permit" should be changed to "conditions permit".

AGENCY RESPONSE: We will modify this AMP.

PROPOSED RULE CHANGE: 6.2.1 Waterbars on temporary truck roads shall be correctly installed to divert the surface water runoff into a filter areas and shall be spaced at intervals according to Table 1 where existing soil, rock, and ledge and road bed conditions allows.

6.3 Skid Trails - Practices to be Applied During Logging

6.3.1 Skid trails shall not exceed 20 percent grade. Where no reasonable alternative exists, a steep section of no more than 25 percent grade is allowed but shall not exceed 300 feet in length.

COMMENTS:

- As with my comments regarding 6.1.1, what if there is a section of skid trail that is 25% for 400 feet? Can this trail not be used? If the trail can be properly closed out, then what would the issue be? What if this was the only way to access an entire area, or a parcel?
- Change to read "Skid trails should not exceed 20 percent grade. Where no reasonable alternative exists, a steeper trail is allowed but should not exceed 300 feet in length."
- With old skid trails that are still good and not causing a problem but exceed the percentage...can you use those skid trails? There are many examples where use of pre-existing roads is much better than the disruption of creating a new one.
- Referencing the 20 % rule topic. Speaker does work in Tunbridge and Orange County...many situations where it is hard to stay in compliance with the rule there. Sometimes cannot get spacing to specs. But if do it right can still prevent erosion.

- Increasing the permissible grade for steep skid roads to 25% from 20% is a move in the right direction. However, I believe there are often circumstances where a higher grade is needed for distances much shorter than 300 feet. That reality is not covered in either the current or proposed AMP's. For instance, in the right instance, a skid road with 30% grade for 80 feet will not categorically result in a discharge into the state's waters. And, using the existing road would probably result in less risk to the watershed than constructing a new road which would likely be longer and include a long switchback. I would like to see additional flexibility written into the new rules to cover this situation.
- The term "shall" should be changed to "should" in two places and "no more than 25%" should be changed to "over 20%". Also there should be a provision for pre-existing corridors to be grandfathered where there is no alternative location available.
- One of my primary concerns is with the proposed changes can be found in 6.3.1 which states: "Skid trails shall not exceed 20% grade. Where no reasonable alternative exists, a steep section of no more than 25% grade is allowed but shall not exceed 300 feet in length." Do you realize how limiting this is? Do you understand the implications here? Are you aware of how many acres that are perfectly accessible and erosion free today, would be totally off limits if this was ever enforced (again "shall")? Statewide this likely represent at least tens of thousands of acres of productive forest land that this "amendment" would push out of productivity entirely. Is this the role of the State on private land? If managing these acres was resulting in mass erosion and siltation, I'd understand idea, but its simply not, and everyone knows it.

AGENCY RESPONSE: The intent of this AMP is to protect water quality through the prevention of discharges to streams and other waters. Steep roads pose a greater risk for erosion because water can move faster on steep slopes and have a greater erosive force. The 1987 AMP stated that "short steep sections of up to 20% grade are permissible, but shall not exceed 300 feet in length." This proposed AMP recognizes the variability of natural terrain and the operational constraints faced by loggers by allowing short steep sections of skid trail up to 25% grade and not exceeding 300 feet in length, with intervening sections of lesser grade which will reduce velocity of surface water runoff and thus reduce the potential for soil erosion. However, recognizing there are many variables, we will add language to provide for flexibility in addressing ground conditions that would prevent compliance.

PROPOSED RULE CHANGE: 6.3.1 Skid trails shall not exceed 20 percent grade. Where no reasonable alternative exists, a steep section of the minimum grade and length necessary due to physical constraints, property boundaries and ground conditions ~~no more than 25 percent grade~~ is allowed, but shall should not exceed 300 feet in length.

6.3.2 Waterbars and turn-ups shall be correctly installed on skid trails to divert surface water runoff into a filter area and shall be spaced at intervals according to Table 1 where rock and ledge allows.

COMMENTS:

- Replace "rock and ledge" with topography.
- Change "shall" to "should."
- The term "shall" should be replaced by "should" in two places. The term "rock and ledge permit" should be replaced by "conditions permit". Logging slash should be included as a tool to stabilize skid trails and to be used in place of waterbars and turnups. Reference for this technique can be found in the Journal of Forestry Volume 114, number 1.

AGENCY RESPONSE: We do not agree that logging slash, in and of itself, is an effective method for intercepting and diverting surface runoff on skid trails. Use of logging slash is not prohibited if the waterbar or turn-up structure diverts the surface water on skid trails into a filter area. Compliance with this AMP will be measured by whether surface water runoff is diverted into a filter area. We do not agree that "topography" is a better choice of words for determining physical constraints of installing waterbars. We will modify to address ground conditions consistent with revisions made to AMP 6.2.1 above.

PROPOSED RULE CHANGE:

6.3.2 Waterbars and turn-ups shall be correctly installed on skid trails to divert the surface water runoff into a filter area and shall be spaced at intervals according to Table 1 where existing soil, rock, and ledge and skid trail conditions allows.

6.4 Skid Trails - Practices to be Applied Immediately After Logging

6.4.1 Ruts on skid trails shall be smoothed to prevent gully erosion and to prevent sediment from entering streams and other waters.

COMMENTS:

- Needs to be re-worded. Are ruts acceptable if no gully erosion or sedimentation will occur? This point is unclear.
- Change "shall" to "should."
- Deep, and continuous rutting on vulnerable grades is clearly an issue for water quality. Smoothing does not in and of itself prevent erosion. Rain falling un-intercepted on bare soil may cause increased erosion, but this is hard to define and measure. Our main concern here is again the broad definition of the word "rut." We fear that leaving the

"rut" definition so broad will leave reasonable enforcement efforts little leeway when assessing the impacts of well planned and well implemented forest operations.

- Some reasonable measurement is needed that allow the AMPs to address truly significant rutting that has the potential to create erosion and effect water quality.
- The term "shall" should be changed to "should", and an exception should be made for ruts on flat ground or close to waterbars. In these areas, there is no risk of gully erosion.

AGENCY RESPONSE: The definition of "Rut" has been revised, but a rut of any depth and length has the potential for causing significant erosion on slopes and the potential for causing sedimentation if in proximity to streams or other waters. The potential for ruts to cause soil erosion and sedimentation is a function of slope and proximity to streams or other waters. As slope increases there will be a greater potential of soil erosion and sedimentation. Therefore, a minimum skid trail grade will be established for when ruts of any depth or length need to be smoothed.

PROPOSED RULE CHANGE: 6.4.1 Ruts on skid trails shall be smoothed where the skid trail grade is greater than 5 percent to prevent soil gully erosion and to prevent sediment from entering streams and other waters. All ruts of any depth shall be smoothed on approaches to stream crossings on skid trails within the forest buffer.

6.4.2 Waterbars on skid trails shall be correctly installed to divert surface water runoff into a filter area and shall be spaced at intervals according to Table 1 where rock and ledge allows.

