

RAP Response to Comments

Required Agricultural Practices Rules

General Comments

The Agency received many comments regarding the rule and its relationship to the Total Maximum Daily Load (TMDL) for Lake Champlain, Clean Water Act requirements, and the intent of the rule in general. These comments are summarized below.

Comments:

- The RAPs will not meet the reasonable assurance standards of the TMDL.
- The RAPs are not consistent with the scenario tool in the TMDL

Response:

The RAPs, as well as provisions of Act 64 of 2015, were developed in advance of the finalization of the TMDL for Lake Champlain. In fact, it was the Agency's efforts through stakeholder workgroups that provided EPA with the practices chosen to be included in the scenario tool modelling efforts as part of the TMDL Phase I implementation plan. The goals of this plan were developed with the agricultural community, State agencies, federal agencies and other service providers. The same recommendations informed the development of Act 64 and requirements for the revision of the RAPs. However, it is important to recognize that the RAPs apply to all areas of the State, not just the Champlain watershed. The EPA generated TMDL, as a planning and modeling tool, was informed by recommendations from the Agency and not the other way around. The goals of the TMDL are consistent with the Agency's goals of substantially reducing nutrient inputs to State waters. Recommendations of stakeholder groups formed the basis of the Phase I implementation plan for agriculture, Act 64 requirements, and the revised rule. The RAPs are rules developed from the requirements of Act 64 which was signed into law over a year before the EPA TMDL was finalized. The Agency believes that the RAPs are consistent with the requirements of Act 64 and consistent with commitments made as part of the TMDL Phase I implementation plan.

Comment:

The RAPs are inconsistent with State and federal law until:

1. Reach scale geomorphology conditions are included and addressed
2. Property owners assume the burden for verifying improved water quality
3. Sediment and phosphorous loading is fully addressed in RAPs

Response:

The RAPs are consistent with State law in that they are practices for farmers to prevent agricultural pollutants from entering the groundwater and waters of the State as required by 6 V.S.A. § 4810. The enabling law does not require reach scale geomorphology conditions considerations. Farms are required to comply with the rules. The Agency is required to monitor and ensure compliance with the rules. The Agency believes that through compliance and technical assistance efforts water quality will improve. Sediment and phosphorous loading is addressed in the RAPs through multiple requirements including, but not limited to, nutrient management planning, erosion control requirements, limitations on manure application and required practices in frequently flooded lands.

Comment:

The RAPs should incentivize, promote and encourage additional practices to promote water quality.

Response:

RAPs represent a base level of farm management practices that will protect and improve water quality. The authority of the Agency to allow that alternative practices can meet the goals of reducing adverse impacts to water quality can be found in 6 V.S.A. §4810(11). Incentivizing additional practices (Best Management Practices or BMPs) can also be found in associated sections of 6 V.S.A. Chapter 215 such as § 4821 Assistance program created, § 4826 Cost assistance for waste storage facilities, § 4827 Nutrient management planning; incentive grants, § 4828 Capital equipment assistance program, § 4900 Vermont seeding and filter strip program, and § 4951 Farm agronomic practices program. The Agency agrees that incentivizing practices that go beyond the rule is an important part of any effort to reduce non-point source pollution but does not believe that the Required Agricultural Practices Rules are the appropriate place for these programs. RAPs are but one part of a larger water quality program managed by the Agency that includes Best Management Practices incentives.

Comment:

RAPs do not adequately protect municipal ditch systems from agricultural pollutants for which the municipality becomes responsible. The RAPs do not have adequate mechanisms to prevent, as a much as possible, the direct and indirect channeling of pollutants into areas of municipal jurisdiction.

Response:

RAPs are land management practices meant to assure that farms eliminate adverse impacts to water quality. With regards to land and farmstead management practices the Agency believes that the RAPs do provide adequate mechanisms to eliminate adverse impacts to water quality. Municipal authority related to drainage and rights of way exists is 19 V.S.A. § 1111 and is not subject to the Secretary's authority.

Comment:

The Agency should provide its analysis of phosphorous reductions achieved by RAP implementation.

Response:

Phosphorous reductions resulting from the implementation of RAPs have been modelled through the TMDL for Lake Champlain and the associated scenario tool. RAPs as modeled will provide the phosphorus reductions required when fully implemented. It is important to note that the RAPs also apply to all farms in Vermont. No modelling has been done statewide. It should be noted that in large areas of the state phosphorus may not be the nutrient of concern thus requiring different modelling and monitoring efforts.

Comment:

Will RAPs be effective, achievable, affordable, and measurable?

Response:

Measuring change over time will be accomplished, in part, with continuing in-stream monitoring throughout the State, monitoring compliance via inspection, and tracking implementation over time. The Agency believes that full implementation of the RAPs by all farms will result in measurable reductions of farm generated nutrients to waters of the State.

The Agency, with support from NRCS, is coordinating development of a multi-Agency and multi-partner database to tract planning and implementation of BMPs on the ground in Vermont. In addition, per Act 64, State Agencies are partnering to track technical assistance, BMP implementation, and outreach around the implementation of Act 64 of 2015.

The Agency has considered in depth the expected cost for all farms and has determined—as described in Economic Impact Statement—that while there are some costs associated with these new Rules, these costs should be manageable.

Comments:

- The RAPs should be limited to the authorizing language in Act 64 in that the rules shall be practical and cost effective to implement.
- There is not sufficient justification that the environmental benefit of the RAPs justifies the economic burden.

Response:

The Agency believes that the effectiveness of land management practices required by the RAPs (buffers, nutrient management planning, cover crops, manure management, etc.) to reduce sediment and nutrient losses from cropland and farmsteads is generally recognized. Significant flexibility is provided throughout the RAPs to allow a farm to meet water quality standards through alternative methods and practices as approved by the Secretary. The Agency refers commenters to the Economic Impact Statement provided with the draft rule that provides cost impact information.

Comment:

Include farmer's rights in the RAPs with clearly defined parameters on the Ag Agency's visits to a farmer, timeline for information to be provided to the farmer and time tables for improvements required on the farm.

Response:

In general, the Agency has the authority to visit farms during normal business hours as part of its general authority to "conduct routine inspections and investigate suspected violations of any law administered by the Secretary;" (6 V.S.A. Ch. 1 § 1(3)). The Agency has developed policies and procedures regarding communication with farms prior to inspection, information provided as part of the inspection and follow-up reporting. Time tables for improvements on the farm are variable and managed on a case-by-case basis. Typically, procedures and policies are not included as part of a rule as it would not allow these policies and procedures to evolve as needed over time. The Agency does not believe it is appropriate to include these items in the RAPs.

Comment:

There should be a standard for response from the Agency regarding the various areas of the rule where variances may be obtained such as cover cropping dates, manure spreading exemptions, etc.

Response:

The Agency strives to respond to all requests on a timely basis. However, the response time is often dictated by the quality of information received by the entity requesting the variance. The Agency does not believe that placing inflexible standards of response in the rule would serve the variance process or the agricultural community well. The Agency intends to develop guidance documents for those requesting variances to the rule that will aid in the process.

Comment:

The Agency should include a plan on how to separate the enforcement division from the promotion/education division which was the intent of the Agency and overlooked as part of Act 64.

Response:

Educational, compliance, technical assistance, and enforcement efforts are managed as a coordinated group of programs within the Agricultural Resources Management Division at the Agency of Agriculture. It is the Agency's belief that this structure allows for the most efficient use of limited resources while providing the greatest opportunity to resolve water quality issues on farms. The Division does not engage in development or promotional efforts.

Comment:

Annual Certified Small Farm permit fee will be an undue burden.

Response:

There is no fee being proposed with this rule. The Agency will be required to provide a report to the Legislature regarding fees for certified small farms as part of the 2017 legislative session.

Comment:

Comment suggested there should be language within the rule discussing monitoring (soil and water samples), management, and storage of pesticides in all relevant sections of this document.

Response:

6 V.S.A. Chapter 87 is the relevant section of Vermont Statute which provides for the authority and programming to manage pesticides on farms. The Vermont Regulations for the Control of Pesticides and associated programs have been in place since the late 1970s and appropriately regulate pesticide use on farms. The RAPs are not the relevant rule with which to address those management needs or requirements.

Section 1 General

Comment:

The Agency received comments regarding the general information section of the rule including the introduction, purpose, and authority. Comments suggested improving language to clarify the purpose of the rules, adding information regarding practices that will improve water quality over the long term as well as promote the important efforts to be made by the Agricultural community in the future.

Response:

The Agency has considered the comments provided and has made changes to the rule in response. In order to provide further clarity in Section 1 the Agency has re-titled and rearranged the introduction, purpose, and authority sections. The language found in the newly titled Enabling Legislation section is language directly from 6 V.S.A. § 4810. Rather than modify existing statutory language the Agency has provided a preamble to the rule that further clarifies the rules purpose, vision and goals.

Comment:

Comments were also received stating that there should not be language regarding a presumption of no discharge when farms are in compliance with the rules.

Response:

The language pertaining to the presumption of no discharge is statutory language (6 V.S.A. §4810(b)).

1.1 Introduction

Comment:

The rules as written primarily require, and largely fail to encourage or promote, additional practices that could substantially improve water quality outcomes.

Response:

The RAPs are consistent with state law in that they are practices for farmers to prevent agricultural pollutants from entering the groundwater and waters of the State as required by 6 V.S.A. § 4810

RAPs represent a base level of farm management in order to protect water quality. The authority of the Agency to determine that alternative practices can meet the goals of reducing adverse impacts to water quality can be found in 6 V.S.A. § 4810(11). Incentivizing additional practices (Best Management Practices or BMPs) can also be found in associated sections of 6 V.S.A. Chapter 215 such as § 4821 Assistance program created, § 4826 Cost assistance for waste storage facilities, § 4827 Nutrient management planning; incentive grants, § 4828 Capital equipment assistance program, § 4900 Vermont seeding and filter strip program, and § 4951 Farm Agronomic Practices program. The Agency agrees that incentivizing practices that go beyond the rule is an important part of any effort to reduce non-point source pollution but does not believe that the Required Agricultural Practices Rules are the appropriate place for these programs.

Comment:

AAFAM should add some positive words to the introduction that explain, “Why are we doing this?” Maybe something along the lines of what the logging AMPs offer at the beginning of their rules:

Response:

The Agency has considered the comments provided and has made changes to the rule in response. In order to provide further clarity in Section 1 the Agency has re-titled and rearranged the introduction, purpose, and authority sections. The language found in the newly titled Enabling Legislation section is language directly from 6 V.S.A. § 4810. Rather than modify existing statutory language the Agency has provided a preamble to the rule that further clarifies the rules purpose, vision, and goals.

1.2 Purpose

Comment:

This might be the appropriate section to state that enforcement is not the first step in enforcing these rules. In any event, the text of the rule does not say these rules will help our waters anywhere and should.

Response:

The Agency has considered the comments provided and has made changes to the rule in response. In order to provide further clarity in Section 1 the Agency has re-titled and rearranged the introduction, purpose and authority sections. The language found in the newly titled Enabling Legislation section is language directly from 6 V.S.A. § 4810. Rather than modify existing statutory language the Agency has provided a preamble to the rule that further clarifies the rules purpose, vision, and goals.

Comment:

Terms "control and reduce" are used; terms elsewhere are much more rigid (e.g. Section 6 uses "prevent" and "Farms shall not create any discharge"). Change language to clarify.

Response:

Language used in Section 1.2 of the Rule comes directly from statute: 6 V.S.A. §§ 4810 and 4810a.

1.3 Authority

Comment:

The proposed rule should repeal the overarching authority given to the Secretary throughout the rule.

Response:

The Authorities of the Secretary within the rule are provided by the Legislature and cannot be repealed by an administrative rule.

1.4 Enforcement

No comments received.

1.5 Further considerations under the RAPs

Comment:

Comments received suggested that Section 1.5 be re-written to require review of the rule as opposed to current language that states the Secretary “may also evaluate the current status of the effectiveness of the Required Agricultural Practices. The comment also suggested that 2 years may be too soon and that further review should be required in 5 years.

Response:

The inclusion of the cited language in Section 1.5 was meant to clarify that amendments made in 2018 may not be limited to tile drain considerations but that other amendments could be made to the rule if deemed necessary. This language was not meant to provide a rule review mechanism within the rule itself.

Section 2 Definition general

Comment:

Comments suggested that the term “Residue Management” Should be defined and added to the Rule.

Response:

The Agency does not believe the inclusion of this term in the RAP Rule is necessary, as the term was not used in Section 6.3(c) as suggested by the comment.

Comment:

Add a definition of “Tile Outlet”

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule. The Agency believes the term “Tile Outlet” is generally understood.

Comment:

Comments received suggested that the term “Agricultural Pollutants” should be explicitly defined in the RAP Rule.

Response:

“Agricultural Pollutants” is a term that is used throughout Vermont Statutes without an explicit definition. The term Agricultural Pollutants is used undefined in the enabling legislation, found in 6 V.S.A. § 4810, and is generally used to refer to wastes as that term is defined in the Rule that may be generated by a farm. It is a generally understood and recognized term in Vermont law; the Rule serves to further clarify the intent of the term as it is used throughout the document. “Agricultural Pollutants” appears five times in the RAP rule and three of those times it is used in the enabling legislation taken directly from Vermont Law.

2.01 Agency

No comments received.

2.02 Agricultural Product

No comments received.

2.03 Annual Cropland

Comment:

Comment received focused on the provision of the “Annual Cropland” definition which expressly exempts vegetable and small grain acreage from requirements specific to Annual Cropland--including expanded winter Frequently Flooded Field manure spreading ban as well as cover crop establishment requirements. No one type of crop should be exempt from the requirements associated with Annual Cropland--it is not “All-In”.

Response:

Further subcategorization was established in the 2nd Draft RAPs between cropland and annual cropland to reflect comments regarding further need for refinement of the threshold for Small Farm Certification set in the first draft of the RAPs. It is important to note an important change to the definition of ‘Annual Cropland’ which now includes annual row crops not grown for human consumption. This distinction allows for the refinement of the threshold for ‘Small Farm Certification’ for farms whose primary enterprise is not livestock to reflect the intent of Act 64

that crop farms of a certain size, to be determined by the Secretary, be included in the Small Farm Certification program.

Additional clarity was needed and provided for the definition of ‘Annual Cropland’ as to what crop types would specifically trigger inclusion in the ‘Annual Cropland’ definition and subcategory, which is used as a threshold criteria for Small Farm Certification as well as a threshold for a number of provisions for land management including cover cropping floodplains and manure spreading restrictions on floodplains.

