

Agency Of Agriculture, Food & Markets  
116 State Street  
Montpelier, VT 05620-2901  
[www.Agriculture.Vermont.gov](http://www.Agriculture.Vermont.gov)

September 13, 2016

To: Legislative Committee on Administrative Rules

From: Vermont Agency of Agriculture, Food and Markets

Re: Required Agricultural Practices Rules

The enclosed Required Agricultural Practices Rules and supporting documents have been developed over the past year in conformance with the requirements of Act 64 of 2015. The Agency has held 89 meetings with the public and the regulated community since October of 2015. These meetings were held as the Agency provided two drafts of a proposed rule prior to the formal rulemaking process and a third draft (the proposed rule) filed with the Secretary of State in May of 2016. Over 2,100 individuals have attended meetings regarding the rule over the course of the pre-rulemaking process and formal rulemaking process. The Agency has attempted to engage with the public and the regulated community regarding the requirements of this rule and has sought to be responsive to comments provided over the past year. Substantial changes were made to the first two drafts of the rule prior to the formal rulemaking process. The enclosed final proposed rule has also been changed to reflect comments received during the formal comment period.

Areas of the rule that received the greatest amount of comment were those that specified what types of farms would be required to self-certify and what entities would be subject to the rule in general (Section 3; 361 comments), buffer requirements (Section 6; 466 comments), and the requirements for livestock exclusion from surface waters (Section 7; 376 comments). The Agency directs reviewers of the rule to the Responsiveness Summary for more detail regarding these comments and the Agency's responses to them.

The Agency has spent countless hours reviewing and considering all of the comments received about the rule in an effort to balance the needs of a highly diverse and thriving agricultural community, the requirements of Act 64, and the demands of the public at large for improvements to the State's water quality. The Agency firmly believes that the resulting rule strikes that balance.



## Administrative Procedures – Final Proposed Rule Coversheet

**Instructions:**

In accordance with Title 3 Chapter 25 of the Vermont Statutes Annotated and the “Rule on Rulemaking” adopted by the Office of the Secretary of State, this final proposed filing will be considered complete upon the submission and acceptance of the following components to the Office of the Secretary of State and to the Legislative Committee on Administrative Rules:

- Final Proposed Rule Coversheet
- Adopting Page
- Economic Impact Statement
- Public Input Statement
- Scientific Information Statement (if applicable)
- Incorporated by Reference Statement (if applicable)
- Clean text of the rule (Amended text without annotation)
- Annotated text (Clearly marking changes from previous rule)
- Copy of ICAR acceptance e-mail
- A copy of comments received during the Public Notice and Comment Period.
- Responsiveness Summary (detailing agency’s decisions to reject or adopt suggested changes received as public comment).

All forms submitted to the Office of the Secretary of State, requiring a signature shall be hand signed original signatures of the appropriate adopting authority or authorized person, and all filings are to be submitted, no later than 3:30 pm on the last scheduled day of the work week.

**Certification Statement:** As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I approve the contents of this filing entitled:

**Rule Title: Required Agricultural Practices Rule for The Agricultural Nonpoint Source Pollution Control Program**

 \_\_\_\_\_, on 9/12/2016 \_\_\_\_\_.  
 (signature) (date)

Printed Name and Title:  
 Charles R. Ross, Jr., Secretary

RECEIVED BY: \_\_\_\_\_

- Final Proposed Rule Coversheet
- Adopting Page
- Economic Impact Statement
- Public Input Statement
- Scientific Information Statement (if applicable)
- Incorporated by Reference Statement (if applicable)
- Clean text of the rule (Amended text without annotation)
- Annotated text (Clearly marking changes from previous rule)
- ICAR Approval received by E-mail.
- Copy of Comments
- Responsiveness Summary

1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The  
Agricultural Nonpoint Source Pollution Control Program

2. PROPOSED NUMBER ASSIGNED BY THE SECRETARY OF STATE

16P-015

3. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

4. PRIMARY CONTACT PERSON:

*(A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE).*

Name: Jim Leland

Agency: The Vermont Agency of Agriculture, Food and  
Markets

Mailing Address: 116 State Street, Montpelier, VT 05620

Telephone: 802 828 - 3478 Fax: 802 828 - 1410

E-Mail: Jim.Leland@vermont.gov

Web URL *(WHERE THE RULE WILL BE POSTED)*:

<http://agriculture.vermont.gov/>

5. SECONDARY CONTACT PERSON:

*(A SPECIFIC PERSON FROM WHOM COPIES OF FILINGS MAY BE REQUESTED OR WHO MAY ANSWER QUESTIONS ABOUT FORMS SUBMITTED FOR FILING IF DIFFERENT FROM THE PRIMARY CONTACT PERSON).*

Name: Laura DiPietro

Agency: The Vermont Agency of Agriculture, Food and  
Markets

Mailing Address: 116 State Street, Montpelier, VT 05620

Telephone: 802 828 - 1289 Fax: 802 828 - 1410

E-Mail: Laura.DiPietro @vermont.gov

6. RECORDS EXEMPTION INCLUDED WITHIN RULE:

*(DOES THE RULE CONTAIN ANY PROVISION DESIGNATING INFORMATION AS CONFIDENTIAL; LIMITING ITS PUBLIC RELEASE; OR OTHERWISE EXEMPTING IT FROM INSPECTION AND COPYING?)* No

IF YES, CITE THE STATUTORY AUTHORITY FOR THE EXEMPTION:

PLEASE SUMMARIZE THE REASON FOR THE EXEMPTION:

7. LEGAL AUTHORITY / ENABLING LEGISLATION:

*(THE SPECIFIC STATUTORY OR LEGAL CITATION FROM SESSION LAW INDICATING WHO THE ADOPTING ENTITY IS AND THUS WHO THE SIGNATORY SHOULD BE. THIS SHOULD BE A SPECIFIC CITATION NOT A CHAPTER CITATION).*

6 V.S.A. § 4810a(a)

8. THE FILING HAS CHANGED SINCE THE FILING OF THE PROPOSED RULE.
9. THE AGENCY HAS INCLUDED WITH THIS FILING A LETTER EXPLAINING IN DETAIL WHAT CHANGES WERE MADE, CITING CHAPTER AND SECTION WHERE APPLICABLE.
10. SUBSTANTIAL ARGUMENTS AND CONSIDERATIONS WERE NOT RAISED FOR OR AGAINST THE ORIGINAL PROPOSAL.
11. THE AGENCY HAS INCLUDED COPIES OF ALL WRITTEN SUBMISSIONS AND SYNOPSES OF ORAL COMMENTS RECEIVED.
12. THE AGENCY HAS INCLUDED A LETTER EXPLAINING IN DETAIL THE REASONS FOR THE AGENCY'S DECISION TO REJECT OR ADOPT THEM.
13. **CONCISE SUMMARY (150 WORDS OR LESS):**  
The Required Agricultural Practices (RAPs) are farm and land management practices that will control and reduce agricultural nonpoint source pollution and subsequent nutrient losses from farm fields and production areas to surface and ground waters of the State or across property boundaries. The RAPs also establish minimum construction and siting requirements for farm structures in floodplains, floodways, river corridors, and flood hazard areas.
14. **EXPLANATION OF WHY THE RULE IS NECESSARY:**  
As defined in 6 V.S.A. Chapter 215, §§ 4810 and 4810a, the Required Agricultural Practices (RAPs) shall be management standards to be followed by all persons engaged in farming in this State. These standards shall address activities which have a potential for causing agricultural pollutants to enter the groundwater and waters of the State, including dairy and other livestock operations, all forms of crop and nursery operations and on-farm or agricultural fairground registered pursuant to 20 V.S.A. § 3902, and livestock and poultry slaughter and processing activities. The RAPs shall include, as well as promote and encourage,

practices for farmers in preventing agricultural pollutants from entering the groundwater and waters of the State when engaged in animal waste management and disposal, soil amendment applications, plant fertilization, and pest and weed control. Persons engaged in farming who are in compliance with these practices shall be presumed to not have a discharge of agricultural pollutants t

**15. LIST OF PEOPLE, ENTERPRISES AND GOVERNMENT ENTITIES AFFECTED BY THIS RULE:**

The Vermont Agency of Agriculture, Food and Markets  
Natural Resources Conservation Districts  
United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS)  
The University of Vermont (UVM) Extension System  
Farm organizations  
Environmental Organizations  
The Vermont Agency of Natural Resources (ANR)  
The Vermont Department of Health  
The General Public  
Conservation Reserve Enhancement Program (CREP)  
Best Management Practices  
Integrated Crop Management (ICM)  
The Vermont Department of Forests, Parks and Recreation

**16. BRIEF SUMMARY OF ECONOMIC IMPACT(150 WORDS OR LESS):**

We expect that the land management changes required by this rule will cost the average medium and large farm operation \$24,984.81, and the average small farm operation \$13,079.04. Farms will benefit from increased soil health and fertility, reduced risk of crop loss due to climatic extremes, and reduced costs associated with improved nutrient management. Other stakeholders, including the general public, will benefit from improved water quality and aquatic habitat as a result of this rule. The estimated reduction in greenhouse gas emissions associated with these land management changes are, at a minimum, 80,750 tonnes of CO2 equivalent per year. This rule balances the actions required to meet the State's water quality goals while considering and minimizing the economic burden on farms.

**17. A HEARING WAS HELD.**

**18. HEARING INFORMATION**

(THE FIRST HEARING SHALL BE NO SOONER THAN 30 DAYS FOLLOWING THE POSTING OF NOTICES ONLINE).

IF THIS FORM IS INSUFFICIENT TO LIST THE INFORMATION FOR EACH HEARING PLEASE ATTACH A SEPARATE SHEET TO COMPLETE THE HEARING INFORMATION.

Date: 6/21/2016

Time: 12:30 PM

Street Address: St. Albans Museum, 9 Church Street, St. Albans, VT

Zip Code: 05478

Date: 6/22/2016

Time: 12:30 PM

Street Address: Brandon American Legion, 55 Franklin Street, Brandon, VT

Zip Code: 05733

Date: 6/23/2016

Time: 12:30 PM

Street Address: 164 Chelsea Street, South Royalton, VT

Zip Code: 05068

Date: 6/27/2016

Time: 12:30 PM

Street Address: Fraternal Order of the Eagles 2282 VT-11, Manchester Center, VT

Zip Code: 05255

Date: 6/28/2016

Time: 12:30 PM

Street Address: Newport American Legion, 160 Freeman Street, Newport, VT

Zip Code: 058550

Date: 6/29/2016

Time: 12:30 PM

Street Address: Brattleboro American Legion, 32 Linden Street, Brattleboro, VT

Zip Code: 05301

Date:

Time: AM

Street Address:

Zip Code:

Date:

Time: AM

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Zip Code:

19. DEADLINE FOR COMMENT (NO EARLIER THAN 7 DAYS FOLLOWING LAST HEARING):

7/7/2016

20. KEYWORDS (PLEASE PROVIDE AT LEAST 3 KEYWORDS OR PHRASES TO AID IN THE SEARCHABILITY OF THE RULE NOTICE ONLINE).

Required Agricultural Practices

Pollution Control

Farm Management Practices

Flood Hazard

Flood Plains

Water Quality



# Administrative Procedures – Adopting Page

## Instructions:

This form must be completed for each filing made during the rulemaking process:

- Proposed Rule Filing
- Final Proposed Filing
- Adopted Rule Filing
- Emergency Rule Filing

Note: To satisfy the requirement for an annotated text, an agency must submit the entire rule in annotated form with proposed and final proposed filings. Filing an annotated paragraph or page of a larger rule is not sufficient. Annotation must clearly show the changes to the rule.

When possible the agency shall file the annotated text, using the appropriate page or pages from the Code of Vermont Rules as a basis for the annotated version. New rules need not be accompanied by an annotated text.

1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The  
Agricultural Nonpoint Source Pollution Control Program

2. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

3. AGENCY REFERENCE NUMBER, IF ANY:

None

4. TYPE OF FILING (*PLEASE CHOOSE THE TYPE OF FILING FROM THE DROPDOWN MENU BASED ON THE DEFINITIONS PROVIDED BELOW*):

- **AMENDMENT** - Any change to an already existing rule, even if it is a complete rewrite of the rule, it is considered an amendment as long as the rule is replaced with other text.
- **NEW RULE** - A rule that did not previously exist even under a different name.
- **REPEAL** - The removal of a rule in its entirety, without replacing it with other text.

This filing is **AN AMENDMENT OF AN EXISTING RULE** .

5. LAST ADOPTED (*PLEASE PROVIDE THE SOS LOG#, TITLE AND LAST DATE OF ADOPTION FOR THE EXISTING RULE*):

SOS Log# 06-012, Accepted Agricultural Practices  
Regulations, 04/24/2006 effective date

# Administrative Procedures – Economic Impact Statement

## Instructions:

In completing the economic impact statement, an agency analyzes and evaluates the anticipated costs and benefits to be expected from adoption of the rule. This form must be completed for the following filings made during the rulemaking process:

- Proposed Rule Filing
- Final Proposed Filing
- Adopted Rule Filing
- Emergency Rule Filing

Rules affecting or regulating public education and public schools must include cost implications to local school districts and taxpayers in the impact statement (see 3 V.S.A. § 832b for details).

The economic impact statement also contains a section relating to the impact of the rule on greenhouse gases. Agencies are required to explain how the rule has been crafted to reduce the extent to which greenhouse gases are emitted (see 3 V.S.A. § 838(c)(4) for details).

All forms requiring a signature shall be original signatures of the appropriate adopting authority or authorized person.

**Certification Statement:** As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I conclude that this rule is the most appropriate method of achieving the regulatory purpose. In support of this conclusion I have attached all findings required by 3 V.S.A. §§ 832a, 832b, and 838(c) for the filing of the rule entitled:

**Rule Title: Required Agricultural Practices Rule for The Agricultural Nonpoint Source Pollution Control Program**

 \_\_\_\_\_, on 9/12/2016  
(signature) (date)

Printed Name and Title:

Charles R. Ross, Jr., Secretary

*BE AS SPECIFIC AS POSSIBLE IN THE COMPLETION OF THIS FORM, GIVING FULL INFORMATION ON YOUR ASSUMPTIONS, DATABASES, AND ATTEMPTS TO GATHER OTHER INFORMATION ON THE NATURE OF THE COSTS AND BENEFITS INVOLVED. COSTS AND BENEFITS CAN INCLUDE ANY TANGIBLE OR INTANGIBLE ENTITIES OR FORCES WHICH WILL MAKE AN IMPACT ON LIFE WITHOUT THIS RULE.*

1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The  
Agricultural Nonpoint Source Pollution Control Program

2. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

3. CATEGORY OF AFFECTED PARTIES:

*LIST CATEGORIES OF PEOPLE, ENTERPRISES, AND GOVERNMENTAL ENTITIES POTENTIALLY AFFECTED BY THE ADOPTION OF THIS RULE AND THE ESTIMATED COSTS AND BENEFITS ANTICIPATED:*

ANTICIPATED:

This rule requires management changes and targeted conservation practice implementation on farms in order to protect water quality. The economic impact of these changes depend largely on the size and type of the farm and their specific obligations under the rule. In general, livestock farms and farms growing annual crops in floodplain areas will be most affected by the rules. Provisions in this rule that we expect to have an economic impact include:

- Development and implementation of Nutrient Management Plans for Certified Small Farm Operations.
- Increase in vegetated buffer width on streams from 10 feet to 25 feet for Small Farm Operations.
- Implementation of 10 feet wide vegetated buffers on field ditches for all farms.
- Implementation of cover crops on frequently flooded soils for all farms.
- Increase in vegetated buffer width on surface water from 25 feet to 100 feet for all annual cropland that has a slope greater than or equal to 10%.

There are a number of federal and state programs that offer technical and financial assistance to farmers and landowners seeking to implement the management changes and conservation practices required by this rule. These programs will lessen the economic impact to farmers who choose to participate, and will also have an impact on the organizations administering the programs.

Additionally, other stakeholders will be affected by the implementation of this rule, either directly or indirectly. This section outlines the parties expected to be affected by the implementation of this rule, and estimates the economic costs and benefits affecting each party.

Permitted Medium and Large Farm Operations (MFOs, LFOs)  
- There are currently 180 permitted Medium and Large Farm Operations in Vermont, which manage an estimated half of Vermont's agricultural land.

We estimate that an average MFO of 536 acres would need to implement approximately 17 acres of vegetated buffers on their farm ditches as a result of the 10 feet wide buffer on farm ditches requirement in this rule, costing the average medium sized farm \$9,872.24 (\$580.72 per acre). This cost includes foregone income from lost corn production, and is likely a high estimate since this calculation assumes no buffers are currently in place on ditches.

For annual cropland that has a slope greater than 10%, MFOs and LFOs will need to increase their vegetated buffer widths on surface water from 25 feet to 100 feet, costing the average sized MFO \$10,580.71 to implement an estimated 18.22 acres of additional vegetated buffer. Exceptions to the required vegetative buffer zone widths may be considered upon request on a site specific basis according to standards approved by the Secretary, but in no case shall a buffer zone be less than 10 feet in width.

Another provision of this rule requires the establishment of cover crops on farm fields that have Frequently Flooded Soils, as designated by the USDA NRCS soil survey. We estimate that between 8% and 16% of cropland statewide falls under the Frequently

Flooded Soils classification. Further, of all Cropland in the state, it is estimated that in a given year, 3% of cropland in Vermont would be required to be covercropped under this provision. In a given year, it is estimated that 12% of Vermont's 'Annual Crop' fields—as defined in the rule—would require cover crops under this provision. This would require the average sized MFO to implement as much as 86 acres of cover crop as a result of this rule, costing them \$7,641.96 per year (\$88.86 per acre). This cost is seen as an upper-end estimate, because the percentage of fields effected represent "croppable" acres, that is, they could be planted to an annual crop in a given year and would thus be required to have cover crops applied to them. However, croppable acres also represents land that is planted to permanent hay, or land that is in a crop rotation between an annual crop and hay. Therefore, in any given year, the actual cost to the average farm is likely to be much lower. Running a separate analysis, we estimate that of those "croppable" acres, only 3% are planted to an annual crop on land that would be classified as having frequently flooded soils in a given year, or approximately 16 acres on an average sized 536 acre MFO. Therefore, a more realistic estimated cost of this requirement to an average size MFO in any given year will be closer \$1,421.76. The Agency expects the actual cost to fall in the middle of the two ranges.

In order for MFOs and LFOs to establish cover crops in the aforementioned areas, they may need to shift to planting shorter season corn on their frequently flooded corn fields. Studies conducted by the University of Vermont Extension Service have shown that shorter season corn varieties can produce equally as well, if not better, than typical longer season varieties in Vermont. Therefore, we estimate that there will be no significant economic impact from MFOs and LFOs planting shorter season corn in order to establish cover crop by October 1st (broadcast seed) or October 15th (drilled seed) on their Frequently Flooded soils.

In addition to cover crop requirements on land that is classified as Frequently Flooded, MFOs and LFOs will be

restricted from applying manure and other agricultural wastes to that land from October 16th to April 14th, or about 2 ½ months longer of a restriction on applying these wastes than land not classified as Frequently Flooded. While this does reflect a change in management, we do not foresee this as having a significant economic impact on the majority of farms, as the adoption of no-cost management changes prioritizing spreading of manure on frequently flooded lands will satisfy the requirements of the proposed rule. Farms will be able to apply for a variance to this requirement if they can demonstrate that they can manage the land in a way that prevents significant sediment and nutrient losses from their land.

This rule requires that all gully erosion be stabilized and controlled. The most common conservation practice used for gully erosion is the implementation of a grassed waterway. However, MFOs and LFOs should already be addressing their gully erosion through the implementation of their Nutrient Management Plans, per the NRCS 590 practice standard. Therefore, we do not expect a significant economic impact to MFOs and LFOs regarding gully stabilization as a result of this rule.

Small Farm Operations and Certified Small Farm Operations (SFOs, CSFOs) - There are approximately 7,000 small farms, 1,500 of which will likely be required to certify their Small Farm Operations under this rule. We estimate that small farms operate roughly 50% of all agricultural land in Vermont.

This rule requires CSFOs to develop and implement nutrient management plans on their land to the USDA NRCS 590 practice standard. We estimate the development of an NMP on an average small farm to cost \$2,938.00, and the implementation of this plan to cost an average CSFO of 107 acres an additional \$2,675.00. However, it should be noted that there will likely be a significant economic benefit to implementing these nutrient management plans as a result of optimized yields, and a reduced need to purchase fertilizer and better soil health and retention.

We estimate that an average SFO that owns 107 acres would need to implement approximately 3.4 acres of vegetated buffers on their farm ditches as a result of the 10 foot wide buffer on farm ditches requirement in this rule, costing them \$1,974.45 (\$580.72 per acre). This cost includes foregone income from lost corn production, and is likely a high estimate since this calculation assumes no buffers are currently in place on ditches.

All small farms will be required to increase their vegetated buffer width on surface water from 10 feet to 25 feet. We estimate that this will require the average sized small farm to implement 4.27 acres of vegetated buffer, costing them approximately \$2,479.67.

For annual cropland that has a slope greater than 10%, SFOs will need to increase their vegetated buffer widths on surface water from 25 feet to 100 feet, costing the average sized SFO \$2,113.82 to implement an estimated 3.64 acres of additional vegetated buffer.

Analogous to the impact on Medium and Large Farm Operations, another provision of this rule requires the establishment of cover crops on annual crop fields that have Frequently Flooded soils, as designated by the USDA NRCS soil survey. We estimate that between 8% and 16% of cropland falls under the Frequently Flooded Soils classification. Further, of all cropland in the state, it is estimated that in a given year, 3% of land in Vermont would be required to be cover cropped under this provision. In a given year, 12% of Vermont's 'Annual Crop' fields—as defined in the rule—would require cover crops, and would require the average sized SFO to implement approximately 17 acres of cover crop as a result of this rule, costing them \$1,510.96 per year (\$88.86 per acre). Again, we believe this is an upper-end estimate, because the percentage of fields effected represent "croppable" acres, as discussed under the impact to MFOs and LFOs. Running the same analysis used to create a more realistic yearly impact for an average sized MFO, we estimate that this rule would effect approximately 3.21 acres (3%) on an average sized 107 acre SFO in any given year.

Therefore, a more realistic estimated cost of this requirement to an average size SFO in any given year will be closer \$285.24. The Agency expects the actual cost to fall in the middle of the two ranges.

Following the same rule which applies to MFOs and LFOs, SFOs will be restricted from applying manure and other agricultural wastes to Frequently Flooded cropland from October 16th to April 14th, or about 2 ½ months longer of a restriction on applying these wastes than land not classified as frequently flooded. While this does reflect a change in management, we do not foresee this as having a significant economic impact on the majority of farms, as the adoption of no-cost management changes prioritizing the spreading of manure on Frequently Flooded lands will satisfy the requirements of the proposed rule. Again, farms will be able to apply for a variance to this requirement if they can demonstrate that they can manage the land in a way that prevents significant sediment and nutrient losses from their land.

SFOs will be required to stabilize gully erosion where it exists on their land (MFO and LFOs are assumed to have already addressed these issues as part of existing permit rules). While we are not able to estimate how many acres of cropland will need gully stabilization, the most common practice used to address this issue is the implementation of grassed waterways, which we estimate to cost \$0.25 per square foot.