COMMENTS:

- Change "shall" to "should."
- The term "shall" should be changed to "should" in two places and the term "rock and ledge permit" should be changed to "conditions permit".

AGENCY RESPONSE: We do not agree that "where conditions permit" is a better choice of words in determining physical constraints for installing waterbars on skid trails, but have made some modifications.

PROPOSED RULE CHANGE: 6.42 Waterbars on skid trails shall be correctly installed to divert the surface water runoff into a filter area and shall be spaced at intervals according to Table 1 where existing soil, rock, and ledge and skid trail conditions allows.

6.5 Stream Crossings on Truck Roads and Skid Trails – Practices to be Applied During Logging

6.5.1 Streams and all waters shall be kept free of logging slash and logging debris.

COMMENTS:

- I understand the premise of the rule, but this rule would theoretically put almost every logging job in the state in violation. It is nearly impossible to keep ALL slash and debris out of the streams and I believe the rule should be written more towards outcome based forestry. For example, if a state official showed up to a job and found a few sticks in the stream, and there was no evidence of siltation and the debris was not impeding water flow, would the logger be in violation?
- Most loggers do an excellent job with installing and maintaining crossings, especially if there is a control method, such as a forester, job foreman or experienced logger that recognizes problems before they become significant. I can understand there being a violation if the logger was not maintaining the crossing, but in my opinion this rule is too strict and absolutely almost 100% impossible to adhere to. I like the way Maine operates. If they get a complaint about a problem they inspect it, and if they deem it to be in violation then they give the logger X amount of days to fix it. If they come back in X amount of days and the problem hasn't been fixed then the logger gets a fine.
- Change to read "Streams and all waters shall be kept free of branches and limbs and logging debris."
- An exception should be made for fine twigs and leaf material that is not likely to block a stream channel.

AGENCY RESPONSE: There are no proposed revisions to this AMP. It's the same AMP that's been in effect since 1987 and it's consistent with Vermont Statute 10 V.S.A. Chapter 47 that prohibits a discharge of any waste substance into waters of the state.

PROPOSED RULE CHANGE: None.

6.5.2 Stream crossings shall be made perpendicular to the stream channel. Stream crossings shall be located where the stream channel is narrow and well defined, streambanks are stable and approaches are level or gently sloping.

COMMENTS:

- Change "shall" to "should" in the first sentence or add "unless restricted by topography."
- Change to read "Where possible stream crossings shall be made perpendicular to the stream channel. Stream crossings should be located where the stream channel is narrow

and well defined, streambanks are stable and approaches are level or gently sloping. Stream crossings shall be constructed to prevent sediment from entering streams.”

- Stream crossings SHALL be perpendicular to channel. What if there is already a suitable existing road that is not perpendicular? It is nice to cross at right angle when can but not always realistic.
- “Stream Crossings shall be made perpendicular to the stream channel” this would be good as a “recommendation” and should be implemented where possible but it is not practical or even possible in many locations. Many historic, well-constructed stream crossings exist that are not “perpendicular” to the stream. Many of these access hundreds of acres of forest land. Are these now not to use used? Will these now need to be reconstructed, even if they are the best layout for the protection of water quality as they have existed for years? Many old bridge abutments on solid ledge are not at the proper angle, but are in the best place and to reconstruct them would have a negative impact on water quality just to meet an impractical limitation.
- This isn’t always possible. Depending on the definition of level or gently sloping it may not be possible in most cases.
- “Where possible” should be added to the beginning of the first sentence. The term “shall” should be changed to “should” in two places. Perpendicular crossings are not always possible and often the best spot to cross has already been developed in past harvests and may not be perpendicular.

AGENCY RESPONSE: We acknowledge that the existing AMP provides some flexibility regarding crossing streams. The existing AMP states that “stream crossings shall be made at right angles where possible.” We recognize that physical constraints and existing infrastructure may not always allow for crossing streams at right angles. “Gently sloping” has been changed to “approaches are 10 percent grade or less.”

PROPOSED RULE CHANGE: 6.5.2 Stream crossings shall be made perpendicular to the stream channel unless rock, ledge or other ground conditions prevent a perpendicular crossing and no other reasonable alternative crossing exists. Stream crossings shall be located where the stream channel is narrow and well defined, ~~streambanks~~ the banks are stable and approaches are 10 percent grade or less ~~level or gently sloping.~~

6.5.3 Temporary stream crossings on truck roads shall be over a bridge, culvert or by constructing an at-grade ford. Culvert diameter and bridge structure opening shall be according to Table 2. At-grade fords shall be used only where streams have low banks, stable beds (cobble or ledge) and stable, gradual approaches.

COMMENTS:

Temporary crossings should only be allowed to be in place for up to one year and should be removed after logging is completed if less than one year. Temporary bridges should span the entire width of the stream.

PROPOSED RULE CHANGE: 6.5.3 Temporary stream crossings on truck roads shall be over a bridge, culvert or by constructing an at-grade ford. Culvert diameter and bridge structure opening shall be according to Table 2. Temporary bridges shall span the entire width of the stream channel. At-grade fords shall be used only where streams have low banks, stable beds (cobble or ledge) and stable, gradual approaches. All temporary stream crossing structures shall be removed after logging is completed or after a period of one year after installation, whichever is less.

6.5.4 Temporary stream crossings on skid trails shall be over a bridge, culvert or pole ford. Culvert diameter and bridge structure opening shall be according to Table 2. Pole fords are allowed on skid trails where the streambed is cobble or ledge. Brushing-in is allowed but only on intermittent streams and when the ground is frozen.

COMMENTS:

- Temporary crossing with culverts are far superior to pole crossings, minimizing sedimentation and causing less water flow restriction. Most of these 'culverts' are old boiler pipe, strong enough to stand up to the abuse of heavy equipment, and typically 10-18" in size. With the new minimum size, a culvert crossing could actually be out of compliance with too small of a pipe, even though the crossing would still function better than a pole crossing.
- Should allow for smaller multiple culverts as long as cross-sectional area conforms.
- "Pole fords are allowed on skid trails where the streambed is cobble or ledge" The existing AMP's use the term "gravel" not "cobble". This is a huge change that will limit the crossing of thousands of miles of streams. "Gravel" bottomed streams are common; "cobble" stream bottoms are not as common. This could limit crossings used for decades with no impact to water quality. This is not an appropriate or needed change to the AMP's.
- The proposed changes eliminate the option of an at-grade ford for logging machinery (6.5.4), but maintain them for trucks (6.5.3). Is this the intent? If so, we would argue that an at-grade ford, with a good approach and a cobble substrate is an appropriate place for a forwarder to ford. The forwarder has less wheel surface area than a log truck and hence less potential for turning wheels to deposit fine sediment into a flowing stream during a fording.

AGENCY RESPONSE: Culvert sizes for temporary stream crossings were calculated based upon expected flows that are associated with a two-year flood event and where temporary

culverts will remain in place for not more than one year. We will include "gravel" in describing stream conditions where pole fords are allowed. We realize that fording a stream may be the only feasible alternative in some situations due to access constraints.