The Agency elected in the 2nd Draft to clarify that sweet corn and pumpkins are to be considered ‘Annual Cropland’ for the purposes of the RAP Rule. Small grains for the purposes of this rule are not considered Annual Cropland. This category is meant to include those farms that are growing, rye, wheat, sorghum, or other cereal grains whose growth characteristics and annual management differ significantly from the crops included in the Annual Cropland crop list.

The Agency believes the 50-acre threshold for annual cropland for certification is the appropriate threshold because it is estimated that this threshold would ensure that at least 93% of all corn grown for Silage in Vermont would need to enter into the Small Farm Certification program and develop and implement a 590 nutrient management plan—if those corn acres are not already included in a MFO or LFO permit program. Including 93% of all corn grown for silage in Small Farm Certification or a MFO or LFO permit program represents 74,241 of the 80,231 acres of corn grown for silage in Vermont at the time of the 2012 USDA NASS Ag Census.

With 789 vegetable operations in Vermont, according to the 2012 USDA NASS Ag Census, the 3,699 vegetable acres those farms manage represents less than 1% of total harvested cropland in Vermont. To maintain parity between vegetable operations and annual cropland operations, the threshold of 50 acres has been determined to reasonably include a sufficient number of Vegetable Operations in Small Farm Certification which are of size where the additional requirements of the Small Farm Certification Program have significant enough impact on efforts to reduce non-point source pollution while prioritizing compliance and technical assistance efforts.

Based on analysis of Ag Census Data, and testimony provided by subject matter experts in the field of vegetable production in Vermont, the Agency believes that 50 vegetable operations in Vermont would fall under the Small Farm Certification requirements. This represents at least 2,500 of the 3,699 vegetable acres operated in Vermont, or 68% of all vegetable acreage in the State.

One hundred and sixty five vegetable producers are currently Certified Organic in Vermont, according to 2015 VOF annual statistics. With a total of 1,666 vegetable acres currently certified as Organic in Vermont, this cohort of producers represents an average farm size of 10 acres, well below the 50-acre threshold for certification. While a number of these producers are likely larger than 50 acres, it is worth noting that a number of these operations represent vegetable operations which will not only need to follow the RAPs, but will also need to follow additional environmental quality standards in order to maintain Organic certification. A significant number

of the vegetable operations in the state below the 50-acre threshold for Small Farm Certification are already implementing enhanced soil management techniques, such as mandatory crop rotation which are required by the Organic federal inspection and certification program. These Organic certification requirements exceed, in some places, the requirements in the RAPs, and as such the Agency feels a number of vegetable operations below the 50-acre threshold for certification are already exceeding many of the standards set in the RAP Proposed Rule making a lower Small Farm Certification threshold redundant.

For these reasons, VAAFAM believes that a 50-acre threshold for vegetables for Small Farm Certification--as well as its exclusion from Annual Cropland requirements--sufficiently addresses the appropriate scale of farm which would be required to enter into the Small Farm Certification program and meets the Act 64 mandate for the prioritization of effort and resources in implementing the Small Farm Certification Program.

Standards for Annual Cropland has changed as applied in the final proposed rule in response to comments received. Vegetable and Small Grain cropland are now subject to § 6.05(f) [100' vegetated buffer on 10% or greater sloped land]. Small Grain cropland will now be required to follow § 6.05(c) [no manure application on frequently flooded fields after October 16th or before April 14th].

2.04 ANR

No comments received.

2.05 Buffer Zone

Comment:

Comments received suggested that the definition for Buffer Zone was unclear and required additional clarification.

Response:

The Agency agrees that the definition used in the RAP Proposed Rule was unclear, and has further refined the definition for clarity.

2.06 Certified Small Farm

Comment:

Comment received expressed that the definition of Certified Small Farm was unclear.

Response:

The Agency has revised the definition for clarity.

2.07 Compost

Comment:

Comment received suggested that the definition for Compost used in the RAP Proposed rule would be best replaced by the definition for Compost utilized in the USDA National Organic Program.

Response:

The definition of 'Compost' utilized in the RAP Final Proposed Rule comes directly from Vermont Law: 10 V.S.A. § 6602(25).

2.08 Cover Crop

Comment:

Comment received suggested that cover cropping could apply to all cropland--including vegetables and small grains--not just annual cropland.

Response:

The Agency agrees with this comment and has made applicable changes in the definition of 'Cover Crop'. It was not the Agency's intent to define cover crops in relation to the land they are grown on in the Proposed Rule. The Agency encourages the use of cover crops as may be practicable from time to time. As further clarification, the Final Proposed Rule enumerates that the mandatory cover cropping of annual crop fields will only apply to annual cropland as defined in this Rule.

Comment:

Comment received suggested that the definition of Cover Crop as applied throughout the Rule would not, in fact, provide organic matter to annual cropland and would not improve soil health in this way.

Response:

The Agency disagrees with this comment, and believes it is on firm scientific ground to make the assertion that cover cropping would indeed introduce additional biomass which would be converted to organic matter and improve soil health through not just the increase in the organic matter level of the soil and also through the enhancement of soil microbial activity. (*Managing Cover Crops Profitably*, Sustainable Agriculture Research and Education, University of Maryland Press, 2015 p.10)

2.09 Crop and Cropland

Comment:

Comment received suggested that the definition of ‘Crop’ and ‘Cropland’ was unclear and required further clarification.

Response:

The Agency has rewritten this definition, incorporating the comment received, so that the language is more clear.

2.10 Custom Applicator

No comments received.

2.11 Discharge

Comment:

Comment received requested clarification as to the definition of an “injection well” as utilized in the RAP Rule.

Response:

“Injection well” is defined in statute under 10 V.S.A. § 1251(14)

(14)"Injection well" means any opening in the ground used as a means of discharging waste except for a dry hole not exceeding seven feet in depth which is constructed as, and used solely for the disposal of domestic wastes.

Comment:

This definition is the only place in the document where "emission" is used. Strike "emission."

Response:

The definition for “discharge” comes directly from statute: 10 V.S.A. § 1251.

2.12 Ditch

Comment:

Comments received suggested that the definition of ‘Ditch’ is unclear, or required additional clarification to accurately identify such features on the farm landscape.

Response:

The Agency reviewed comments received and decided that the definition proposed in the RAP Rules accurately identifies those features on the landscape that are ‘ditches’. Suggestions to incorporate NRCS practice standard definitions for a ‘Surface Drain, Field Ditch’ would not satisfy the intent of the definition of ‘Ditch’ as defined in the RAP Rule. NRCS definition would exempt ditches at the end of a field, or those ditches within a municipal or state road or right of way. ‘Ditches’ at the edge of farm field are intended to be included in the ‘ditch’ definition and further would require the minimum of a 10’ vegetated buffer.

Further, the Agency seeks to bring clarity to the point that regardless of the intent of a ditch when constructed, all ditches will require a 10’ vegetated buffer and a manure spreading setback. If waste or agricultural wastes are applied directly to these channels, such an application of material could constitute a discharge and be subject to regulatory action.

2.13 Farm

Comment:

Comment received suggested that the definition of “farm” is inconsistent with Act 64.

Response:

The Agency notes that there are frequent references within Act 64 to “farm” without a corresponding definition. The Agency believes that the language contained in Act 64 establishes a concept that the Required Agricultural Practices apply to “farms” and as such has endeavored to define “farm” for the purposes of the rule. The Agency does not believe, and the law does not specify, that all activities associated with plant or animal husbandry on any given property define those properties as a farm. To assume otherwise leads to the illogical conclusion that the Agency should be actively regulating backyard gardening and backyard livestock husbandry as farming.

The Agency also contends that its effort to define a farm, for the purposes of the rule, is entirely consistent with the existing standards relative to “farm structures”. By establishing a threshold that mirrors that of “farm structures” definitions the Agency has attempted to provide clarity and consistency as to what a farm is for the purposes of Act 64 and what activities associated with a farm are being managed by the rule. See Section 2.14.

Language regarding the applicability of the certification requirements in Section 4 was further clarified by Act 105 in 2016 with the following revision to 6 V.S.A. § 4871(b):

Required Small Farm Certification. Beginning on July 1, 2017, a person who owns or operates a small farm, as designated by the Secretary consistent with subdivision

4810a(a)(1) of this title, shall, on a form provided by the Secretary, certify compliance with the required agricultural practices.

The Agency believes that the clear language in § 4871(b) as revised in the 2016 session provides the Secretary with the authority to designate those small farms that would be required to certify compliance with the rule. It is presumed when interpreting a statute that when the Legislature used the term “small farm” as well as the term “farm” in the same statute (§ 4871) the Legislature used those distinct terms advisedly and intended to create two classes of agricultural operations.

The Agency also believes that the approach taken in the rules is consistent with the Legislature’s intent that the Agency should prioritize its efforts related to water quality based on the identified water quality issues posed by a farm. In addition, the Legislature provided the authority to the Secretary to require any farm to be certified based on the threat that the farm may pose to water quality.

2.14 Farm Structure

Comment:

Exclude dwelling for human habitation; however current use law, habitations are mentioned as farm structure. Definitions should remain the same between all the laws. Important to add permanent before farm structure, there are a lot of things out there in the land, pastured poultry, little hoop houses, non-permanent structures people are pulling, high tunnels, and under Vermont tax codes, there is language about structures that are not considered taxable; has to do with concrete structures, how it was used before.

Response:

Farm Structure is used as defined in Statute: 24 V.S.A. § 3314(1)

(1)For purposes of this section, "farm structure" means a building, enclosure, or fence for housing livestock, raising horticultural or agronomic plants, or carrying out other practices associated with accepted agricultural or farming practices, including a silo, as "farming" is defined in 10 V.S.A. § 6001(22), but excludes a dwelling for human habitation.

2.15 Farming

Comment:

Different definitions are used in Sections 6.05 (b) and (c) and 6.06 (b)(9) references USDA Soil Flooding Frequency Class soil types. Section 9 (a) references a Flood Hazard Area and River Corridor permit. Review for consistency within the RAPs.

Response:

The Agency has reviewed terminology throughout the rule for consistency and has made revisions where appropriate to ensure consist use of language.

2.16 Fertilizer

Comment:

Comment received expressed confusion on the term ‘vegetable manure’ and requested clarification as to what constitutes ‘vegetable manure’

Response:

The term ‘vegetable manure’ is utilized in Statute: 6 V.S.A. Chapter 28 § 363(5)

‘Vegetable manure’ is a reference to semi-composted or composted plant material fertilizers.

2.17 Flood Hazard Area

No comments received.

2.18 Floodplain

Comment:

Different definitions are used in Sections 6.05 (b) and (c) and 6.06 (b)(9) references USDA Soil Flooding Frequency Class soil types. Section 9 (a) references a Flood Hazard Area and River Corridor permit. Review for consistency within the RAPs.

Response:

The Agency has reviewed terminology throughout the rule for consistency and has made revisions where appropriate to ensure consistency.

2.19 Floodway

Comment:

Different definitions are used in Sections 6.05 (b) and (c) and 6.06 (b)(9) references USDA Soil Flooding Frequency Class soil types. Section 9 (a) references a Flood Hazard Area and River Corridor permit. Review for consistency within the RAPs.

Response:

The Agency has reviewed terminology throughout the rule for consistency and has made revisions where appropriate to ensure consistency.

2.20 Food Processing Residual

No comments received.

2.21 Groundwater

No comments received.

2.22 Groundwater Quality Standards

No comments received.

2.23 Livestock

No comments received.

2.24 Manure

No comments received.

2.25 Nonpoint Source Pollution

No comments received.

2.26 Person

No comments received.

2.27 Pesticide

No comments received.

2.28 Principally Produced

Comment:

Comment received suggested the definition of ‘Principally Produced’ was unnecessarily confusing.

Response:

The Agency agrees and has revised the definition to bring clarity to the Rule.

2.29 Production Area

No comments received.

2.30 River Corridor

Comment:

Comment received suggested that the definition of ‘River Corridor’ is unclear.

Response:

The definition of ‘River Corridor’ is taken directly from Statute: 10 V.S.A. § 752(11)

2.31 Secretary

No comments received.

2.32 Surface Water or Waters

Comment:

Comment received questioned whether ‘manure lagoons’ would be included in the definition.

Response:

The Agency does not intend to include ‘manure lagoons’ in the definition. “Manure lagoons” are Waste Storage Facilities as defined in Section 2.37 of this Rule.

2.33 Top of Bank

No comments received.

2.34 Vegetable Production

No comments received.

2.35 Waste or Agricultural Waste

Comment:

Comment received suggested that the definition of ‘Waste’ or ‘Agricultural Waste’ in the Proposed Rule was overly broad or pejorative towards manure and compost which are utilized by farmers as a nutrient source to nourish crops and build organic matter in the soil.

Response:

In the 2nd Draft of the RAPs, a definition of compost was provided in the to further bring clarity to what the Agency means by Waste or Agricultural Waste to respond to these same comments. The Agency recognizes that manure is an important part of farm’s overall nutrient management; however, application of all materials needs to be managed appropriately.

The definition of ‘Waste’ or ‘Agricultural Wastes’ since the 2nd draft of the RAPs was taken directly from statute. The definition can be found in 6 V.S.A. § 4802(7).

Comment:

Thermal pollution should be stricken, RO water coming from maple syrup production, is too broad and leaves too much for interpretation.

Response:

“Waste” or “agricultural waste” is defined in Statute: 6 V.S.A. § 4802(7).

2.36 Waste Management System

No comments received.

2.37 Waste Storage Facility

No comments received.

2.38 Waters of the State

Comment:

Phrase "surface water and groundwater as applied" should be consistent with Section 2.32.

Response:

Definition of waters of the State applies to all waters under the jurisdiction of the Agency through this Rule. definition of surface water applies only to surface water for the purposes of this Rule.

2.39 Water Supply

Comment:

Comment received suggested that the definitions of public and private water supplies should be added to the definition of ‘Water Supply’ in the RAP Rule.

Response:

The definition of ‘Water Supply’ is intended to include any drinking water source, whether public or private--understanding that public water supplies are regulated by the Secretary of Natural Resources under 10 V.S.A. Chapter 56.

**Section 3. Required Agricultural Practices Activities and Applicability &
Section 4. Small Farm Certification and Training Requirements**

Comment:

The Agency received numerous comments regarding the thresholds established for applicability of the rule in general and specifically for the thresholds established for small farm certification requirements. Comments received stated, in part, that:

- All farming activities must comply with the RAPs regardless of the size of the operation
- All persons engaged in farming be required to comply with the rule
- The required agricultural practices apply to all farms
- Thresholds should be clear and unambiguous
- A mechanism should be provided whereby the Agency of Natural Resources can require a farm to be designated a small farm requiring certification.