We estimate that there will be a significant economic benefit to implementing the management changes required under this rule from improvements in soil fertility and soil health, and reduced risk of crop loss as improved soil health increases crop resiliency to climatic extremes. There are substantial benefits to the farm from managing these areas of erosion due to the retention of soils in the field as well.

Technical Service Providers - Technical service providers will likely see an increase in business as a result of this rule, as farmers seek technical assistance in changing farm management. Custom manure applicators will see an economic cost of needing



certification to apply manure on farms. We anticipate that this cost will be negligible, as it requires eight hours of training every five years. Act 149 of 2016 will require an annual certification fee of \$30.00 for each full-time employee of a custom manure applicator business.

USDA Natural Resources Conservations Service (NRCS) - The proposed rule will likely increase participation in the NRCS programs, especially the Environmental Quality Incentives Program (EQIP). NRCS programs could significantly reduce the cost of implementation of this rule for farmers who choose to participate in their programs.

The Agency of Natural Resources (ANR) - ANR may have increased costs as a result of this rule. These costs are a result of additional coordination that may be required with the Agency of Agriculture and the re-drafting of the Memorandum of Understanding for that Ag Nonpoint Source Pollution Reduction Program, and coordinating program, policy and compliance efforts.

Fishing Industry - We expect there to be a positive long-term economic impact to the State's fisheries and fishing industry as a result of this rule. Water quality improvements associated with the implementation of this rule should improve fish habitat, and reduce algal blooms that can result in large fish kills.

The General Public - The general public will benefit from this rule through improved water quality. Vermont attracts \$2.5 billion in tourism spending each year, of which \$300 million is from second-home owners and visitors in and around Lake Champlain. According to a recent University of Vermont study, a minor decrease in water quality in Lake Champlain-measured as just a one meter decrease of water clarity-could end up costing \$12.6 million in reduced tourism spending every year in July and August alone.

Clean water is also valuable for protecting our investments. In 2015, the grand list in Georgia, Vermont, dropped by \$1.8 million due to reassessments

of 37 lakeside properties with declining water quality. The same UVM study projected that a one-meter increase in water clarity would result in a 37 percent increase in seasonal home prices. By maintaining clean water, we can protect property values and the economy, statewide. Agriculture will contribute a significant portion of the reductions for phosphorus for Lake Champlain and is one part of the 'all-in' effort to improve water quality statewide.

Vermont Association of Conservation Districts (VACD) - VACD may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

Natural Resources Conservation Districts (NRCDS) - The NRCDS may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

University of Vermont Extension Service (UVM Ext.) - UVM Ext. may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

Environmental Organizations - Environmental Organizations will benefit from improved water quality and aquatic habitat as a result of this rule as well as increased opportunities for grants and contracts for local implementation and education efforts.

#### 4. IMPACT ON SCHOOLS:

*INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON PUBLIC EDUCATION, PUBLIC SCHOOLS, LOCAL SCHOOL DISTRICTS AND/OR TAXPAYERS:*

This rule is not expected to have any significant impact on schools.

#### 5. COMPARISON:

*COMPARE THE ECONOMIC IMPACT OF THE RULE WITH THE ECONOMIC IMPACT OF OTHER ALTERNATIVES TO THE RULE, INCLUDING NO RULE ON THE SUBJECT OR A RULE HAVING SEPARATE REQUIREMENTS FOR SMALL BUSINESS:*

Requirements established through Act 64 and existing rules for agricultural water quality do not allow for the consideration of no rule for the sake of comparison. The intent of the RAP rule is to set a standard to be followed by farms in managing land and infrastructure to reduce or eliminate adverse water quality impacts and represents a significant change in accomplishing that goal. The Agency strives to establish standards that are achievable through enhanced land management practices while limiting the economic impact of those practices to the farm.

Another alternative is one that was entertained while drafting this rule, and represents requiring more stringent environmental standards generally. For example, complete livestock exclusion on all surface waters could be required, the animal thresholds to trigger small farm certification could be lower thus impacting substantially more farms, opportunities for alternative management methods could be prohibited and a one size fits all rule could be established. The Agency believes that this approach would not succeed in meeting the goals of the programs involved and would result in less compliance and therefore less improvement in water quality.

The proposed rule prioritized the water quality impacts and the associated economic impacts in order to obtain the highest water quality benefits without creating unreasonable economic burdens.

**6. FLEXIBILITY STATEMENT:**

*COMPARE THE BURDEN IMPOSED ON SMALL BUSINESS BY COMPLIANCE WITH THE RULE TO THE BURDEN WHICH WOULD BE IMPOSED BY ALTERNATIVES CONSIDERED IN 3 V.S.A. § 832a:*

Many requirements in this rule have the ability to request an alternative standard from the Secretary on a case-by-case basis by demonstrating how the requirement impacts the farm and the proposed alternative could still maintain water quality goals. This allows for a

significant amount of flexibility in how farmers are able to manage their land.

7. GREENHOUSE GAS IMPACT: *EXPLAIN HOW THE RULE WAS CRAFTED TO REDUCE THE EXTENT TO WHICH GREENHOUSE GASES ARE EMITTED, EITHER DIRECTLY OR INDIRECTLY, FROM THE FOLLOWING SECTORS OF ACTIVITIES:*

a. TRANSPORTATION —

*IMPACTS BASED ON THE TRANSPORTATION OF PEOPLE OR PRODUCTS (e.g., "THE RULE HAS PROVISIONS FOR CONFERENCE CALLS INSTEAD OF TRAVEL TO MEETINGS" OR "LOCAL PRODUCTS ARE PREFERENTIALLY PURCHASED TO REDUCE SHIPPING DISTANCE."):*

This rule is expected to have little to no effect on greenhouse gas emissions related to transportation.

b. LAND USE AND DEVELOPMENT —

*IMPACTS BASED ON LAND USE AND DEVELOPMENT, FORESTRY, AGRICULTURE ETC. (e.g., "THE RULE WILL RESULT IN ENHANCED, HIGHER DENSITY DOWNTOWN DEVELOPMENT." OR "THE RULE MAINTAINS OPEN SPACE, FORESTED LAND AND/OR AGRICULTURAL LAND."):*

The implementation of this rule is expected to result in a significant reduction of greenhouse gasses relating to land use and development. These reductions are primarily driven by carbon sequestration and reduced fuel use resulting from on-farm land management changes. Specifically, using the NRCS COMET planner tool, the statewide implementation of 75,000 acres of cover crops and 42,000 acres of filter strips/buffers alone are expected to result in the reduction of 80,750 tonnes of CO<sub>2</sub> equivalent per year, which is similar to removing 21,400 cars from the road.

c. BUILDING INFRASTRUCTURE —

*IMPACTS BASED ON THE HEATING, COOLING AND ELECTRICITY CONSUMPTION NEEDS (e.g., "THE RULE PROMOTES WEATHERIZATION TO REDUCE BUILDING HEATING AND COOLING DEMANDS." OR "THE PURCHASE AND USE OF EFFICIENT ENERGY STAR APPLIANCES IS REQUIRED TO REDUCE ELECTRICITY CONSUMPTION."):*

This rule is not expected to have a direct impact on greenhouse gas emissions relating to building infrastructure. However, it is expected to increase farmer enrollment in USDA - NRCS programs, which could lead to some farms taking advantage of financial assistance for energy audits and energy efficiency retrofits offered in their EQIP program. This could lead to a significant reduction in greenhouse gasses emissions from increased building infrastructure

efficiency on Vermont farms. The impact from this is impossible to estimate at this point in time.

d. WASTE GENERATION / REDUCTION —

*IMPACTS BASED ON THE GENERATION OF WASTE OR THE REDUCTION, REUSE, AND RECYCLING OPPORTUNITIES AVAILABLE (e.g., "THE RULE WILL RESULT IN REUSE OF PACKING MATERIALS." OR "AS A RESULT OF THE RULE, FOOD AND OTHER ORGANIC WASTE WILL BE COMPOSTED OR DIVERTED TO A 'METHANE TO ENERGY PROJECT'."):*

This rule is not expected to have a direct impact on greenhouse gas emissions relating to waste generation/reduction. However, this rule is expected to increase farmer enrollment in USDA - NRCS programs, which may lead to some farms taking advantage of federal programs offering financial assistance for on-farm methane digesters, which could lead to a significant reduction in greenhouse gasses emissions from waste on Vermont farms. The impact from this is impossible to estimate at this point in time.

e. OTHER —

*IMPACTS BASED ON OTHER CRITERIA NOT PREVIOUSLY LISTED:*

This rule is not expected to have any other significant impacts on greenhouse gas emissions. Several data sources were used to generate the estimated economic impact of this rule. The number of farms and size of farms were estimated using a combination of the 2012 USDA NASS Agricultural Census Data, and existing VAAFM data from our MFO and LFO permit programs. Our estimate of SFOs managing half of the land, and MFOs and LFOs managing the other half was based on information for them same Agricultural Census Data, and reaffirmed by the same conclusion reached for the Missisquoi Bay Watershed in a 2012 Critical Source Area report by Stone Environmental, Inc. Cost data on the implementation of conservation practices, such as cover crop, grassed filter strips, and grassed waterways, were taken from the Vermont NRCS Estimated Practice Costs 'Gray Box' Data From Program Payment Schedules Fiscal Year 2016. Estimates for needed cover crop and vegetated buffer implementation were generated using a combination of available Soil GIS data, stream data, enhanced hydrology data, and the results of a 2015 VAAFM ditch network study in St. Albans Bay. Estimates for Frequently Flooded agricultural lands included data gathered from the USDA NRCS Soil Survey (GeologicSoils\_SO layer) and the use of the 2014 Crop Data Layer from USDA NASS.

# Administrative Procedures – Public Input Statement

## Instructions:

In completing the public input statement, an agency describes what it did do, or will do to maximize the involvement of the public in the development of the rule. This form must be completed for the following filings made during the rulemaking process:

- Proposed Rule Filing
- Final Proposed Filing
- Adopted Rule Filing
- Emergency Rule Filing

1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The  
Agricultural Nonpoint Source Pollution Control Program

2. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

3. PLEASE LIST THE STEPS THAT HAVE BEEN OR WILL BE TAKEN TO MAXIMIZE PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THE PROPOSED RULE:

Since October 2015, the Vermont Agency of Agriculture, Food and Markets (VAAF) has hosted informational meetings, coordinated discussion groups, and presented, through a variety of media, the Required Agricultural Practices revisions to partnering agencies, partnering organizations, Technical Service Providers (Nutrient Management Planners), the regulated community, and the agricultural community at large. Revision of the Required Agricultural Practices Rule has been achieved through continued involvement from the Natural Resources Conservation Service, Conservation Districts, Agency of Natural Resources, Environmental Leaders, Agricultural Leaders, Agricultural Service Organizations, Technical Service Providers, Land Treatment Planners, the regulated community, the agricultural community at large, and the general public.

The proposed rule has been posted on the Agency's website.

The public involvement process to date consists of:

Event Subject	Event Date	# of Attendees
RAP Focus Group Discussion 1st Draft	10/15/2015	20
RAP Focus Group Discussion 1st Draft	10/19/2015	20
RAP Focus Group Discussion 1st Draft	10/22/2015	3
RAP Focus Group Discussion 1st Draft	10/22/2015	12
RAP Focus Group Discussion 1st Draft	10/23/2015	20
RAP Focus Group Discussion 1st Draft	10/27/2015	20
RAP Focus Group Discussion 1st Draft	10/28/2015	13
RAP Focus Group Discussion 1st Draft	11/5/2015	24
RAP Focus Group Discussion 1st Draft	11/6/2015	50
RAP Focus Group Discussion 1st Draft	11/18/2015	5
RAP Focus Group Discussion 1st Draft	11/16/2015	20
RAP Focus Group Discussion 1st Draft	11/18/2015	4
RAP Focus Group Discussion 1st Draft	11/20/2015	11
RAP Focus Group Discussion 1st Draft	11/20/2015	22
RAP Focus Group Discussion 1st Draft	11/20/2015	10
RAP Focus Group Discussion 1st Draft	12/9/2015	10
RAP Focus Group Discussion 1st Draft	12/9/2015	31
1st Draft RAP Public Meeting	11/17/2015	64
1st Draft RAP Public Meeting	11/17/2015	48
1st Draft RAP Public Meeting	11/19/2015	98
1st Draft RAP Public Meeting	11/19/2015	54
1st Draft RAP Public Meeting	12/3/2015	59
1st Draft RAP Public Meeting	12/3/2015	40
1st Draft RAP Public Meeting	12/8/2015	47
1st Draft RAP Public Meeting	12/8/2015	65
1st Draft RAP Public Meeting	12/10/2015	46
1st Draft RAP Public Meeting	12/10/2015	61
2nd Draft RAP Revision Discusison	1/5/2016	24
2nd Draft RAP Revision Discusison	1/8/2016	10

## Public Input Statement

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2nd Draft RAP Revision Discusison	1/11/2016	16
2nd Draft RAP Revision Discusison	1/13/2016	30
2nd Draft RAP Revision Discusison	1/16/2016	14
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2nd Draft RAP Revision Discusison	2/4/2016	30
2nd Draft RAP Revision Discusison	2/4/2016	16
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2nd Draft RAP Discussion	2/24/2016	20
2nd Draft RAP Discussion	2/24/2016	8
2nd Draft RAP Discussion	2/25/2016	10
2nd Draft RAP Discussion	3/2/2016	15
2nd Draft RAP Discussion	3/3/2016	10
2nd Draft RAP Discussion	3/4/2016	10
2nd Draft RAP Discussion	3/8/2016	30
2nd Draft RAP Discussion	3/8/2016	20
2nd Draft RAP Discussion	3/9/2016	8
2nd Draft RAP Discussion	3/9/2016	20
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2nd Draft RAP Discussion	3/11/2016	14
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2nd Draft RAP Discussion	3/15/2016	14
2nd Draft RAP Discussion	3/15/2016	30



Public Input Statement

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2nd Draft RAP Discussion	3/22/2016	3
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2nd Draft RAP Discussion	4/5/2016	12
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2nd Draft RAP Discussion	4/12/2016	18
2nd Draft RAP Discussion	4/14/2016	25
2nd Draft RAP Discussion	4/20/2016	10
RAP Webinar	5/26/2016	13
Champlain Valley Farmer's Coalition	6/1/2016	20
RAP Webinar	6/17/2016	20
Public Hearing RAP Proposed Rule	6/21/2016	98
Public Hearing RAP Proposed Rule	6/22/2016	47
Public Hearing RAP Proposed Rule	6/23/2016	48
Public Hearing RAP Proposed Rule	6/27/2016	32
Public Hearing RAP Proposed Rule	6/28/2016	32
Public Hearing RAP Proposed Rule	6/29/2016	20
TOTAL: 89 Meetings	2140 attendees	

4. BEYOND GENERAL ADVERTISEMENTS, PLEASE LIST THE PEOPLE AND ORGANIZATIONS THAT HAVE BEEN OR WILL BE INVOLVED IN THE DEVELOPMENT OF THE PROPOSED RULE:

Addison County Relocalization Network  
Addison County Road Foreman Association  
Agricultural Consulting Services  
Bennington County Natural Resources Conservation District  
Bob White Systems  
Caledonia County Natural Resources Conservation District  
Champlain Valley Farmers Coalition  
Chittenden County Regional Planning Commission  
Connecticut River Farmers' Watershed Alliance  
Conservation Law Foundation  
Department of Environmental Conservation  
Environmental and Natural Resources Law Clinic - Vermont Law School  
Farm Bureau  
Farm Service Agency  
Farmers Watershed Alliance  
Franklin County Farm Bureau  
Friends of Northern Lake Champlain  
Lake Champlain Committee  
Lake Champlain International  
Lintilhac Foundation  
Natural Resources Conservation Service  
Northeast Organic Farmers Association - Vermont  
Orleans County Advisory Board for Community National Bank  
Poultney Mettowee Natural Resources Conservation District  
Rural Vermont

Rutland County Natural Resources Conservation District  
Rutland Regional Planning Commission  
Sierra Club  
Southern Windsor Regional Planning Commission  
St. Albans Coop  
The Nature Conservancy  
Two Rivers Ottauquechee Regional Planning Commission  
University of Vermont Center for Sustainable  
Agriculture's Pasture Program  
University of Vermont Extension  
University of Vermont Extension Crop, Soil and Pasture  
Team  
University of Vermont Extension Northwest Crops & Soils  
Program  
Vermont Agency of Agriculture, Food & Markets  
Vermont Agency of Natural Resources, Department of  
Environmental Conservation  
Vermont Agency of Natural Resources, Department of  
Forests, Parks and Recreation  
Vermont Association of Conservation Districts  
Vermont Beef Producers Association  
Vermont Christmas Tree Growers Association  
Vermont Conservation Voters  
Vermont Fresh Network  
Vermont Grass Farmers Association  
Vermont Horse Council  
Vermont Legislature  
Vermont Planners Association  
Vermont Sheep and Goat Association  
Vermont Trout Unlimited  
Vermont Vegetable and Berry Growers Association  
VT Food Funders Network

White River Natural Resources Conservation District  
Windham County Natural Resources Conservation District  
Windham Regional Planning Commission

For a more comprehensive list, please see the  
Responsiveness Summary and Copy of Comments

# Administrative Procedures – Incorporation by Reference Statement

## Instructions:

In completing the incorporation by reference statement, an agency describes any materials that are incorporated into the rule by reference and why the full text was not reproduced within the rule.

This form is only required when a rule incorporates materials by referencing another source without reproducing the text within the rule itself (e.g. federal or national standards, or regulations).


Copies of incorporated materials will be held by the Office of the Secretary of State until adoption or formal withdrawal of the rule is complete. Materials will be returned to the agency upon completion of the rule.

All forms requiring a signature shall be original signatures of the appropriate adopting authority or authorized person.

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**Certification Statement:** As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I certify that the text of the matter incorporated has been reviewed by an official of the agency. I further certify that the agency has the capacity and intent to enforce the rule entitled:

**Rule Title: Required Agricultural Practices Rule for The Agricultural Nonpoint Source Pollution Control Program**

 \_\_\_\_\_, on 9/12/2016.  
(signature) (date)

Printed Name and Title:

Charles R. Ross, Jr., Secretary

## 1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The  
Agricultural Nonpoint Source Pollution Control Program

## 2. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

3. DESCRIPTION (*DESCRIBE THE MATERIALS INCORPORATED BY REFERENCE*):

- 6 V.S.A. Chapter 215 (Agricultural Water Quality, found in Sec. 1.1)
- 20 V.S.A. § 3902 (Registration of fairs, found in Sec. 1.1)
- Act 64 of the Vermont General Assembly (2015 session, found in Sec. 1.3)
- 6 V.S.A. §§ 4991 - 4996 (Enforcement subchapter, found in Sec. 1.4)
- 6 V.S.A. § 21(6) (definition of raw agricultural commodity, found in Sec. 2.02)
- 44 C.F.R. § 59.1 (National Flood Insurance Program Regulations, definition of area of special flood hazard, found in Sec. 2.17)
- Appendix One of the Groundwater Protection Rule and Strategy (found in Sec. 2.22, 8(a), 8(b))
- 10 V.S.A. Chapter 48 (Groundwater Protection, found in Sec. 2.22 and 8(a))
- 6 V.S.A. § 911 (definition of economic poison, found in Sec. 2.27)
- Section I 23 of the Vermont Regulations for Control of Pesticides (definition of economic poison, in accordance with 6 V.S.A. Chapter 87, found in Sec. 2.27)
- ANR's Flood Hazard Area and River Corridor Protection Procedure (determination of annual flood event, found in Sec. 2.34)
- 10 V.S.A. § 1251(12) (definition of waste, found in Sec. 2.35)
- 6 V.S.A. § 4857(2) (definition of Medium Farm, found in Sec. 4.1(a)(2))

- 6 V.S.A. § 4871(c) (Certification due to water quality threat, found in Sec. 4.1(d))
- United States Department of Agriculture's Natural Resources Conservation Service (USDA NRCS) standards and specifications (Conservation Practices Standard Code 313 Waste Storage Facility, April 2007, found in Sec. 6.02(c)(3), 6.10(b), 7(b)(2), and 8(h))
- Vermont Fertilizer and Lime Regulations (Sec. XIII, Storage, Handling and Use of Fertilizer Materials, found in Sec. 6.02(h))
- 6 V.S.A. Chapter 87 (Control of Pesticides, found in Sec. 6.02(i))
- United States Department of Agriculture's Natural Resources Conservation Service (USDA NRCS) Nutrient Management Practice Code 590 (Conservation Practices Standard Code 590 Nutrient Management, August 2006, found in Sec. 6.03(a), (d), (e), and 10(b))
- Morgan's extractant (tool for finding Phosphorous Index, found in Sec. 6.03(c))
- Revised Universal Soil Loss Equation 2 (RUSLE2) (computer program that estimates rates of rill and interrill soil erosion caused by rainfall and its associated overland flow, found in Sec. 6.04(b) and 6.06(b)(8))
- United States Department of Agriculture (USDA) Soil Survey Flooding Frequency Class (map showing land subject to flooding, found in Sec. 6.04(d), 6.05(b)-(d), and 6.06(b)(9))
- DEC Water Supply Rules (rules for wells, found in Sec. 6.05(g) and 7(b)(2))
- 10 V.S.A. § 902(5) (definition of wetlands, found in Sec. 6.06(c)(3))
- 10 V.S.A. § 1972(6) (definition of potable water supply, found in Sec. 6.06(c)(4))
- 10 V.S.A. § 1021 (Alteration prohibited; exceptions, found in Sec. 6.10(a))
- Groundwater Quality Standards (found in Sec. 8(h) and (i))

- Flood Hazard Areas and River Corridor permit (found in Sec. 9(a))
- Medium Farm Operations Rule and Permits (found in Sec. 10(a), (b), and (d))
- Large Farm Operations Rule and Permits (found in Sec. 10(a), (b), and (d))

4. OBTAINING COPIES: *(EXPLAIN HOW THE MATERIAL(S) CAN BE OBTAINED BY THE PUBLIC, AND AT WHAT COST):*

All materials can be obtained online at no cost.

5. MODIFICATIONS *(PLEASE EXPLAIN ANY MODIFICATION TO THE INCORPORATED MATERIALS E.G., WHETHER ONLY PART OF THE MATERIAL IS ADOPTED AND IF SO, WHICH PART(S) ARE MODIFIED):*

None

6. REASONS FOR INCORPORATION BY REFERENCE *(EXPLAIN WHY THE AGENCY DECIDED TO INCORPORATE THE MATERIALS RATHER THAN REPRODUCE THE MATERIAL IN FULL WITHIN THE TEXT OF THE RULE):*

It would be burdensome to reproduce the material in full within the text of the rule when all that was needed from certain referenced rules and laws were definitions.