PROPOSED RULE CHANGE: 6.5.4 Temporary stream crossings on skid trails shall be over a bridge, culvert or pole ford. Culvert diameter and bridge structure opening shall be according to Table 2. Temporary bridges shall span the entire width of the stream channel. Pole fords are allowed on skid trails where the streambed is gravel, cobble or ledge. Brushing-in is allowed but only on intermittent streams and only when the ground is frozen. All temporary stream crossing structures shall be removed after logging is completed or after a period of one year after installation, whichever is less. Streams may be crossed by using an at-grade ford only where streambeds and approaches to streams are cobble or ledge and only if no other alternative exists.

6.5.5 Permanent stream crossings on perennial streams shall be in compliance with standards set forth in the Vermont Agency of Natural Resources Stream Alteration Rule and General Permit, Environmental Protection Rule, Chapter 27, Subchapter 5.

COMMENTS:

- This illustrates my incompetence on a computer, but I spent% of an hour searching the 27 pages of AN R's Stream Alteration General Permit, finding that less than 10c.y. of removal didn't require a permit but never finding Environmental Protection Rule, Chapter 27, Sub chapter 5. Could that information be inserted here? There may be others that don't have the time or competence to search for this.
- "Newly constructed" should be added to the beginning of the first sentence. ANR staff members have intimated that pre-existing structures are grandfathered until replacement is necessary. This needs to be memorialized in this Rule.

AGENCY RESPONSE: Please refer to the ANR Stream Alteration General Permit for guidance.

PROPOSED RULE CHANGE: None.

6.5.6 Logging equipment shall be kept out of stream channels, except when used for the construction of stream crossing structures or the use of at-grade fords on truck roads.

COMMENTS:

- end of sentence-"ford crossings" from the 12/12 draft gives more flexibility than "at-grade fords". 6.5.4 allows skid trails to use pole fords, but 6.5.6 allows them only on truck roads. "on truck roads" should be eliminated.

AGENCY RESPONSE: The intent of this AMP is to restrict logging equipment from operating in a stream except when temporary stream crossing structures are being installed and removed and except for at-grade ford crossings. The definition of "logging equipment" has been modified to include equipment used to construct, maintain and install infrastructure necessary for and associated with logging operations. "Truck roads" was deleted to be consistent with the proposed rule change for 6.5.4.

PROPOSED RULE CHANGE: 6.5.6 Logging equipment shall be kept out of stream channels, except as necessary when used for the construction, maintenance, use, removal and stabilization of stream crossing structures or the use of at-grade fords ~~on truck roads~~.

6.5.7 On approaches to stream crossings, waterbars, turn-ups or broad-based dips shall be correctly installed on truck roads and skid trails to divert surface water runoff into a filter area. They shall be installed a minimum of 25 feet away from the top of the streambank.

COMMENTS:

- I think the wording "They shall be installed a minimum of 25 feet away from the top of the streambank" should be changed to "They should be installed a minimum of 25 feet away from the top of the streambank." How many crossings are dugways down to the brook, then the trail turns or fades away on the topography? Due to topography, etc., it may in reality make sense for the waterbar to be 10 or 15 feet away from the top of the streambank because 25 feet away the water is draining the other direction.
- SHALL be within 25' minimum of top of stream crossing - Water bar should turn water off before get to Stream bank. Shall again is the problem here.
- Crowning of truck roads should be added. The term "shall" should be changed to "should". Logging residue and slash should be included as an additional tool for stabilizing stream crossing approaches. If slash is used correctly, waterbars and turnups are not necessary. See reference to recent research in Journal of Forestry Vol 114, Number 1.

AGENCY RESPONSE: The objective of this AMP is to provide prescribe how to divert surface runoff on approaches to stream crossings into a filter area or forest buffer to avoid sedimentation and prevent discharges. The AMP will be revised to provide for better clarity.

PROPOSED RULE CHANGE: 6.5.7 On approaches to stream crossings, waterbars, turn-ups or broad-based dips shall be correctly installed on truck roads and skid trails to divert the surface water runoff into a filter area. They shall be installed a minimum of as close to 25 feet away from the top of bank the streambank as existing soil, rock, ledge and ground conditions allow.

6.5.8 Except for the travelled portions of truck roads and skid trails, areas of exposed soil within 50 feet of the stream channel as measured from the top of the streambank shall be seeded and mulched, according to Table 3, immediately after installing stream crossing structures.

COMMENTS:

- A 100-foot area to be seeded and mulched is likely much more than is necessary in many situations. I suggest that this be changed to seeding and mulching to the first water diversion structure.
- Change to read "Except for the travelled portions of truck roads and skid trails, areas of exposed soil within 25 feet of the stream channel as measured from the top of the streambank shall be stabilized immediately after installing stream crossing structures. Table 3 provides accepted methods for seed and mulch."
- 6.5.8 – says to seed and mulched according to table 3 directly after job is complete. Speaker is very worried about invasive plants in bale of hay. Makes no sense to require hay or no particular seed. Speaker would use annual rye grass only for any seeding. Nothing else. We need to protect areas where there are no current invasive plant infestations asking for hay mulch is asking for invasive spread.
- Prefers leaving wood used for the approaches at crossings in place instead of ripping that out to mulch and seed. Works just as good and causes less disruption.
- This calls for seeding and mulching "exposed soil" within 50 feet of the stream channel "immediately after installing stream structures". Even in the dead of winter? Seems like kind of a waste of seed and mulch. This needs to be reworded to make it practical.
- Change back to original distance. The first water diversion is required at 25 feet therefore no sediment should reach the stream from the area 25 – 50' away.
- It's essential that the AMPs allow for other proven methods of stabilizing the approach such as brush and slash in order to keep costs down and make the AMPs practical to implement.
- The term "shall" should be changed to "should". "immediately after" should be changed to "as soon as conditions permit after". Add "logging slash is an acceptable

tool for stabilizing skid trails within 50 feet of stream channels and may be used in place of seed and mulch".

AGENCY RESPONSE: Seeding and mulching is a low cost and effective treatment for controlling soil erosion and preventing sedimentation. Extending the distance to be seeded and mulched on approaches to stream crossings from 25 feet to 50 feet will reduce sediment movement within the buffer where the chances of sedimentation are high due to proximity of surface water. The extended mulching and seeding will reduce the risk of discharge. The term "streambank" is change to "top of bank" to be consistent with the definition change, see 5.37 above.

PROPOSED RULE CHANGE: 6.5.8 Except for the travelled portions of truck roads and skid trails, areas of exposed soil within 50 feet of the stream channel as measured from the top of ~~bank~~ ~~the streambank~~ shall be seeded and mulched, according to Table 3, immediately after installing stream crossing structures.

6.6 Stream Crossings on Truck Roads and Skid Trails – Practices to be Applied Immediately After Logging

6.6.1 All temporary structures shall be removed from streams and the channel restored to a stable condition. Brushed-in crossings on intermittent streams shall be removed when skid trail use has been completed or as soon thereafter as ground conditions allow.