The Agency received numerous comments regarding the threshold criteria in Section 3 that would define those farms that would be subject to the rule as well as the definition of a “certified small farm” in Section 4 of the rule. Section 4 defines those farms that would be required to meet the certification requirements for small farms. Commenters suggested that the Agency approach was not consistent with what they interpret to be the intent and requirements of Act 64, that all activities associated with growing crops or raising livestock, regardless of the size of the operation, must follow the rule in order to protect water quality. Commenters also suggested that all small farms, as defined in Act 64, are subject to the certification requirements.

Response:

The Agency has spent considerable time in considering, developing, and revising the regulatory model found in the rule. The Agency believes the threshold criteria in Section 3 and the definition of “Certified Small Farm” in Section 4 are part of a regulatory model that is consistent with both the intent of Acts 64 of 2015 and 105 of 2016, as well as the plain language of the law. The threshold criteria appropriately and clearly establish the requirements for applicability.

Although 6 V.S.A. § 4810 states that the “Required Agricultural Practices shall be management standards to be followed by all persons engaged in farming” the Legislature further directed the Agency to amend the Required Agricultural Practices and, in so doing, to “specify” those farms that are required to comply with the small farm certification requirements and to also “specify” those farms that are subject to the Required Agricultural Practices Rules but that do not need to comply with the small farm certification requirements. The legislature’s directive is found in § 4810(a):

(1) Specify those farms that:

(A) are required to comply with the small farm certification requirements under section 4871 of this title due to the potential impact of the farm or type of farm on water quality as a result of livestock managed on the farm, agricultural inputs used by the farm, or tillage practices on the farm; and

(B) shall be subject to the required agricultural practices, but shall not be required to comply with small farm certification requirements under section 4871 of this title.

The Agency believes that a logical conclusion resulting from the Legislature’s directive to the Agency to determine those farms that are required to certify and those farms that are not required to certify but are required to comply with the rule is that there are other operations that involve the growing of crops or raising of livestock that may not be required to comply as they may not be a farm for the purposes of Act 64.

The Agency notes that there are frequent references within Act 64 to “farm” without a corresponding definition. The Agency believes that the language contained in Act 64 establishes a concept that the Required Agricultural Practices apply to “farms” and as such has endeavored to define “farm” for the purposes of the rule. The Agency does not believe, and the law does not specify, that all activities associated with plant or animal husbandry on any given property define those properties as a farm. To assume otherwise leads to the illogical conclusion that the Agency should be actively regulating backyard gardening and backyard livestock husbandry as farming.

The Agency also contends that its effort to define a farm, for the purposes of the rule, is entirely consistent with the existing standards relative to “farm structures”. By establishing a threshold that mirrors that of “farm structures” definitions the Agency has attempted to provide clarity and consistency as to what a farm is for the purposes of Act 64 and what activities associated with a farm are being managed by the rule. See Section 2.14 for definition of a Farm Structure.

Language regarding the applicability of the certification requirements in Section 4 was further clarified by Act 105 in 2016 with the following revision to § 4871(b):

Required Small Farm Certification. Beginning on July 1, 2017, a person who owns or operates a small farm, as designated by the Secretary consistent with subdivision 4810a(a)(1) of this title, shall, on a form provided by the Secretary, certify compliance with the required agricultural practices.

The Agency believes that the clear language in § 4871(b) as revised in the 2016 session provides the Secretary with the authority to designate those small farms that would be required to certify compliance with the rule. It is presumed when interpreting a statute that when the Legislature used the term “small farm” as well as the term “farm” in the same statute (§ 4871) the Legislature used those distinct terms advisedly and intended to create two classes of agricultural operations.

The Agency also believes that the approach taken in the rules is consistent with the Legislature’s intent that the Agency should prioritize its efforts related to water quality based on the identified water quality issues posed by a farm. In addition, the Legislature provided the authority to the Secretary to require any farm to be certified based on the threat that the farm may pose to water quality.

The Agency provides the following additional justifications for this approach:

- 1) 1) Regardless of size or whether or not an operation is considered a farm, discharges to waters of the State are not allowed.
- 2) Should there be any operation impacting water quality that is below the RAP threshold and in a municipality that has no ordinance that could regulate the activity the Agency retains the authority to require compliance with the RAPs.

As regards a mechanism to provide a role for the Agency of Natural Resources to designate a small farm as one that requires certification, the authority to make these designations rests with the Secretary. The Agency of Natural Resources and the Agency of Agriculture share cooperative roles in the management of non-point source pollution and as such are in regular communication regarding enforcement and compliance activities. For clarity it should be noted that all decisions of the Secretary as part of a hearing process are subject to appeal.

- 3) Agency experience over many years of responding to complaints regarding operations of the smallest size has been that there are seldom water quality issues associated with the complaint. Most often the complaints center around neighbor disputes and nuisances associated with backyard husbandry. It is the Agency's belief that these types of issues are best managed locally and that the Legislature recognized this in tasking the Agency to specify which operations rise to the level of farming and must comply with the RAPs.
- 4) Municipalities currently have the authority to regulate structures associated with these very small backyard operations. Municipalities have had the authority since the inception of the AAP rules in 1995 to regulate non-farm structures. It is therefore sensible that municipalities also have the opportunity to manage the activities associated with those non-farm structures.
- 5) The certification thresholds alone, as proposed, will apply to over 76% of the livestock in Vermont (including 94% of the State's dairy cows), 93% of the silage corn acreage and 68% of the vegetable crop acreage in Vermont. The applicability threshold is estimated to apply to over 7,000 farms in Vermont as well. The Agency believes that those operations not covered by the rule will represent a minimal impact to water quality.

Section 3. Required Agricultural Practices Activities and Applicability

3.1

Comment:

Comments were also received stating that there should not be language regarding a presumption of no discharge when farms are in compliance with the rules.

Response:

The language pertaining to the presumption of no discharge is statutory language (6 V.S.A. § 4810(b))

3.2

Comment:

Comment received suggested that the activities of establishing and maintaining a vegetated buffer and riparian buffer zones are agricultural practices to be governed by the Rule.

Response:

The Agency has incorporated this suggestion into this section of the Rule.

Comment:

Comment received suggested that the activity of protecting crops is related to the use of pesticides and should be explicitly stated in the Rule.

Response:

6 V.S.A. Chapter 87 is the relevant section of Vermont Statute which provides for the authority and programming to manage pesticides on farms. The Vermont Regulations for the Control of Pesticides and associated programs have been in place since the late 1970s and appropriately regulate pesticide use on farms. The RAPs are not the relevant rule with which to address those management needs or requirements.

Section 4. Small Farm Certification and Training Requirements

Comment:

Comments received suggested concern about the economic viability of small farm operations and the increasing set of performance standards proposed in the RAP Rule. comment also suggested that the RAPs should be limited to the authorizing language in Act 64, and shall be practical and cost effective to implement. Also, it was suggested that there is no justification for the economic burden.

Response:

The Agency believes that the effectiveness of land management practices as required by the RAPs (buffers, nutrient management planning, cover crops, manure management etc.) that reduce sediment and nutrient losses from cropland and farmsteads is generally recognized. Significant flexibility is provided throughout the RAPs to allow a farm to meet water quality standards through alternative methods and practices as approved by the secretary. The Agency refers commenters to the economic impact analysis provided with the draft rule that provides cost impact information.

Comment:

Comments received suggested that the seven-year inspection cycle was not frequent enough and that the time between inspections should be reduced.

Response:

6 V.S.A. § 4871(e) gives authority to the Secretary to prioritize inspections of small farms in the State based on the identified water quality issues posed by the small farm as well as the authority to designate the required frequency of inspection of small farms. The Secretary will ensure prioritization of Certified Small Farms based on known water quality impacts of a farm and retains the authority in Section 4.2(a) of the RAP Rule to inspect a small farm at any time to assess compliance by the farm with the RAPs.

Based on an assessment of Agency resources and the estimated number of Certified Small Farms that are expected to enroll in the certification program, the Agency believes it will be able to inspect farms on a seven-year cycle. If additional resources are allocated to the Agency, this inspection cycle could be reduced.

4.1

Comment:

Comment received raised questions as to how the certification thresholds between different animal classes were determined and an apparent inconsistency between the species and numbers of animals it would require to reach the Small Farm Certification threshold.

Response:

The thresholds for Small Farm Certification has been set consistent with the LFO and MFO program thresholds, which are derived from the Environmental Protection Agency (EPA) threshold for a Confined Animal Feeding Operation (CAFO). The Small Farm Certification Threshold is established at 25% of the Medium Farm Operations (MFO) threshold. This threshold, based primarily on the CAFO threshold is adopted after consideration of many variables including waste and nutrient generation by species. It must also be made clear that

operations below these certification thresholds must still comply with the RAPs, though they will not be required to self-certify.

The EPA considered the following when setting thresholds for the CAFO program of which the Small Farm Certification thresholds are derived:

- a. Animal type
- b. Treatability of wastes
- c. Location and climate
- d. Size and age of facilities and equipment
- e. Raw materials used
- f. Product produced
- g. Production process employed
- h. Product or waste impact of any group or subgroup
- i. Characteristics of waste produced
- j. Cost to waste treatment systems

4.2

No comments received.

4.3

Comment:

Comment was received specific to the certification reporting requirement found in Section 4.3(c) requiring that changes in ownership be reported within 30 days should apply to the ‘parcel’ as required by Act 64.

Response:

Act 64 requires the reporting of the change of ownership of the “small farm” and not the parcel. See § 4871(f).

Comment:

Comment received indicated that the RAPs should specify that the requirements for the annual certification form will be subject to public notice and comment.

Response:

When the form is developed by policy, it will be made available to the public and farmers for comment prior to finalization. Enumerating these requirements does not fit in the RAP Rule itself and will rather be followed up on through Small Farm Certification program development and the setting of policy.

Section 5. Agricultural Water Quality Training

Comment:

Comment received suggested that Farm Operator Training should occur on an annual or semi-annual basis.

Response:

The Agency feels the four hours of training in a five-year period is an appropriate requirement as the training aspects of the new Rule are phased in. Though four hours is the baseline requirement, it is anticipated that there will be numerous opportunities for training in a variety of venues--both in a classroom or field setting, as well as online--as the training program is phased in.

Section 6. Required Agricultural Practices; Conditions, Restrictions, and Operating Standards

6.01 Discharges

Comment:

6.01(a) Please clarify if a subsurface agricultural tile drain is considered a pipe that would require a permit from the Secretary of Natural Resources.

Response:

Generally speaking, it is the Agency's understanding that tile drain systems are not required to be permitted.

Comment:

"Any discharge" seems to be an impossible (or very improbable) limit given the definition of "Agricultural Waste" (2.35). Are there specific discharge standards?

Response:

The term 'discharge' is taken directly from statute 10 V.S.A. § 1251 and 6 V.S.A. § 4810(b). Intent of 6.01(a) is to clearly state that discharges to waters of the state are prohibited without a permit issued by the Secretary of the Agency of Natural Resources or unless otherwise exempted from permitting requirements. This has been the original standard since the original AAP Rules in 1995.

Comment:

6.01(b) Include “pesticide storage areas” as part of the list of systems which are required to utilize management strategies to prevent discharges of agricultural wastes.

Response:

6 V.S.A. Chapter 87 is the relevant section of Vermont Statute which provides for the authority and programming to manage pesticides on farms. The Vermont Regulations for the Control of Pesticides and associated programs have been in place since the late 1970s and appropriately regulate pesticide use on farms. The RAPs are not the relevant rule with which to address those management needs or requirements.

Comment:

6.01(b) Please reconsider section B to eliminate “shall” and replace with “are required to”.

Response:

The Agency believes that the Rule as written--utilizing the word ‘shall’--not only has the same meaning as ‘are required to’, but the use of the word ‘shall’ follows normative drafting language.

Comment:

The term "prevent" needs clarification; this appears to be an arbitrary standard that can be interpreted differently depending on the inspector.

Response:

The Agency believes this standard is clear and it is consistent with the previous agricultural water quality standard which has been effective since 2006.

MFOs and LFOs are required via their permits to prevent discharges to waters of the state and have been since the inception of those programs. It is the agency’s belief that the term prevent, as it has been used for many years, is consistent with Act 64’s focus of water quality protection.

6.02 Storage of Agricultural Wastes and Agricultural Inputs

Comment:

Comment suggested that the commentator would like to see something included in the Rule about reducing waste from barnyards.

Response:

The RAPs provide adequate water quality protection for barnyard management per section 6.01(b)

*"Production areas, **barnyards**, animal holding or feedlot areas, **manure storage areas**, and feed storage areas shall utilize runoff and leachate collections systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater."* [Emphasis added]

Comment:

6.02(e) Comment received expressed support for the 200' from top of bank of surface water setback, and the 100' setback from a ditch for field stacking of manure

Response:

Thank you for your comment. These standards are found in statute: 6 V.S.A. § 4810a(a)(2)(B)

Comment:

6.02(e) Comments received suggested that stacking of manure should be prohibited in all flood plains

Response:

The standard established in Act 64 § 4810a(a)(2)(A)(ii) prohibits manure stacking on lands in the floodway or otherwise subject to annual flooding. The Rule has established the same standard.

Stacking of manure in the floodway is prohibited in the RAPs.

Further, setbacks of 200' from surface water are also required of manure stacks.

In addition, section 6.01(b) states that " production areas, barnyards, animal holding or feedlot areas, **manure storage areas**, and feed storage areas shall utilize runoff and leachate collections systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater."

With these various requirements already in place in the RAPs, the Agency does not intend on a complete prohibition on floodplains as they are not defined other than the 1% in a year sized event.

Comment:

6.02(e) Current law is 100 feet and this should be kept. It is unclear as to the water quality basis for changing this law to 200 feet.

Response:

The standard for manure stacking setbacks comes from statute: §4810a(a)(2)(B)

Comment:

6.02(e)(4)(E): "Areas subject to concentrated runoff" needs reference for identification and determination.

Response:

The Agency believes the subsection indicating "areas subject to concentrated runoff" is sufficiently clear and does not need clarification for the purposes of this Rule. The Agency will provide further guidance through a guidance document and additional education and outreach after the Rule becomes effective.

Comment:

6.02(f) Please consider site specifics to include no stacking allowed agricultural land with a gradient of 5% or greater unless approved State engineer and or inspector.

Response:

The Agency received a significant amount of comment about the original draft that required 1 year limits on field stacking wastes. Due to the legitimacy of these comments from a wide variety of stakeholders, the Agency increased the storage limitation to 2 years. In the event that during the 2-year timeframe there is an impact to water quality, the Agency can utilize other sections of the RAPs, specifically 6.01(b), which states that, "Production areas, barnyards, animal holding or feedlot areas, manure storage areas, and feed storage areas shall utilize runoff and leachate collections systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater."