7. THE INCORPORATED MATERIALS HAVE BEEN REVIEWED BY THE FOLLOWING OFFICIAL OF THE AGENCY:

Jim Leland

8. THE ADOPTING AGENCY REQUESTS THAT ALL COPIES OF INCORPORATED MATERIALS BE RETURNED TO THE AGENCY .

Run Spell Check



## Agency Summary of Changes Made From RAP Proposed Rule to RAP Final Proposed Rule

Main document changes and comments

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1.1 Introduction: As defined in 6 V.S.A. Chapter 215,

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1.1 Preamble: Agriculture has been identified as a major contributor of non-point source pollution to surface waters of Vermont. For example, the Lake Champlain Total Maximum Daily Load (TMDL), as modeled by the Environmental Protection Agency, estimates that nutrient losses from agricultural activities represent 29% of the total phosphorous load to the Lake Champlain basin and over 40% of Vermont's contribution to the phosphorous load to the basin. Agriculture contributes non-point source pollution to surface and groundwater from multiple sources, including cropland erosion, farmstead management, crop storage, and manure storage and application. While contributions of non-point source pollution from agriculture may vary from watershed to watershed, the overall impact to water quality from agricultural lands, when not managed well, is significant.

The Vermont legislature first directed the Agency of Agriculture, Food and Markets to develop a comprehensive Agricultural Non-Point Source Pollution Reduction Program in 1992. The Accepted Agricultural Practices Rules (AAPs), which regulate farming activities in order to protect water quality, became effective in 1995 and were revised in 2006.

As a result of Act 64—the Vermont Clean Water Act—the Agency of Agriculture was tasked with updating the AAPs to further reduce the impact of agricultural activities to water quality across the State. The Required Agricultural Practices Rules (RAPs) are an updated version of the AAPs, re-written to a higher level of performance.

Act 64, which was signed into law by the Governor in June 2015, amended and enacted multiple requirements related to water quality in the State. The act required the Agency of Agriculture to amend several provisions of the AAPs in order to improve water quality in Vermont. The first change was to rename the Accepted Agricultural Practices Rules the Required Agricultural Practices Rules. The RAPs are standards to which all types of farms must be managed. Act 64 further required the Agency of Agriculture to:

- Establish requirements for a Small Farm Certification Program;
- Establish nutrient, manure, and waste storage standards;
- Make recommendations for soil health;
- Establish requirements for vegetated buffer zones;
- Establish requirements for livestock exclusion from surface water;
- Establish nutrient management planning standards; and

- Establish standards for soil conservation such as cover cropping

The standards and rules that follow are intended to improve the quality of all of Vermont's waters by reducing and eliminating cropland erosion, sediment losses, and nutrient losses through improved farm management techniques, technical and compliance assistance, and, where appropriate, enforcement. This rule strives to balance the complexity, variability, and requirements of farm management with the need to improve that management in order to meet the State's goals in improving and protecting water quality.

Soil quality and soil health are critical elements of an overall agricultural non-point source pollution reduction program. Agricultural soils are recognized as a critical resource for the overall prosperity of Vermont's agricultural community and for the public at large. Efforts to build soil organic matter, increase biological activity, and reduce compaction, including reduced tillage, use of composts, establishing crop rotations, cover cropping, and the elimination of annual cropping on highly vulnerable lands, will be essential to the success of programs whose goal is to improve Vermont's water quality. 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.

1.2 Enabling Legislation: As defined in 6 V.S.A.

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Barnyard and Feedlot means an area, either earthen or improved, where animals are confined by fences, other structures, or topography, are primarily sustained by supplemental feed, and where vegetation cover is sparse.

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is required to submit annual certification of compliance with

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, and is not a surface water as defined in Section 2.34 of this rule

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grown or produced as a result of farming		
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surface water or ditch VAAFM 9/13/2016 4:49:00 PM

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Practice

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Practices

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farm

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, and the establishment and maintenance of vegetated buffer zones and riparian buffer zones

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lambs

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goats

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or broilers

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certified

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(g) Over a three-year period, field

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or shall be exported off the farm within two years

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, actively managed as a compost, or moved to a suitable alternative location

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regulations

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Regulations

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leaf analysis.

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nutrient testing procedures.

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nutrient application

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practices to reduce phosphorus levels over time in soil, including eliminating or reducing manure applications, and shall implement

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, including eliminating or reducing manure applications

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that

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minimize

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prevent fieldborne

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or other specific crop management needs and

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cropland, vegetable cropland, or small grain cropland

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well

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water supply

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(h)

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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.

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spread

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applied

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to the seasonal winter spreading ban

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wells

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water supply

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flooding frequency class as described in

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Flooding Frequency Class

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to the winter spreading ban		
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no application zones		
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manure spreading setbacks		
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wells		
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water supplies		
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and ditches		
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all		
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inlets of		
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and maintenance		
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(a)

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being

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shall be properly stored, handled, and

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on the farm shall be buried or composted.

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according

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, so as

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the following standards:

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minimize adverse water quality impacts.

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a

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b

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b

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c

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or otherwise disposed of

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on unimproved sites

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Page 21: Deleted VAAFM 9/13/2016 4:49:00 PM  
wells

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supplies

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a minimum of

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(d) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

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at a minimum

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of

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from

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not owned by the farm

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composting

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supplies

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supply, property boundary,

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(a) Except at defined crossings and defined watering areas, adequate

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(a) Adequate

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from excessive

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to minimize

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(b)

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(b) Crossings and watering areas need to be maintained so as to minimize erosion and be adequately protective of surface waters.

(c)

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defined

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defined

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or an equivalent standard,

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no less than

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at least an average of

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in the

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within

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between

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of

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and

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of

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within

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between

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d

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d

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e

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well

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water supply

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well

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water supply

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) Siting

(1

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) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the setback distances from adjoining property lines, road rights-of-way, and adjacent surface water.

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(2) Local setbacks and setbacks designed by this rule shall be observed unless the Secretary has approved a farmer's written request for other reasonable setbacks for the specific farm structure being constructed or maintained in accordance with Section 9(b).

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(b) Local setbacks shall be observed unless the Secretary has approved a farmer's written request for other reasonable setbacks for the specific farm structure being constructed or maintained in accordance with Section 9(e).

(c) Notwithstanding the provision of Section 9(e)(2), and in addition to the provisions of Sections 9(a) and (b), new

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(4) Construction of new farm structures, specifically buildings and other farm structures that disturb one or more acres of land must obtain authorization from the ANR before commencing with land disturbance or construction activities.

(5) Existing Production Areas

Farm

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(A)

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(d)

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) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the setback distances from adjoining property lines, road rights-of-way, and adjacent surface water.

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(e) Construction of

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(B) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(C) Such structures do not include waste storage facilities if the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer.

(6) New Production Areas

(A)

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structures, excluding waste storage facilities, shall be constructed so that a minimum distance of 50 feet is maintained between the top of the bank of adjoining surface waters and the farm structure.

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(i)

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Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering,

(ii) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the

purposes of protecting ground water quality or surface water quality.

(B) The following

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setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:

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i  
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) 100 feet from the centerline of a public road;

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ii  
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) 100 feet from any abutting property line;

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iii) 200 feet from  
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the top of the bank of any surface water; and

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Structures –

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iv) 200 feet from public or private water supplies.

(b)  
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The Secretary may authorize the siting of a waste storage facility within 200 feet of a surface water or private water supply if the site is the best available site on the farm for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed

by a licensed engineer to meet USDA NRCS standards and specifications or an equivalent standard. If an equivalent design standard is used, the design and construction shall be certified by the Secretary, or a licensed professional engineer operating within the scope of his or her expertise.

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(B

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C

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not substantially or permanently impair

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be

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appropriate use or development

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site that is the best available on the farm for the purposes

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adjoining property, nor be detrimental to public health, safety, welfare,

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protecting ground water quality or surface water quality;

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the environment; and

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(2) The following minimum

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setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:

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) 100 feet from the centerline of a public road;

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B  

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) 100 feet from any abutting property line;

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C) 100 feet from

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the top of the bank of any surface water; and

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D) 200 feet from public or private wells.

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record keeping

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recordkeeping

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Practice

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Practices

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make all applications of manure or other agricultural wastes consistent with this rule and the requirements of the farm's Nutrient Management Plan.

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Certified custom applicators shall

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If a custom applicator has a request to apply manure or agricultural wastes on a farm that does not have a nutrient management plan as required, the applicator must notify the Agency and request the ability to proceed with the land application. The Secretary may require application restrictions.

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Secretary of State's Office. This rule will be subject to public hearing and comment prior to rule finalization.		
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Public comment on this RAPs draft should be submitted to <a href="mailto:AGR.RAP@vermont.gov">AGR.RAP@vermont.gov</a> .		
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## REQUIRED AGRICULTURAL PRACTICES RULE FOR THE AGRICULTURAL NONPOINT SOURCE POLLUTION CONTROL PROGRAM

### Section 1. General

1.1 Preamble: Agriculture has been identified as a major contributor of non-point source pollution to surface waters of Vermont. For example, the Lake Champlain Total Maximum Daily Load (TMDL), as modeled by the Environmental Protection Agency, estimates that nutrient losses from agricultural activities represent 29% of the total phosphorous load to the Lake Champlain basin and over 40% of Vermont's contribution to the phosphorous load to the basin. Agriculture contributes non-point source pollution to surface and groundwater from multiple sources, including cropland erosion, farmstead management, crop storage, and manure storage and application. While contributions of non-point source pollution from agriculture may vary from watershed to watershed, the overall impact to water quality from agricultural lands, when not managed well, is significant.

The Vermont legislature first directed the Agency of Agriculture, Food and Markets to develop a comprehensive Agricultural Non-Point Source Pollution Reduction Program in 1992. The Accepted Agricultural Practices Rules (AAPs), which regulate farming activities in order to protect water quality, became effective in 1995 and were revised in 2006.

As a result of Act 64—the Vermont Clean Water Act—the Agency of Agriculture was tasked with updating the AAPs to further reduce the impact of agricultural activities to water quality across the State. The Required Agricultural Practices Rules (RAPs) are an updated version of the AAPs, re-written to a higher level of performance.

Act 64, which was signed into law by the Governor in June 2015, amended and enacted multiple requirements related to water quality in the State. The act required the Agency of Agriculture to amend several provisions of the AAPs in order to improve water quality in Vermont. The first change was to rename the Accepted Agricultural Practices Rules the Required Agricultural Practices Rules. The RAPs are standards to which all types of farms must be managed. Act 64 further required the Agency of Agriculture to:

- Establish requirements for a Small Farm Certification Program;
- Establish nutrient, manure, and waste storage standards;
- Make recommendations for soil health;
- Establish requirements for vegetated buffer zones;
- Establish requirements for livestock exclusion from surface water;
- Establish nutrient management planning standards; and

- 1.5 **Enforcement:** Violations of this rule are subject to enforcement by the Secretary of the Vermont Agency of Agriculture, Food and Markets and the Attorney General under the provisions of 6 V.S.A. §§ 4991 - 4996 and additional remedies available to the State under other applicable Vermont law.
- 1.6 **Further considerations under the RAPs:** 6 V.S.A. § 4810a(b) requires that on or before January 15, 2018, the Secretary of Agriculture, Food and Markets shall amend by rule the Required Agricultural Practices in order to include requirements for reducing nutrient contribution to waters of the State from subsurface tile drainage. As part of the rule amendment process, the Secretary may also evaluate the current status of effectiveness of the Required Agricultural Practices, the implementation of additional best management practices, and the current water quality condition of waters of the State. The Secretary may consider additional changes to the Required Agricultural Practices, as appropriate, to meet the water quality goals of the State.

## Section 2. Definitions

- 2.01 **Agency** means the Vermont Agency of Agriculture, Food and Markets.
- 2.02 **Agricultural Product** means any raw agricultural commodity, as defined in 6 V.S.A. § 21(6), that is principally produced on the farm and includes products prepared from the raw agricultural commodities principally produced on the farm.
- 2.03 **Annual Cropland** means, for the purposes of this rule, land devoted to the production, cultivation, harvesting, and management of annual row crops, including sweet corn and pumpkins, but does not include:
- (a) vegetable, fruit, or berry crops grown for human consumption; and
  - (b) small grains.
- 2.04 **ANR** means the Vermont Agency of Natural Resources, and the Secretary of the Vermont Agency of Natural Resources and her or his designees.
- 2.05 **Barnyard and Feedlot** means an area, either earthen or improved, where animals are confined by fences, other structures, or topography, are primarily sustained by supplemental feed, and where vegetation cover is sparse.
- 2.06 **Buffer Zone** means an area of perennial vegetation between the edge of cropland and:
- (a) the top of the bank of an adjoining water of the State;
  - (b) a ditch that is not a surface water under State law and that is not a water of the United States under federal law; and

a silo, a building to house livestock or raise horticultural or agronomic plants, or customarily used to carry out the agricultural practices defined in Section 3.2 of this rule. A farm structure includes a barnyard or waste management system, either of which is created from an assembly of materials, including the supporting fill necessary for structural integrity, but excludes a dwelling for human habitation. A farm structure also must be used by a person who can demonstrate meeting the minimum threshold criteria as found in Section 3.1 of this rule.

2.16 Farming means:

- (a) the cultivation or other use of land for growing food, fiber, Christmas trees, maple sap, or horticultural, viticultural, and orchard crops; or
- (b) the raising, feeding, or management of livestock, poultry, fish, or bees; or
- (c) the operation of greenhouses; or
- (d) the production of maple syrup; or
- (e) the on-site storage, preparation, and sale of agricultural products principally produced on the farm; or
- (f) the on-site storage, preparation, production, and sale of fuel or power from agricultural products or wastes principally produced on the farm; or
- (g) the raising, feeding, or management of four or more equines owned or boarded by the farmer, including training, showing, and providing instruction and lessons in riding, training, and the management of equines.

2.17 Fertilizer means any substance containing one or more recognized plant nutrients that is used for its plant nutrient content and that is designed for use or claimed to have value in promoting plant growth or health, except unprocessed animal or vegetable manures and other products exempted by the Secretary.

2.18 Flood Hazard Area means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year (a.k.a. 100-yr flood). The term has the same meaning as "area of special flood hazard" under 44 C.F.R. § 59.1. The area may be designated as Zone A or AE on the National Flood Insurance Program maps.

2.19 Floodplain means any land area susceptible to being inundated by water from any source.

2.20 Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base (one percent annual chance) flood without cumulatively increasing the water surface elevation more than one foot at any

- 2.29 Principally Produced means that more than 50% (either by weight or volume) of raw agricultural products that are stored, prepared, or sold at the farm are also grown or produced on the farm.
- 2.30 Production Area means those areas of a farm where animals, agricultural inputs, or raw agricultural products are confined, housed, stored, or prepared whether within or without structures, including barnyards, raw materials storage areas, heavy use areas, fertilizer and pesticide storage areas, and waste storage and containment areas. Production areas include egg washing or egg processing facilities, milkhouses, raw agricultural commodity preparation or storage, or any area used in the storage, handling, treatment, or disposal of mortalities.
- 2.31 River Corridor means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures.
- 2.32 Secretary means the Secretary of the Agency of Agriculture, Food and Markets and her or his designees.
- 2.33 Small Farm means a small farm as defined in 6 V.S.A. § 4871.
- 2.34 Surface Water or Waters means all rivers; streams, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border the state or any portion of it.
- 2.35 Top of Bank means the point along the bank of a surface water or ditch where an abrupt change in slope is evident, and where the surface water is generally able to overflow the banks and enter the adjacent floodplain during an annual flood event. Annual flood event shall be determined according to the Agency of Natural Resources' Flood Hazard Area and River Corridor Protection Procedure.
- 2.36 Vegetable Production means the production of all true vegetables and all commonly known vegetables that are technically fruits, including, but not limited to, peppers, tomatoes, eggplants, and peas.
- 2.37 Waste or Agricultural Waste means material originating or emanating from a farm that is determined by the Secretary or the Secretary of Natural Resources to be harmful to the waters of the State, including: sediments; minerals, including heavy metals; plant nutrients; pesticides; organic wastes, including livestock waste, animal mortalities, compost, feed and crop debris; waste oils; pathogenic bacteria and viruses; thermal pollution; silage runoff; untreated milkhouse waste; and any other farm waste as the term "waste" is defined in 10 V.S.A. § 1251(12).

- (1) four equines;
  - (2) five cattle, cows, or American bison;
  - (3) 15 swine;
  - (4) 15 goats;
  - (5) 15 sheep;
  - (6) 15 cervids;
  - (7) 50 turkeys;
  - (8) 50 geese;
  - (9) 100 laying hens;
  - (10) 250 broilers, pheasant, Chukar partridge, or Coturnix quail;
  - (11) three camelids;
  - (12) four ratites;
  - (13) 30 rabbits;
  - (14) 100 ducks;
  - (15) 1,000 pounds of cultured trout; or
  - (16) other livestock types, combinations, or numbers as designated by the Secretary based upon or resulting from the impacts upon water quality consistent with this rule; or
- (e) is raising, feeding, or managing other livestock types, combinations, and numbers, or managing crops or engaging in other agricultural practices on less than 4.0 contiguous acres in size that the Secretary has determined, after the opportunity for a hearing, to be causing adverse water quality impacts and in a municipality where no ordinances are in place to manage the activities causing the water quality impacts; or
- (f) is managed by a farmer filing with the Internal Revenue Service a 1040(F) income tax statement in at least one of the past two years; or



- (a) (1) a parcel or parcels of land on which 10 or more acres are used for the raising, feeding, or management of livestock;
- (2) that house no more than the number of animals specified under 6 V.S.A. § 4857(2) (Medium Farm definition); and
- (3) that house at least the following numbers and types of livestock:
- (A) 50 mature dairy cows;
  - (B) 75 youngstock or heifers;
  - (C) 75 veal calves;
  - (D) 75 cattle or cow/calf pairs;
  - (E) 188 swine weighing over 55 pounds;
  - (F) 750 swine weighing less than 55 pounds;
  - (G) 40 equines;
  - (H) 750 sheep or goats;
  - (I) 4,125 turkeys;
  - (J) 2,250 laying hens or broilers with a liquid manure handling system;
  - (K) 6,250 laying hens or broilers without a liquid manure handling system;
  - (L) 375 ducks with a liquid manure handling system;
  - (M) 2,500 ducks without a liquid manure handling system;
  - (N) any other animal type, number, or combination of animals as designated by the Secretary that is having an adverse impact on water quality; or
  - (O) any combination of more than one animal type exceeding 90,000 pounds of total live animal weight (animal units); or
- (b) farms on a parcel or parcels of land greater than 50 acres used for the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of

- (2) the mitigation and management of stormwater runoff;
  - (3) statutory and regulatory requirements of the operation of a large, medium, or small farm and financial resources available to assist in compliance;
  - (4) the mechanical application of manure or nutrients and methods or techniques used to minimize the runoff of applied manure or nutrients to waters of the State;
  - (5) weather and soil conditions that increase the risk of runoff of manure or nutrients to waters of the State; and
  - (6) standards for nutrient management including nutrient management planning.
- (b) Large Farm Operations, Medium Farm Operations, and Certified Small Farm Operations shall obtain four hours of approved training at least once in every five years. This requirement will commence upon notice from the Secretary.
- (c) The Secretary may approve training offered by other entities upon request of the entity providing the training. All requests for training approval shall be provided to the Secretary at least 30 days prior to the scheduled training dates. The entity will be required to submit information about the training and attendees in a manner requested by the Secretary.

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

### **6.01 Discharges**

- (a) Farms shall not create any discharge of agricultural wastes to surface waters of the State through a discrete conveyance such as, but not limited to, a pipe, ditch, or conduit without a permit from the Secretary of ANR.
- (b) Production areas, barnyards, animal holding or feedlot areas, manure storage areas, and feed storage areas shall utilize runoff and leachate collection systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater.

### **6.02 Storage of Agricultural Wastes and Agricultural Inputs**

- (a) All agricultural wastes shall be managed in a manner to prevent runoff or leaching of wastes to waters of the State or across property boundaries.

(E) areas subject to concentrated runoff;

(f) The Secretary may authorize site-specific standards other than those listed in Section 6.02(e)(4)(A)-(E) when the Secretary determines that a manure stacking or piling site, fertilizer storage, or other nutrient storage will not have an adverse impact on groundwater quality or surface water quality but in no case shall unimproved manure stacking sites be located less than 100 feet from a private water supply or the top of the bank of surface water.

(g) Over a three-year period, field stacked agricultural wastes shall be land applied consistent with the nutrient management plan requirements of Section 6.03, actively managed as a compost, or moved to a suitable alternative location.

(h) Fertilizer shall be stored consistent with the Vermont Fertilizer and Lime Regulations Section XIII. Fertigation and chemigation equipment shall be operated with an adequate anti-siphon device between the system and the water source.

(i) Pesticides shall be used in accordance with 6 V.S.A. Chapter 87 (Control of Pesticides) and all regulations promulgated thereunder.

#### 6.03 Nutrient Management Planning

(a) All Certified Small Farm Operations as defined in Section 4 of this rule and all permitted Medium and Large Farm Operations managing manure, agricultural wastes, or fertilizer for use as nutrient sources shall implement a field-by-field nutrient management plan consistent with the requirements of the USDA NRCS Nutrient Management Practice Code 590 or other equivalent standards approved by the Secretary.

(b) For all other farming operations subject to this rule, all sources of nutrients shall be accounted for when determining nutrient application rates. Recommended rates may be adjusted based on manure or other waste analysis and/or nutrient testing procedures. Recommended nutrient application rates shall be consistent with current university recommendations and standard agricultural practices.

(c) For all other farming operations subject to this rule, all fields receiving mechanical application of manure, agricultural wastes, or fertilizer shall be soil sampled at least once in every five years using modified Morgan's extractant or other equivalent standards approved by the Secretary. Records of soil analysis, manure or other agricultural waste application, and fertilizer applications shall be maintained on the farm for a period five years and provided to the Secretary upon request.

(c) Croplands shall be managed to prevent fieldborne gully erosion and reduce or eliminate associated sediment discharges using management strategies that may include the establishment of grassed waterways, filter strips, or other methods deemed appropriate by the Secretary.

(d) Annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, shall be required to be planted to cover crops. Broadcast seeding must be completed by October 1 of each year. Seed planted with drill seeders or otherwise incorporated shall be completed by October 15 of each year. The Secretary may, on a case-by-case basis, approve alternative planting dates due to unusual soil or weather conditions or other specific crop management needs and upon request of the owner or operator of a farm managing annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class. If annual crops cannot be harvested prior to October 15, then 30% crop residue, growing directly in the soil, must remain in order to limit soil loss.

#### 6.05 Manure and Waste Application Standards and Restrictions

(a) Manure or other agricultural wastes shall not be applied between December 15 and April 1. The Secretary may prohibit the application of manure to land in the State following adequate notice to the agricultural community between December 1 and December 15 and between April 1 and April 30 of any calendar year when the Secretary determines that due to weather conditions, soil conditions, or other limitations, application of manure to land would pose a significant potential of runoff to waters of the State.

(b) Manure or other agricultural wastes shall not be applied to cropland, perennial grass land, small grain cropland, or hay land subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, after October 16 or before April 14.

(c) Manure or other agricultural wastes applied to annual cropland subject to frequent flooding, as described in the USDA Soil Survey Flooding Frequency Class, shall be injected or otherwise incorporated within 48 hours of application. This requirement shall not apply to land in no-till management.

(d) Manure or other agricultural wastes shall not be applied when field conditions are conducive to flooding, runoff, ponding, or other off-site movement, or can be reasonably anticipated to result in flooding, runoff, ponding, or other off-site movement, regardless of NMP recommendations.