COMMENTS:

- I have no problem with the rule change. I do believe the title is misleading. Generally, close out is performed shortly after the logging ends. However, in the instance of a winter job, close out often can't occur until the summer months. The rule does clearly read that close out should occur "as soon thereafter as ground conditions allow", but the title does not reflect that. Rule 7.10 also reads that close out shall occur immediately after logging, when due to conditions it sometimes is just not possible.

AGENCY RESPONSE: We will provide for better clarification.

PROPOSED RULE CHANGE: 6.6.1 All temporary structures on skid trails and truck roads shall be removed from streams and the channel restored to a stable condition immediately after logging is completed or after a period of one year after installation, whichever is less. Brushed-in crossings on intermittent streams shall be removed when skid trail use has been completed or as soon thereafter as ground conditions allow.

6.6.2 After removing temporary stream crossing structures, waterbars shall be correctly installed 25 feet back from the top of the streambank to divert surface water runoff into a filter area. All areas of exposed soil shall be seeded and mulched a minimum of 50 feet on each side of the stream crossing. Seed and mulch at application rates according to Table 3 immediately after logging or as soon thereafter as ground conditions allow.

COMMENTS:

- A 100 foot area to be seeded and mulched is likely much more than is necessary in many situations. I suggest that this be changed to seeding and mulching to the first water diversion structure.

- 6.6.2 Shall vs. Should. I suggest the wording be changed to "waterbars should be correctly installed 25 feet back from the top of the streambank..." Topography, etc. should dictate the location of the waterbar.

- I am also wondering why exposed soil would need to be seeded and mulched 50 from the stream crossing. Why not to the first water diversion structure as in the previous AMP Manual? If the structure is installed and functions correctly, seeding and mulching past the structure should not be necessary as that water diversion structure would be draining into an appropriate filter area.

- Change to read "After removing temporary stream crossing structures, waterbars shall be correctly installed 25 feet back from the top of the streambank to divert surface water runoff into a filter area. All areas of exposed soil shall be stabilized a minimum of 25 feet on each side of the stream crossing. If utilizing seed and mulch, use application rates according to Table 3 immediately after logging or as soon thereafter as ground conditions allow."

- The proposed changes differentiate between perennial streams (5.21), intermittent streams (5.16), and streams (5.31). Then, in 6.6.2, the proposed rule would require that bare soil for a minimum of 50' on each side of a stream crossing be mulched after harvest. Is this meant for all 3 types of streams or just "streams"? If it is all streams, we believe that this will have a significant ecological (see below- mulching comment) and economic impact on harvesting projects. To mulch every bit of exposed soil in these areas near all types of streams would not be a "minor additional cost" as the EIS currently states.

- It's essential that the AMPs allow for other proven methods of stabilizing the approach such as brush and slash in order to keep costs down and make the AMPs practical to implement.

- The term "shall" should be changed to "should" in two places. Second sentence should read "All areas of exposed soil *should* be stabilized for a minimum of 25 feet on each side of a stream crossing". After the 3rd sentence, add a 4th sentence: "Logging residue used for stabilizing approaches to stream crossings may be left in place and may be used in place of waterbars and seed and mulch".

AGENCY RESPONSE: Seeding and mulching is a low cost and effective treatment for controlling soil erosion and preventing sedimentation. Recent research studies have shown that logging slash is also another low-cost and effective method but not as effective as mulch. Extending the distance to be seeded and mulched on approaches to stream crossings from 25 feet to 50 feet will reduce sediment movement within the buffer where the chances of sedimentation are high due to proximity of surface water. The extended mulching and seeding will reduce the risk of discharge.

PROPOSED RULE CHANGE: 6.6.2 After removing temporary stream crossing structures, waterbars shall be correctly installed as close to 25 feet back from the top of bank as ground conditions allow ~~the streambank~~ to divert the surface water runoff into a filter area. All areas of exposed soil shall be seeded and mulched a minimum of 50 feet on each side of the stream crossing. Seed and mulch at application rates according to Table 3 immediately after logging or as soon thereafter as ground conditions allow.

6.7 Forest Buffer

6.7.1 A forest buffer shall be left along streams and other waters in which only partial cutting can occur such that openings in the forest canopy are minimal and continuous forest cover is maintained. The width of the buffer shall be in accordance with Table 4 as measured from the top of the streambank.

COMMENTS:

- Need to define "other waters."
- Retention standard needs to be defined (such as 50% BA for perennials, shade for intermittent) within the primary 25 feet and then less retention to the limit of the variable secondary buffer in accordance with table 4.
- Change to read "A 25' wide primary forest buffer, measured from the top of the stream bank, shall be left along streams and other waters in which only partial cutting can occur such that openings in the forest canopy are minimal and continuous forest cover is maintained. A secondary forest buffer shall be left outside the primary buffer such that the combined width of the buffers shall be in accordance with Table 4 as measured from the top of the streambank or to a natural break in grade where land slopes away from

the stream. The secondary buffer shall be maintained as a filter area with minimal soil disturbance (protect the forest floor)."

- Define partial cutting. 50% removal of basal area of trees 4" DBH and up.
- Second sentence should read "The width of the buffer may be variable and should be in accordance with Table 4 as measured from the top of the stream bank".

AGENCY RESPONSE: "Waters" is defined in the proposed rule. The language for this AMP is identical to the original 1987 rule and there have been no issues with implementation. The term "streambank" has been replaced with "top of bank" to be consistent with the definition change in 5.37 above.

PROPOSED RULE CHANGE: 6.7.1 A forest buffer shall be left along streams and other waters in which only partial cutting can occur such that openings in the forest canopy are minimal and continuous forest cover is maintained. The width of the buffer shall be in accordance with Table 4 as measured from the top of bank ~~the streambank~~.

6.7.2 Truck roads, skid trails and log landings shall not be located within a forest buffer, except for the necessary construction of stream crossings.

COMMENTS:

- This AMP excludes truck roads and skid roads from buffers. Table 4 is not exactly clear whether the total buffer for minimum slopes is 50 feet in width, or 50 feet on each side of a perennial stream. In either case, several truck roads I work with are within a buffer. Often they are at the foot of steep slopes. They consist of discontinued town roads substantially upgraded with gravel and stone and are at least as firm and hard as town gravel roads. We use them regularly. In all cases I can think of, given terrain, it would be impossible to reroute the road. To a lesser extent, the same is true with skid roads. Sometimes there is no practical alternative.
- Change to read "Truck roads, skid trails and log landings shall not be located within a forest buffer, except for the necessary construction of stream crossings, and when there is no reasonable alternative."
- Need an allowance for grandfathering existing roads and trails.
- 6.7.2 – Many properties have roads and landings within 25' of a stream. Speaker just rebuilt a road in conjunction with NRCS within 25 feet of a stream. Need to remove the term SHALL. Leaving it as is will limit access. Lots of properties will be impacted by this term 'shall'. Many legacy roads are perfectly fine.