The site specific variances requests do include assessments of the sites available on the farm and selection of a site is made that is the best available site on the farm for the purposes of protecting groundwater quality or surface water quality.

Comment:

6.02(f): The statement "... Secretary determines that ... will not have an adverse impact ..." does not clarify how the determination will be made.

Response:

Reference for this section of the Rule comes directly from Statute: 6 V.S.A. § 4810a(a)(C)(i).

The policy by which the Secretary reviews and makes determinations regarding manure spreading and stacking variances should not be included in the Rule and the Agency will provide appropriate Technical Assistance to farmers as required.

Comment:

6.02(i) Section 6.02(i) should specify that pesticides shall also be applied in accordance with the federal Clean Water Act, with 10 V.S.A. § 1259, and with all regulations promulgated thereunder.

Response:

6 V.S.A. Chapter 87 is the relevant section of Vermont Statute which provides for the authority and programming to manage pesticides on farms. The Vermont Regulations for the Control of Pesticides and associated programs have been in place since the late 1970s and appropriately regulate pesticide use on farms. The RAPs are not the relevant rule with which to address those management needs or requirements.

6.03 Nutrient Management Planning

Comments:

- Nutrient management plans are not implemented universally and the agency relies too heavily on nutrient management planning to meet phosphorous reduction obligations.
- Implementing nutrient management plans may reduce fertilizer use but increase manure application.

Response:

Agency compliance efforts through education, training and inspection will ensure that NMPs are implemented. Nutrient management planning forms the basis for decision making and crop management on a farm relative to the nutrients the farm generates and applies to the land. Nutrient application rates are determined by multiple factors including the crop being grown, soil test results, rotational planning and farm management practices. Nutrient management plans balance all sources of nutrients, whether fertilizer or manure, to meet crop goals and water quality goals. Reduction of fertilizer use will provide an economic incentive but does not relax the standards established by required nutrient planning to manage, field-by-field, to a nutrient balance.

Comment:

Comments received indicated skepticism of the 590 process epistemologically, as well as in the practical aspect of technical assistance available to help over 1000 new farms to write and implement nmps.

Response:

The Agency is going to create a Nutrient Management Workgroup to help address the current backlog issues with plan development. This group can decide to create alternatives to the current 590 standard that may help expedite the planning process and lower the costs for plan development for farms. Currently, farms that need USDA NRCS support for waste utilization practices will still be required to develop a full 590 nutrient management plan in order to access cost share assistance.

Comment:

6.03(a) Since the Rule is based upon (590 –Nutrient Management Code) “soil health” and “allowable erosion” rates in USDA technical standards, no guarantee in water quality improvement should be assumed – this standard is not a stand-alone water quality standard without other practices in many cases.

Response:

The "purpose" as written in the USDA Vermont 590 standard is "to minimize agricultural non-point source pollution of surface and groundwater resources", which is specifically the intent of the RAPs. The RAPs also state that an equivalent standard approved by the Secretary, in lieu of 590, can be utilized. The intent of this alternative is to make space for improvements in research and tools in the nutrient management realm where the products would more closely connect to water quality improvements.

Comment:

6.03(b) Suggest changing to “Recommended rates may be adjusted based on manure or other waste analysis and/or nutrient testing procedures”. Many farmers test for nitrogen levels at sidedress for corn using a PSNT test which a soil nitrogen test NOT leaf analysis.

Response:

The Agency has revised the Rule to reflect this comment. This section of the Rule was updated to more broadly allow for ‘nutrient testing procedures’--not just ‘leaf analysis. Further clarification was provided in this section regarding how these nutrient testing procedures will inform nutrient application rates.

Comment:

6.03(c) Soil samples should be collected annually, especially in the watershed of an impaired lake. One sample within 6 years is not sufficient.

Response:

The RAPs require soil testing every 5 years for all farms except CSFO, MFO, or LFO operations. The Agency had originally drafted the RAPs in the 10/20/2015 draft to include soil sampling every 3 years. The significant volume of comments the agency received regarding this proposal centered around the added costs for small producers without justification for meaningful changes in results which led to the Agency revising Draft 2 to maintain the current 5-year requirement which has been Agency Rule since 2006 in the AAPs.

Comment:

6.03(d) Many comments were received regarding the 20 ppm Soil Test Phosphorus standard. Comments received stated in part that:

- Ambiguous temporal scale for reduction of phosphorus
- 20 ppm is too low of a threshold
- 20 ppm is too high of a threshold
- No scientific basis for 20 ppm threshold
- Vegetables and small grain growers should be included in this standard

Response:

As discussed in the Agency's Responsiveness Summary to the 1st Draft RAP Public Comments, the initial requirements in the RAPs included the provision that on 20 ppm or higher soil test phosphorus fields—on the Modified Morgan scale—manure would not be able to be applied to these fields. This standard was changed in the 2nd Draft of the RAPs and is altered again for the Final Proposed Rule to respond to comments and ensure a more workable requirement.

Over the 28 public hearings and meetings the Agency engaged in during the 1st Draft Public Comment Period from October 15, 2015 to December 18, 2015, the Agency discussed with the farming community the long-term implications for the State of Vermont of continual over application of manure on Vermont's farm fields. As farmers try to meet the nitrogen requirements of their corn and hay fields using dairy manure as the sole—or largest part of—nutrient source, the over application of phosphorus in excess of what the crop can remove from the field leads to soil test phosphorus levels growing over time. This leads to greater losses of phosphorus from fields as research has demonstrated. Levels above twenty ppm, the 'excessive' level, in a farm field is, will result in a greater per unit loss of phosphorus.

The decision to establish the 20 ppm soil test phosphorus level is aligned with the current federal and state nutrient management planning standard that has been in place for over ten years in Vermont. We arrived at this standard by utilizing the body work UVM Extension and NRCS generated in the creation of the Phosphorus-Index for Vermont—a cornerstone of nutrient

management planning in the State—calling out the requirement in the nutrient management planning standard which state that above 20 ppm soil test phosphorus level, a farm needs to work to develop and implement a reduction strategy for that particular field.

In calling direct attention to this provision of the standard, which has been the planning standard for all MFO and LFO farms in VT since 2006, and indicating that all Certified Small Farm Operations will need to follow this standard as well, the Agency is not only seeking to remind farmers of the importance of this planning standard, but also to raise awareness around the challenges continually increasing soil test P levels pose to the long term health of Vermont's surface water as well as Lake Champlain.

Both the NRCS 590 Standard as well as the VAAFMM RAP Proposed Rule are flexible as to how farmers can meet these standards—no particular practices are required outside of limiting phosphorus applications to crop removal rates or soil test recommendations for phosphorus, whichever is greater. We know that reduction of soil test P can take many years, and as such we do not prescribe a timeframe within which a farm must get their field below 20 ppm, for example. Rather the standard will be to design and follow a plan that over time will draw P from the soils of a field. Farmers can continue to apply manure and other nutrients to their fields that are above 20 ppm, provided they are doing so in accordance with the spreading plan recommended in the P reduction strategy. Again, it is important to emphasize here that at the 20 ppm soil test P level on the Modified Morgan scale—university recommendations indicate that no additional phosphorus is needed to achieve an agronomically appropriate yield.

It should also be noted that the Vermont Phosphorus-Index (“P-Index”) utilizes a host of site specific field considerations when determining the reduction strategy that will be most effective for that particular field. These site specific considerations include metrics such as: geographic region of Vermont, elevation, soil test phosphorus level, crop being grown and manure type—in addition to many others. This index is currently being revised by UVM Extension and the new standard will be utilized by all farms planning a phosphorus reduction strategy.

Further, the application of manure itself is not a direct correlation of phosphorus losses from the landscape as there are a lot of variables, weather, crop type, application rate, conservation practices installed/employed, etc. that can provide water quality benefits in addition to crop uptake of the manure phosphorus. By having farmers identify these fields that have excessive phosphorus levels and then to prepare a plan that will over time reduce the phosphorus in the soils is the first step at identifying the issue and working on a solution.

In addition, The RAPs still contain the requirement to implement practices that reduce soil phosphorus levels when soil analyses demonstrate greater than 20 parts per million. The revised RAPs require that "manure or other agricultural wastes shall not be applied in exceedance of nutrient recommendations such that it ceases to be useful or beneficial for plant uptake".

With regards to scientific standing, the 20 ppm is a university researched threshold defined as "excessive", specifically the interpretation states "soil tests higher than desirable for economic

and/or environmental reasons. No fertilizer recommended. Addition of nutrients may cause nutrient imbalance." The Agency utilizes the University of Vermont research and published standards as they are Vermont specific standards. If there is a new scientific recommendation made to the Agency from UVM, or other appropriate authority, the Agency would have the authority under the Final Proposed Rule to utilize their recommendations as an alternative standard. The P Index and the use of the modified Morgan's soil test for phosphorus are UVM's Vermont specific tools and can be adjusted per provisions included in the Final Proposed Rule..

The following scientific literature was cited in the development of the Vermont P-Index and the establishment of the 20 ppm threshold for the "excessive" range of Phosphorus for crop fields in Vermont:

- Bolinder, M.A., R.R. Simard, S. Beachemin, and K.B. MacDonald. 1998. Indicator of risk of water contamination: methodology for the phosphorus component. Report No. 24. Agriculture and Agri-Food Canada.
- Coale, F, and S. Layton. 1999. Phosphorus site Index for Maryland. Report to Northeast Phosphorus Index Work Group. Univ. of Maryland., College Park, MD.
- Gburek, W.J., A.N. Sharpley, and G.J. Folmar. 1998. Modifying the P index to account for transport pathways. Report to the SERA Transport Workgroup. USDA-ARS, University Park, PA.
- Jokela, W.E., J.W. Hughes, D. Tobi, and D.W. Meals. 1999. Managed vegetative riparian buffers to control P runoff losses from corn fields. *Agronomy Abstracts*. Amer. Soc. of Agron., Madison, WI.
- Jokela, W.E., F. R. Magdoff, and R. P. Durieux. 1998a. Improved phosphorus recommendations using modified Morgan phosphorus and aluminum soil tests. *Comm. Soil. Sci. Plant Anal.* 29:1739-1749.
- Jokela, B., F. Magdoff, R. Bartlett, S. Bosworth, and D. Ross. 1998b. Nutrient recommendations for field crops in Vermont. Br. 1390. University of Vermont Extension, Burlington, VT. Web: <http://ctr.uvm.edu/pubs/nutrientrec/>
- Klausner, S.D. 1995. *Nutrient management: crop production and water quality*. Cornell Univ. College of Agric. and Life Sci., Ithaca, NY.
- Klausner, S., D. Flaherty, and S. Pacenka. 1997. Working paper: Field phosphorus index tools for the NYC watershed agricultural program. Cornell University. Ithaca, NY.
- Lee, Y. S. and R. J. Bartlett. 1977. Assessing phosphorus fertilizer need based on intensity-capacity relationships. *Soil Sci. Soc. Amer J.* 41:710-712.

Lemunyon, J.L., and R.G. Gilbert. 1993. The concept and need for a phosphorus assessment tool. *J.Prod. Agric.* 6:483-486.

Lory, J.A., and P.C. Scharf. 1999. Threshold P survey. On Web page for SERA-17, Minimizing P losses from agriculture:
http://ces.soil.ncsu.edu/sera17/publications/P_Threshold/Threshold_P_Survey_3_1_99.htm

Magdoff, F.R. C. Hryshko, W.E. Jokela, R.P. Durieux, and Y. Bu. 1999. Comparison of phosphorus soil test extractants for plant availability and environmental assessment. *Soil Sci. Soc. Am. J.* 63:999-1006

McFarland, A., L. Hauck, J. White, W. Donham, J. Lemunyon, and S. Jones. 1998. Manure management in harmony with the environment and society. SWCS, Ames, IA.

McIntosh, J. L. 1969. Bray and Morgan soil test extractions modified for testing acid soils from different parent materials. *Agron. J.* 61:259-265

NRCS. 1994. The Phosphorus Index: A Phosphorus Assessment Tool
<http://www.nhq.nrcs.usda.gov/BCS/nutri/phosphor.html>

NRCS. 1999. Nutrient Management. 190-GM, Issue 9, 3/99; Part 402. Web:
<http://www.nhq.nrcs.usda.gov/BCS/nutri/gm-190.html>

Sims, J.T., R.R. Simard, and B.C. Joern. 1998. Phosphorus loss in agricultural drainage: historical perspective and current research. *J. Environ. Qual.* 27:277-293.

Based on comments received, changes were made to Section 6.03(d) of the Rule. These changes include a restructure of the sub-section to better articulate the intent of the standard: development and implementation of a 590 nutrient management plan will balance soil test phosphorus levels with appropriate management strategies to reduce those levels over time. No prescription is given to the timeframe in which a farm would need to meet a reduction standard--implementation of an accurate 590 NMP would satisfy the requirements of this standard.

It is important to note that only small farms that are required to Certify under the Rule are required to follow 6.03(d). In this regard, vegetable or small grain operations are not wholly exempt from this provision: if a vegetable or small grain operation reaches the Small Farm Certification threshold, they would need to develop and implement a 590 NMP which would ensure the development and implementation of phosphorus reduction strategies as proposed for annual cropland, perennial grassland or hay land in 6.03(d).

Comment:

6.03(e) The Rule should be more more specific and apply not just to “significant” changes.

Response:

The Agency will provide details to what constitutes ‘significant’ in a guidance document to be released post rule adoption.

The “significant” threshold will mirror LFO and MFO requirements which comes from the NRCS 590 Standard which states:

At a minimum, plans must be reviewed and revised, as needed with each soil test cycle [3 years], or a 10% or greater change in manure volume or analysis, crops, or crop management or land base.

Comment:

6.03(f) The records required to be kept in Section 6.03 should be submitted to the Secretary on an annual basis, not just available upon request.

Response:

The annual report for Certified Small Farms will require an aggregated record of nutrient applications, exports and imports on the farm. If all farm’s full nutrient management plan and manure application records were submitted to the Agency annually, the volume of information that would be submitted by each farm, is unrealistic given the space and staffing resources at the Agency. It may be possible in the future for electronic records to be kept and submitted, but at this time there is no system in place. By having the records available on the farm the Agency has access to the information without the burden of space or staffing to individually manage each record on an annual basis.

Comment:

6.03(f): The Agency should require standard record keeping on all farms, and records should be reported annually for all farms to the Secretary. For Medium and Large Farm Operations, we should implement an IT system that tracks the transport and application of manure.