(e) Manure or other agricultural wastes shall not be applied in areas of croplands, perennial grass lands, or hay lands that:

- (4) the identification of soil types, depth to groundwater, and slopes;
  - (5) the current soil test results;
  - (6) the annual nutrient application plan for the fields;
  - (7) the Phosphorus Index, or equivalent, results;
  - (8) the RUSLE2, or equivalent, results; and
  - (9) the USDA Soil Survey Flooding Frequency Class, and if applicable to the request, evidence that the flood frequency class is not accurate.
- (c) All approvals for a seasonal exemption shall be in writing and shall prohibit the application of manure:
- (1) to areas with established channels of concentrated storm water runoff to surface waters;
  - (2) to permanent vegetative buffer zones;
  - (3) to wetlands, as that term is defined in 10 V.S.A. § 902(5);
  - (4) within 200 feet of a potable water supply, as that term is defined in 10 V.S.A. § 1972(6);
  - (5) to fields exceeding tolerable soil loss (T);
  - (6) to saturated soils; and
  - (7) to any other area as designated by the Secretary on a case-by-case basis.
- (d) Approvals for seasonal exemptions to the winter spreading ban shall establish requirements and conditions for the application of manure when frozen or snow-covered soils prevent effective incorporation at the time of application, require manure to be applied according to a nutrient management plan, establish the maximum amounts of manure that may be applied per acre during any one application, and establish required manure spreading setbacks from surface water, water supplies, and other water conveyances. Seasonal exemptions to the winter spreading ban may be renewed annually upon request and submission of winter spreading records of application.

## 6.08 Animal Mortality Management Requirements

- (a) Animal mortalities shall be properly stored, handled, and disposed of within 48 hours, so as to minimize adverse water quality impacts.
- (b) Animal mortalities buried on farm property shall be sited so as to be:
- (1) a minimum of 150 feet from property lines and the top of the bank of surface waters;
  - (2) a minimum of three feet above the seasonal high water table and bedrock;
  - (3) covered with a minimum of 24 inches of soil;
  - (4) a minimum of 200 feet from public or private drinking water supplies; and
  - (5) not located on lands in a floodway or subject to annual flooding.
- (c) Animal mortalities composted or otherwise disposed of on farm property on unimproved sites shall be prohibited on lands in a floodway or subject to annual flooding, and shall be sited so as to be:
- (1) a minimum of 200 feet from property lines;
  - (2) a minimum of 200 feet from the top of the bank of surface waters;
  - (3) a minimum of 200 feet from public or private drinking water supplies not owned by the farm;
  - (4) a minimum of 300 feet from neighboring residences or public buildings;
  - (5) a minimum of 100 feet from a ditch or conveyance to surface water; and
  - (6) not upon areas of exposed bedrock.
- (d) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

(c) Livestock shall not have access to surface water in production areas or immediately adjacent to production areas, except:

(1) at livestock crossings or watering areas;

(2) in areas prescribed by a rotational grazing plan consistent with NRCS standards or an equivalent standard, and approved by the Secretary. Approved grazing plan areas shall maintain at least an average of three inches of vegetative growth within 25 feet of the top of bank of surface water, and within 10 feet of the top of bank of ditches; or

(3) in areas approved by the Secretary based on site-specific characteristics and management requirements.

(d) Livestock shall not have access to surface water in areas outside of production areas that:

(1) contain unstable banks or where erosion is present; or

(2) are areas designated by the Secretary as having actual or potential threat to water quality as a result of livestock access.

(e) Livestock shall not be pastured within 50 feet of a private water supply without the permission of the water supply owner. This prohibition shall not apply to private water supplies that have been established inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the water supply was established.

## **Section 8. Ground Water Quality and Groundwater Quality Investigations**

(a) Farm operations shall be conducted so that the concentration of wastes in groundwater originating from agricultural operations do not reach or exceed the primary or secondary groundwater quality enforcement standards identified by Appendix One of the Groundwater Protection Rule and Strategy in accordance with 10 V.S.A. Chapter 48 (Groundwater Protection).

(b) Farm operations shall be conducted with the goal of reducing the concentration of wastes in groundwater to the preventive action levels (PALs) of the primary or secondary groundwater quality standards identified by Appendix One of the Groundwater Protection Rule and Strategy when monitoring indicates the presence of these wastes in groundwater that exceed the enforcement standard.

(c) The Secretary may conduct groundwater quality monitoring to assess the impact of agricultural practices and farm operations on the quality of drinking

- (3) conduct additional sampling to confirm the detection of contaminants and to determine the extent and scope of contamination at the site;
  - (4) require corrective actions such as changes in activities, management practices, cropping patterns, or structural revisions designed to reduce the contamination from current activities and prevent contamination from future activities;
  - (5) conduct follow up water quality sampling to determine the effectiveness of changes made or corrective actions taken;
  - (6) seek additional investigative or consultation resources to evaluate and characterize sites to determine vulnerability to drinking water and groundwater contamination; and
  - (7) review testing results and site evaluations to determine if changes in water quality data are the result of changes in activities or natural site conditions.
- (h) The Secretary may require the owner or operator of a waste storage facility to modify the facility to meet the USDA NRCS or an equivalent standard for the facility or to implement additional management measures if the facility poses a threat to human health or the environment as established by an exceedance of the State's Groundwater Quality Standards.
- (i) For the purpose of assessing whether a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall pay for the initial costs to conduct groundwater monitoring. When the Secretary has made a determination that a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall provide notification to the Department of Health and the Agency of Natural Resources. This notification shall occur within 21 days and include the location of the facility and the name of the owner or operator. When the Secretary makes a determination that a waste storage facility no longer poses a threat to human health or the environment, the Secretary shall provide notification of the revised determination to the Department of Health and the ANR.

## Section 9. Construction of Farm Structures

### (a) Siting

- (1) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the



between the top of the bank of adjoining surface waters and the farm structure.

(i) Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering,

(ii) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(B) The following setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:

(i) 100 feet from the centerline of a public road;

(ii) 100 feet from any abutting property line;

(iii) 200 feet from the top of the bank of any surface water;  
and

(iv) 200 feet from public or private water supplies.

(b) Setbacks Approved by the Secretary

Local setbacks or no build areas for wetlands, River Corridors, and other setbacks applicable to all development in a local zoning bylaw established by the municipality shall be maintained, unless upon written request of the person, consistent with the procedures found in Appendix A, the Secretary has approved other reasonable setbacks for the specific farm structure being constructed. The Secretary may authorize the siting of a waste storage facility within 200 feet of a surface water or private water supply if the site is the best available site on the farm for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer to meet USDA NRCS standards and specifications or an equivalent standard. If an equivalent design standard is used, the design and construction shall be certified by the Secretary, or a licensed professional engineer operating within the scope of his or her expertise. The Secretary may consider the following in rendering a decision regarding alternative setbacks:

(1) unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would prevent development in accordance with this rule;

This document, developed pursuant to Act 64 (2015 session), is the clean draft of the Required Agricultural Practices (RAPs) that was submitted to the Legislative Committee on Administrative Rules (LCAR). For more information, please visit <http://agriculture.vermont.gov/water-quality/regulations/rap> or contact the Vermont Agency of Agriculture, Food and Markets at (802) 828-3478.

(f) Certified custom applicators shall complete eight hours of training in each five-year period of certification. Completion of five-year training requirements will serve as meeting the requirements for recertification.

(g) Certified custom applicators shall maintain records of the amount of manure or agricultural waste applied by farm and field for a period of five years and provide those records to the Agency upon reasonable request.

### **Section 11. Site-Specific On-Farm Conservation Practices**

When the Secretary determines, after inspection of a farm, that a person engaged in farming is complying with the Required Agricultural Practices Rule but there still exists the potential for agricultural pollutants to enter the waters of the State, the Secretary shall require the person to implement additional, site-specific, on-farm conservation practices designed to prevent agricultural pollutants from entering the waters of the State. When requiring implementation of a conservation practice, the Secretary shall inform the person engaged in farming of the resources available to assist the person in implementing the conservation practices to comply with the requirements of this rule.

### **Section 12. Severability Clause**

If any provision of this rule, or the application thereof to any person or circumstance, is held invalid, such determination shall not affect other provisions or applications of this rule which can be given effect without the invalid provision or application, and to that end the provisions of this rule are severable.

### **Section 13. Effective Dates**

(a) Sections 1 – 6.04(c), 6.05(a), and 6.05(c) – 13 of this regulation shall become effective on [date of adoption]; and

(b) Sections 6.04(d) and 6.05(b) of this regulation shall become effective on April 15, 2017.

(b) Public Notice and Issuance Requirements

The Secretary will notify the municipality in writing by certified mail and copy the affected adjoining property owner(s) of his or her intent to consider a petition for an alternative setback. The notification shall include a description of the proposed project, submitted plan, and shall be accompanied by information that clearly states where additional information may be obtained. The Secretary will request that the notice be posted in a public place in the municipal office.

Any comments resulting from this posting or from the municipality must be received in writing at the Agency by 4:30 p.m. on the seventh business day following receipt of the notice.

(c) Standards

The Secretary may grant a petition for an alternate setback or grant a petition for an alternate setback with conditions, except as otherwise outlined in this rule or statutorily required, when:

- (1) there are unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would create a hardship for the farm operation;
- (2) because of such physical conditions or constraints, there is no possibility that the property can be developed in strict conformity with the provisions of this rule and that the authorization of an alternative setback is therefore necessary to enable the reasonable operation of the farm;
- (3) the hardship has not been created by the applicant;
- (4) the alternative setback, if authorized by the Secretary, will not substantially or permanently impair the appropriate use or development of adjoining property, nor be detrimental to the public health, safety, and welfare; and
- (5) the variance, if authorized by the Secretary, will represent the minimum alternative that will afford relief and will represent the least deviation possible from this rule.

\* The Agency cannot approve alternate setbacks from State wetland regulations, nor approve construction within Highway rights-of-way.

2431. On-farm composting or anaerobic digestion of food residuals and food processing residuals may require registration or permitting by the Vermont Waste Management & Prevention Division. More information can be obtained by calling (802) 828-1138.

**Wastewater Management and Residuals Management:** Farm operations generating wastewater indirect discharges or discharges to underground injection wells are advised that permits may be required from the Department of Environmental Conservation Watershed Management Division or Groundwater Protection and Management Division. The management of sewage, biosolids, and septage on a farm must be conducted consistent with the Vermont Solid Waste Management Rules and any Solid Waste Management Facility Certification authorizing these activities. Information regarding these requirements can be obtained by calling (802) 828-1535.

**Water Withdrawal and Irrigation:** Farm operations utilizing surface waters for irrigation purposes are advised that water withdrawals above a *de minimis* rate are required to obtain a permit from the Department of Environmental Conservation consistent with the *Procedure for Determining Acceptable Minimum Stream Flows*. More information regarding water withdrawals for irrigation purposes and permitting requirements can be obtained by calling the Watershed Management Division at (802) 828-1535.

**Alteration of Streams:** Stream alteration permits regulate activities that take place in or along streams. The permit program is intended to prevent the creation of flood hazards, protect against damage to aquatic life, and protect the rights of neighboring landowners. The types of activities that are regulated include streambank stabilization, road improvements that encroach on streams, bridge construction or repair, and utility crossings under streambeds. More information regarding stream alteration and permitting requirements can be obtained by calling the River Management Division at (802) 828-1535.

**Spill Prevention, Control, and Countermeasure (SPCC):** EPA's oil pollution prevention regulation requires facilities that are subject to regulation to prepare and implement a plan to prevent any discharge of oil into navigable waters or adjoining shorelines of the U.S. A farm must prepare a SPCC Plan if it has an aggregate aboveground storage capacity of greater than 1,320 gallons. Only containers of oil with a capacity of 55-gallons or greater are counted toward this aggregate capacity threshold. The plan is referred to as a Spill Prevention, Control, and Countermeasure (SPCC) plan. More information regarding SPCC and permitting requirements can be obtained by calling the Environmental Assistance Office at 1(800) 974-9559.



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Office of the Secretary

## INTERAGENCY COMMITTEE ON ADMINISTRATIVE RULES

**To:** Louise Corliss, SOS  
Chris Winters, SOS  
Charlene Dindo, LCAR  
ICAR Members

**Date:** May 10, 2016

**Proposed Rule:** Required Agricultural Practices Rule for the Agricultural Nonpoint Source Pollution Control Program  
(Agency of Agriculture, Food and Markets)

The following official action was taken at the May 9, 2016 meeting of ICAR.

**Present:** Chair Michael Clasen, Steve Knudson, Dirk Anderson, Scott Bascom, Diane Bothfeld, Clare O'Shaughnessy and Allan Sullivan

**Absent:** Jenn Duggan  
John Kessler

**Abstain:** Diane Bothfeld

The Committee has no objection to the proposed rule being filed with the Secretary of State.

The Committee approves the rule with the following recommendations.

1. Throughout all document pages: Define all acronyms when first referenced.
2. Coversheet #14: Make "Required agricultural practices" one sentence.
3. Coversheet #14 Add to keywords: Pollution Control, Farm Management Practices, Flood Hazard, Flood Plains, and Water Quality.
4. Adopting Page #5: Add SOS Log #.
5. Economic Impact Statements #3, 3<sup>rd</sup> bullet: Confirm whether it should say "10 feet", or "10 foot".
6. Economic Impact Statement: Explain why reference to "lost corn production" is used.
7. Economic Impact Statement #5, first sentence: Add year to Act 64 reference.
8. Economic Impact Statement #5, second paragraph. Change "lower" to "lowered".
9. Economic Impact Statement #7: Correct formatting, including correcting "g" and "h".
10. Economic Impact Statement #7 h: Change "for them" to "from the".
11. Delete Scientific Information Statement.
12. Incorporation by Reference Statement #3: Considering deleting state references.
13. Rule, Section 2. Definitions: Add "Frequently Flooded Soils".

The Committee opposes filing of the proposed rule.

cc: Jim Leland  
Laura DiPietro  
Dave Huber



## REQUIRED AGRICULTURAL PRACTICES RULE FOR THE AGRICULTURAL NONPOINT SOURCE POLLUTION CONTROL PROGRAM

### Section 1. General

1.1 Preamble: Agriculture has been identified as a major contributor of non-point source pollution to surface waters of Vermont. For example, the Lake Champlain Total Maximum Daily Load (TMDL), as modeled by the Environmental Protection Agency, estimates that nutrient losses from agricultural activities represent 29% of the total phosphorous load to the Lake Champlain basin and over 40% of Vermont's contribution to the phosphorous load to the basin. Agriculture contributes non-point source pollution to surface and groundwater from multiple sources, including cropland erosion, farmstead management, crop storage, and manure storage and application. While contributions of non-point source pollution from agriculture may vary from watershed to watershed, the overall impact to water quality from agricultural lands, when not managed well, is significant.

The Vermont legislature first directed the Agency of Agriculture, Food and Markets to develop a comprehensive Agricultural Non-Point Source Pollution Reduction Program in 1992. The Accepted Agricultural Practices Rules (AAPs), which regulate farming activities in order to protect water quality, became effective in 1995 and were revised in 2006.

As a result of Act 64—the Vermont Clean Water Act—the Agency of Agriculture was tasked with updating the AAPs to further reduce the impact of agricultural activities to water quality across the State. The Required Agricultural Practices Rules (RAPs) are an updated version of the AAPs, re-written to a higher level of performance.

Act 64, which was signed into law by the Governor in June 2015, amended and enacted multiple requirements related to water quality in the State. The act required the Agency of Agriculture to amend several provisions of the AAPs in order to improve water quality in Vermont. The first change was to rename the Accepted Agricultural Practices Rules the Required Agricultural Practices Rules. The RAPs are standards to which all types of farms must be managed. Act 64 further required the Agency of Agriculture to:

- Establish requirements for a Small Farm Certification Program;
- Establish nutrient, manure, and waste storage standards;
- Make recommendations for soil health;
- Establish requirements for vegetated buffer zones;
- Establish requirements for livestock exclusion from surface water;
- Establish nutrient management planning standards; and

- Establish standards for soil conservation such as cover cropping

The standards and rules that follow are intended to improve the quality of all of Vermont's waters by reducing and eliminating cropland erosion, sediment losses, and nutrient losses through improved farm management techniques, technical and compliance assistance, and, where appropriate, enforcement. This rule strives to balance the complexity, variability, and requirements of farm management with the need to improve that management in order to meet the State's goals in improving and protecting water quality.

Soil quality and soil health are critical elements of an overall agricultural non-point source pollution reduction program. Agricultural soils are recognized as a critical resource for the overall prosperity of Vermont's agricultural community and for the public at large. Efforts to build soil organic matter, increase biological activity, and reduce compaction, including reduced tillage, use of composts, establishing crop rotations, cover cropping, and the elimination of annual cropping on highly vulnerable lands, will be essential to the success of programs whose goal is to improve Vermont's water quality. 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.

- 1.2 Enabling Legislation: As defined in 6 V.S.A. §§ 4810 and 4810a, the Required Agricultural Practices (RAPs) shall be management standards to be followed by all persons engaged in farming in this State. These standards shall address activities which have a potential for causing agricultural pollutants to enter the groundwater and waters of the State, including dairy and other livestock operations, all forms of crop and nursery operations and on-farm or agricultural fairground registered pursuant to 20 V.S.A. § 3902, and livestock and poultry slaughter and processing activities. The RAPs shall include, as well as promote and encourage, practices for farmers in preventing agricultural pollutants from entering the groundwater and waters of the State when engaged in animal waste management and disposal, soil amendment applications, plant fertilization, and pest and weed control. Persons engaged in farming who are in compliance with these practices shall be presumed to not have a discharge of agricultural pollutants to waters of the State. The RAPs shall be designed to protect water quality and shall be practical and cost-effective to implement, as determined by the Secretary.
- 1.3 Purpose: The RAPs are farm and land management practices that will control and reduce agricultural nonpoint source pollution and subsequent nutrient losses from farm fields and production areas to surface and ground waters of the State or across property boundaries. The RAPs also establish minimum construction and siting requirements for farm structures in floodplains, floodways, river corridors, and flood hazard areas.
- 1.4 Authority: 6 V.S.A. Chapter 215 (Agricultural Water Quality), including §§ 4810, 4810a, and 4811, and Act 64 of the Vermont General Assembly (2015 session).

This document, developed pursuant to Act 64 (2015 session), is the clean draft of the Required Agricultural Practices (RAPs) that was submitted to the Legislative Committee on Administrative Rules (LCAR). For more information, please visit <http://agriculture.vermont.gov/water-quality/regulations/rap> or contact the Vermont Agency of Agriculture, Food and Markets at (802) 828-3478.

- 1.5 **Enforcement:** Violations of this rule are subject to enforcement by the Secretary of the Vermont Agency of Agriculture, Food and Markets and the Attorney General under the provisions of 6 V.S.A. §§ 4991 - 4996 and additional remedies available to the State under other applicable Vermont law.
- 1.6 **Further considerations under the RAPs:** 6 V.S.A. § 4810a(b) requires that on or before January 15, 2018, the Secretary of Agriculture, Food and Markets shall amend by rule the Required Agricultural Practices in order to include requirements for reducing nutrient contribution to waters of the State from subsurface tile drainage. As part of the rule amendment process, the Secretary may also evaluate the current status of effectiveness of the Required Agricultural Practices, the implementation of additional best management practices, and the current water quality condition of waters of the State. The Secretary may consider additional changes to the Required Agricultural Practices, as appropriate, to meet the water quality goals of the State.

## Section 2. Definitions

- 2.01 **Agency** means the Vermont Agency of Agriculture, Food and Markets.
- 2.02 **Agricultural Product** means any raw agricultural commodity, as defined in 6 V.S.A. § 21(6), that is principally produced on the farm and includes products prepared from the raw agricultural commodities principally produced on the farm.
- 2.03 **Annual Cropland** means, for the purposes of this rule, land devoted to the production, cultivation, harvesting, and management of annual row crops, including sweet corn and pumpkins, but does not include:
- (a) vegetable, fruit, or berry crops grown for human consumption; and
  - (b) small grains.
- 2.04 **ANR** means the Vermont Agency of Natural Resources, and the Secretary of the Vermont Agency of Natural Resources and her or his designees.
- 2.05 **Barnyard** and **Feedlot** means an area, either earthen or improved, where animals are confined by fences, other structures, or topography, are primarily sustained by supplemental feed, and where vegetation cover is sparse.
- 2.06 **Buffer Zone** means an area of perennial vegetation between the edge of cropland and:
- (a) the top of the bank of an adjoining water of the State;
  - (b) a ditch that is not a surface water under State law and that is not a water of the United States under federal law; and



(c) surface inlets or open drains.

- 2.07 Certified Small Farm means a farm that meets the criteria of Section 4.1 of this rule.
- 2.08 Compost means a stable, humus-like material produced by the controlled biological decomposition of organic matter through active management, but shall not mean sewage, septage, or materials derived from sewage or septage.
- 2.09 Cover Crop means a temporary vegetative crop established for the purpose of:
- (a) reducing erosion and runoff; and
  - (b) enhancing soil health by providing organic matter in cropland.
- 2.10 Crop and Cropland, for the purposes of this rule, means:
- (a) plants grown for food, feed, fiber (other than trees grown for silvicultural or timber purposes), Christmas trees, maple sap, horticultural, viticultural, orchard crops, and pasture; and
  - (b) the land upon which they are grown.
- 2.11 Custom Applicator means a person who is engaged in the business of applying manure or other agricultural wastes to land and who charges or collects other consideration for the service including full-time employees of a person engaged in the business of applying manure or agricultural wastes to land.
- 2.12 Discharge means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into waters.
- 2.13 Ditch means a constructed channel or 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, and is not a surface water as defined in Section 2.34 of this rule.
- 2.14 Farm means a parcel or parcels of land owned, leased, or managed by a person and devoted primarily to farming, as defined in Section 2.16 of this rule, and that meets the threshold criteria as established in Section 3 of this rule, provided that the lessee controls the leased lands to the extent they would be considered as part of the lessee's own farm. Indicators of control may include whether the lessee makes day-to-day decisions concerning the cultivation or other farming-related use of the leased lands and whether the lessee manages the land for farming during the leased period.
- 2.15 Farm Structure means a structure that is used by a person for farming, including

a silo, a building to house livestock or raise horticultural or agronomic plants, or customarily used to carry out the agricultural practices defined in Section 3.2 of this rule. A farm structure includes a barnyard or waste management system, either of which is created from an assembly of materials, including the supporting fill necessary for structural integrity, but excludes a dwelling for human habitation. A farm structure also must be used by a person who can demonstrate meeting the minimum threshold criteria as found in Section 3.1 of this rule.

2.16 Farming means:

- (a) the cultivation or other use of land for growing food, fiber, Christmas trees, maple sap, or horticultural, viticultural, and orchard crops; or
- (b) the raising, feeding, or management of livestock, poultry, fish, or bees; or
- (c) the operation of greenhouses; or
- (d) the production of maple syrup; or
- (e) the on-site storage, preparation, and sale of agricultural products principally produced on the farm; or
- (f) the on-site storage, preparation, production, and sale of fuel or power from agricultural products or wastes principally produced on the farm; or
- (g) the raising, feeding, or management of four or more equines owned or boarded by the farmer, including training, showing, and providing instruction and lessons in riding, training, and the management of equines.

2.17 Fertilizer means any substance containing one or more recognized plant nutrients that is used for its plant nutrient content and that is designed for use or claimed to have value in promoting plant growth or health, except unprocessed animal or vegetable manures and other products exempted by the Secretary.