- We all know of many examples of town and state highways that traverse narrow valleys where the road embankment is also the stream embankment because it is impossible to get further from the watercourse. How can harvesting operations be held to a higher standard than state highways?
- "Truck roads, skid trails and log landings shall not be located within a forest buffer, except for the necessary construction of stream crossings" (found in section 6.9 as well) This restriction is not realistic. There are hundreds of perfectly good skid trails and log landings located in these buffer areas that function fine with no impact on water quality. In many places these have been there for decades and may be the only location available. This cannot be a full limitation. This would shut off thousands of acres to forest management. This is a major change in the application of the AMP's and is unworkable.
- This also creates a contradiction of state law/policy with the Vermont Wetland Rules. The public process on those rules acknowledged the need to locate skid trails, truck roads and log landings in wetland buffers and in wetlands (during frozen wither conditions). Now they will be prohibited by the AMP's. It is bad public policy to have rules that contradict each other. This will also potentially impact the access to many thousands of acres that have been historically accessed in these restricted areas and have no other location options.
- Change to read "Truck roads and log landings shall not be located within a forest buffer, except for the necessary construction of stream crossings, and when there is no reasonable alternative."
- Eliminating the ability to have skid trails within the buffer will in some cases force landowners to leave forest land unmanaged.
- The term "shall" should be changed to "should". Add the sentence: "Where no reasonable alternative exists, pre-existing infrastructure within prescribed forest buffers may be used". There are many instances where the only alternative for access is along pre-existing infrastructure that does not conform to updated buffer provisions. This situation exists throughout the state and the Rule as proposed seems to ignore potential conflicts with landowner property rights. Grandfathering this type of infrastructure is a sensible way to deal with this conflict. Perhaps limiting the AMP requirements to "new construction" as suggested in AMP 6.5.5 above is appropriate.

AGENCY RESPONSE: We recognize the fact that due to physical constraints on the ground and possibly property boundaries, complying with this AMP can be problematic in some situations. We realize that there is existing infrastructure (segments of truck roads and skid trails and portions of log landings) that are within the designated forest buffer. We also realize that re-locating existing infrastructure may not be environmentally or

economically feasible in some cases. Whenever there is a feasible alternative, all new construction of truck roads, skid trails and log landings must comply with this AMP and existing infrastructure must be re-located outside of forest buffers.

PROPOSED RULE CHANGE:

6.7.2 New truck roads, skid trails and log landings shall not be constructed located within a forest buffer, except for the necessary construction of stream crossings, unless there is no feasible alternative due to existing soil, rock, ledge or other ground conditions. Truck roads, skid trails and log landings that exist within the forest buffer prior to the adoption of this rule, in whole or in part, may only be used if there is no other feasible alternative for relocation or if construction of a new truck road, skid trail or log landing would result in greater potential for erosion and sediment discharge than would result from using the existing truck road, skid trail or log landing within the forest buffer.

6.7.3 In a forest buffer, no logging equipment shall be operated within a 25-foot wide area along streams, as measured from the top of the streambank, and other waters

COMMENTS:

- Landowners should be allowed to manage the timber within the streamside management zones and to not allow any equipment access within 25' may be impractical. Yes, a cable skidder can run the cable into the zone without any equipment entering the zone. However, the timber can still be dragged to the skidder with the winch, causing ground disturbance. A feller buncher's boom limit is generally right around 25'. With larger trees the effective reach is less, so there may be times where a buncher must be within 20' of a tree to cut it. Again, I believe this should be more of an outcome based rule and I also believe that 6.7.1 already limits the activity within the buffer zone.
- If the rule designated frozen conditions or conditions that would allow for minimum disturbance, I believe the desired outcome for the buffer zone would be the same, and there would be no strict distance limit to adhere to. Most operators I work with are timid enough working around streamside management zones, which is why I mark them, and I believe this proposed rule, as written, would push many unsupervised operators towards zero management within 25' of the stream bank.
- This should say except on skid trails, to remove/ install temporary or permanent crossings etc.
- Need to define "other waters."
- The definition for "logging equipment" includes pretty much everything that has to do with "cutting or removal of timber" including chainsaws. Within the revised section

6.7.3 regarding forest buffers, requires that no logging equipment be used within 25 feet of the stream bank. Using the definition of the "logging equipment", this will remove this area from -any- logging activities. I would recommend that section 6.7.3 be revised to state, more clearly the implications of this section. I'm under the impression, that skidders, trucks would not be allowed, but cutting is still allowed within this 25' buffer. Or, if I am mistaken, and no logging equipment, including saws, chains or other implements is to be operated in the 25' margin, state this more explicitly; 'no logging activities will be allowed to occur'. This would also infer that this area of land be enrolled in Current Use as Forest Riparian Buffers. If the latter is the correct understanding, I find this onerous and excessive. Streams, including intermittent streams are numerous and diverse, including many that are not "blue-line streams". Surveying for, mapping and creating mapped buffers for the Current Use Program can create quite a workload for enrollment and does not improve management of the resource proportionately.

- "no logging equipment shall be operated within a 25-footwide area along streams," ... I suggest inserting 'for harvesting purposes' after operated to allow access up narrow valleys that don't allow a sufficient buffer from the stream.
- This is the 25 foot equipment prohibition along streams. With the new definition of a "stream" that now limits many more areas to logging access. It also fails to acknowledge the advance of tracked harvesting equipment that needs to operate somewhat closer to the tree than a cable system. This will possibly put many acres in areas of high stream density off limits to harvesting. The inevitable "work around" for this limitation is to create more stream crossings.
- Change to read "In a forest buffer, no logging equipment shall be operated within the primary forest buffer along streams, as measured from the top of the streambank, and other waters."
- The term "shall" should be changed to "should".

AGENCY RESPONSE: The intent of this AMP is to prevent discharges by minimizing ground disturbance directly adjacent to streams and other waters by prohibiting the driving of logging equipment that typically can cause ground disturbance within that 25 foot strip. This AMP does not prohibit timber harvesting, but such harvesting must be done in compliance with the requirements of AMP 6.7.1 and without driving logging equipment (mechanized and horses) into and within the 25-foot strip from top of bank of the stream. The term "logging equipment" has been amended to provide for better clarity.

PROPOSED RULE CHANGE: 6.7.3 ~~In a forest buffer, no~~ Logging equipment shall not be driven ~~operated~~ within a 25-foot-wide area along streams or other waters, as measured

from the top of ~~bank, the streambank, and other waters~~ except as necessary for the construction, maintenance, use, removal and stabilization of stream crossings.

6.8 Petroleum Products and Hazardous Materials

6.8.1 Petroleum products and other hazardous materials as necessary for logging shall be stored only on log landings, placed outside of forest buffers, and shall be removed upon completion of logging.

COMMENTS:

- Re-word. Most people who cut trees with a chainsaw, commercially or for personal use, bring fuel and bar oil into the woods on their tractor, truck, or by hand.
- What is the definition of 'stored'? How will this affect a hand cutter who carries fuel and oil around with him all day? I think "shall" should be changed to "should" unless 'stored' is defined more specifically.
- Change to read "Petroleum products and other hazardous materials as necessary for logging shall be stored outside of forest buffers, and shall be removed upon completion of logging."