Response:

The Agency has provided standard forms for record keeping for all farms throughout this process, however annual reporting of records is not deemed by the Agency as necessary nor would the Agency have the resources to manage the volume of information should these records be required to be reported.

RAPs are rules that apply to all size farms, as such it would be inappropriate to require farms to implement IT systems for transport and application tracking. The Agency offers up to \$50,000

per farm to assist them in purchasing and installing flow meter and other GPS and precision manure spreading technologies.

6.04 Soil Health Management; Cover Crop Requirements

Comment:

6.04(a) This does not belong here as it is not a rule, but a description of soil health. This could be moved to the definition section.

Response:

This section of rule comes from Statute which instructed the agency to establish standards for nutrient management on farms, including recommended practices for improving and maintaining soil quality and healthy soils. 6 V.S.A. §4810a(a)(4)(B).

The Agency included this information about soil health in this section as it was clear in all the testimony and meetings held on this topic that the understanding about how conservation practices improve soil health was not widely known. While we agree it fits better with definitions, we find it's placement in the rule beneficial to the reader and ensures the rule meets the legislative intent of Act 64 of 2015.

Comment:

Under 6.04(a) AAFM should establish specific standards for each of the specific conservation practices, as mandated by Act 64.

Response:

Standards for soil conservation practices, as required by 6 V.S.A. §4810a(a)(10) can be found in 6.04(b), 6.04(c) and 6.04(d). The practices referred to in 6.04(a) are recommendations for soil health as required by 6 V.S.A. §4810a(a)(4)(B) and are generally recognized practices by the agricultural community.

Comment:

6.04(a) define what 'practicable' means for applying soil health practices.

Response:

Not all practices are practicable in all situations and this statement gives deference to that fact.

Comment:

6.04(b) If you are a certified farm, you are working with someone who can calculate T for your fields but if not certified how will the farmer be able to do this themselves?

Response:

A farm that does not have to have a nutrient management plan does not necessarily need to run the RUSLE calculation to determine their erosion tolerance and whether they are meeting it (i.e. meeting T). However, if the Agency identifies fields that have erosion concerns and we run RUSLE, then they may be found in violation. If you manage your farm the best you can to minimize erosion you should be able to meet erosion tolerances.

The Agency provided additional information in the rule in the RAP Proposed Rule to assist farmers in understanding the performance standard of the Tolerable Soil Loss (T) metric. Visual observations of field conditions can provide indications that a particular field is failing to meet the T standard—including deposits of sediment in buffers, sheet or rill erosion in a field, presence of gullies, or greater than 5-8% slope which is an indicator of greater risk for soil loss above T values for a particular soil. A guidance document will be published by VAAFAM after adoption of the rule which will assist farmers in using visual observation to document and estimate if their field is meeting T, and if additional planner resources are needed to accurately calculate the current T loss of their field's management and if management changes are needed to meet T.

Comment:

6.04(c): AAFM should modify section 6.04(c) so that the word “minimize” is changed to “prevent” and the wording “reduce or eliminate” is changed to “eliminate.” Grassed waterways and filter strips should be the required management strategy to prevent gully erosion.

Response:

The Agency agrees with the rephrasing of 6.04 (c) to change "minimize" to "prevent fieldborne" erosion. The Agency aims to address erosion caused by agricultural land uses and not by neighboring properties. There are also a number of ways that a farm can address gully erosion and therefore the Agency does not wish to dictate a solution when it may not be the solution. For instance, a farm could seed down the whole field, which is not a grassed waterway or a filter strip.

Further, the Agency will clarify through guidance that both Ephemeral and Classic gullies will need to be stabilized per 6.04(c).

Comment:

6.04(c): Diversion ditches and permanent grassed waterways should be included here.

Response:

The Agency agrees that either of the conservation practices mentioned in the comment could be used to address gully erosion found in fields. These conservation practices would fall under an appropriate management strategy but are not included in the list in the subsection.

Comment:

6.04(d): Numerous comments were received regarding Section 6.04(d). These comments are summarized below.

- Cover cropping should be mandatory for all cropland
- The 100-year floodplain should be cover cropped
- How will the Agency respond to requests for variances
- 30% crop residue is very unclear.
- The cover crop establishment dates are unrealistic for all parts of the state

Response:

The RAPs would require change on many farms, some of which come with increased costs. Some farms already cover crop their croplands outside of the floodplains and we encourage that activity to continue. However, in trying to target the implementation efforts to the areas where the greatest water quality improvements can be made, the Agency has not prioritized cover crops to be applied to all annual croplands. However, the management standard for erosion is being cut in half (from 2T to 1T) which often will require cover cropping as an alternative to the current management on these fields which may be in uplands. The farmer certainly can choose to apply alternative practices such as seeding the field down, creating grass strips in contour plantings, no-till, etc., however cover cropping is the most common option to reduce erosion.

The USDA Soil Survey Flooding Frequency Class is nearly identical to the 100-year floodplain which is inclusive of the floodways. The benefit of the USDA data is that it is more widely mapped statewide.

The Agency heard this comment following previous drafts of the RAPs and hence adjusted the dates for cover cropping to accommodate the variations that exists statewide. With a rule being established statewide, hard zone lines would be further disputed when they begin to transect individual farms for instance. In fairness to all the Agency pushed the establishment date back far enough to accommodate all the growing season lengths we heard through the draft development efforts in meeting with stakeholders.

Fields do not need to erode to be at risk from flooding when it comes to phosphorus losses. The interaction of the surface water and the soils can release soluble phosphorus into the water while leaving sediments in the field. The manure application restrictions and cover cropping requirements in frequently flooded soils is intended to address soluble and particulate phosphorus losses.

The Agency has defined the areas that are required to be cover cropped as those identified on the USDA Soil Survey Flood Frequency Class. It is up to the farm to decide if the whole field should be managed as one unit.

The termination strategies for cover crops varies depending on the field conditions in the spring. Pesticides have their own requirements and farms must follow those as they are regulated by their own set of Rules.

The Agency will be providing written guidance and procedural information for the RAPs once they become effective in the final form.

Due to the copious comment we received from divergent farm stakeholder groups, we provided a new definition of “Frequently Flooded Ground” in the second draft of the RAP Rule. This change was in direct response to farmers asking for clarification on “field subject to flooding.” They felt this standard was too broad and they request a more discrete way for a farmer to assess whether or not their crop fields would need to be cover cropped annually and follow a longer manure spreading ban season.

For this reason, VAAFM introduced the “Frequently Flooded Soils” layer to respond to farmers and provided them a statewide layer that would assist them in identifying the fields on their farms that would need to follow the additional field management requirements necessary for frequently flooded fields—cover cropping for annual cropland, and longer manure spreading restrictions.

Our Economic Impact Statement, released with the RAP Proposed Rule will be revised when the Agency files the Final Proposed Rule with LCAR. However, upon reviewing the Economic Impact Statement, as well as USDA Ag Census data and modeling done for the TMDL for P for Lake Champlain by EPA, we can begin to gain insight into the potential scale of impact of the frequently flooded provisions in the RAP Rule:

According to the 2012 USDA NASS Agricultural Census, there are about 488,000 acres of cropland used by agriculture in Vermont. Of these 488,000 acres of agricultural land, 76,500 acres is estimated to fall completely, or in part, in the Frequently Flooded Zone. It is estimated that between 8% and 16% of Vermont’s cropland would be subject to the longer winter manure spreading ban, unless an alternative management plan is developed, submitted and approved by the Secretary.

As it relates to land being used to grow an annual crop which would require the establishment of a cover crop, 11,000 acres, or 3% of all cropland in Vermont would be required to meet this standard, as proposed in this version of the draft rule. Of the 91,000 acres used to grow annual cropland in the state, 11,000 acres, or 12% of Vermont’s annual crop fields are estimated to fall in the Frequently Flooded Mapped Zone.

After numerous stakeholder discussions, and further research and analysis, the Agency has determined that the USDA Frequently Flooded Soils Layer is a useful layer for the purposes of

outlining floodplain fields that require a higher level of management. A clarification was made for the Proposed Rule whereby floodplain fields as described by the USDA Frequently Flooded Soils Layer are eligible for Manure Spreading Exemptions where a farmer can propose a written plan for an exemption to the seasonal winter spreading ban on their floodplain fields.

Farm managers and planners may develop alternative management strategies to meet State requirements to reduce adverse impacts to water quality where, for example, a Frequently Flooded Soil type is incorrectly mapped, where human impacts on the river cause it to no longer flood frequently, or where the rule creates a hardship on a particular farm owing to a very large percentage of their farm being located in the floodplain. The definition of Frequently Flooded means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year. All approved alternative management plans will ensure reduced adverse impacts to water quality.

In the RAP Proposed Rule, manure injection and chiseling would not be allowed after October 16 or before April 14 on fields that are determined to be frequently flooded. Further, there is a paucity of research evaluating manure injection within the context of NPS losses on floodplain fields. More studies are needed to evaluate efficacy of using subsurface injection of liquid manure in a floodplain as a method to reduce potential adverse impacts of manure application on a floodplain field relative to losses that may occur during a flood event.

Section 6.06(b) outlines a process by which farmers may request seasonal exemptions from the winter spreading ban for their Frequently Flooded Fields (FF Fields) if a farmer feels weather conditions or other factors require them to spread within the winter spreading ban timeframe for Frequently Flooded fields. These exemptions for spreading of manure on FF Fields would not need to be requested annually and would rather be reoccurring provided the farmer keeps records demonstrating that the use of the exemption is taken in a manner which follows the conditions of the exemption.

The Agency envisions that the nutrient management planning process will add a new section for “Floodplain Manure Management Plan” whereby a farmer or a farmer and their TSP will work to ascertain whether they need to request an exemption to the winter manure spreading exemption on their FF Fields. Considering and requesting these variances could become a seamless part of the nutrient management planning process which is already occurring for all LFO and MFO farms—which will soon include all Certified SFO farms.

Regular exemptions could also be requested for regular winter manure spreading exemptions, and farmers will be able to work with the Agency and their TSP to determine applicability and develop plans for their individual farm fields—including FF Fields.

Section 6.04(d) provides the details around the FF Fields cover cropping establishment dates as well as additional provisions regarding late harvest and alternative planting date approval. The cover cropping requirement for FF Fields is October 1st for the broadcast of cover crop seeds; October 15 where a cover crop is drilled into the field. The Agency anticipates most farmers

being able to meet this date with advanced planning for the 2017 season. It is important to note that farmers will need to meet the October 1 deadline to broadcast cover crop to ensure eligibility for NRCS cost sharing on cover crop establishment.

The Agency worked closely with NRCS and UVM Extension to ensure the RAP Proposed Rules corresponded with relevant federal policy regarding cost-share eligibility, as well as best science around the latest dates in Vermont to ensure there is a water quality benefit to a seeded cover crop. With an October 1 deadline for a farmer to establish cover crop for NRCS EQIP cost share, it made natural sense to align the RAP date with this policy. In addition, between October 1 and October 15 is the date range which UVM Extension—through their numerous, Vermont-specific studies—has concluded as being the most effective dates to ensure a cover crop is established that is not only agronomically useful, but also a benefit to water quality.

It is important to note that cover crop could of course be established earlier in the season with the use of broadcast of cover crop seed at sidedress or through interseeding with a highboy planter from UVM or other dealers. Further, drilling cover crop seed could occur at any time before October 15 and meet the requirements for establishing a cover crop.

The Agency provided the "...30% crop residue, growing directly in the soil, must remain in order to limit soil loss." The example provided of grain crops that can provide significant residue was considered when the alternative to cover cropping is to have 30% residue. The intent of "growing directly in the soil" was to address that mulching a field does not meet the intent as that is more likely to wash off in a flood event. The expectation is that plants can be dormant but must have roots to meet the 30% standard. The Agency will put out additional guidance documents to help educate farms about the RAPs which will include this topic.

If harvesting an annual crop after October 15, the standard is that there must be 30% surface coverage in the field which must consist of rooted plant that was at one point in time living. In providing guidance on this standard, the Agency believes that corn stubble and chaff is okay from the harvesting of corn for snaplage or high moisture ear corn—would likely meet the standard. If the corn is harvested and it is found that significant weed pressure exists in the understory, this would also meet the standard.

Comment:

Prohibit the use of pesticides on cover crop

Response:

The termination strategies for cover crops varies depending on the field conditions in the spring. Pesticides have their own requirements and farms must follow those as they are regulatory.

Pesticide use is managed under the Vermont Regulations for the Control of Pesticides.

Comment:

RAPs continue to set forth a management approach that tolerates ongoing annual soil loss at unacceptable levels.

Response:

The standards in the RAPs for tolerable soil loss were established in Act 64 of 2015; 6 V.S.A. § 4810a(a)(5).

6.05 Manure and Waste Application Standards and Restrictions

Comment:

The “Waste Application Standards” in § 6.05 should require all persons who land apply wastes to comply with the same requirements with which custom manure applicators must comply

Response:

The RAPs as written cover both farmers and custom applicators with all provision of Section 6.05. It is the Agency that certification requirements for custom applicators will include following all of the RAPs, Medium and Large Farm regulations will also apply to those farmers who carry those particular permits and specific standards of those permits, in addition to the RAPs, will apply to all farmers and custom applicators applying manure or other agricultural waste on farm fields.

Comment:

6.05(a) The terms "significant" and "adequate" are vague and undefined.

Response:

Language for this section comes directly from Statute and therefore must be included as worded in the RAPs. See: 6 V.S.A. § 4816(b).

Comment:

6.05(b) This provision will shorten the growing season. Additionally, the manure spreading restrictions will significantly increase the need for manure storage capacity on many farms. And is too encompassing and inclusive.

Response:

The Secretary understands that some farms will be impacted more directly by the manure application restrictions and therefore the option of applying for a seasonal manure spreading exemption exists for those farms that can demonstrate they can protect water quality or they need planning time to make changes on the farm that can allow them to comply. The Agency understands these changes may require engineering infrastructure or land purchases.

This regulation has applied to all SFO, MFO and LFO farms and will continue to apply when the RAP Rule is finalized. This standard is important to highlight within the context of manure pit planning and storage insofar as NRCS minimum storage planning length is 180 days, with the opportunity to plan for 240 days of storage without a waiver request.

Currently, the AAP manure winter spreading ban for all farms runs from December 15 to April 1 which encompasses 106 days. This winter spreading ban will continue under the RAP Rule. Under the RAP Proposed Rule, farms managing frequently flooded land would not be able to apply manure on only those frequently flooded fields from October 16 to April 14—a spreading ban length which runs 180 days.