2.18 Flood Hazard Area means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year (a.k.a. 100-yr flood). The term has the same meaning as "area of special flood hazard" under 44 C.F.R. § 59.1. The area may be designated as Zone A or AE on the National Flood Insurance Program maps.

2.19 Floodplain means any land area susceptible to being inundated by water from any source.

2.20 Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base (one percent annual chance) flood without cumulatively increasing the water surface elevation more than one foot at any

point. Flood hazard areas and floodways may be shown on separate National Flood Insurance Program map panels.

- 2.21 Food Processing Residual means the remaining organic material from a food processing plant and may include whey and other dairy, cheese making, and ice cream residuals or residuals from any food manufacturing process excluding slaughtering and rendering operations. It does not include materials from markets, groceries, or restaurants.
- 2.22 Groundwater means water below the land surface in a zone of saturation, but does not include surface waters.
- 2.23 Groundwater Quality Standards means the primary and secondary groundwater quality standards listed in Appendix One of the Groundwater Protection Rule and Strategy in accordance with 10 V.S.A. Chapter 48 (Groundwater Protection).
- 2.24 Livestock means cattle, cow/calf pairs, youngstock, heifers, bulls, American bison, swine, sheep, goats, horses, cervids, camelids, ratites, rabbits, pheasants, chukar partridge, coturnix quail, laying hens, broilers, ducks, turkeys, or any other type of fowl as designated by the Secretary. Other livestock types may be designated by the Secretary based on the potential to generate nutrients or other associated agricultural wastes.
- 2.25 Manure means livestock waste in solid or liquid form that may also contain bedding, spilled feed, water, milkhouse waste, or soil.
- 2.26 Nonpoint Source Pollution for the purposes of this rule, means agricultural wastes that reach surface water or groundwater indirectly or in a diffuse manner as a result of farming.
- 2.27 Person means:
- (a) an individual, partnership, corporation, association, unincorporated organization, trust, or other legal or commercial entity, including a joint venture or affiliated ownership; or
  - (b) a municipality or state agency; or
  - (c) individuals and entities affiliated with each other for profit, consideration, or any other beneficial interest derived from agricultural management, including lessors and lessees.
- 2.28 Pesticide means economic poison as defined in 6 V.S.A. § 911(5) and Section I 22 of the Vermont Regulations for Control of Pesticides.

- 2.29 Principally Produced means that more than 50% (either by weight or volume) of raw agricultural products that are stored, prepared, or sold at the farm are also grown or produced on the farm.
- 2.30 Production Area means those areas of a farm where animals, agricultural inputs, or raw agricultural products are confined, housed, stored, or prepared whether within or without structures, including barnyards, raw materials storage areas, heavy use areas, fertilizer and pesticide storage areas, and waste storage and containment areas. Production areas include egg washing or egg processing facilities, milkhouses, raw agricultural commodity preparation or storage, or any area used in the storage, handling, treatment, or disposal of mortalities.
- 2.31 River Corridor means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures.
- 2.32 Secretary means the Secretary of the Agency of Agriculture, Food and Markets and her or his designees.
- 2.33 Small Farm means a small farm as defined in 6 V.S.A. § 4871.
- 2.34 Surface Water or Waters means all rivers; streams, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border the state or any portion of it.
- 2.35 Top of Bank means the point along the bank of a surface water or ditch where an abrupt change in slope is evident, and where the surface water is generally able to overflow the banks and enter the adjacent floodplain during an annual flood event. Annual flood event shall be determined according to the Agency of Natural Resources' Flood Hazard Area and River Corridor Protection Procedure.
- 2.36 Vegetable Production means the production of all true vegetables and all commonly known vegetables that are technically fruits, including, but not limited to, peppers, tomatoes, eggplants, and peas.
- 2.37 Waste or Agricultural Waste means material originating or emanating from a farm that is determined by the Secretary or the Secretary of Natural Resources to be harmful to the waters of the State, including: sediments; minerals, including heavy metals; plant nutrients; pesticides; organic wastes, including livestock waste, animal mortalities, compost, feed and crop debris; waste oils; pathogenic bacteria and viruses; thermal pollution; silage runoff; untreated milkhouse waste; and any other farm waste as the term "waste" is defined in 10 V.S.A. § 1251(12).

- 2.38 Waste Management System means an on-farm waste management program and conservation practices which may include a combination of:
- (a) an adequately sized waste storage facility, field stacking, composting, leachate control systems, bedded pack systems, and milkhouse waste systems;
  - (b) contracts which transfer the ownership of wastes generated at a production area to another person for management in a manner determined by the Secretary; and/or,
  - (c) a nutrient management plan (NMP) for all wastes to be applied in compliance with this rule.
- 2.39 Waste Storage Facility means an impoundment made for the purpose of storing agricultural waste by constructing an embankment, excavating a pit or dugout, fabricating an in-ground or above-ground structure, or any combination thereof.
- 2.40 Waters of the State include, for the purposes of this rule, surface water and groundwater as applied.
- 2.41 Water Supply means a drinking water source that intersects the water table and provides water through pipes or other conveyances and includes drilled wells, dug wells, driven point wells, and natural springs.

### Section 3. Required Agricultural Practices Activities and Applicability

- 3.1 Persons engaged in farming and the agricultural practices as defined in Section 3.2 of this rule and who meet the minimum threshold criteria for applicability of this rule as found in Section 3.1(a) – (g) must meet all applicable Required Agricultural Practices conditions, restrictions, and operating standards. Persons engaged in farming who are in compliance with these conditions, restrictions, and operating standards, as applicable, shall be presumed to not have a discharge of agricultural wastes to waters of the State. Compliance with the Required Agricultural Practices Rule is required if a person:
- (a) is required to be permitted or certified by the Secretary, consistent with the requirements of 6 V.S.A. Chapter 215 and this rule; or
  - (b) has produced an annual gross income from the sale of agricultural products of \$2,000.00 or more in an average year; or
  - (c) is preparing, tilling, fertilizing, planting, protecting, irrigating, and harvesting crops for sale on a farm that is no less than 4.0 contiguous acres in size; or
  - (d) is raising, feeding, or managing at least the following number of adult livestock on a farm that is no less than 4.0 contiguous acres in size:

- (1) four equines;
  - (2) five cattle, cows, or American bison;
  - (3) 15 swine;
  - (4) 15 goats;
  - (5) 15 sheep;
  - (6) 15 cervids;
  - (7) 50 turkeys;
  - (8) 50 geese;
  - (9) 100 laying hens;
  - (10) 250 broilers, pheasant, Chukar partridge, or Coturnix quail;
  - (11) three camelids;
  - (12) four ratites;
  - (13) 30 rabbits;
  - (14) 100 ducks;
  - (15) 1,000 pounds of cultured trout; or
  - (16) other livestock types, combinations, or numbers as designated by the Secretary based upon or resulting from the impacts upon water quality consistent with this rule; or
- (e) is raising, feeding, or managing other livestock types, combinations, and numbers, or managing crops or engaging in other agricultural practices on less than 4.0 contiguous acres in size that the Secretary has determined, after the opportunity for a hearing, to be causing adverse water quality impacts and in a municipality where no ordinances are in place to manage the activities causing the water quality impacts; or
- (f) is managed by a farmer filing with the Internal Revenue Service a 1040(F) income tax statement in at least one of the past two years; or

(g) has a prospective business or farm management plan, approved by the Secretary, describing how the farm will meet the threshold requirements of this section.

3.2 The agricultural practices on farms meeting the minimum threshold criteria set forth in Section 3.1 that are governed by this rule include:

- (a) the confinement, feeding, fencing, and watering of livestock;
- (b) the storage and handling of agricultural wastes principally produced on the farm;
- (c) the collection of maple sap principally produced from trees on the farm and/or production of maple syrup from sap principally produced on the farm;
- (d) the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of crops;
- (e) the ditching and subsurface drainage of farm fields and the construction of farm ponds;
- (f) the stabilization of farm fields adjacent to banks of surface water, and the establishment and maintenance of vegetated buffer zones and riparian buffer zones;
- (g) the construction and maintenance of farm structures, farm roads, and associated infrastructure;
- (h) the on-site storage, preparation, production, and sale of fuel or power from agricultural products or wastes principally produced on the farm;
- (i) the on-site storage, preparation, and sale of agricultural products principally produced on the farm from raw agricultural commodities principally produced on the farm;
- (j) the on-site storage of agricultural inputs for use on the farm including, but not limited to, lime, fertilizer, pesticides, compost and other soil amendments, and the equipment necessary for operation of the farm; and
- (k) the management of livestock mortalities produced on the farm.

#### **Section 4. Small Farm Certification and Training Requirements**

4.1 As used in this section, "Certified Small Farm" means:

- (a) (1) a parcel or parcels of land on which 10 or more acres are used for the raising, feeding, or management of livestock;
- (2) that house no more than the number of animals specified under 6 V.S.A. § 4857(2) (Medium Farm definition); and
- (3) that house at least the following numbers and types of livestock:
- (A) 50 mature dairy cows;
  - (B) 75 youngstock or heifers;
  - (C) 75 veal calves;
  - (D) 75 cattle or cow/calf pairs;
  - (E) 188 swine weighing over 55 pounds;
  - (F) 750 swine weighing less than 55 pounds;
  - (G) 40 equines;
  - (H) 750 sheep or goats;
  - (I) 4,125 turkeys;
  - (J) 2,250 laying hens or broilers with a liquid manure handling system;
  - (K) 6,250 laying hens or broilers without a liquid manure handling system;
  - (L) 375 ducks with a liquid manure handling system;
  - (M) 2,500 ducks without a liquid manure handling system;
  - (N) any other animal type, number, or combination of animals as designated by the Secretary that is having an adverse impact on water quality; or
  - (O) any combination of more than one animal type exceeding 90,000 pounds of total live animal weight (animal units); or
- (b) farms on a parcel or parcels of land greater than 50 acres used for the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of



annual cropland where fertilizer, manure, or agricultural wastes are mechanically applied to said parcel or parcels; or

(c) farms on a parcel or parcels of land greater than 50 acres used for the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of vegetable production where fertilizer, manure, or agricultural wastes are mechanically applied to said parcel or parcels; or

(d) that the Secretary has designated, on a case-by-case basis after an opportunity for a hearing, as a farm required to comply with the certification requirements pursuant to 6 V.S.A. § 4871(c) based on the farm's management, agricultural inputs used by the farm, tillage practices used by the farm, agricultural wastes generated by the farm, and the associated actual or potential water quality impacts.

4.2 On a case-by-case basis after an opportunity for a hearing, the Secretary may designate a farm as not being required to comply with the certification requirements pursuant to 6 V.S.A. § 4871(c) upon a determination that the farm does not pose a threat of discharge to a water of the State or does not pose a threat of contamination to groundwater.

4.3 Certified Small Farms shall annually certify compliance with the Required Agricultural Practices Rule. Certification shall be in a manner and schedule established by the Secretary.

(a) Certified Small Farms may be inspected at any time for the purposes of assessing compliance by the farm with the Required Agricultural Practices Rule.

(b) The Secretary may prioritize inspections and inspection frequency based on the identified water quality or compliance issues posed by a farm. Certified Small Farms shall be scheduled for inspection at least once in every seven-year period commencing at the receipt by the Secretary of certification.

(c) A person who owns or leases a Certified Small Farm shall notify the Secretary of a change of ownership or change of lessee of a Certified Small Farm within 30 days of the change. The notification shall include the certification of farm compliance and shall be submitted by the new owner or lessee.

## Section 5. Agricultural Water Quality Training

(a) Owners or operators of certified small farms, permitted medium farms, or permitted large farms shall obtain water quality training as approved by the Secretary. Training shall provide information regarding:

(1) the prevention of discharges;

- (2) the mitigation and management of stormwater runoff;
  - (3) statutory and regulatory requirements of the operation of a large, medium, or small farm and financial resources available to assist in compliance;
  - (4) the mechanical application of manure or nutrients and methods or techniques used to minimize the runoff of applied manure or nutrients to waters of the State;
  - (5) weather and soil conditions that increase the risk of runoff of manure or nutrients to waters of the State; and
  - (6) standards for nutrient management including nutrient management planning.
- (b) Large Farm Operations, Medium Farm Operations, and Certified Small Farm Operations shall obtain four hours of approved training at least once in every five years. This requirement will commence upon notice from the Secretary.
- (c) The Secretary may approve training offered by other entities upon request of the entity providing the training. All requests for training approval shall be provided to the Secretary at least 30 days prior to the scheduled training dates. The entity will be required to submit information about the training and attendees in a manner requested by the Secretary.

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

### **6.01 Discharges**

- (a) Farms shall not create any discharge of agricultural wastes to surface waters of the State through a discrete conveyance such as, but not limited to, a pipe, ditch, or conduit without a permit from the Secretary of ANR.
- (b) Production areas, barnyards, animal holding or feedlot areas, manure storage areas, and feed storage areas shall utilize runoff and leachate collection systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater.

### **6.02 Storage of Agricultural Wastes and Agricultural Inputs**

- (a) All agricultural wastes shall be managed in a manner to prevent runoff or leaching of wastes to waters of the State or across property boundaries.

- (b) All components of a waste management system, including waste storage facilities, shall be managed and maintained so as to prevent structural or mechanical failures.
- (c) Waste Storage Facilities maintenance and construction shall ensure:
- (1) Vegetation is managed so that the facility maintains structural integrity and prevents leaks or overflows at all times.
  - (2) Waste Storage Facilities are managed to provide adequate volume in order to prevent overflows at all times.
  - (3) 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 Resources 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.
- (d) The Secretary may require, on a case-by-case basis, that the owner or operator of a waste storage facility certify compliance with standards established by the USDA NRCS for waste storage facilities, or an equivalent standard certified by a professional engineer licensed in the State of Vermont.
- (e) Field stacking of manure or other agricultural wastes on sites not approved consistent with USDA NRCS standards, or otherwise approved by the Secretary:
- (1) shall consist of a stackable material that is no less than 20% solids and be able to stack four feet high; and
  - (2) shall be prohibited on lands in a floodway or subject to annual flooding; and
  - (3) shall be prohibited on exposed bedrock; and
  - (4) shall not be sited within:
    - (A) 200 feet of the top of bank of surface water;
    - (B) 200 feet of a public or private water supply;
    - (C) 100 feet from a property line;
    - (D) 100 feet from a ditch or conveyance to surface water; or

(E) areas subject to concentrated runoff;

(f) The Secretary may authorize site-specific standards other than those listed in Section 6.02(e)(4)(A)-(E) when the Secretary determines that a manure stacking or piling site, fertilizer storage, or other nutrient storage will not have an adverse impact on groundwater quality or surface water quality but in no case shall unimproved manure stacking sites be located less than 100 feet from a private water supply or the top of the bank of surface water.

(g) Over a three-year period, field stacked agricultural wastes shall be land applied consistent with the nutrient management plan requirements of Section 6.03, actively managed as a compost, or moved to a suitable alternative location.

(h) Fertilizer shall be stored consistent with the Vermont Fertilizer and Lime Regulations Section XIII. Fertigation and chemigation equipment shall be operated with an adequate anti-siphon device between the system and the water source.

(i) Pesticides shall be used in accordance with 6 V.S.A. Chapter 87 (Control of Pesticides) and all regulations promulgated thereunder.

### 6.03 Nutrient Management Planning

(a) All Certified Small Farm Operations as defined in Section 4 of this rule and all permitted Medium and Large Farm Operations managing manure, agricultural wastes, or fertilizer for use as nutrient sources shall implement a field-by-field nutrient management plan consistent with the requirements of the USDA NRCS Nutrient Management Practice Code 590 or other equivalent standards approved by the Secretary.

(b) For all other farming operations subject to this rule, all sources of nutrients shall be accounted for when determining nutrient application rates. Recommended rates may be adjusted based on manure or other waste analysis and/or nutrient testing procedures. Recommended nutrient application rates shall be consistent with current university recommendations and standard agricultural practices.

(c) For all other farming operations subject to this rule, all fields receiving mechanical application of manure, agricultural wastes, or fertilizer shall be soil sampled at least once in every five years using modified Morgan's extractant or other equivalent standards approved by the Secretary. Records of soil analysis, manure or other agricultural waste application, and fertilizer applications shall be maintained on the farm for a period five years and provided to the Secretary upon request.

(d) Owners and operators of annual cropland, perennial grass land, or hay land who are required to implement a USDA 590 standard nutrient management plan and who have soil analyses demonstrating greater than 20 parts per million (ppm) phosphorous shall implement appropriate provisions of an approved nutrient management plan that balances excessive soil phosphorus levels with management strategies to reduce those levels, including eliminating or reducing manure applications.

(e) Owners and operators of farms required to implement a USDA 590 standard nutrient management plan shall document significant changes in animal numbers, management, nutrient application rates, field management, or crop management, and shall make appropriate modifications to the farm's nutrient management plan in a timely manner.

(f) The following records of manure or other agricultural waste application shall be maintained by all farms for a period of five years and shall be provided to the Secretary upon request:

- (1) date of application;
- (2) field location;
- (3) application rate;
- (4) source of nutrients applied; and
- (5) weather and field conditions at the time of application.

#### 6.04 Soil Health Management; Cover Crop Requirements

(a) Soil management activities that increase organic matter, reduce compaction, promote biological activity, reduce erosion, and maintain appropriate nutrient levels shall be considered and implemented as practicable. Practices that promote these goals include reduced tillage, conservation tillage, avoiding mechanical activities on saturated soils, addition of organic matter using manure, green manures and compost, sod and legume rotations, and the use of cover crops.

(b) Cropland shall be cultivated in a manner that retains soil in the field and promotes soil health while minimizing visible erosion into buffer strips, across property boundaries, or that creates gully erosion. The performance management standard for the soil must result in an average soil loss less than or equal to the soil loss tolerance (T) for the prevalent soil type as calculated through application of the Revised Universal Soil Loss Equation 2 or through the application of similarly accepted models.

(c) Croplands shall be managed to prevent fieldborne gully erosion and reduce or eliminate associated sediment discharges using management strategies that may include the establishment of grassed waterways, filter strips, or other methods deemed appropriate by the Secretary.

(d) Annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, shall be required to be planted to cover crops. Broadcast seeding must be completed by October 1 of each year. Seed planted with drill seeders or otherwise incorporated shall be completed by October 15 of each year. The Secretary may, on a case-by-case basis, approve alternative planting dates due to unusual soil or weather conditions or other specific crop management needs and upon request of the owner or operator of a farm managing annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class. If annual crops cannot be harvested prior to October 15, then 30% crop residue, growing directly in the soil, must remain in order to limit soil loss.

#### 6.05 Manure and Waste Application Standards and Restrictions

(a) Manure or other agricultural wastes shall not be applied between December 15 and April 1. The Secretary may prohibit the application of manure to land in the State following adequate notice to the agricultural community between December 1 and December 15 and between April 1 and April 30 of any calendar year when the Secretary determines that due to weather conditions, soil conditions, or other limitations, application of manure to land would pose a significant potential of runoff to waters of the State.

(b) Manure or other agricultural wastes shall not be applied to cropland, perennial grass land, small grain cropland, or hay land subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, after October 16 or before April 14.

(c) Manure or other agricultural wastes applied to annual cropland subject to frequent flooding, as described in the USDA Soil Survey Flooding Frequency Class, shall be injected or otherwise incorporated within 48 hours of application. This requirement shall not apply to land in no-till management.

(d) Manure or other agricultural wastes shall not be applied when field conditions are conducive to flooding, runoff, ponding, or other off-site movement, or can be reasonably anticipated to result in flooding, runoff, ponding, or other off-site movement, regardless of NMP recommendations.

(e) Manure or other agricultural wastes shall not be applied in areas of croplands, perennial grass lands, or hay lands that:

- (1) are saturated with water with the potential to runoff to surface water;
  - (2) are frozen or snow covered, unless the Secretary has approved an exemption consistent with the requirements of Section 6.06; or
  - (3) have exposed bedrock.
- (f) Manure or other agricultural wastes shall not be applied to annual cropland, vegetable cropland, or small grain cropland where the average field slope exceeds 10%, unless a permanently vegetated buffer zone of 100 feet adjacent to downslope surface water has been established. Manure shall not be applied within the buffer zone.
- (g) Manure or other agricultural wastes shall not be mechanically applied within 100 feet of a private water supply or 200 feet of a public water supply. This prohibition shall not apply to private water supplies that have been established inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the water supply was established.
- (h) 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.

#### 6.06 Manure Spreading Exemptions

- (a) Manure and other agricultural wastes shall be land applied consistent with the requirements of this section unless the Secretary grants an emergency exemption because of an emergency situation such as the structural failure of a waste storage facility or has granted a seasonal exemption consistent with Section 6.06(b) – (d). In granting an emergency exemption, the Secretary shall establish requirements so that manure will be applied on fields in a manner with the least likelihood of generating runoff to surface waters.
- (b) The Secretary may approve a seasonal exemption to the winter spreading ban or the restrictions on frequently flooded fields for manure applications on a case-by-case basis upon written request. Requests for an exemption shall provide:
- (1) the identification and location of specific fields to be used for winter spreading;
  - (2) the proposed rates of application;
  - (3) the location of nearest surface water, mapped wetlands, mapped floodplains, water supply, tile drains, surface inlets or open drains, property boundaries, and ditches;

- (4) the identification of soil types, depth to groundwater, and slopes;
  - (5) the current soil test results;
  - (6) the annual nutrient application plan for the fields;
  - (7) the Phosphorus Index, or equivalent, results;
  - (8) the RUSLE2, or equivalent, results; and
  - (9) the USDA Soil Survey Flooding Frequency Class, and if applicable to the request, evidence that the flood frequency class is not accurate.
- (c) All approvals for a seasonal exemption shall be in writing and shall prohibit the application of manure:
- (1) to areas with established channels of concentrated storm water runoff to surface waters;
  - (2) to permanent vegetative buffer zones;
  - (3) to wetlands, as that term is defined in 10 V.S.A. § 902(5);
  - (4) within 200 feet of a potable water supply, as that term is defined in 10 V.S.A. § 1972(6);
  - (5) to fields exceeding tolerable soil loss (T);
  - (6) to saturated soils; and
  - (7) to any other area as designated by the Secretary on a case-by-case basis.
- (d) Approvals for seasonal exemptions to the winter spreading ban shall establish requirements and conditions for the application of manure when frozen or snow-covered soils prevent effective incorporation at the time of application, require manure to be applied according to a nutrient management plan, establish the maximum amounts of manure that may be applied per acre during any one application, and establish required manure spreading setbacks from surface water, water supplies, and other water conveyances. Seasonal exemptions to the winter spreading ban may be renewed annually upon request and submission of winter spreading records of application.