AGENCY RESPONSE: Proper storage, handling and use of hazardous materials are critical to protect water quality during timber harvesting operations. Timber harvesting equipment uses fuels, lubricants, coolants and solvents, all of which are considered hazardous materials and are toxic at very low concentrations. Log landings are commonly used to store fuels and lubricants used during logging. Storage of these hazardous materials must not be in proximity to streams or other waters in case a spill occurs. We acknowledge that storing these materials outside of forest buffers is the critical message to impart and that some latitude can be provided that these materials shall only be stored on log landings.

PROPOSED RULE CHANGE: 6.8.1 Petroleum products and other hazardous materials as necessary for logging shall be stored only on log landings, placed outside of forest buffers, and shall be removed immediately upon completion of logging.

6.9 Log Landings - Practices to be Applied During Logging

6.9.1 Log landings shall not be located in a forest buffer. The width of the forest buffer shall be in accordance with Table 4.

COMMENTS:

- This Amp prohibits log landings within a buffer. In rare occasions there is no alternative, again because of terrain. My wife and I own a woodlot of about 300

acres in Guilford. We reach the woodlot by crossing a ford in green river. We have no other access. The landing is on a strip of land, about 120 feet in width between the river to the west and a small brook that runs parallel to the river east of the landing. The brook is at the foot of a slope and intercepts water draining down the slope. The landing is naturally dry as a result. We have improved the landing with stone and gravel. Because of terrain, there is no other location we can use.

- Change to read "Log landings shall not be located in a forest buffer unless there is no reasonable alternative. The width of the forest buffer shall be in accordance with Table 4."
- If there is an existing log landing within the buffer strip, can it still be used?
- We have all seen incredibly difficult log landing sites that don't allow flexibility of location. "Log landings shall not be located in a forest buffer." Add "unless there is no other reasonable site". In that case place emphasis on 6.9.2 and
- Change to read "Log landings shall not be located in a forest buffer unless there is no reasonable alternative. The width of the forest buffer shall be in accordance with Table 4 or at a natural break in grade where land slopes away from the stream."
- The term "shall" should be changed to "should". Add the sentence "where no reasonable alternative exists, pre-existing log landings located within a forest buffer may be utilized"

AGENCY RESPONSE: We recognize the fact that due to ground conditions or property boundaries, complying with this AMP can be problematic in some situations. We realize that there are existing log landings that are located within the designated forest buffer. We also realize that re-locating existing log landings may not be possible due to ground conditions or property boundaries. All new construction of log landings must be located outside of forest buffers unless there is no feasible alternative location and existing log landings must be re-located outside of forest buffers unless relocation would cause a greater potential for erosion and sediment discharge than using the existing landing.

PROPOSED RULE CHANGE: 6.9.1 Log landings shall not be constructed located in a forest buffer, except where no feasible alternative exists due to existing soil, rock, ledge or other ground conditions. Log landings that exist within the forest buffer prior to the adoption of this rule, in whole or in part, may only be used if there is no other feasible alternative for relocation or if construction of a new log landing would result in a greater potential for erosion and sediment discharge than would result from using the existing log landing. The width of the forest buffer shall be in accordance with Table 4.

6.9.2 Silt fencing, hay bale check dams and drainage structures shall be correctly installed on log landings to prevent sediment from entering streams and other waters.

COMMENTS:

- Add slash
- The term "shall" should be changed to "should".

AGENCY RESPONSE: The definition for "Hay-bale check dam" has been changed to "Check dam" means A small barrier constructed in a drainage structure, its outlet, or in a small gully or other watercourse to decrease the water flow velocity, minimize channel scour and promote deposition of sediment. A check dam creates a small sediment basin. Check dams may be constructed of hay-bales or other stable and semi porous material." See definition 5.14 above. The AMP has been revised to refer to "check dam".

PROPOSED RULE CHANGE: 6.9.2 Silt fencing, hay bale check dams and drainage structures shall be correctly installed on log landings to prevent sediment from entering streams and other waters.

6.10 Log Landings - Practices to be Applied Immediately After Logging

6.10.1 Log landings shall be stabilized and drainage structures shall be correctly installed to prevent sediment from entering streams and other bodies of water.

COMMENTS:

- Change to read "to prevent sediment from entering streams and other waters."
- The term "shall" should be changed to "should" in two places.

AGENCY RESPONSE: This AMP is amended to use language consistent with other AMPs.

PROPOSED RULE CHANGE: 6.10.1 Log landings shall be stabilized and drainage structures shall be correctly installed to prevent sediment from entering streams and other bodies of waters.

6.11 Table 1: Distance (Feet) Between Drainage Structures on Truck Roads and Skid Trails

Road Grade (Percent Slope)	Skid Trails	Truck Roads Permanent Truck Roads During and After Logging:	Temporary Truck Roads After Logging

	Temporary Truck Roads During Logging.				Waterbars
	During Logging (Waterbars & Turn-Ups)	After Logging (Waterbars and Turn-Ups)	Broad-Based Dips	Ditch Relief Culverts	
1	500	400	500	450	400
2	300	250	300	300	250
5	200	135	180	200	135
10	140	80	140	140	80
15	130	60	---	130	60
20	120	45	---	120	45
25	110	40	---	65	40
30	100	35	---	60	35
40	90	30	---	50	30

Table 1 COMMENTS:

- The recommended spacing of Broad Base Dips on Truck Roads does not account for roads which are protected by crowning.
- Table 1 and table 2 doesn't see any references or bibliography that shows where culvert sizes are increased. All the old culvert size references have been removed.
- Waterbar intervals are more than necessary.
- Separating truck road and skid road standards is a needed clarification. My old AMP orange book has several hand-written notes where I was trying to decide whether certain tables applied to truck roads or skid roads, or both.
- I support the revised standards in Table 1 which provide more flexibility in terms of the distance between waterbars on skid roads and dips on truck roads.

AGENCY RESPONSE: Table 1 was re-formatted to provide for better clarity of spacing requirements for drainage structures on permanent truck roads, temporary truck roads and skid trails for both during logging and after logging. Spacing requirements, as determined by percent grade of truck roads and skid trails has not changed from the 1987 rule.

PROPOSED RULE CHANGE: None

6.12 Table 2: Minimum Culvert Sizing for Temporary Stream Crossings

Drainage Area (Acres)	Waterway Area <u>Minimum</u> Size of Opening Required For Bridges and Culverts (Square Feet)	<u>Minimum</u> Culvert Diameter (Inches)
4	0.6	12
8	1.0	15
15	1.5	18
20	1.9	18
40	3.2	24
50	3.8	30
80	5.3	36
100	6.3	36
150	8.6	42
200	10.6	48
250	12.6	48
300	14.4	54
350	16.2	60
450	19.5	60
550	22.7	66
640	25.4	72

Table 2 COMMENTS:

- This table does not account for pole fords, or for pole fords constructed with a drainage pipe which may be smaller than 12" diameter.