This may be a significant share of the acreage for a number of farms in the state, so a discussion of how small farms will plan to meet this increased storage length requirement is a conversation that will be engaged in as soon as practicably possible. It should be noted that any farm that has expanded or improved their waste storage facility since 2006 will have had to have met NRCS standards per the AAPs and as such will have already met the 180-day minimum storage length requirement.

Inadequate storage volume is a resource concern that NRCS could fund through EQIP, so all small farms which have inadequately sized pits could be covered by NRCS. In addition, VAAFMT through the BMP Program, has \$1.8 million of funding for conservation practices, including new Waste Storage Facilities.

The Agency does not anticipate that MFO and LFO sized farms will be substantially impacted by the increased spreading ban length for floodplain fields as they are required to have 180 days of storage per their general and individual permits.

Agency staff will need to work closely with SFOs to develop individual farm plans for how these farms will adjust to the increase in 74 days of storage required for their frequently flooded farm fields. Expansions to waste storage facilities to accommodate this new requirement will be eligible for NRCS and VAAFMT funds.

It is important to remember that all waste storage facilities constructed, expanded, or modified after July 1, 2006 are designed and constructed according to the United States Department of Agriculture's Natural Resource Conservation Service (USDA NRCS) standards and specifications or an equivalent standard certified by a professional engineer licensed in the State of Vermont. Waste Storage Facilities shall be managed and maintained consistent with the

requirements of the Operation and Maintenance Plans for the facility. In other words, all pits built and repaired since 2006 should have 180 days of storage.

Section 6.06 of the RAP Proposed Rule outlines a process for exemptions to the winter manure spreading ban. There is the possibility for LFO, MFO and SFO operations to develop a non-emergency regular winter spreading plan, so that when conditions are appropriate, farms could apply manure in the winter at reduced rates and with wider buffers as some of the minimum requirements. This could potentially alleviate some of the storage challenges which farms may face as outlined in the RAP Proposed Rules regarding an extended winter spreading ban for floodplain fields.

After numerous stakeholder discussions, and further research and analysis, the Agency has determined that the USDA Frequently Flooded Soils Layer is a useful layer for the purposes of outlining floodplain fields that require a higher level of management. A clarification was made for the Proposed Rule whereby floodplain fields as described by the USDA Frequently Flooded Soils Layer are eligible for Manure Spreading Exemptions where a farmer can propose a written plan for an exemption to the seasonal winter spreading ban on their floodplain fields.

Farm managers and planners may develop alternative management strategies to meet State requirements to reduce adverse impacts to water quality where, for example, a Frequently Flooded Soil type is incorrectly mapped, where human impacts on the river cause it to no longer flood frequently, or where the rule creates a hardship on a particular farm owing to a very large percentage of their farm being located in the floodplain. The definition of Frequently Flooded means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year. All approved alternative management plans will ensure reduced adverse impacts to water quality.

In the RAP Proposed Rule, manure injection and chiseling would not be allowed after October 15 or before April 15 on fields that are determined to be frequently flooded. Further, there is a paucity of research evaluating manure injection within the context of NPS losses on floodplain fields. More studies are needed to evaluate efficacy of using subsurface injection of liquid manure in a floodplain as a method to reduce potential adverse impacts of manure application on a floodplain field relative to losses that may occur during a flood event.

Section 6.06(b) outlines a process by which farmers may request seasonal exemptions from the winter spreading ban for their Frequently Flooded Fields (FF Fields) if a farmer feels weather conditions or other factors require them to spread within the winter spreading ban timeframe for Frequently Flooded fields. These exemptions for spreading of manure on FF Fields would not need to be requested annually and would rather be reoccurring provided the farmer keeps records demonstrating compliance with the requirements of the exemption.

The Agency envisions that the nutrient management planning process will add a new section for "Floodplain Manure Management Plan" whereby a farmer or a farmer and their TSP will work to ascertain whether they need to request an exemption to the winter manure spreading exemption

on their FF Fields. Considering and requesting these variances could become a seamless part of the nutrient management planning process which is already occurring for all LFO and MFO farms—which will soon include all Certified SFO farms.

Regular exemptions could also be requested for regular winter manure spreading exemptions, and farmers will be able to work with the Agency and their TSP to determine applicability and develop plans for their individual farm fields—including FF Fields.

Comment:

6.05(b): Change this section to Manure and other wastes shall not be spread between December 15 and April 1. Farmers felt that an undefined ban date would make it extremely difficult to work with custom operators to schedule spreading.

Response:

The ability to change the ban dates is in Statute and therefore must be included in the RAPs. See 6 V.S.A. § 4816(b).

Comment:

6.05(b): Excluding vegetable and small grain production from the increased manure spreading restrictions in floodplains and increased buffer requirements on sloped land goes against the 'all in' approach.

Response:

The Agency has revised the Rule to those growing small grains in the requirements for 6.05(b). Those growing small grains on frequently flooded soils will be required to ensure that manure or other agricultural wastes are not applied to their cropland after October 16 or before April 14 unless exempted consistent with the requirements of 6.06(b).

The Agency has elected to not include those growing vegetables in the provisions 1) because they manage less than 1% of all cropland acreage in the State of Vermont and further, and 2) there are spreading restriction dates that pertain to the raising of crops for human consumption that require long windows between applications of manure for both NOP standards as well as the new FSMA rule. Including vegetable acreage in this spreading restriction requirement would potentially make many very small operations no longer viable in Vermont and would go against the charge from Act 64 of 2015 that requires the Agency to prioritize regulatory efforts.

Comment:

6.05(c): Manure applied to cropland should be immediately incorporated or injected.

Response:

Immediate incorporation is recommended by most universities, however not all farms have support in the field either equipment or personnel to perform this task immediately. This recommendation from universities is to reduce the volatilization of nitrogen. There is no loss of phosphorus in the 48 hours set in the RAPs unless there is a significant precipitation or flooding event. The RAPs 6.05 (d) provide protection where a flooding or precipitation event that causes runoff losses of manure to surface water could have been reasonably anticipated.

Comment:

6.05(d): Recommend adding language to § 6.05(d) to make it clear that the prohibition on applying wastes when the weather and/or field conditions can be reasonably anticipated to result in flooding, etc., applies regardless of whether a Nutrient Management Plan would otherwise allow waste application. We also recommend adding an example of what “reasonable anticipation” would mean,

Response:

Agency has added language to the rule which makes clear that regardless of NMP recommendations a person applying manure or other agricultural wastes needs to be aware of field and weather conditions when applying nutrients to ensure no off-site movement occurs.

Comment:

6.05(d) Suggestion is we not allow farming of any kind in areas that are deemed potential flood areas and compensate farmers for not using their property in these areas.

Response:

The Agency of Natural Resources has a program that compensates landowners for preserving the floodplains and river corridors and the Agency of Agriculture assists in identifying projects that would be eligible. Currently there are insufficient funds to pay all the farms that own floodplain lands.

Comment:

6.05(e) Comment received suggested that if a farm has developed a NMP that meets the 590 NRCS standard that these regulations need not apply as they are already addressed in the 590 standard.

Response:

The Agency understands that the 590 NMP requirement includes many components identified in the RAPs. The Agency's intent is that major items in the 590 requirement are in the RAPs so that farms can understand the bulk of the regulations when reading the RAPs.

Further not all farms that are required to follow the RAPs are required to develop a 590 NMP. Highlighting these standards ensures they will apply to all farms that are required to follow the RAPs.

Comment:

6.05(e)(3): The phrase "have exposed bedrock" is too broad given the writing of the section.

Response:

The Agency has revised Section 6.05 to clarify which specific areas of a field cannot receive application of manure or agricultural wastes.

Comment:

6.05(f) The requirement for 100 foot buffers on land with slopes in excess of 10% will reduce the available acreage for forage production and could lead to significant acreage loss in many areas. A better approach would be a process where all buffer requirements could be adjusted where warranted on a case by case basis, when doing so would not adversely affect water quality.

Response:

The annual cropland lands that this requirement would apply to are only those where the overall average field slope is 10% or greater, not just areas within a field where the slope is 10%, and the buffer is only required along a waterway adjacent to the field and can include existing vegetation which reduces the lost yield impact. Additionally, if a farm can demonstrate to the Secretary that an alternative to this requirement is adequately protective of surface water the Secretary can issue an exception to the requirement.

The Agency estimates that 19,600 acres, or 4%, of Vermont cropland will be impacted by this requirement

Vegetated buffer zones are one such area that the Agency has proposed a process by which a farmer could submit to the Secretary a proposal to have site-specific, or 'smart' buffers, which deviate from the minimum standards proposed in the RAP Rule, as long as the plan can demonstrate that the management system to be put in place to reduce the buffer zones will still meet the State requirements to reduce adverse impacts to water quality. One important threshold is that in no case can a site-specific vegetated buffer fall below 10 feet in width.

A farmer could work independently, with NRCS, the Agency of Agriculture, UVM Extension, the Districts or their Technical Service Provider to develop an alternative management strategy to reduce vegetated buffer zone width on their farm. The actual process for how the Agency will receive, review and approve proposals will be set by policy and shared widely after the RAP Rule is finalized and adopted.

The areas within the Proposed Rule which could be eligible for a buffer zone variance includes:

1. 25' vegetated buffer on surface water
2. 25' vegetated buffer on a ditch which has been determined to convey significant nutrients
3. 25' vegetated buffer on a surface inlet in a field
4. 100' vegetated buffer on a >10% slope field.

The Agency could approve a minimum width of 10 feet. These standards will apply to all farmers. Over the three drafts, greater clarity has been brought to ensure that the above four sections of the rule are eligible for a variance to the minimum buffer width on a site by site basis as approved by the Secretary.

It is also important to note, that if a buffer is being overwhelmed by sediment and failing to effectively filter overland flow, the Agency may require that a Best Management Practice be implemented to address this issue. One of the BMPs that could be required would be an expansion of a buffer strip so to be sized in a manner that will enable it to successfully filter overland flow of water born nutrients and sediments.

Comment:

6.05 (f) - Add “perennial grass land or hay land” after “annual croplands” in the first sentence

Response:

Previous drafts included all agricultural lands and based on comment and data analysis the Agency revised the RAPs to be specific to annual croplands. Other aspects of the RAPs such as 6.05(d) address direct runoff of manure to water when a precipitation or flooding event could have been reasonably anticipated.

Comment:

6.05(g) the location of nearest surface water, mapped wetlands, mapped floodplains, ~~wells~~ water supplies, tile drains, surface inlets or open drains, property boundaries and ditches;

Response:

The Agency has revised the rule to update language throughout the rule to include the term Water Supply where appropriate.

6.06 Manure Spreading Exemptions

Comment:

6.06 (b) Request that a process be implemented that would provide landowners an opportunity to demonstrate whether or not their land is frequently flooded and whether or not the predominance of any flooding tends to be in the spring or fall of the year. There is no obligation for the Agency to respond to a request within a specific time frame

Response:

A nutrient management plan should include the terms of a seasonal exemption for floodplains once approved by the Secretary. However, the continued approval of the seasonal exemption is reviewed annually per 6.06(d) upon submission of records of application. Timeline for response regarding non-emergency exemptions to the winter manure spreading ban will be provided through guidance and will not be provided in the Rule.

Comment:

6.06(b): Considerable information is requested for an exemption request given that the request is likely a time critical issue that necessitated the request.

Response:

Emergency exemptions from the Winter Manure Spreading ban are still permitted under Section 6.06(a) and operate on different planning requirement than those for 6.06(b). For those farms which wish to apply manure on a regular basis during the winter manure spreading ban, a higher standard of planning is necessary to ensure the allowances provided under the regular seasonal exemption meet water quality standards.

Comment:

6.06(b)(4): Reference to "depth to groundwater" is not currently part of nutrient management plans and may not be known.

Response:

Depth to groundwater is a critical part of the 590 NMP standard, and is provided as part of the minimum components of a NMP under 2(b): Soils maps and soil descriptions.
https://efotg.sc.egov.usda.gov/references/public/VT/CAP_104_NMP_Certification_Checklist.pdf

Comment:

6.06 (b)(3) the location of nearest surface water, mapped wetlands, mapped floodplains, wells water supplies, tile drains, surface inlets or open drains, property boundaries and ditches;

Response:

The Agency has revised the rule to update language throughout the rule to include the term Water Supply where appropriate.

Comment:

6.06 (c)(4) Throughout the document, there are mentions of public water supplies, private water supplies, potable water supplies, and public and private drinking water wells. For consistency and clarity, we suggest only the defined terms of “public water supply” and “private water supply” be used. Water supplies can include drilled wells, dug wells, and springs so the use of the term “drinking water well” is misleading.

Response:

The Agency has decided to utilize the term ‘Water Supply’ as defined in the rule to apply to drinking water sources in Vermont, except where other terms are used throughout the rule to ensure consistence with Act 64 of 2015.

Comment:

6.06(d): Throughout the document, there are mentions of public water supplies, private water supplies, potable water supplies, and public and private drinking water wells. For consistency and clarity, we suggest only the defined terms of “public water supply” and “private water supply” be used. Water supplies can include drilled wells, dug wells, and springs so the use of the term “drinking water well” is misleading.

Response:

The Agency has revised the term ‘wells’ in 6.06(d) to ‘water supplies’ to ensure consistency throughout the rule.

6.07 Buffer Zones: Manure and Agricultural Wastes Application Setbacks

Comment:

Comments received specific to the buffer requirements found in Section 6.07 suggest that the RAP buffer definition and requirements are inconsistent with statute, are inconsistent with other state riparian buffer requirements and will be ineffective in controlling nutrient and sediment

losses to surface water. Comments received also state that activities allowed within the buffer zone such as harvesting of the buffer, fertility and livestock grazing risk defeating the purpose of the buffer zone. Comments also requested the Agency's rationale for using a 25-foot standard.

Response:

The definition of Buffer Zones in the RAPs is based on statutory language directly from Act 64. 6 V.S.A. §4810(a)(6)(A) states that the RAPs shall:

Require a farm to comply with standards established by the Secretary for maintaining a vegetative buffer zone of perennial vegetation between annual croplands and the top of the bank of adjoining surface water of the state. At a minimum the vegetative buffer standards established by the Secretary shall prohibit the application of manure on the farm within 25 feet of the top of the bank of an adjoining surface water or within 10 feet of a ditch that is not a surface water under State law and that is not a water of the United States under federal law.