#### 6.07 Buffer Zones: Manure and Agricultural Wastes Application Setbacks

A vegetative buffer zone of perennial vegetation shall be maintained between croplands and the top of the bank of adjoining surface waters and ditches consistent with the criteria in (a) through (i) below:

- (a) Adjacent surface waters shall be buffered from croplands by 25 feet of perennial vegetation.
- (b) Ditches shall be buffered from croplands by 10 feet of perennial vegetation unless determined to potentially transport significant waste or nutrients to surface water consistent with the USDA 590 standard nutrient management requirements.
- (c) Surface inlets or inlets of open drains shall be buffered from croplands by 25 feet of perennial vegetation.
- (d) Mechanical application of manure or other agricultural wastes is prohibited within perennially vegetated buffer zones. Grazing of livestock consistent with the provisions of Section 7 of this rule is permitted.
- (e) The use of fertilizer or compost for the establishment and maintenance of a required vegetative buffer zone is allowed consistent with nutrient management plan requirements, soil analysis, and agronomic recommendations for the buffer zone.
- (f) Tillage within the perennially vegetated buffer zone is prohibited other than for the establishment and maintenance of the buffer zone.
- (g) Harvesting a vegetative buffer zone as a perennial crop is allowed.
- (h) Spoils from agricultural ditch maintenance shall not be stored in the buffer zone or in such a manner as to discharge to surface water.
- (i) Exceptions to the required vegetative buffer zone widths, including the requirements of Section 6.05(f), may be considered upon request on a site-specific basis according to standards approved by the Secretary, but in no case shall a buffer zone be less than 10 feet in width. Site-specific buffer zones may be approved based on field characteristics such as a determination that a conveyance has the potential to transport significant wastes or nutrients to surface water, field contours, soil types, slopes, proximity to water, nutrient management plan requirements, and other relevant characteristics when the Secretary determines that the proposed site-specific buffer zones are adequately protective of surface waters.

## 6.08 Animal Mortality Management Requirements

(a) Animal mortalities shall be properly stored, handled, and disposed of within 48 hours, so as to minimize adverse water quality impacts.

(b) Animal mortalities buried on farm property shall be sited so as to be:

(1) a minimum of 150 feet from property lines and the top of the bank of surface waters;

(2) a minimum of three feet above the seasonal high water table and bedrock;

(3) covered with a minimum of 24 inches of soil;

(4) a minimum of 200 feet from public or private drinking water supplies; and

(5) not located on lands in a floodway or subject to annual flooding.

(c) Animal mortalities composted or otherwise disposed of on farm property on unimproved sites shall be prohibited on lands in a floodway or subject to annual flooding, and shall be sited so as to be:

(1) a minimum of 200 feet from property lines;

(2) a minimum of 200 feet from the top of the bank of surface waters;

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

(4) a minimum of 300 feet from neighboring residences or public buildings;

(5) a minimum of 100 feet from a ditch or conveyance to surface water; and

(6) not upon areas of exposed bedrock.

(d) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

6.09 On-Farm Composting of Imported Food Processing Residuals

(a) All on-farm composting facilities importing less than 1,000 cubic yards per year of food processing residuals shall be sited so as to be at a minimum:

- (1) 200 feet from the top of bank of surface water;
- (2) 200 feet from a public or private water supply not owned by the farm;
- (3) 300 feet from a neighboring residence or public building;
- (4) 200 feet from a property line;
- (5) 100 feet from a ditch or conveyance to surface water;
- (6) not within floodways, areas subject to annual flooding or concentrated runoff; and
- (7) not upon areas of exposed bedrock.

(b) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

6.10 Stabilization of Banks of Surface Waters

(a) The areas from the top of a bank of surface water to the edge of the surface water shall be left in their natural state except as allowed by State statute including, but not limited to, 10 V.S.A. § 1021, and the standards established for the pasturing of livestock consistent with Section 7 of this rule.

(b) Stabilization of farm field banks of surface waters, when allowed under Section 6.10(a) of this rule, shall be constructed in accordance with the USDA NRCS standards and specifications or other standards approved by the ANR and the Agency that are consistent with policies adopted by the Secretary of Natural Resources to reduce fluvial erosion hazards.

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

(a) Adequate vegetative cover shall be maintained on banks of surface waters by limiting livestock trampling and equipment damage to protect banks of surface waters to minimize erosion.

(b) Crossings and watering areas need to be maintained so as to minimize erosion and be adequately protective of surface waters.

(c) Livestock shall not have access to surface water in production areas or immediately adjacent to production areas, except:

(1) at livestock crossings or watering areas;

(2) in areas prescribed by a rotational grazing plan consistent with NRCS standards or an equivalent standard, and approved by the Secretary. Approved grazing plan areas shall maintain at least an average of three inches of vegetative growth within 25 feet of the top of bank of surface water, and within 10 feet of the top of bank of ditches; or

(3) in areas approved by the Secretary based on site-specific characteristics and management requirements.

(d) Livestock shall not have access to surface water in areas outside of production areas that:

(1) contain unstable banks or where erosion is present; or

(2) are areas designated by the Secretary as having actual or potential threat to water quality as a result of livestock access.

(e) Livestock shall not be pastured within 50 feet of a private water supply without the permission of the water supply owner. This prohibition shall not apply to private water supplies that have been established inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the water supply was established.

## **Section 8. Ground Water Quality and Groundwater Quality Investigations**

(a) Farm operations shall be conducted so that the concentration of wastes in groundwater originating from agricultural operations do not reach or exceed the primary or secondary groundwater quality enforcement standards identified by Appendix One of the Groundwater Protection Rule and Strategy in accordance with 10 V.S.A. Chapter 48 (Groundwater Protection).

(b) Farm operations shall be conducted with the goal of reducing the concentration of wastes in groundwater to the preventive action levels (PALs) of the primary or secondary groundwater quality standards identified by Appendix One of the Groundwater Protection Rule and Strategy when monitoring indicates the presence of these wastes in groundwater that exceed the enforcement standard.

(c) The Secretary may conduct groundwater quality monitoring to assess the impact of agricultural practices and farm operations on the quality of drinking

water and groundwater. The Secretary may conduct groundwater sampling at sites:

- (1) selected by the Secretary where water supply owners or tenants have volunteered or agreed to participate in the sampling program;
  - (2) upon the request of a water supply owner or tenant;
  - (3) selected by the Secretary based on the results of other sampling data or the existence of vulnerable site characteristics; or
  - (4) with activities or operations permitted, certified, or regulated by the Secretary.
- (d) The Secretary shall conduct a groundwater investigation where the Secretary has received a complaint from a water supply owner in the vicinity of a farm that the farm or its agricultural practices has contaminated the drinking water or groundwater of the water supply owner.
- (e) The Secretary shall conduct a groundwater investigation where sampling indicates that drinking water or groundwater contains detectable concentrations of agricultural contaminants.
- (f) The Secretary shall provide:
- (1) written notification of testing results to each individual water supply owner and tenant, if known, that participates in the sampling program.
  - (2) property owners in the vicinity of farm operations and agricultural lands with the test results for each water supply owned by them that is sampled by the Secretary.
  - (3) farm operations with the test results for water supplies owned by the farm operation and, upon request, for water supplies adjacent to or impacted by the crop land or facilities managed by the farm operation.
- (g) In order to identify and remediate sources of drinking water and groundwater contamination, the Secretary, without limitation, may:
- (1) conduct site visits to interview property owners and farm operators, gain an understanding of the physical characteristics of the landscape and locate additional sites for water quality sampling;
  - (2) communicate with farm operators and adjacent property owners to identify practices and activities that are potential sources of contamination;

(3) conduct additional sampling to confirm the detection of contaminants and to determine the extent and scope of contamination at the site;

(4) require corrective actions such as changes in activities, management practices, cropping patterns, or structural revisions designed to reduce the contamination from current activities and prevent contamination from future activities;

(5) conduct follow up water quality sampling to determine the effectiveness of changes made or corrective actions taken;

(6) seek additional investigative or consultation resources to evaluate and characterize sites to determine vulnerability to drinking water and groundwater contamination; and

(7) review testing results and site evaluations to determine if changes in water quality data are the result of changes in activities or natural site conditions.

(h) The Secretary may require the owner or operator of a waste storage facility to modify the facility to meet the USDA NRCS or an equivalent standard for the facility or to implement additional management measures if the facility poses a threat to human health or the environment as established by an exceedance of the State's Groundwater Quality Standards.

(i) For the purpose of assessing whether a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall pay for the initial costs to conduct groundwater monitoring. When the Secretary has made a determination that a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall provide notification to the Department of Health and the Agency of Natural Resources. This notification shall occur within 21 days and include the location of the facility and the name of the owner or operator. When the Secretary makes a determination that a waste storage facility no longer poses a threat to human health or the environment, the Secretary shall provide notification of the revised determination to the Department of Health and the ANR.

## **Section 9. Construction of Farm Structures**

### **(a) Siting**

(1) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the

setback distances from adjoining property lines, road rights-of-way, and adjacent surface water.

(2) Local setbacks and setbacks designed by this rule shall be observed unless the Secretary has approved a farmer's written request for other reasonable setbacks for the specific farm structure being constructed or maintained in accordance with Section 9(b).

(3) Construction of farm structures in Flood Hazard Areas and River Corridors are required to obtain a Flood Hazard Area and River Corridor permit from the ANR or its designee unless otherwise exempt (refer to Appendix A). Fences through which floodwater may flow are not structures which represent an encroachment in a floodway area.

(4) Construction of new farm structures, specifically buildings and other farm structures that disturb one or more acres of land must obtain authorization from the ANR before commencing with land disturbance or construction activities.

(5) Existing Production Areas

Farm structures, with the exception of replacement structures built to occupy existing structural footprints, shall be constructed so that a minimum distance of 50 feet is maintained between the top of the bank of adjoining surface waters and the farm structure.

(A) Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering,

(B) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(C) Such structures do not include waste storage facilities if the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer.

(6) New Production Areas

(A) Farm structures, excluding waste storage facilities, shall be constructed so that a minimum distance of 50 feet is maintained

between the top of the bank of adjoining surface waters and the farm structure.

(i) Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering,

(ii) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(B) The following setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:

(i) 100 feet from the centerline of a public road;

(ii) 100 feet from any abutting property line;

(iii) 200 feet from the top of the bank of any surface water; and

(iv) 200 feet from public or private water supplies.

(b) Setbacks Approved by the Secretary

Local setbacks or no build areas for wetlands, River Corridors, and other setbacks applicable to all development in a local zoning bylaw established by the municipality shall be maintained, unless upon written request of the person, consistent with the procedures found in Appendix A, the Secretary has approved other reasonable setbacks for the specific farm structure being constructed. The Secretary may authorize the siting of a waste storage facility within 200 feet of a surface water or private water supply if the site is the best available site on the farm for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer to meet USDA NRCS standards and specifications or an equivalent standard. If an equivalent design standard is used, the design and construction shall be certified by the Secretary, or a licensed professional engineer operating within the scope of his or her expertise. The Secretary may consider the following in rendering a decision regarding alternative setbacks:

(1) unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would prevent development in accordance with this rule;



- (2) because of such physical conditions or constraints, there is no possibility that the property can be developed in conformity with the provisions of this rule and that the approval of an alternative setback is therefore necessary to enable the reasonable operation of the farm;
- (3) the alternative setback, if approved by the Secretary, will be the site that is the best available on the farm for the purposes of protecting ground water quality or surface water quality; and
- (4) the setback, if approved by the Secretary, will represent the minimum alternative setback necessary to allow for reasonable operation of the farm.

### **Section 10. Custom Applicator Certification**

- (a) Custom applicators of manure or other agricultural wastes shall be certified by the Secretary in order to operate within the State and shall comply with all applicable requirements of the Required Agricultural Practices Rule, Medium Farm Operations Rule and Permits, and Large Farm Operations Rule and Permits.
- (b) Custom applicators shall demonstrate knowledge of Required Agricultural Practices Rule standards, Medium Farm Operation Rule and Permit requirements, Large Farm Operation Rule and Permit requirements, and the USDA NRCS Nutrient Management Practice Code 590, including manure or other wastes application restrictions, buffer zones, setback requirements, and recordkeeping requirements.
- (c) Custom applicators shall demonstrate competency in methods and techniques used to minimize runoff from application sites, identification of weather or soil conditions that may increase risk of field runoff, recordkeeping, and other information deemed pertinent by the Secretary.
- (d) Certified custom applicators shall train all employees and seasonal workers in methods or techniques to minimize runoff to surface water, identification of weather or soil conditions that may increase the risk of runoff, and the Required Agricultural Practices Rule, Medium Farm Operation Rule and Permit, Large Farm Operation Rule and Permit standards and restrictions for the application of manure or other agricultural wastes. Records of training shall be maintained in a manner prescribed by the Secretary.
- (e) Certification shall be valid for five years from the date of issuance and shall be renewable annually on a form and in a manner prescribed by the Secretary.

This document, developed pursuant to Act 64 (2015 session), is the clean draft of the Required Agricultural Practices (RAPs) that was submitted to the Legislative Committee on Administrative Rules (LCAR). For more information, please visit <http://agriculture.vermont.gov/water-quality/regulations/rap> or contact the Vermont Agency of Agriculture, Food and Markets at (802) 828-3478.

(f) Certified custom applicators shall complete eight hours of training in each five-year period of certification. Completion of five-year training requirements will serve as meeting the requirements for recertification.

(g) Certified custom applicators shall maintain records of the amount of manure or agricultural waste applied by farm and field for a period of five years and provide those records to the Agency upon reasonable request.

### **Section 11. Site-Specific On-Farm Conservation Practices**

When the Secretary determines, after inspection of a farm, that a person engaged in farming is complying with the Required Agricultural Practices Rule but there still exists the potential for agricultural pollutants to enter the waters of the State, the Secretary shall require the person to implement additional, site-specific, on-farm conservation practices designed to prevent agricultural pollutants from entering the waters of the State. When requiring implementation of a conservation practice, the Secretary shall inform the person engaged in farming of the resources available to assist the person in implementing the conservation practices to comply with the requirements of this rule.

### **Section 12. Severability Clause**

If any provision of this rule, or the application thereof to any person or circumstance, is held invalid, such determination shall not affect other provisions or applications of this rule which can be given effect without the invalid provision or application, and to that end the provisions of this rule are severable.

### **Section 13. Effective Dates**

(a) Sections 1 – 6.04(c), 6.05(a), and 6.05(c) – 13 of this regulation shall become effective on [date of adoption]; and

(b) Sections 6.04(d) and 6.05(b) of this regulation shall become effective on April 15, 2017.

## **Appendix A: Process for obtaining variances**

### Farm Structures/Municipal Setbacks: Variances

- (a) A complete petition for an alternative setback shall include:
- (1) the location of the parcel, and contact information where the applicant can be reached for additional information or clarification;
  - (2) a detailed description of the farm operation and description of how the applicant is engaged in Required Agricultural Practices as defined in Section 3 of the RAPs;
  - (3) a statement of the reason why less restrictive setbacks are necessary and why the setback is the least deviation possible to provide relief;
  - (4) a copy of the zoning ordinance governing the tract on which the structure will be built outlining the setback requirements or a letter from the municipality with the required setback information;
  - (5) the name and contact information for your town's Zoning Administrator or Town Clerk, including an affirmative statement that the town has been notified of the intent to construct a Farm Structure;
  - (6) a plan of the existing structure(s) and proposed structure(s) showing the distance to all property lines from the furthest projection of the structure, including overhangs. For property lines along highway rights-of-way, measure the setback appropriately as outlined in the municipal regulations;
  - (7) name(s) and address(es) of the affected adjoining property owner(s) and a description of each adjoining land use;
  - (8) any letter(s) from adjoining landowners where applicable; and
  - (9) certification that the farm is in compliance with all Required Agricultural Practices rules.

The Secretary bases his or her decision on facts provided by the petitioner. Failure to provide information to the Secretary could result in denial of request.

(b) Public Notice and Issuance Requirements

The Secretary will notify the municipality in writing by certified mail and copy the affected adjoining property owner(s) of his or her intent to consider a petition for an alternative setback. The notification shall include a description of the proposed project, submitted plan, and shall be accompanied by information that clearly states where additional information may be obtained. The Secretary will request that the notice be posted in a public place in the municipal office.

Any comments resulting from this posting or from the municipality must be received in writing at the Agency by 4:30 p.m. on the seventh business day following receipt of the notice.

(c) Standards

The Secretary may grant a petition for an alternate setback or grant a petition for an alternate setback with conditions, except as otherwise outlined in this rule or statutorily required, when:

- (1) there are unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would create a hardship for the farm operation;
- (2) because of such physical conditions or constraints, there is no possibility that the property can be developed in strict conformity with the provisions of this rule and that the authorization of an alternative setback is therefore necessary to enable the reasonable operation of the farm;
- (3) the hardship has not been created by the applicant;
- (4) the alternative setback, if authorized by the Secretary, will not substantially or permanently impair the appropriate use or development of adjoining property, nor be detrimental to the public health, safety, and welfare; and
- (5) the variance, if authorized by the Secretary, will represent the minimum alternative that will afford relief and will represent the least deviation possible from this rule.

\* The Agency cannot approve alternate setbacks from State wetland regulations, nor approve construction within Highway rights-of-way.

## **Roles of Other State Agencies: Information**

**Public Drinking Water Supplies and Wastewater Management:** Nutrients, sediment, organic matter, and microorganisms may also impact drinking water supplies derived from surface waters. Farm operations should be aware of the locations of surface drinking water source intakes and appropriately manage agricultural activities to reduce potential negative impacts. Information regarding public water supplies as well as information pertaining to wastewater systems requirements may be obtained at (802) 828-1535.

**Wetlands:** Farm operations should be aware of existing rules pertaining to wetlands under state and federal jurisdiction. The Natural Resources Conservation Service, U.S. Army Corps of Engineers, and the Vermont Department of Environmental Conservation coordinate all agriculture and wetland issues in Vermont. It is strongly suggested that landowners contact the U.S. Army Corps of Engineers at (802) 872-2893 and the Vermont Department of Environmental Conservation at (802) 828-1535 before initiating farm-related projects in or near wetlands.

**Construction of New Farm Structures:** Construction of new farm structures, specifically buildings and other farm-related structures, or other construction on the farm that disturb one or more acres of land, must obtain authorization from the ANR before commencing with land disturbance or construction activities. Approval will be issued by the ANR upon receipt of a Notice of Intent (NOI) which certifies that adequate measures for the control of erosion and sedimentation will be used during land disturbance and construction efforts. Persons needing additional information about the Construction General Permit or NOI concerning one or more acres of land disturbance are advised to contact the Watershed Management Division of the Vermont Department of Environmental Conservation's Environmental Assistance Hotline at 1-800-974-9559. Authorization by the ANR is not needed for construction or land disturbance related to cultivation, irrigation, drainage, and fencing.

**Flood Hazard Area and River Corridor General Permit:** An ANR General Permit for activities exempt from municipal regulation in Flood Hazard Areas and River Corridors may be required. The primary purpose for the General Permit is to fully implement the Vermont Flood Hazard Area & River Corridor Rule (effective 03/01/2015) which requires the Agency to regulate activities exempt from municipal regulation in Flood Hazard Areas and River Corridors. These activities include state-owned and operated institutions and facilities, required agricultural and silvicultural practices, and power generating and transmission facilities regulated under 30 V.S.A. §§ 248 and 248a. More information can be obtained by calling (802) 828-1535.

**Solid and Hazardous Waste Management:** Farm operations are required to manage all wastes generated on the farm consistent with all applicable solid waste rules and hazardous waste rules. Information regarding the proper management, storage, and disposal of hazardous waste, universal waste, used oil, and petroleum products can be obtained from the Vermont Waste Management & Prevention Division by calling (802) 828-1138. Information regarding the proper management, storage, and disposal of pesticidal waste and empty pesticide containers can be obtained from the Vermont Agency of Agriculture, Food and Markets by calling (802) 828-

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2431. On-farm composting or anaerobic digestion of food residuals and food processing residuals may require registration or permitting by the Vermont Waste Management & Prevention Division. More information can be obtained by calling (802) 828-1138.

**Wastewater Management and Residuals Management:** Farm operations generating wastewater indirect discharges or discharges to underground injection wells are advised that permits may be required from the Department of Environmental Conservation Watershed Management Division or Groundwater Protection and Management Division. The management of sewage, biosolids, and septage on a farm must be conducted consistent with the Vermont Solid Waste Management Rules and any Solid Waste Management Facility Certification authorizing these activities. Information regarding these requirements can be obtained by calling (802) 828-1535.

**Water Withdrawal and Irrigation:** Farm operations utilizing surface waters for irrigation purposes are advised that water withdrawals above a *de minimis* rate are required to obtain a permit from the Department of Environmental Conservation consistent with the *Procedure for Determining Acceptable Minimum Stream Flows*. More information regarding water withdrawals for irrigation purposes and permitting requirements can be obtained by calling the Watershed Management Division at (802) 828-1535.

**Alteration of Streams:** Stream alteration permits regulate activities that take place in or along streams. The permit program is intended to prevent the creation of flood hazards, protect against damage to aquatic life, and protect the rights of neighboring landowners. The types of activities that are regulated include streambank stabilization, road improvements that encroach on streams, bridge construction or repair, and utility crossings under streambeds. More information regarding stream alteration and permitting requirements can be obtained by calling the River Management Division at (802) 828-1535.

**Spill Prevention, Control, and Countermeasure (SPCC):** EPA's oil pollution prevention regulation requires facilities that are subject to regulation to prepare and implement a plan to prevent any discharge of oil into navigable waters or adjoining shorelines of the U.S. A farm must prepare a SPCC Plan if it has an aggregate aboveground storage capacity of greater than 1,320 gallons. Only containers of oil with a capacity of 55-gallons or greater are counted toward this aggregate capacity threshold. The plan is referred to as a Spill Prevention, Control, and Countermeasure (SPCC) plan. More information regarding SPCC and permitting requirements can be obtained by calling the Environmental Assistance Office at 1(800) 974-9559.

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## REQUIRED AGRICULTURAL PRACTICES RULE FOR THE AGRICULTURAL NONPOINT SOURCE POLLUTION CONTROL PROGRAM

### Section 1. General

~~1.1 Introduction:~~ As defined in 6 V.S.A. Chapter 215, 1.1 Preamble: Agriculture has been identified as a major contributor of non-point source pollution to surface waters of Vermont. For example, the Lake Champlain Total Maximum Daily Load (TMDL), as modeled by the Environmental Protection Agency, estimates that nutrient losses from agricultural activities represent 29% of the total phosphorous load to the Lake Champlain basin and over 40% of Vermont's contribution to the phosphorous load to the basin. Agriculture contributes non-point source pollution to surface and groundwater from multiple sources, including cropland erosion, farmstead management, crop storage, and manure storage and application. While contributions of non-point source pollution from agriculture may vary from watershed to watershed, the overall impact to water quality from agricultural lands, when not managed well, is significant.

The Vermont legislature first directed the Agency of Agriculture, Food and Markets to develop a comprehensive Agricultural Non-Point Source Pollution Reduction Program in 1992. The Accepted Agricultural Practices Rules (AAPs), which regulate farming activities in order to protect water quality, became effective in 1995 and were revised in 2006.

As a result of Act 64—the Vermont Clean Water Act—the Agency of Agriculture was tasked with updating the AAPs to further reduce the impact of agricultural activities to water quality across the State. The Required Agricultural Practices Rules (RAPs) are an updated version of the AAPs, re-written to a higher level of performance.