- Table 1 and table 2 doesn't see any references or bibliography that shows where culvert sizes are increased. All the old culvert size references have been removed.
- Table 2- Waterway area needs to be defined.
- Basing Table 2 on drainage area rather than type of soils seems to me to make more sense. Drainage area is a more certain standard and can be figured quickly from a topo map.

AGENCY RESPONSE: Minimum culvert sizes for a given watershed area were determined for temporary stream crossings based upon expected flow for a two-year flood event and that a temporary culvert will not be in place for more than one year.

PROPOSED RULE CHANGE: See Table 2 above. Deleted "Waterway Area" and inserted "Minimum Size of Opening" and added "Minimum" before "Culvert Diameter (Inches)".

6.13 Table 3: Methods of Seeding and Mulching Truck Roads, Log Landings, Skid Trails and Stream Crossings

Options	Rate of Application	Timing of Application
Option 1. Hay or Straw Mulch with Annual Ryegrass	60 bales/acre or 1 ½ bales/1,000 square feet AND Annual ryegrass at 40 lbs./acre or 1 lb./1,000 square feet	Anytime
Option 2. Hay or Straw Mulch with Winter Rye	60 bales/acre or 1 ½ bales/1,000 square feet AND Winter rye at 112 lbs./acre or 2 ½ lbs./1,000 square feet	Anytime
Option 3. Hay or Straw Mulch with Soil Conservation Seed Mix	60 bales/acre or 1 ½ bales/1,000 square feet AND Soil Conservation Seed Mix at 42 lbs./acre or 1 lb./1,000 square feet	Anytime. Best when applied between April 15 – June 15 OR August 1 – September 15

Table 3 COMMENTS:

- The requirement for mulching per table 3 could become the fastest way to spread exotic plants since the USDA promoted them in the 1950s and 60s.
- No mentioning of using brush for armoring of trails. If modernizing these practices then let's include the use of brush for armoring. It is something we did not do 30 years ago and is a great technique. It is a great technique because instead of ripping out and then putting down seed and mulch a logger can just leave the brush in place. This technique needs to be an acceptable erosion prevention measure.
- Follow up on comments about woody debris mulching instead of mulch hay. Forest service allows this woody debris mulching. A great technique.
- Stream cross approaches – don't add seed to a natural environment. Effectiveness of brush – tech guidance.
- The proposed changes expand the areas where mulch is expected at the close of operations. Invasive species are a serious concern and using hay, from potentially infested fields, has the potential to dramatically increase the spread of invasives plants into the forest and into waterways.

AGENCY RESPONSE: We recognize the potential of spreading exotic plant species by using hay mulch. We also realize that hay is more abundant and affordable than straw. Therefore we cannot preclude the use of hay mulch. The options presented in Table 3 are minimal requirements. A landowner can choose to go beyond those requirements if they so choose.

PROPOSED RULE CHANGE: None

6.14 Table 4: Minimum Forest Buffer Widths

Percent Slope of Land Between Skid Trails, Truck Roads or Log Landings and Streams or Other Bodies of Waters	Width from Top of <u>Bank Streambank</u> (Feet Along Surface of Ground Measured Perpendicular to the Stream <u>or Other Waters</u>)
0-10	50
11-20	70
21-30	90
31-40*	110

Table 4 COMMENTS: No comments received but changes made above to be consistent with other language in the AMPs, e.g. delete "Bodies of" and insert "Other Waters" and "streambank" is deleted and replaced with "bank".

Comments— Use Value Appraisal and the AMPs:

COMMENTS:

- My greatest concern is for the UVA-AMP connection. The long-standing requirement that AMPs be implemented on UVA parcels regardless of the discharge issue is appropriate, and I support its continuation. I have some personal experience with a UVA inspector criticizing un-water-barred skid roads, and threatening UVA action against the owner in an instance where there had been no erosion, there was no nearby stream, and we had just not gotten to the work yet; a case of an old skid road on gravelly soil being less than 25 ft from a stream, but with no erosion or discharge, reported as an AMP violation by the UVA inspector, but subsequent observation from the AMP forester that he was not concerned about the situation. Beyond a certain level, AMP conformance has nothing to do with water quality, but everything to do with protecting the UVA enrollment.
- The combination of mandates in the AMP rules and their connection to UVA lands is clearly a case of sacrificing good to excellent in the quest for perfection.
- These are mandated on Use Value properties, is it going to be mandated on other properties? Rumor is out there that this is going to happen. If mandated in UVA – the county forester comes out and sees a skid road section where there is just no fix. Just a basic mud hole here and that is simply the way it is. However no discharge. Is that a violation? There are places where we are just not going to be able to smooth the ruts, without making a bigger mess. Need flexibility to make this call that it is okay. Not a big deal.
- The AMP's have been "mandatory" for many years for forest land enrolled in the Current Use Program. It has always been understood that this means Current Use landowners must implement the AMP's that are "practical and achievable" on their land. It has never been interpreted that this means they must implement all AMP's on all acres of their land at all times. This practical and currently used interpretation of the AMP rule MUST be codified into the proposed rule. To do otherwise is unfair and deceptive to all parties involved.

AGENCY RESPONSE: It is true that the current Minimum Standards for Forest Management and Regeneration do create an important responsibility for landowners enrolled in UVA to adhere to the practices contained within the AMPs. Currently, standards for eligibility in the Use Value Appraisal Program are in part outlined in the Minimum Standards for Forest Management and Regeneration contained within the UVA manual available from the FPR website. These standards state that the AMPs shall be employed to the maximum practicable extent on all UVA enrolled parcels. To maintain eligibility in UVA, compliance with this standard is independent from discharge, as it is intended to prevent discharge and erosion of soil on UVA enrolled lands. It is up to the discretion of the County Forester to determine if AMPs have been employed to the maximum practicable extent on UVA enrolled parcels. This discretion is important for administration of the UVA program.

The applicability of the AMPs to lands enrolled in the Use Value Appraisal program (UVA) is defined by the Minimum Standards for Forest Management and Regeneration as adopted by the Commissioner of Forests, Parks and Recreation. While foresters and loggers often encounter enforcement of AMPs as a result of the land's enrollment in UVA, the AMP rules are drafted and exist independently from UVA. It is within the scope of the Minimum Standards for Forest Management and Regeneration for the UVA program, and not the AMP rules themselves, to address how the AMPs are applied to the UVA program.

PROPOSED RULE CHANGE: None

Comments-Costs Associated with Implementing the AMPs:

COMMENTS:

- The revised AMP's, as proposed in this rule, contain several very problematic provisions that need to be changed or adjusted. There are some very serious implications for forest landowners and the harvesting professionals working in Vermont forests. Several parts of this rule are overly restrictive to implement as written. The impact would be to place many thousands of acres of forest land off limits to timber management and the practice of silviculture. This could have drastic negative economic, social and ecological impacts to Vermont.
- The "Economic Impact Statement" prepared for the rule is inadequate and inaccurate. If the rule is put in place, and enforced as written, many thousands of acres of forest land in Vermont cannot be operated on at all because of the severe restrictions on stream crossings and log landing locations. This will put off limits many historically used crossings and landing locations that have been used many times with no impact on water quality. There must be more flexibility for site specific conditions built into the

rule. The economic impact statement as written shows a very disturbing lack of understanding of the limitations imposed on forest operations.