Further clarity of the intent of Act 64 with regards to the requirements for a buffer zone in the RAPs being a perennially vegetated grass buffer is provided through the language in Act 64 which specifically requires that VAAFMM shall pay the farmer for an easement on their land if a buffer of trees or other woody vegetation is required as a BMP:

If a perennial buffer of trees or other woody vegetation is required as a BMP, the Secretary shall pay the farmer for a first priority easement on the land on which the buffer is located. (6 V.S.A. § 4810.)

The purpose of perennially vegetated buffers associated with annual cropland differ from other land uses. The goal of a perennially vegetated buffer on annual croplands is to eliminate tillage, eliminate manure application, and establish perennial vegetation for the purpose of reducing runoff, nutrient losses and sediment losses. These buffers have been understood to be allowed to be managed and harvestable since the original promulgation of the AAPs (VT Ag NPS Reduction Program Law and Regulations, § 4.06 Vegetative Buffer Zones (1995)). Harvesting buffers provides the added benefit of removing nutrients from the buffer (crop removal) while the addition of nitrogen at agronomic rates ensures a buffer that is growing vigorously thus allowing for more effective filtration and nutrient uptake. Tillage is allowed only for the establishment of the buffer and not as a regular occurrence. Livestock grazing in the buffer is considered to be an insignificant source of nutrient loading to surface water as it would occur on a very small segment of areas adjacent to annual croplands. Managed livestock grazing in these areas can also aid in the effectiveness of the buffer; light grazing is one method to manage phosphorus levels so that the soils in the buffer do not become saturated. Without some removal, either via harvesting or light grazing the buffer's effectiveness will be reduced over time. Livestock exclusion requirements will apply in these areas as well as pasture areas.

In addition, the proposed rule continues to require, as the existing rule does, that no activities take place over the top of the bank and that those areas be left in their natural state. Compost and

fertilizer are allowed to be utilized and applied within the perennially vegetated buffer zones to promote plant growth and add organic matter in order to maintain an effective filter that efficiently removes nutrients captured from runoff.

Further, both the Vermont's TMDL Phase 1 Implementation Plan as well as the EPA's own TMDL modeling and reporting includes 'grassed riparian buffers' as the basis for buffer zones and the associated phosphorus reductions from agricultural activities. EPA's June 17, 2016 *Phosphorus TMDL for VT's Segments of Lake Champlain* provides the allocations of phosphorus loads to Lake Champlain to meet water quality criteria, describes the basis for allocation for future growth, and describes how implementation measures were simulated to determine that allocations can be achieved.

The 2016 final TMDL references the BMP Scenario Tool, which is a spreadsheet-based modeling tool designed to estimate how much Phosphorus reduction could potentially be achieved by various management scenarios in each watershed. EPA made extensive use of the Scenario Tool when evaluating whether there was sufficient reasonable assurance that load allocations and reductions could and would be met.

In *Appendix B* for the *Phosphorus TMDL for VT's Segments of Lake Champlain*, which is the *Crosswalk between the Vermont Phase 1 Plan and EPA's BMP scenario identifying achievable phosphorus reductions*, EPA provides information on (1) a description of the level and type of BMPs simulated in the TMDL Scenario, presented in the form of a matrix with some additional text explanation; (2) references to where in the Phase 1 Plan are the basis for the level and types of BMPs simulated; and (3) the estimated phosphorus reductions from the applied scenario used by EPA to determine what level of reduction was achievable in each watershed.

Information provided in the *Crosswalk* explains EPA's integration of VT's Phase 1 Implementation Plan into TMDL Modeling as it pertains to buffers:

The Phase 1 Plan includes a suite of new required agricultural practices ("RAPs"), including 10 foot ditch buffers, 25 foot riparian buffers, gully erosion control, livestock exclusion from waterways, and reduced field erosion tolerance. The ditch buffer and riparian buffer practices were directly plugged into the scenario tool, assuming application to 80% of cropland fields as a conservative estimate.

Tetra Tech's 2015 Lake Champlain BMP Scenario Tool Report elucidates more clearly what specific type of buffer they used in their modeling. Using the Lake Champlain Basin SWAT watershed model results and BMP efficiency rates, Tetra Tech developed a spreadsheet-based tool that allows one to evaluate the amount of phosphorus reduction expected from different combinations of BMPs in Vermont's Lake Champlain tributary watersheds. This report describes the design, function, and data requirements for the scenario tool (TetraTech, 2015).

On page 23 of the report, TetraTech explains that the SWAT riparian buffer width efficiency table is based on the effectiveness of filter strips, which may be composed of grass only. Also on page 2, TetraTech title the buffer BMP as a “Grassed Riparian Buffer”.

For all of these reasons, the Agency believes that buffers proposed in the RAPs are compliant with the TMDL Phase 1 Implementation Plan as well as the legislative intent of Act 64. The Agency also believes that the proposed vegetated buffer zone requirements will be effective in reducing nutrient and sediment losses to surface waters as they represent a significant increase in the size of the required buffer as well as the location of the required buffer. Current rules require buffers 10 feet wide adjacent to surface waters only. The RAP proposed buffer zone standards will require perennially vegetated buffers of 25 feet along surface waters and 10 feet along ditches. The 25-foot standard was selected to be consistent with Act 64 requirements that prohibit manure application within 25 feet of the top of the bank of surface water. It is also widely understood that while buffers are required on all annual cropland areas adjacent to surface water, many of these areas do not contribute sheet flow runoff to the adjacent surface waters. Field management, field slopes and topography dictate the actual directional flow of runoff water; not simply the proximity to surface water. To further prevent nutrient and sediment losses from annual croplands the rule requires that fields with average slopes of 10% or greater are precluded from manure application unless a vegetated buffer of 100 feet has been established. Manure application is prohibited within the buffer as well.

Support for this approach is found throughout the scientific literature. One of the most comprehensive reviews of literature for this topic area is found in the 2012 *Conservation Outcomes from Pastureland and Hayland Practices* (Nelson et al., 2012) which was a multiagency and multi-stakeholder effort to quantify scientifically the environmental outcomes of conservation practices. This 362-page effort’s express goal is to inform deliberations of managers and policymakers regarding the current effectiveness and potential improvements land management policy. This study represented best analysis of effectiveness of eastern temperate region pasture and hayland management practices. Karlen et al., 2007; Clausen et al., 2000; and Liu et al., 2008; reflect the most cited authors on the subject whose conclusions reflect the efficacy of vegetated buffers to reduce surface runoff from agricultural fields as well as the dual purpose vegetative buffers can serve as a forage crop and a conservation buffer. The results of this analysis informs the billions of dollars which are invested in installing and maintaining vegetated buffers throughout the United States as implemented through the NRCS.

Working buffers are important as the harvesting of material allows for the depletion of nutrients that may have accumulated in the buffer and are utilized by the plants during the growing season. The legislature also established that the RAPs cannot require forested buffers without purchasing the land from the landowner and currently there are insufficient funds to purchase the land adjacent to rivers.

The RAPs aim to keep mechanical manure applications out of buffers. Fertilizer can only be used when a soil test demonstrates that nutrients are needed, which must be documented by the farm. It is rare that a buffer will need phosphorus, rather nitrogen is the likely fertilization need that

would in turn allow a good yield that would then remove additional phosphorus from the buffer. Grazing of cropland buffers is a rare practice in Vermont and the livestock exclusion requirements would still apply. The RAPs are requiring a significant amount of change on many farms, which comes with increased costs. The Agency made these distinctions in an effort to target the implementation efforts to the areas where the greatest water quality improvements can be made as many farms will have multiple areas to address and we want the highest priorities to be the focus.

The purpose of the RAPs buffers are not meant to be consistent with the ANR buffer recommendations. Agricultural buffers are intended to address field losses of agricultural pollutants where ANR buffers are to address impervious surface runoff and associated increased development pressures. Agricultural fields have a number of requirements in the RAPs that are all aimed at reducing the pollutant losses in the field and the buffer is just one practice in that suite of practices.

Comment:

6.07(a) The requirement for 15'-25' buffers upland of tillable acreage will have no impact on water quality, while significantly reducing acreage available to grow crops. I would urge the Agency to develop a process that would allow the maximum amount of flexibility while still achieving the desired water quality improvement.

Response:

The RAPs include a provision about site-specific buffers (6.07(i)). This exception allows for the consideration of a smaller buffer if it can adequately protect surface waters, however the buffer cannot be less than 10 feet. This provision also allows for wider buffers where water quality is not adequately protected, for instance at points of runoff.

Comment:

6.07(b) Additional clarification was requested regarding this section

Response:

The RAPs in this section describe a requirement for establishing perennial vegetation along ditches. Ditches are defined as a "constructed channel which forms as a result of human activities primarily associated with land drainage or water conveyance through or around private or public property or infrastructure." Ditches are not 'diversions', which are defined by USDA as "a channel generally constructed across the slope with a supporting ridge on the lower side." These field diversions are always grassed in order to be effective in managing runoff from agricultural fields--these diversions are essentially an implemented conservation practice which is addressing a landscape feature which would result in gully erosion of not for a grassed field diversion--another term for a narrow 'grassed waterways'.

Comment:

6.07(b): Berms should be required at the top of ditches to stop the flow of contaminated water.

Response:

There are a number of regulatory and insurance agencies that do not support putting berms along surface waters as they become a barrier to the river accessing the floodplain during high flow events. The Agency of Agriculture agrees and therefore such a practice is not required in the RAPs.

Comment:

§6.07(b): The term "significant" is vague and undefined. The phrase "potential to transport nutrients" requires further analysis or reference for its definition.

Response:

The utilization of this planning standard is incorporated from the NRCS 590 Standard which all LFO and MFO farms have had to follow since 2006. NRCS quality criteria for determining when a ditch becomes a "significant" conveyance will be consistent with established planning standards and provided through guidance.

Comment:

6.07(f): add spraying to kill vegetation.

Response:

The Agency has added the provision that tillage within the vegetated buffer zone is prohibited other than for the establishment and maintenance of the buffer zone. Maintenance has been added to ensure a properly functioning vegetated buffer is maintained at all times.

Vermont Regulations for the Control of Pesticides is the Rule at the Agency which manages the proper use and application of pesticides to agricultural fields in Vermont.

Comment:

The consideration of using an injection manure process should be included in the RAPs. It should be mandatory in the watershed of an impaired lake.

Response:

Manure injection requires a significant investment in equipment, which most farms do not own. Though some custom manure applicators do own injection equipment, they cannot service all farms due to the volume of customers. Therefore, the logistics of making this a requirement is not feasible at this time.

Comment:

Comment received suggested that there should be specific ditch and ditch buffer management recommendations

Response:

The RAPs require that functioning vegetated buffers be maintained at all times.

The Agency will revise the ditch management factsheet co-authored with DEC as guidance following Rule adoption.

6.08 Animal Mortality Management Requirements

Comment:

6.08(b)(3): a minimum of 200 feet from public or private ~~drinking water wells~~ water supplies not owned by the farm;

Response:

The Agency has made change based on comment received. The Agency has decided to utilize the term 'Water Supply' as defined in the rule to apply to drinking water sources in Vermont, except where other terms are used throughout the rule to ensure consistence with Act 64 of 2015.

6.09 On-Farm Composting of Imported Food Processing Residuals

Comment:

The section of the rule pertaining to the feeding of human food residuals to livestock should exempt wells owned by the farm from the proposed 200' setback (as the mortalities composting section does).

Response:

Feeding of food residuals does not require a 200' setback from property boundaries. Section 6.09 is specific to composting facilities importing less than 1,000 cubic yards per year of food processing residuals.

6.10 Stabilization of Banks of Surface Waters

Comment:

6.10(a) This language should be changed to reflect the need to stabilize and reduce erosion from many of the river/stream banks in the state of Vermont

Response:

The Agency of Natural Resources has been directed by the Legislature to create a number of rules and policies aimed at streams regaining equilibrium. In order to accomplish this equilibrium goal, each site that is considered for a stabilization project must be considered for more than just that location on the stream. DEC issues all stream alteration permits and is the authority of such aspects. The RAPs essentially point to the ANR regulations as the standard and otherwise state that streambanks shall be kept in their natural state as a means to achieve the equilibrium standard over time.

Section 7. Exclusion of Livestock from the Waters of the State

Comment:

Comments received state that the livestock exclusion standard should be a mandatory, by default exclusion requirement for all surface water. The AAFM should require all livestock to be excluded from all surface water unless a determination has been made, on a case by case basis, that exclusion is not necessary. Comments also suggest that anything other than full exclusion of all livestock, everywhere would not meet legislative intent to “prevent erosion and adverse water quality impacts”.

Response:

VAAFAM believes that the proposed rules regarding livestock exclusion meet the legislative intent of Act 64. Throughout the legislative committee process, it was made clear to the Agency that universal exclusion was not the goal of Act 64, but rather, a prioritized system that would recognize that there are areas where exclusion would not benefit water quality. The Agency believes that committee records of testimony support this conclusion. Targeting the highest priority locations for livestock exclusion will yield the greatest benefit for water quality while appropriately managing the economic impacts associated with these practices. With limited resources to implement a wide variety of non-point source agricultural pollution strategies, targeting resources to the highest priorities is the best strategy for phosphorus reduction benefits. There are many examples of areas where livestock exclusion is unnecessary, impractical and without benefit to water quality. Providing farms the flexibility to manage and/or exclude livestock in areas where surface water access is most problematic will naturally lead to improvements in both erosion and nutrient loading.

Further, VAAFAM believes the proposed livestock exclusion in the RAPs meets the standards of the TMDL Phase 1 Implementation Plan as well as the assumptions used in developing Reasonable Assurance for the TMDL. In fact, the TMDL Phase 1 Implementation Plan uses language which is almost exactly what is found in the proposed RAPs; exclusion where there is erosion in pastures, mandatory exclusion in production areas.

The proposed change to the RAPs will explicitly exclude livestock from perennial streams where erosion is prevalent and in all production areas.

EPA utilized this Phase 1 Implementation Plan to develop TMDL Phosphorus Modeling for Lake Champlain, thus forming the foundation of the Reasonable Assurances consideration. This work was based on this Phase 1 Implementation Plan Proposal, as evidenced in EPA's *Lake Champlain TMDL Appendix B Crosswalk* which explains on page three:

The livestock exclusion practice was also directly entered into the scenario, assuming application to 80% of pasture land, based on the provision in the Phase 1 Plan that requires livestock exclusion wherever livestock access is creating erosion and at all production areas, which the Phase 1 Plan indicates will address a "major portion" of the phosphorus load associated with livestock access to streams. EPA represented this major portion in the scenario run by applying livestock exclusion to 80% of applicable areas.

It should be noted that the contribution of nutrients to surface water from livestock access is approximately 5% as modeled by the scenario tool.