Act 64, which was signed into law by the Governor in June 2015, amended and enacted multiple requirements related to water quality in the State. The act required the Agency of Agriculture to amend several provisions of the AAPs in order to improve water quality in Vermont. The first change was to rename the Accepted Agricultural Practices Rules the Required Agricultural Practices Rules. The RAPs are standards to which all types of farms must be managed. Act 64 further required the Agency of Agriculture to:

- Establish requirements for a Small Farm Certification Program;
- Establish nutrient, manure, and waste storage standards;
- Make recommendations for soil health;
- Establish requirements for vegetated buffer zones;
- Establish requirements for livestock exclusion from surface water;

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- Establish nutrient management planning standards; and
- Establish standards for soil conservation such as cover cropping

The standards and rules that follow are intended to improve the quality of all of Vermont's waters by reducing and eliminating cropland erosion, sediment losses, and nutrient losses through improved farm management techniques, technical and compliance assistance, and, where appropriate, enforcement. This rule strives to balance the complexity, variability, and requirements of farm management with the need to improve that management in order to meet the State's goals in improving and protecting water quality.

Soil quality and soil health are critical elements of an overall agricultural non-point source pollution reduction program. Agricultural soils are recognized as a critical resource for the overall prosperity of Vermont's agricultural community and for the public at large. Efforts to build soil organic matter, increase biological activity, and reduce compaction, including reduced tillage, use of composts, establishing crop rotations, cover cropping, and the elimination of annual cropping on highly vulnerable lands, will be essential to the success of programs whose goal is to improve Vermont's water quality. 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.

1.2 Enabling Legislation: As defined in 6 V.S.A. §§ 4810 and 4810a, the Required Agricultural Practices (RAPs) shall be management standards to be followed by all persons engaged in farming in this State. These standards shall address activities which have a potential for causing agricultural pollutants to enter the groundwater and waters of the State, including dairy and other livestock operations, all forms of crop and nursery operations and on-farm or agricultural fairground registered pursuant to 20 V.S.A. § 3902, and livestock and poultry slaughter and processing activities. The RAPs shall include, as well as promote and encourage, practices for farmers in preventing agricultural pollutants from entering the groundwater and waters of the State when engaged in animal waste management and disposal, soil amendment applications, plant fertilization, and pest and weed control. Persons engaged in farming who are in compliance with these practices shall be presumed to not have a discharge of agricultural pollutants to waters of the State. The RAPs shall be designed to protect water quality and shall be practical and cost-effective to implement, as determined by the Secretary.

1.23 Purpose: The RAPs are farm and land management practices that will control and reduce agricultural nonpoint source pollution and subsequent nutrient losses from farm fields and production areas to surface and ground waters of the State or across property boundaries. The RAPs also establish minimum construction and siting requirements for farm structures in floodplains, floodways, river corridors, and flood hazard areas.



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- 1.34 Authority: 6 V.S.A. Chapter 215 (Agricultural Water Quality), including §§ 4810, 4810(a), 4810a, and 4811, and Act 64 of the Vermont General Assembly (2015 session).
- 1.45 Enforcement: Violations of this rule are subject to enforcement by the Secretary of the Vermont Agency of Agriculture, Food and Markets and the Attorney General under the provisions of 6 V.S.A. §§ 4991 - 4996 and additional remedies available to the State under other applicable Vermont law.
- 1.56 Further considerations under the RAPs: 6 V.S.A. § 4810a(b) requires that on or before January 15, 2018, the Secretary of Agriculture, Food and Markets shall amend by rule the Required Agricultural Practices in order to include requirements for reducing nutrient contribution to waters of the State from subsurface tile drainage. As part of the rule amendment process, the Secretary may also evaluate the current status of effectiveness of the Required Agricultural Practices, the implementation of additional best management practices, and the current water quality condition of waters of the State. The Secretary may consider additional changes to the Required Agricultural Practices, as appropriate, to meet the water quality goals of the State.

## Section 2. Definitions

- 2.01- Agency means the Vermont Agency of Agriculture, Food and Markets.
- 2.02 Agricultural Product means any raw agricultural commodity, as defined in 6 V.S.A. § 21(6), that is principally produced on the farm and includes products prepared from the raw agricultural commodities principally produced on the farm.
- 2.03 Annual Cropland means, for the purposes of this rule, land devoted to the production, cultivation, harvesting, and management of annual row crops, including sweet corn and pumpkins, but does not include:
- (a) vegetable, fruit, or berry crops grown for human consumption; and
  - (b) small grains.
- 2.04 ANR means the Vermont Agency of Natural Resources, and the Secretary of the Vermont Agency of Natural Resources and her or his designees.
- 2.05 Barnyard and Feedlot means an area, either earthen or improved, where animals are confined by fences, other structures, or topography, are primarily sustained by supplemental feed, and where vegetation cover is sparse.
- 2.06 Buffer Zone means an area of perennial vegetation between the edge of cropland and:
- (a) the top of the bank of an adjoining water of the State;

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~~(b) a ditch that is not a surface water under State law and that is not a water of the United States under federal law, and surface inlets or open drains;~~ and

~~(c) surface inlets or open drains.~~

~~2.0607 Certified Small Farm means a farm that is required to submit annual certification of compliance with~~ meets the Required Agricultural Practices Rule as specified in criteria of Section 4.1 of this rule.

~~2.0708 Compost means a stable, humus-like material produced by the controlled biological decomposition of organic matter through active management, but shall not mean sewage, septage, or materials derived from sewage or septage.~~

~~2.0809 Cover Crop means a temporary vegetative crop established for the purpose of:~~

~~(a) reducing erosion and runoff; and~~

~~(b) enhancing soil health by providing organic matter in annual cropland.~~

~~2.0910 Crop and Cropland, for the purposes of this rule, means:~~

~~(a) plants grown for food, feed, fiber (other than trees grown for silvicultural or timber purposes), Christmas trees, maple sap, horticultural, viticultural, orchard crops, and pasture;~~ and

~~(b) the land upon which they are grown.~~

~~2.4011 Custom Applicator means a person who is engaged in the business of applying manure or other agricultural wastes to land and who charges or collects other consideration for the service including full-time employees of a person engaged in the business of applying manure or agricultural wastes to land.~~

~~2.4112 Discharge means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into waters.~~

~~2.4213 Ditch means a constructed channel or 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, and is not a surface water as defined in Section 2.34 of this rule.~~

~~2.4314 Farm means a parcel or parcels of land owned, leased, or managed by a person and devoted primarily to farming, as defined in Section 2.4516 of this rule, and that meets the threshold criteria as established in Section 3 of this rule, provided that the lessee controls the leased lands to the extent they would be considered as part of the lessee's own farm.~~

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Indicators of control may include whether the lessee makes day-to-day decisions concerning the cultivation or other farming-related use of the leased lands and whether the lessee manages the land for farming during the leased period.

2.415 Farm Structure means a structure that is used by a person for farming, including a silo, a building to house livestock or raise horticultural or agronomic plants, or customarily used to carry out the agricultural practices defined in Section 3.2 of this rule. A farm structure includes a barnyard or waste management system, either of which is created from an assembly of materials, including the supporting fill necessary for structural integrity, but excludes a dwelling for human habitation. A farm structure also must be used by a person who can demonstrate meeting the minimum threshold criteria as found in Section 3.1 of this rule.

2.416 Farming means:

- (a) the cultivation or other use of land for growing food, fiber, Christmas trees, maple sap, or horticultural, viticultural, and orchard crops; or
- (b) the raising, feeding, or management of livestock, poultry, fish, or bees; or
- (c) the operation of greenhouses; or
- (d) the production of maple syrup; or
- (e) the on-site storage, preparation, and sale of agricultural products principally produced on the farm; or
- (f) the on-site storage, preparation, production, and sale of fuel or power from agricultural products or wastes principally produced on the farm; or
- (g) the raising, feeding, or management of four or more equines owned or boarded by the farmer, including training, showing, and providing instruction and lessons in riding, training, and the management of equines.

2.417 Fertilizer means any substance containing one or more recognized plant nutrients that is used for its plant nutrient content and that is designed for use or claimed to have value in promoting plant growth or health, except unprocessed animal or vegetable manures and other products exempted by the Secretary.

2.418 Flood Hazard Area means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year (a.k.a. 100-yr flood). The term has the same meaning as "area of special flood hazard" under 44 C.F.R. § 59.1. The area may be designated as Zone A or AE on the National Flood Insurance Program maps.

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- 2.1819 Floodplain means any land area susceptible to being inundated by water from any source.
- 2.1920 Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base (one percent annual chance) flood without cumulatively increasing the water surface elevation more than one foot at any point. Flood hazard areas and floodways may be shown on separate National Flood Insurance Program map panels.
- 2.2021 Food Processing Residual means the remaining organic material from a food processing plant and may include whey and other dairy, cheese making, and ice cream residuals or residuals from any food manufacturing process excluding slaughtering and rendering operations. It does not include materials from markets, groceries, or restaurants.
- 2.2122 Groundwater means water below the land surface in a zone of saturation, but does not include surface waters.
- 2.2223 Groundwater Quality Standards means the primary and secondary groundwater quality standards listed in Appendix One of the Groundwater Protection Rule and Strategy in accordance with 10 V.S.A. Chapter 48 (Groundwater Protection).
- 2.2324 Livestock means cattle, cow/calf pairs, youngstock, heifers, bulls, ~~american~~American bison, swine, sheep, goats, horses, cervids, camelids, ratites, rabbits, pheasants, chukar partridge, coturnix quail, laying hens, broilers, ducks, turkeys, or any other type of fowl as designated by the Secretary. Other livestock types may be designated by the Secretary based on the potential to generate nutrients or other associated agricultural wastes.
- 2.2425 Manure means livestock waste in solid or liquid form that may also contain bedding, spilled feed, water, milkhouse waste, or soil.
- 2.2526 Nonpoint Source Pollution for the purposes of this rule, means agricultural wastes that reach surface water or groundwater indirectly or in a diffuse manner as a result of farming.
- 2.2627 Person means:
- (a) an individual, partnership, corporation, association, unincorporated organization, trust, or other legal or commercial entity, including a joint venture or affiliated ownership; or
  - (b) a municipality or state agency; or
  - (c) individuals and entities affiliated with each other for profit, consideration, or any other beneficial interest derived from agricultural management, including lessors and lessees.

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2.2728 Pesticide means economic poison as defined in 6 V.S.A. § 911(5) and Section I 22 of the Vermont Regulations for Control of Pesticides.

2.2829 Principally Produced means that more than 50% (either by weight or volume) of raw agricultural products grown or produced as a result of farming that are stored, prepared, or sold at the farm are also grown or produced on the farm.

2.2930 Production Area means those areas of a farm where animals, agricultural inputs, or raw agricultural products are confined, housed, stored, or prepared whether within or without structures, including barnyards, raw materials storage areas, heavy use areas, fertilizer and pesticide storage areas, and waste storage and containment areas. Production areas include egg washing or egg processing facilities, milkhouses, raw agricultural commodity preparation or storage, or any area used in the storage, handling, treatment, or disposal of mortalities.

2.3031 River Corridor means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance of natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures.

2.3132 Secretary means the Secretary of the Agency of Agriculture, Food and Markets and her or his designees.

2.32-2.33 Small Farm means a small farm as defined in 6 V.S.A. § 4871.

2.34 Surface Water or Waters means all rivers, streams, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border the state or any portion of it.

2.3335 Top of Bank means the point along the bank of a stream surface water or ditch where an abrupt change in slope is evident, and where the stream surface water is generally able to overflow the banks and enter the adjacent floodplain during an annual flood event. Annual flood event shall be determined according to the Agency of Natural Resources' Flood Hazard Area and River Corridor Protection Procedure.

2.3436 Vegetable Production means the production of all true vegetables and all commonly known vegetables that are technically fruits, including, but not limited to, peppers, tomatoes, eggplants, and peas.

2.3537 Waste or Agricultural Waste means material originating or emanating from a farm that is determined by the Secretary or the Secretary of Natural Resources to be harmful to the waters of the State, including: sediments; minerals, including heavy metals; plant nutrients; pesticides; organic wastes, including livestock waste, animal mortalities,

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compost, feed and crop debris; waste oils; pathogenic bacteria and viruses; thermal pollution; silage runoff; untreated milkhouse waste; and any other farm waste as the term "waste" is defined in 10 V.S.A. § 1251(12).

**2.3638 Waste Management System** means an on-farm waste management program and conservation practices which may include a combination of:

- (a) an adequately sized waste storage facility, field stacking, composting, leachate control systems, bedded pack systems, and milkhouse waste systems;
- (b) contracts which transfer the ownership of wastes generated at a production area to another person for management in a manner determined by the Secretary; and/or,
- (c) a nutrient management plan (NMP) for all wastes to be applied in compliance with this rule.

**2.3739 Waste Storage Facility** means an impoundment made for the purpose of storing agricultural waste by constructing an embankment, excavating a pit or dugout, fabricating an in-ground or above-ground structure, or any combination thereof.

**2.3840 Waters of the State** include, for the purposes of this rule, surface water and groundwater as applied.

**2.3941 Water Supply** means a drinking water source that intersects the water table and provides water through pipes or other conveyances and includes drilled wells, dug wells, driven point wells, and natural springs.

### Section 3. Required Agricultural Practices Activities and Applicability

3.1 Persons engaged in farming and the agricultural practices as defined in Section 3.2 of this rule and who meet the minimum threshold criteria for applicability of this rule as found in Section 3.1(a) – (g) must meet all applicable Required Agricultural Practices conditions, restrictions, and operating standards. Persons engaged in farming who are in compliance with these conditions, restrictions, and operating standards, as applicable, shall be presumed to not have a discharge of agricultural wastes to waters of the State. Compliance with the Required Agricultural Practices Rule is required if a farm person:

- (a) is required to be permitted or certified by the Secretary, consistent with the requirements of 6 V.S.A. Chapter 215 and this rule; or

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(b) has produced an annual gross income from the sale of agricultural products of \$2,000.00 or more in an average year; or

(c) is preparing, tilling, fertilizing, planting, protecting, irrigating, and harvesting crops for sale on a farm that is no less than 4.0 contiguous acres in size; or

(d) is raising, feeding, or managing at least the following number of adult livestock on a farm that is no less than 4.0 contiguous acres in size:

(1) four equines;

(2) five cattle, cows, or American bison;

(3) 15 swine;

(4) 15 goats;

(5) 15 sheep;

(6) 15 cervids;

(7) 50 turkeys;

(8) 50 geese;

(9) 100 laying hens;

(10) 250 broilers, pheasant, Chukar partridge, or Coturnix quail;

(11) three camelids;

(12) four ratites;

(~~3~~)

(13) 30 rabbits;

(14) 100 ducks;

(15) 1,000 pounds of cultured trout; or

(16) other livestock types, combinations, or numbers as designated by the Secretary based upon or resulting from the impacts upon water quality consistent with this rule; or

(e) is raising, feeding, or managing other livestock types, combinations, and numbers, or managing crops or engaging in other agricultural practices on less

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than 4.0 contiguous acres in size that the Secretary has determined, after the opportunity for a hearing, to be causing adverse water quality impacts and in a municipality where no ordinances are in place to manage the activities causing the water quality impacts; or

(f) is managed by a farmer filing with the Internal Revenue Service a 1040(F) income tax statement in at least one of the past two years; or

(g) has a prospective business or farm management plan, approved by the Secretary, describing how the farm will meet the threshold requirements of this section.

3.2 The agricultural practices on farms meeting the minimum threshold criteria set forth in Section 3.1 that are governed by this rule include:

(a) the confinement, feeding, fencing, and watering of livestock;

(b) the storage and handling of agricultural wastes principally produced on the farm;

(c) the collection of maple sap principally produced from trees on the farm and/or production of maple syrup from sap principally produced on the farm;

(d) the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of crops;

(e) the ditching and subsurface drainage of farm fields and the construction of farm ponds;

(f) the stabilization of farm fields adjacent to banks of surface water, and the establishment and maintenance of vegetated buffer zones and riparian buffer zones;

(g) the construction and maintenance of farm structures, farm roads, and associated infrastructure;

(h) the on-site storage, preparation, production, and sale of fuel or power from agricultural products or wastes principally produced on the farm;

(i) the on-site storage, preparation, and sale of agricultural products principally produced on the farm from raw agricultural commodities principally produced on the farm;



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(j) the on-site storage of agricultural inputs for use on the farm including, but not limited to, lime, fertilizer, pesticides, compost and other soil amendments, and the equipment necessary for operation of the farm; and

(k) the management of livestock mortalities produced on the farm.

#### Section 4. Small Farm Certification and Training Requirements

4.1 As used in this section, "Certified Small Farm" means:

(a) (1) a parcel or parcels of land on which 10 or more acres are used for the raising, feeding, or management of livestock;

(2) that house no more than the number of animals specified under 6 V.S.A. § 4857(2) (Medium Farm definition); and

(3) that house at least the following numbers and types of livestock:

(A) 50 mature dairy cows;

(B) 75 youngstock or heifers;

(C) 75 veal calves;

(D) 75 cattle or cow/calf pairs;

(E) 188 swine weighing over 55 pounds;

(F) 750 swine weighing less than 55 pounds;

(G) 40 equines;

(H) 750 sheep or lambs/goats;

(I) 4,125 turkeys;

(J) 2,250 laying hens or broilers with a liquid manure handling system;

(K) 6,250 laying hens or broilers without a liquid manure handling system;

(L) 375 ducks with a liquid manure handling system;

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(M) 2,500 ducks without a liquid manure handling system;

(N) any other animal type, number, or combination of animals as designated by the Secretary that is having an adverse impact on water quality; or

(O) any combination of more than one animal type exceeding 90,000 pounds of total live animal weight (animal units); or

(b) farms on a parcel or parcels of land greater than 50 acres used for the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of annual cropland where fertilizer, manure, or agricultural wastes are mechanically applied to said parcel or parcels; or

(c) farms on a parcel or parcels of land greater than 50 acres used for the preparation, tilling, fertilization, planting, protection, irrigation, and harvesting of vegetable production where fertilizer, manure, or agricultural wastes are mechanically applied to said parcel or parcels; or

(d) that the Secretary has designated, on a case-by-case basis after an opportunity for a hearing, as a farm required to comply with the certification requirements pursuant to 6 V.S.A. § 4871(c) based on the farm's management, agricultural inputs used by the farm, tillage practices used by the farm, agricultural wastes generated by the farm, and the associated actual or potential water quality impacts.

4.2 On a case-by-case basis after an opportunity for a hearing, the Secretary may designate a farm as not being required to comply with the certification requirements pursuant to 6 V.S.A. § 4871(c) upon a determination that the farm does not pose a threat of discharge to a water of the State or does not pose a threat of contamination to groundwater.

4.3 Certified Small Farms shall annually certify compliance with the Required Agricultural Practices Rule. Certification shall be in a manner and schedule established by the Secretary.

(a) Certified Small Farms may be inspected at any time for the purposes of assessing compliance by the farm with the Required Agricultural Practices Rule.

(b) The Secretary may prioritize inspections and inspection frequency based on the identified water quality or compliance issues posed by a farm. Certified Small Farms shall be scheduled for inspection at least once in every seven-year period commencing at the receipt by the Secretary of certification.

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(c) A person who owns or leases a Certified Small Farm shall notify the Secretary of a change of ownership or change of lessee of a Certified Small Farm within 30 days of the change. The notification shall include the certification of farm compliance and shall be submitted by the new owner or lessee.

## Section 5. Agricultural Water Quality Training

(a) Owners or operators of certified small farms, permitted medium farms, or permitted large farms certified or permitted by the Secretary shall obtain water quality training as approved by the Secretary. Training shall provide information regarding:

- (1) the prevention of discharges;
- (2) the mitigation and management of stormwater runoff;
- (3) statutory and regulatory requirements of the operation of a large, medium, or small farm and financial resources available to assist in compliance;
- (4) the mechanical application of manure or nutrients and methods or techniques used to minimize the runoff of applied manure or nutrients to waters of the State;
- (5) weather and soil conditions that increase the risk of runoff of manure or nutrients to waters of the State; and
- (6) standards for nutrient management including nutrient management planning.

(b) Large Farm Operations (LFO), Medium Farm Operations (MFO), and Certified Small Farm Operations (SFO) shall obtain four hours of approved training at least once in every five years. This requirement will commence upon notice from the Secretary.

(c) The Secretary may approve training offered by other entities upon request of the entity providing the training. All requests for training approval shall be provided to the Secretary at least 30 days prior to the scheduled training dates. The entity will be required to submit information about the training and attendees in a manner requested by the Secretary.

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

### 6.01 Discharges

(a) Farms shall not create any discharge of agricultural wastes to surface waters of the State through a discrete conveyance such as, but not limited to, a pipe, ditch, or conduit without a permit from the Secretary of ANR.

(b) Production areas, barnyards, animal holding or feedlot areas, manure storage areas, and feed storage areas shall utilize runoff and leachate ~~collections~~ collection systems, diversion, or other management strategies in order to prevent the discharge of agricultural wastes to surface water or groundwater.

### 6.02 Storage of Agricultural Wastes and Agricultural Inputs

(a) All agricultural wastes shall be managed in a manner to prevent runoff or leaching of wastes to waters of the State or across property boundaries.

(b) All components of a waste management system, including waste storage facilities, shall be managed and maintained so as to prevent structural or mechanical failures.

(c) Waste Storage Facilities maintenance and construction shall ensure:

(1) Vegetation is managed so that the facility maintains structural integrity and prevents leaks or overflows at all times.

(2) Waste Storage Facilities are managed to provide adequate volume in order to prevent overflows at all times.

(3) 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 ~~Resourc~~ Resources 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.

(d) The Secretary may require, on a case-by-case basis, that the owner or operator of a waste storage facility certify compliance with standards established by the USDA NRCS for waste storage facilities, or an equivalent standard certified by a professional engineer licensed in the State of Vermont.

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(e) Field stacking of manure or other agricultural wastes on sites not approved consistent with USDA NRCS standards, or otherwise approved by the Secretary:

(1) shall consist of a stackable material that is no less than 20% solids and be able to stack four feet high; and

(2) shall be prohibited on lands in a floodway or subject to annual flooding; and

(3) shall be prohibited on exposed bedrock; and

(4) shall not be sited within:

(A) 200 feet of the top of bank of surface water;

(B) 200 feet of a public or private water supply;

(C) 100 feet from a property line;

(D) 100 feet from a ditch or conveyance to surface water; or

(E) areas subject to concentrated runoff;

(f) The Secretary may authorize site-specific standards other than those listed in Section 6.02(e)(4)(A)-(E) when the Secretary determines that a manure stacking or piling site, fertilizer storage, or other nutrient storage will not have an adverse impact on groundwater quality or surface water quality but in no case shall unimproved manure stacking sites be located less than 100 feet from a private water supply or the top of the bank of surface water.

(g) ~~Field~~ Over a three-year period, field stacked agricultural wastes shall be land applied consistent with the nutrient management plan requirements of Section 6.03 ~~or shall be exported off the farm within two years, actively managed as a compost, or moved to a suitable alternative location.~~

(h) Fertilizer shall be stored consistent with the Vermont Fertilizer and Lime regulations ~~Regulations~~ Section XIII. Fertigation and chemigation equipment shall be operated with an adequate anti-siphon device between the system and the water source.

(i) Pesticides shall be used in accordance with 6 V.S.A. Chapter 87 (Control of Pesticides) and all regulations promulgated thereunder.