- Costs will go up for additional seeding and mulching required. How do you explain this to a landowner?
- Small jobs will become cost prohibitive. Need to have an excavator on job.
- So hard to make a living in the woods with all the regulations.
- Almost have to do everything with an excavator – adds \$2/ton.
- Need to have an excavator on job.

AGENCY RESPONSE: We don't agree that the proposed AMPs will restrict logging or put forest land out of production. Compliance with the AMP's does incur operational costs, but the Acceptable Management Practices have been in place since 1987 and there is no evidence that they have had a significant negative impact on the ability to harvest timber or have closed off thousands of acres. We do acknowledge that the increase in distance required for seeding and mulching may cause a slight increase in cost. This will not greatly increase operational costs and thus does not have a significant economic impact. AMP implementation actually saves money, sometimes even in the short term. We recognize that we need to be proactive in helping the regulated community comply with the rule. The Agency is committed to technical support and has also provided active financial support with partners through such programs as the Portable Skidder Bridge Initiative.

PROPOSED RULE CHANGE: None.

Comments-Providing Better Guidance:

COMMENTS:

- A critical omission in the entire document is recognition of the role of new techniques derived from emerging technology. For instance, a landing may successfully be located on soft ground which has been firmed up by brushing in (using chips from a portable chipper, or stacking brush using a grapple skidder). The Rule needs to emphasize that any examples given are illustrative, not exclusive.

- I understand that the informational and instructive illustrated materials deleted from the old "Orange Book" by this rule will be re-issued in a new educational publication which can be revised as appropriate. That will be welcome: VFPA continues to look forward to creating a cleaner and safer woodland both on private and public lands.
- Why weren't accompanying pictures included?
- Charts changed, photos removed.
- We learned at the hearing that the sketches in the old rules were eliminated because of the administrative hassle of having to have them approved by the legislature if included in the rule language. But that sketches would be included in an eventual manual that would incorporate them with the rules language for better public understanding. While I sympathize with the "hassle" factor I think it further limits the ability of the "rules implementer" (logger or landowner) to "legally" use any methodology other than that described in the rules- in this case definitions- to mitigate a water quality issue on a logging job.

AGENCY RESPONSE: Many comments express concern that the AMPs will not be published in a format, with illustrations and figures, similar to the existing "Orange Book." The Department does intend to issue a pocket guide that will include the final revised rule as well as interpretive guidance and illustrations. Many of the proposed revisions strengthen the enforceability of the AMPs while still providing some flexibility on actual implementation. Also, many of the AMPs in this proposed revised rule do not actually change the requirement that is protective of water quality, but only change "should" to "shall" to improve enforceability of the requirement.

PROPOSED RULE CHANGE: None.

Comments-Name? Acceptable Management Practices or Best Management Practices:

COMMENTS:

- The Vermont publication should be re-named to be "Best Management Practices for Maintaining Water Quality on Logging Jobs in Vermont"

- The New Hampshire BMP's have been vetted by a wide range of stakeholders and therefore should be considered a solid reference for the Vermont water quality rules.

- Referring to the Vermont AMP's as merely "Acceptable" creates a rift between resource managers and stakeholders who wish to limit harvest operations. This longstanding problem can be mitigated significantly by referring to the new RULES as "Best Management Practices" which is what professional resource managers consider them to be in practice. The term "BMP's" is widely used throughout the broader resource management community. Using the term for this newly revised set of water quality Rules in Vermont is entirely appropriate and I am suggesting that Vermont adopt the term for this publication.

AGENCY RESPONSE: The AMP wording has been used by Vermont since 1987 and is widely recognized both in the regulated community and public at large. In addition, there are many references to the AMP's in statute, publications and other regulations. ANR believes it would not be practical to change the name at this point.

PROPOSED RULE CHANGE: None

Comments-Potential Impacts to the Vermont Forest Industry and Working Forest:

COMMENTS:

- All the verbiage from FPR is that need to be helping the forestry industry, however then we throw this down. Where is the science behind this? What do our words mean when actually we are making it tougher for the forestry industry?

- What I see happening is the government is putting the final nail in the coffin of the forest products industry.

- There are many relevant idealistic goals associated with maintaining and enhancing water quality in association with timber harvesting. There are many relevant idealistic goals associated with maintaining and enhancing water quality in association with timber harvesting. Several comments were made that the name "Acceptable Management Practices (AMP's) should be changed to Best Management practices (BMP's), which is a more common term both in Vermont and in other states. In addition, we received one comment that referring to the Vermont AMP's as merely "Acceptable" instead of "best" creates a rift between resource managers and stakeholders and enables those who wish to limit harvest operations.

- As I mentioned at the meeting, these amendments are clearly beyond worrying about the stated results in act 64(those are fine and the methods/directives in the current AMPs provide any remedies for what isn't). They are instead all about mandating a "process", and as always that is the problem, process equals regulation, not results. Why "fix" what isn't broken when all it is likely to do is harm an entire industry and address a nonexistent problem. Look around us, forestry is one of a precious few relatively healthy industries left in this state. Is this something we can afford? We already have clean cool water and minimal logging related erosion; there is no need for more regulation for regulation's sake at a cost to the industry as a whole.

AGENCY RESPONSE: The mission of the Vermont Forestry Division is both to manage for and protect healthy forests and promote sustainable use of the land. We all, including ANR and the Forestry division, know from years of on-the-ground experience, that effective AMP's are an essential part of managing for and protecting healthy forests. Promoting sustainable use and the economic benefits of our working lands in Vermont is also a core function of our work and protecting water quality is completely consistent with it

PROPOSED RULE CHANGE: None.

Miscellaneous Comments

COMMENT:

- Have to recognize an element of any rule is that sometimes the solution can be far worse than the problem. 'Keep the water clear and cold' always remains the goal.

- A lot of these comments and stuff seems to focus on process instead of results. How did we get to this point where we need revision? Were there multiple violations, increase of a problem, what brought this about?
- Industry is in a work mode right now and you are asking us to take time to make comments- not enough time.
- 87 book worked fairly well, with a few updates would have fine.
- I'm from the government and I'm here to help you – I get scared by that.
- Phosphorus load attributed to forestry – max 2%.
- Realize there are some bad actors out there and everyone suffers.
- What about the 'water quality team' including loggers.
- Outcome is clean water.
- First of all good water quality practices are a very important part of a log job. Roads should be properly built and vegetation strips should be built along water courses in order to limit erosion and sedimentation.

AGENCY RESPONSE: No response required. Comments are general opinion.

PROPOSED RULE CHANGE: None.