For these reasons, the Agency believes that the RAPs as proposed meet the legislative intent of Act 64 as well as the Agency's commitments under the EPA's TMDL for Lake Champlain and VT's Phase 1 Implementation Plan.

In addition to these considerations, the Secretary has the authority to require livestock exclusion in "areas designated by the Secretary as having actual or potential threat to water quality as a result of livestock access." This indicates that VAAFAM's RAP Rule is in fact more rigorous than the requirements considered in the TMDL modeling.

Comment:

7(b)(2) Comments received suggested that the language of 7(b)(2) should be clarified to ensure proper vegetative growth is maintained from the top of bank of surface water into a pasture.

Response:

The Agency has made the appropriate revisions based on comment received.

Comment:

7(d): Comments received suggested that the language of 7(d) should be clarified to address water supplies.

Response:

The Agency has made change based on comment received. The Agency has decided to utilize the term ‘Water Supply’ as defined in the rule to apply to drinking water sources in Vermont, except where other terms are used throughout the rule to ensure consistence with Act 64 of 2015.

Comment:

Comment received indicated that Section 7 as structured in the RAP Proposed Rule left ambiguity in a production area--or what constitutes a production area--and where exclusion of livestock from surface water would be required.

Response:

The Agency has added the definition of “Barnyard or Feedlot” to bring clarity to what parts of a farm would trigger the requirement to exclude livestock from surface water or ditches.

Comment:

Comment received indicated that it is unclear why pasturing of livestock from private water supplies is limited within 50’, but a similar restriction is not made for public water supplies.

Response:

Authority for Public Water Supplies exists under 10 V.S.A. and is not governed by the RAP Rule. see: 10 V.S.A. Chapter 48, Groundwater Protection; 10 V.S.A. Chapter 56, Public Water Supply; 10 V.S.A. Chapter 61, Water and Waste Water Permits; and 18 V.S.A. § 1218

Section 8. Ground Water Quality and Groundwater Quality Investigations

Comment:

The Agency should establish background concentrations for agricultural contaminants or wastes. Without background levels clearly established there can be no effective enforcement. Without background levels clearly established for the Lake Champlain TMDL there can be no surety as to agricultural contributions.

Response:

The language in Section 8(a) has been in the current rule since 2006. The current draft of the Required Agricultural Practices Rules is not proposing any significant changes from the existing rule. The Agency, through investigations and groundwater monitoring efforts, utilizes the current groundwater quality standards as established in Appendix One of the Groundwater Protection Rule and Strategy pursuant to 10 Vermont Statutes Annotated Chapter 48. Through monitoring and the use of established standards and protocols the Agency is able to determine when specific agricultural activities are impacting groundwater. Background levels of common agricultural contaminants such as nitrates are well known throughout the state and do not approach standards established for the protection of drinking water. The Agency's experience, investigation protocols and data collection over the past 30 years of groundwater monitoring has established a clear record of being able to discern the differences between existing levels of contaminants and levels that may be influenced by agricultural operations. The Agency uses its discretion in responding to cases of agricultural impacts to groundwater and the resolution of those impacts through technical assistance, management changes and enforcement. The range of responses is clearly demonstrated throughout Section 8.

Comment:

Agricultural contaminants, wastes and agricultural wastes require more clarity

Response:

Agricultural wastes and wastes are clearly defined in Section 2.35 as the commenter noted. For the purposes of Section 8, agricultural contaminants has the same meaning as agricultural wastes or wastes as may be applicable to groundwater monitoring efforts.

Comment:

The phrase "vulnerable site characteristics" is vague and needs definition

Response:

The Agency, as the lead for groundwater monitoring and investigation relative to agricultural activities for the past 30 years, has vast experience in determining when, and where site vulnerabilities exist. This term is utilized to describe the conditions that could trigger further monitoring or investigation. Site characteristics such as soil types, slopes, depth to bedrock, type of bedrock and general hydrogeology are widely known to influence groundwater quality. The Agency does not believe this term requires further definition.

Comment:

Quantitative data should be required from a complainant before an investigation is initiated; lodging a complaint without supporting documentation is a loss of due process

Response:

The Agency responds to all complaints regarding potential groundwater quality issues. It is the Agency's responsibility to investigate all complaints associated with agricultural activities and groundwater. The Agency has historically provided monitoring and sampling resources as part of responses to complaints when deemed appropriate given the site and the nature of the activities in the area. This is a requirement of 6 Vermont Statutes Annotated § 4810(b).

Comment:

Strike "impacted by" in Section 8(f)(3)

Response: There are cases where wells impacted by agricultural activities may not be directly adjacent to the farm operation. The Agency believes the language in Section 8(f)(3) is appropriate.

Comment:

Move Section 8(g)(7) to 8(g)(1); 7 should be the first step not the last.

Response:

The list of activities the Secretary may engage in to identify and remediate sources of drinking water and groundwater contamination is not meant to be a prescriptive sequence of steps taken by the Agency, but rather a broad range of activities and responses that the Agency may take in its investigations.

Comment:

Groundwater investigations that are triggered in accordance with Section 8 should be investigations that are led by the Secretary of ANR rather than the Secretary of VAAF

Response:

Authority to conduct groundwater investigations is found in 6 V.S.A. § 4810(b) "The RAPs for groundwater shall include a process under which the Agency shall receive, investigate, and respond to a complaint that a farm has contaminated the drinking water or groundwater of a property owner."

Comment:

Section 8(c)(2) should add the language "upon the request of *or on behalf of* a water supply owner or tenant"

Response:

The Agency believes that this concept is adequately addressed in 8(c)(1) in that the Agency would conduct monitoring where water supply owners have “agreed to participate in the sampling program”. This language is indicative of the Agency sampling on behalf of the water supply owner.

Comment:

Throughout the document there are mentions of public water supplies, private water supplies, potable water supplies and public and private drinking water wells. For consistency and clarity, we suggest only the defined terms of “public water supply and “private water supply” be used.”

Response:

The Agency agrees in part and has made the appropriate changes to the Rule. The term “Water Supply”, public water supply, and private water supply as is consistent with the requirements of Act 64 of 2015. The Agency deleted terminology such as well, drinking water wells, potable water supplies, etc.

Comment:

Water quality testing is justified; it is the right thing to do and will reveal useful data. Testing should be wider in scope than currently proposed, and should include contaminants such as atrazine. This is an overlap with public health.

Response:

The Agency’s water quality testing program currently includes testing for Atrazine. The Agency has been routinely monitoring drinking water, groundwater, and surface water for herbicide residues for over 30 years.

Section 9. Construction of Farm Structures

Comment:

Comment received suggested that Section 9 as structured in the RAP Proposed Rule was ineffective in communicating the baseline standards and process for siting of farm structures.

Response:

The Agency has restructured Section 9 to bring clarity to the rule and has included all relevant standards provided in Act 64 of 2015 and updated in Act 105 of 2016.

Section 10. Custom Applicator Certification

Comment:

The Agency should not require custom applicators to notify and request the ability to proceed with manure applications when a farm does not have a nutrient management plan. Rather, the applicator should be able to proceed based on standards and recommendations for application as provided by the Agency in the required training.

Response:

The Agency agrees with this comment and has removed the requirements found in Section 10(i). The Agency intends to address issues of manure application rates on farms without nutrient management plans through required training understanding that nutrient management planning efforts will take some time to reach all farms.

Comment:

It is not stipulated whether or not the training of employees and seasonal workers is a one - time event. The requirement is unclear; the certification is valid for five years but needs to be renewed annually?

Response:

The Agency will provide details of the specifics of the program through procedures after the adoption of the rule. It is the Agency's intent that this program be operated in a similar manner to the pesticide applicator certification program which the Agency currently manages. Expects that employees and seasonal workers will be provided training annually.

Section 11. Site Specific On-Farm Conservation Practices

Comment:

Comments received suggested that this section of the Rule gave overly broad and vague authorities to the Secretary. It was also noted that it is unclear how the Agency will determine "potential" in reference to a "potential for agricultural pollutants to enter the waters of the State."

Response:

Section 11 is language directly from Vermont Statute and has been authority that has been granted to the Secretary of Agriculture since 1992; see: 6 V.S.A. § 4810(b) for current citation.

The original authority was granted to the Agency in the 1992 Legislative Session; see: Acts and Resolves Passed By The General Assembly of the State of Vermont 1992 (p.457)0: Sec. 4. V.S.A. chapter 215 § 4810(a):

The second category of agricultural land use practices shall consist of best management practices, which may be required by the commissioner on a case by case basis.

Section 12. Severability Clause

No comments received.

Section 13. Effective Dates

No comments received.

Appendix A: Process for obtaining variances and exemptions

Comment:

Clarification of who is providing the "certification" should be provided. This is redundant given Appendix A (a)(2).

Response:

Subsection 2 is that they are meeting the definitions of what a farm is so they are eligible for a farm structure variance. Subsection 9 is intended to be self-certification that they are compliant with the rules, the agency can follow-up as needed or as they deem necessary.

Roles of Other State Agencies: Information

No comments received.

Additional Comments Received

Comment:

As goes the lake, so goes the property values and associated economic benefits. To say nothing of the quality of life it influences. It is a magnificent resource worth protecting.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

PLEASE support strong RAPS

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

Please establish strong and serious rules in Act 64.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

In a word, Mr. Secretary, the RAPS do not need a little tweak here or a little alteration there; they are wrong at their very first step on this journey and I implore you to scrap them entirely and start again.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

The time has come to use enforcement as a mechanism for those farmers who will not change their practices. It is time to prioritize the health of the lake and the economic vitality it supports. Most importantly the rules need to be enforced.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

We recommend adding a requirement that all farms practice integrated pest management

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

The Agency should take its RAP enforcement budget (if it has one) and use it to create new opportunities for Vermont farmers to sell their products.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

Required Agricultural Practices Rule for non-point source POLLUTION control program. The word pollution should be taken out.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

The term "Pollution" is included in Statute and as such must appear in the RAPs. See: 6 V.S.A. § 4801(1); 6 V.S.A. § 4802(7)

Comment:

There should be a moratorium on tile drainage.

Response:

Requirements for tile drainage were not considered during the RAP Rule revision process. According to Act 64 of 2015, the RAPs will be revised by January 15, 2018 to include requirements for agricultural subsurface tile drainage. A final report on Agricultural Subsurface Tile Drainage in Vermont will be submitted to the legislature by January 15, 2017.

Comment:

Communication is going to be paramount to successful implementation of the RAPs. As we have expressed, clear and timely communication between farmers and Agency staff is critical. Written documentation of information will also be important, so that farmers can address issues and concerns that may arise on their farms in a timely and efficient manner as well as provide farmers with a reasonable assurance that information and decisions specific to our operations will be consistent over time and across individual regulators.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

Would like to see more incentives for regenerative and sustainable agriculture practices in this document.

Response:

The Vermont Agency of Agriculture, Food and Markets supports and endorses all practices that lead to the goal of healthy soils and productive agricultural lands. Incentivizing additional practices (Best Management Practices or BMPs) can also be found in associated sections of 6 V.S.A. Chapter 215 such as § 4821 Assistance program created, § 4826 Cost assistance for waste storage facilities, § 4827 Nutrient management planning; incentive grants, § 4828 Capital equipment assistance program, § 4900 Vermont seeding and filter strip program, and § 4951 Farm agronomic practices program. The Agency agrees that incentivizing practices that go beyond the rule is an important part of any effort to reduce non-point source pollution but does not believe that the Required Agricultural Practices Rules are the appropriate place for these programs. RAPs are but one part of a larger water quality program managed by the Agency that includes Best Management Practices incentives.

Comment:

Comment received encouraged the Agency to create companion documents and appendices to the RAPs, including explanations, illustrations, case studies, and plain language explanations of any laws referenced in the rule.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

The Agency will engage in a robust education and outreach campaign after rule adoption. This will include publication of a Guidance document.

Comment:

Nutrient Production Permits (NPP) should be valid for 1 year. An NPP would be required for every “farm” in Vermont to produce farm sourced pollutants. Anytime any farmer in the state either applied nutrients or even owned farm animals of any kind, they would be required to purchase NPPs as a function of the farm in question’s “total pollutant output”.

Response:

Thank you for your comment. The Agency has taken your comment into consideration. Please see the final proposed rule that has been submitted to LCAR for the most up-to-date version of the rule.

Comment:

The Agency received comment asking about what would happen to a farm if they are not found in “good standing”, that if some fields aren’t complaint or things aren’t complaint what are the banks going to do, is it going to be harder for us to borrow money for time to time to run our businesses

Response:

Pursuant to Section 13 of Act 154 (H.595) of 2016, “good standing” means an applicant for State-funded grants who is not a named party in any administrative order, consent decree, or judicial order relating to Vermont water quality standards issued by the State, and is also in compliance with all federal and State water quality laws and regulations. An applicant for a State-funded grant must certify that the applicant is in good standing with the Agency of Natural Resources and VAAFAM.

The concept of good standing is of a continuing nature, and at any time prior to the award of a State-funded grant or during implementation of a State-funded grant, an applicant must notify the State agency or department administering the State-funded grant if the applicant is no longer in good standing with the Agency of Natural Resources or VAAFAM. Should the applicant not be in good standing, the applicant will be given the opportunity to explain, in writing, their particular circumstances. A State agency or department may consider an applicant’s explanation in determining whether or not to award a State-funded grant to the applicant.

If an applicant knowingly provides a false explanation or fails to notify the State agency or department administering the State-funded grant that the applicant is no longer in good standing

with the Agency of Natural Resources or VAAF, then the State or its agencies or departments may seek to recover the grant award and deny any future grant award to the applicant for up to five years.

If a farmer receives a notice of violation from the Agency which results in the Agency issuing an administrative order, then under the statute, the farmer is not in good standing. The farmer will be given the opportunity to explain, in writing, their particular circumstances. The Agency may consider the farmer's explanation in determining whether the farmer is eligible to receive State-funded cost share monies.

Comment:

What percentage of dairy cows already are regulated by MFO and LFO Permits?

Response:

Permitted MFO and LFO dairy farms represent 62.1% of all Dairy Cows in Vermont according to the 2012 USDA NASS Ag Census.

Comment:

Comment received questioned the Agency's process about subpoenas or warrants or request for access. Also additional privacy concerns were raised around farm records and materials the Agency keeps on file.

Response:

The Agency's authority for access can be found in 6 V.S.A. § 1(a)(3).

Records retained by the Agency are subject to the Public Records Law.

Comment:

Rules should embrace a statewide transition to sustainable agricultural systems.

Response:

The Agency agrees that sustainability is important to the future success of agricultural systems in the State. The Agency believes that Vermont diverse agricultural community strives to recognize and embrace sustainable practices in their operations.