### 6.03 Nutrient Management Planning

- (a) All Certified Small Farm Operations as defined in Section 4 of this rule and all permitted Medium and Large Farm Operations managing manure, agricultural wastes, or fertilizer for use as nutrient sources shall implement a field-by-field nutrient management plan consistent with the requirements of the USDA NRCS Nutrient Management Practice Code 590 or other equivalent standards approved by the Secretary.
- (b) For all other farming operations subject to this rule, all sources of nutrients shall be accounted for when determining nutrient application rates. Recommended rates may be adjusted based on manure or other waste analysis and/or leaf analysis. nutrient testing procedures. Recommended nutrient application rates shall be consistent with current university recommendations and standard agricultural practices.
- (c) For all other farming operations subject to this rule, all fields receiving mechanical application of manure, agricultural wastes, or fertilizer shall be soil sampled at least once in every five years using modified Morgan's extractant or other equivalent standards approved by the Secretary. Records of soil analysis, manure or other agricultural waste application, and fertilizer applications shall be maintained on the farm for a period five years and provided to the Secretary upon request.
- (d) Owners and operators of annual cropland, perennial grass land, or hay land who are required to implement a USDA 590 standard nutrient management plan and who have soil analyses demonstrating greater than 20 parts per million (ppm) phosphorous shall ~~implement practices to reduce phosphorus levels over time in soil, including eliminating or reducing manure applications, and shall implement~~ appropriate provisions of an approved nutrient management plan that balances excessive soil phosphorus levels with management strategies to reduce those levels, including eliminating or reducing manure applications.
- (e) Owners and operators of farms required to implement a USDA 590 standard nutrient management plan shall document significant changes in animal numbers, management, nutrient application rates, field management, or crop management, and shall make appropriate modifications to the farm's nutrient management plan in a timely manner.
- (f) The following records of manure or other agricultural waste application shall be maintained by all farms for a period of five years and shall be provided to the Secretary upon request:

- (1) date of application;

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- (2) field location;
- (3) application rate;
- (4) source of nutrients applied; and
- (5) weather and field conditions at the time of application.

#### 6.04 Soil Health Management; Cover Crop Requirements

(a) Soil management activities that increase organic matter, reduce compaction, promote biological activity, reduce erosion, and maintain appropriate nutrient levels shall be considered and implemented as practicable. Practices that promote these goals include reduced tillage, conservation tillage, avoiding mechanical activities on saturated soils, addition of organic matter using manure, green manures and compost, sod and legume rotations, and the use of cover crops.

(b) Cropland shall be cultivated in a manner that retains soil in the field and promotes soil health while minimizing visible erosion into buffer strips, across property boundaries, or that creates gully erosion. The performance management standard for the soil must result in an average soil loss less than or equal to the soil loss tolerance (T) for the prevalent soil type as calculated through application of the Revised Universal Soil Loss Equation 2 or through the application of similarly accepted models.

(c) Croplands shall be managed to ~~minimize~~prevent fieldborne gully erosion and reduce or eliminate associated sediment discharges using management strategies that may include the establishment of grassed waterways, filter strips, or other methods deemed appropriate by the Secretary.

(d) Annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, shall be required to be planted to cover crops. Broadcast seeding must be completed by October 1 of each year. Seed planted with drill seeders or otherwise incorporated shall be completed by October 15 of each year. The Secretary may, on a case-by-case basis, approve alternative planting dates due to unusual soil or weather conditions or other specific crop management needs and upon request of the owner or operator of a farm managing annual croplands subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class. If annual crops cannot be harvested prior to October 15, then 30% crop residue, growing directly in the soil, must remain in order to limit soil loss.

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#### 6.05 Manure and Waste Application Standards and Restrictions

- (a) Manure or other agricultural wastes shall not be ~~spread~~applied between December 15 and April 1. The Secretary may prohibit the application of manure to land in the State following adequate notice to the agricultural community between December 1 and December 15 and between April 1 and April 30 of any calendar year when the Secretary determines that due to weather conditions, soil conditions, or other limitations, application of manure to land would pose a significant potential of runoff to waters of the State.
- (b) Manure or other agricultural wastes shall not be ~~spread on annual~~applied to cropland, perennial grass land, small grain cropland, or hay land subject to frequent flooding from adjacent surface waters, as described in the USDA Soil Survey Flooding Frequency Class, after October ~~4~~16 or before April ~~4~~14.
- (c) Manure or other agricultural wastes applied to annual cropland subject to frequent flooding, as described in the USDA Soil Survey Flooding Frequency Class, shall be injected or otherwise incorporated within 48 hours of application. This requirement shall not apply to land in no-till management.
- (d) Manure or other agricultural wastes shall not be ~~spread~~applied when field conditions are conducive to flooding, runoff, ponding, or other off-site movement, or can be reasonably anticipated to result in flooding, runoff, ponding, or other off-site movement, regardless of NMP recommendations.
- (e) Manure or other agricultural wastes shall not be applied in areas ~~to~~of croplands, perennial grass lands, or hay lands that:
- (1) are saturated with water with the potential to runoff to surface water;
  - (2) are frozen or snow covered, unless the Secretary has approved an exemption consistent with the requirements of Section 6.06; or
  - (3) have exposed bedrock.
- (f) Manure or other agricultural wastes shall not be applied to annual ~~croplands~~cropland, vegetable cropland, or small grain cropland where the average field slope exceeds 10%, unless a permanently vegetated buffer zone of 100 feet adjacent to downslope surface water has been established. Manure shall not be applied within the buffer zone.
- (g) Manure or other agricultural wastes shall not be mechanically applied within 100 feet of a private water supply or 200 feet of a public water supply. This prohibition shall not apply to private water supplies that have been established.



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inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the wellwater supply was established.

(h) 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.

#### 6.06 Manure Spreading Exemptions

(a) Manure and other agricultural wastes shall be land applied consistent with the requirements of this section unless the Secretary grants an emergency exemption because of an emergency situation such as the structural failure of a waste storage facility or has granted a seasonal exemption consistent with Section 6.06(b) – (d). In granting an emergency exemption, the Secretary shall establish requirements so that manure will be spreadapplied on fields in a manner with the least likelihood of generating runoff to surface waters.

(b) The Secretary may approve a seasonal exemption to the winter spreading ban or the restrictions on frequently flooded fields for manure applications on a case-by-case basis upon written request. Requests for an exemption to the seasonal winter spreading ban shall provide:

- (1) the identification and location of specific fields to be used for winter spreading;
- (2) the proposed rates of application;
- (3) the location of nearest surface water, mapped wetlands, mapped floodplains, wellwater supply, tile drains, surface inlets or open drains, property boundaries, and ditches;
- (4) the identification of soil types, depth to groundwater, and slopes;
- (5) the current soil test results;
- (6) the annual nutrient application plan for the fields;
- (7) the Phosphorus Index, or equivalent, results;
- (8) the RUSLE2, or equivalent, results; and
- (9) the flooding frequency class as described in USDA Soil Survey Flooding Frequency Class, and if applicable to the request, evidence that the flood frequency class is not accurate.

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(c) All approvals for a seasonal exemption to the winter spreading ban shall be in writing and shall prohibit the application of manure:

- (1) to areas with established channels of concentrated storm water runoff to surface waters;
- (2) to permanent vegetative buffer zones;
- (3) to wetlands, as that term is defined in 10 V.S.A. § 902(5);
- (4) within 200 feet of a potable water supply, as that term is defined in 10 V.S.A. § 1972(6);
- (5) to fields exceeding tolerable soil loss (T);
- (6) to saturated soils; and
- (7) to any other area as designated by the Secretary on a case-by-case basis.

(d) Approvals for seasonal exemptions to the winter spreading ban shall establish requirements and conditions for the application of manure when frozen or snow-covered soils prevent effective incorporation at the time of application, require manure to be applied according to a nutrient management plan, establish the maximum amounts of manure that may be applied per acre during any one application, and establish required no application zones manure spreading setbacks from surface water, wellwater supplies, and other water conveyances. Seasonal exemptions to the winter spreading ban may be renewed annually upon request and submission of winter spreading records of application.

#### 6.07. Buffer Zones: Manure and Agricultural Wastes Application Setbacks

A vegetative buffer zone of perennial vegetation shall be maintained between croplands and the top of the bank of adjoining surface waters and ditches consistent with all the criteria in (a) through (i) below:

- (a) Adjacent surface waters shall be buffered from croplands by 25 feet of perennial vegetation.
- (b) Ditches shall be buffered from croplands by 10 feet of perennial vegetation unless determined to potentially transport significant waste or nutrients to surface water consistent with the USDA 590 standard nutrient management requirements.

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(c) Surface inlets or inlets of open drains shall be buffered from croplands by 25 feet of perennial vegetation.

(d) Mechanical application of manure or other agricultural wastes is prohibited within perennially vegetated buffer zones. Grazing of livestock consistent with the provisions of Section 67 of this rule is permitted.

(e) The use of fertilizer or compost for the establishment and maintenance of a required vegetative buffer zone is allowed consistent with nutrient management plan requirements, soil analysis, and agronomic recommendations for the buffer zone.

(f) Tillage within the perennially vegetated buffer zone is prohibited other than for the establishment and maintenance of the buffer zone.

(g) Harvesting a vegetative buffer zone as a perennial crop is allowed.

(h) Spoils from agricultural ditch maintenance shall not be stored in the buffer zone or in such a manner as to discharge to surface water.

(i) Exceptions to the required vegetative buffer zone widths, including the requirements of Section 6.05(f), may be considered upon request on a site-specific basis according to standards approved by the Secretary, but in no case shall a buffer zone be less than 10 feet in width. Site-specific buffer zones may be approved based on field characteristics such as a determination that a conveyance has the potential to transport significant wastes or nutrients to surface water, field contours, soil types, slopes, proximity to water, nutrient management plan requirements, and other relevant characteristics when the Secretary determines that the proposed site-specific buffer zones are adequately protective of surface waters.

#### 6.08 Animal Mortality Management Requirements

(a) ~~Animal mortalities being~~ shall be properly stored, handled, and disposed of on the farm ~~shall be buried or composted within 48 hours according, so as to the following standards: minimize adverse water quality impacts.~~

(ab) Animal mortalities buried on farm property shall be sited so as to be:

(1) a minimum of 150 feet from property lines and the top of the bank of surface waters;

(2) a minimum of three feet above the seasonal high water table and bedrock;

(3) covered with a minimum of 24 inches of soil;

(4) a minimum of 200 feet from public or private drinking water supplies;  
and

(5) not located on lands in a floodway or subject to annual flooding.

(bc) Animal mortalities composted or otherwise disposed of on farm property on unimproved sites shall be prohibited on lands in a floodway or subject to annual flooding, and shall be sited so as to be:

(1) a minimum of 200 feet from property lines;

(2) a minimum of 200 feet from the top of the bank of surface waters;

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

(4) a minimum of 300 feet from neighboring residences or public buildings;

(5) a minimum of 100 feet from a ditch or conveyance to surface water;  
and

(6) not upon areas of exposed bedrock.

(d) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

#### 6.09 On-Farm Composting of Imported Food Processing Residuals

(a) All on-farm composting facilities importing less than 1,000 cubic yards per year of food processing residuals shall be sited so as to be at a minimum:

(1) 200 feet effrom the top of bank of surface water;

(2) 200 feet from a public or private water supply not owned by the farm;

(3) 300 feet from a neighboring residence or public building;

(4) 200 feet from a property line;

(5) 100 feet from a ditch or conveyance to surface water;

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(6) not within floodways, areas subject to annual flooding or concentrated runoff; and

(7) not upon areas of exposed bedrock.

(b) Other site-specific standards may be authorized by the Secretary, but in no case shall unimproved composting sites be located less than 100 feet from a private water supply, property boundary, or the top of the bank of surface water.

#### 6.10 Stabilization of Banks of Surface Waters

(a) The areas from the top of a bank of surface water to the edge of the surface water shall be left in their natural state except as allowed by State statute including, but not limited to, 10 V.S.A. § 1021, and the standards established for the pasturing of livestock consistent with Section 7 of this rule.

(b) Stabilization of farm field banks of surface waters, when allowed under Section 6.10(a) of this rule, shall be constructed in accordance with the USDA NRCS standards and specifications or other standards approved by the ANR and the Agency that are consistent with policies adopted by the Secretary of Natural Resources to reduce fluvial erosion hazards.

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

(a) ~~Except at defined crossings and defined watering areas, adequate~~ Adequate vegetative cover shall be maintained on banks of surface waters by limiting livestock trampling and equipment damage to protect banks of surface waters ~~from excessive~~ to minimize erosion.

(b) Crossings and watering areas need to be maintained so as to minimize erosion and be adequately protective of surface waters.

(c) Livestock shall not have access to surface water in production areas or immediately adjacent to production areas, except:

(1) at defined livestock crossings or defined watering areas;

(2) in areas prescribed by a rotational grazing plan consistent with NRCS standards or an equivalent standard, and approved by the Secretary. Approved grazing plan areas shall maintain no less than at least an average of three inches of vegetative growth in the within 25 feet between of the top of bank and of surface water, and within 10 feet between of the top of bank and of ditches; or

(3) in areas approved by the Secretary based on site-specific characteristics and management requirements.

(ed) Livestock shall not have access to surface water in areas outside of production areas that:

(1) contain unstable banks or where erosion is present; or

(2) are areas designated by the Secretary as having actual or potential threat to water quality as a result of livestock access.

(de) Livestock shall not be pastured within 50 feet of a private water supply without the permission of the water supply owner. This prohibition shall not apply to private water supplies that have been established inconsistent with the Department of Environmental Conservation Water Supply Rules existing at the time that the wellwater supply was established.

## Section 8. Ground Water Quality and Groundwater Quality Investigations

(a) Farm operations shall be conducted so that the concentration of wastes in groundwater originating from agricultural operations do not reach or exceed the primary or secondary groundwater quality enforcement standards identified by Appendix One of the Groundwater Protection Rule and Strategy in accordance with 10 V.S.A. Chapter 48 (Groundwater Protection).

(b) Farm operations shall be conducted with the goal of reducing the concentration of wastes in groundwater to the preventive action levels (PALs) of the primary or secondary groundwater quality standards identified by Appendix One of the Groundwater Protection Rule and Strategy when monitoring indicates the presence of these wastes in groundwater that exceed the enforcement standard.

(c) The Secretary may conduct groundwater quality monitoring to assess the impact of agricultural practices and farm operations on the quality of drinking water and groundwater. The Secretary may conduct groundwater sampling at sites:

(1) selected by the Secretary where wellwater supply owners or tenants have volunteered or agreed to participate in the sampling program;

(2) upon the request of a water supply owner or tenant;

(3) selected by the Secretary based on the results of other sampling data or the existence of vulnerable site characteristics; or

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(4) with activities or operations permitted, certified, or regulated by the Secretary.

(d) The Secretary shall conduct a groundwater investigation where the Secretary has received a complaint from a water supply owner in the vicinity of a farm that the farm or its agricultural practices has contaminated the drinking water or groundwater of the water supply owner.

(e) The Secretary shall conduct a groundwater investigation where sampling indicates that drinking water or groundwater contains detectable concentrations of agricultural contaminants.

(f) The Secretary shall provide:

(1) written notification of testing results to each individual water supply owner and tenant, if known, that participates in the sampling program.

(2) property owners in the vicinity of farm operations and agricultural lands with the test results for each water supply owned by them that is sampled by the Secretary.

(3) farm operations with the test results for water supplies owned by the farm operation and, upon request, for water supplies adjacent to or impacted by the crop land or facilities managed by the farm operation.

(g) In order to identify and remediate sources of drinking water and groundwater contamination, the Secretary, without limitation, may:

(1) conduct site visits to interview property owners and farm operators, gain an understanding of the physical characteristics of the landscape and locate additional sites for water quality sampling;

(2) communicate with farm operators and adjacent property owners to identify practices and activities that are potential sources of contamination;

(3) conduct additional sampling to confirm the detection of contaminants and to determine the extent and scope of contamination at the site;

(4) require corrective actions such as changes in activities, management practices, cropping patterns, or structural revisions designed to reduce the contamination from current activities and prevent contamination from future activities;

(5) conduct follow up water quality sampling to determine the effectiveness of changes made or corrective actions taken;

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- (6) seek additional investigative or consultation resources to evaluate and characterize sites to determine vulnerability to drinking water and groundwater contamination; and
- (7) review testing results and site evaluations to determine if changes in water quality data are the result of changes in activities or natural site conditions.
- (h) The Secretary may require the owner or operator of a waste storage facility to modify the facility to meet the USDA NRCS or an equivalent standard for the facility or to implement additional management measures if the facility poses a threat to human health or the environment as established by an exceedance of the State's Groundwater Quality Standards.
- (i) For the purpose of assessing whether a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall pay for the initial costs to conduct groundwater monitoring. When the Secretary has made a determination that a waste storage facility is violating the State's Groundwater Quality Standards, the Secretary shall provide notification to the Department of Health and the Agency of Natural Resources. This notification shall occur within 21 days and include the location of the facility and the name of the owner or operator. When the Secretary makes a determination that a waste storage facility no longer poses a threat to human health or the environment, the Secretary shall provide notification of the revised determination to the Department of Health and the ANR.

## Section 9. Construction of Farm Structures

### (a) Siting

- (1) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the setback distances from adjoining property lines, road rights-of-way, and adjacent surface water.
- (2) Local setbacks and setbacks designed by this rule shall be observed unless the Secretary has approved a farmer's written request for other reasonable setbacks for the specific farm structure being constructed or maintained in accordance with Section 9(b).
- (3) Construction of farm structures in Flood Hazard Areas and River Corridors are required to obtain a Flood Hazard Area and River Corridor



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permit from the ANR or its designee unless otherwise exempt (refer to Appendix A). Fences through which floodwater may flow are not structures which represent an encroachment in a floodway area.

~~(b) Local setbacks shall be observed unless the Secretary has approved a farmer's written request for other reasonable setbacks for the specific farm structure being constructed or maintained in accordance with Section 9(e).~~

~~(c) Notwithstanding the provision of Section 9(e)(2), and in addition to the provisions of Sections 9(a) and (b), new(4) Construction of new farm structures, specifically buildings and other farm structures that disturb one or more acres of land must obtain authorization from the ANR before commencing with land disturbance or construction activities.~~

#### (5) Existing Production Areas

Farm structures, with the exception of replacement structures built to occupy existing structural footprints, shall be constructed so that a minimum distance of 50 feet is maintained between the top of the bank of adjoining surface waters and the farm structure.

(A) Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering.

~~(d) Prior to construction of farm structures, the farmer must notify the zoning administrator or the town clerk of the town in which the farm structure is proposed, in writing, of the proposed construction activity. The notification must contain a sketch of the proposed structure including the setback distances from adjoining property lines, road rights-of-way, and adjacent surface water.~~

(e) Construction of (B) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(C) Such structures do not include waste storage facilities if the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer.

#### (6) New Production Areas

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(A) Farm structures, excluding waste storage facilities, shall be constructed so that a minimum distance of 50 feet is maintained between the top of the bank of adjoining surface waters and the farm structure.

(i) Such structures do not include those solely constructed for irrigation, drainage, fencing, or livestock watering,

(ii) Such structures do not include water quality conservation practices where the site is the best available site on the farm, as approved by the Secretary, for the purposes of protecting ground water quality or surface water quality.

(B) The following setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:

(i) 100 feet from the centerline of a public road;

(ii) 100 feet from any abutting property line;

(iii) 200 feet from the top of the bank of any surface water;  
and

(Structures—iv) 200 feet from public or private water supplies.

(b) Setbacks Approved by the Secretary

(1) Local setbacks or no build areas for wetlands, River Corridors, and other setbacks applicable to all development in a local zoning bylaw established by the municipality shall be maintained, unless upon written request of the person, consistent with the procedures found in Appendix A, the Secretary has approved other reasonable setbacks for the specific farm structure being constructed. The Secretary may authorize the siting of a waste storage facility within 200 feet of a surface water or private water supply if the site is the best available site on the farm for the purposes of protecting ground water quality or surface water quality and the waste storage facility is designed by a licensed engineer to meet USDA NRCS standards and specifications or an equivalent standard. If an equivalent design standard is used, the design and construction shall be certified by the Secretary, or a licensed professional engineer operating within the scope of his or her expertise. The Secretary may consider the following in rendering a decision regarding alternative setbacks:

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(A1) unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would prevent development in accordance with this rule;

(B2) because of such physical conditions or constraints, there is no possibility that the property can be developed in conformity with the provisions of this rule and that the approval of an alternative setback is therefore necessary to enable the reasonable operation of the farm;

(C3) the alternative setback, if approved by the Secretary, will not substantially or permanently impair the appropriate use or development site that is the best available on the farm for the purposes of adjoining property; nor be detrimental to public health, safety, welfare, protecting ground water quality or surface water quality; and the environment; and

(D4) the setback, if approved by the Secretary, will represent the minimum alternative setback necessary to allow for reasonable operation of the farm.

~~(2) The following minimum setbacks shall apply to all new waste storage facilities proposed on sites where no waste storage facility or production area previously existed:~~

~~(A) 100 feet from the centerline of a public road;~~

~~(B) 100 feet from any abutting property line;~~

~~(C) 100 feet from the top of the bank of any surface water;~~  
and

~~(D) 200 feet from public or private wells.~~

## Section 10. Custom Applicator Certification

(a) Custom applicators of manure or other agricultural wastes shall be certified by the Secretary in order to operate within the State and shall comply with all applicable requirements of the Required Agricultural Practices Rule, Medium Farm Operations Rule and Permits, and Large Farm Operations Rule and Permits.

(b) Custom applicators shall demonstrate knowledge of Required Agricultural Practices Rule standards, Medium Farm Operation Rule and Permit requirements, Large Farm Operation Rule and Permit requirements, and the USDA NRCS Nutrient Management Practice Code 590, including manure or other wastes

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application restrictions, buffer zones, setback requirements, and record keeping requirements.

(c) Custom applicators shall demonstrate competency in methods and techniques used to minimize runoff from application sites, identification of weather or soil conditions that may increase risk of field runoff, recordkeeping, and other information deemed pertinent by the Secretary.

(d) Certified custom applicators shall train all employees and seasonal workers in methods or techniques to minimize runoff to surface water, identification of weather or soil conditions that may increase the risk of runoff, and the Required Agricultural Practices Rule, Medium Farm Operation Rule and Permit, Large Farm Operation Rule and Permit standards and restrictions for the application of manure or other agricultural wastes. Records of training shall be maintained in a manner prescribed by the Secretary.

(e) Certification shall be valid for five years from the date of issuance and shall be renewable annually on a form and in a manner prescribed by the Secretary.

(f) Certified custom applicators shall complete eight hours of training in each five-year period of certification. Completion of five-year training requirements will serve as meeting the requirements for recertification.

(g) Certified custom applicators shall make all applications of manure or other agricultural wastes consistent with this rule and the requirements of the farm's Nutrient Management Plan.

(h) Certified custom applicators shall maintain records of the amount of manure or agricultural waste applied by farm and field for a period of five years and provide those records to the Agency upon reasonable request.

(i) If a custom applicator has a request to apply manure or agricultural wastes on a farm that does not have a nutrient management plan as required, the applicator must notify the Agency and request the ability to proceed with the land application. The Secretary may require application restrictions.

## Section 11. Site-Specific On-Farm Conservation Practices

When the Secretary determines, after inspection of a farm, that a person engaged in farming is complying with the Required Agricultural Practices Rule but there still exists the potential for agricultural pollutants to enter the waters of the State, the Secretary shall require the person to implement additional, site-specific, on-farm conservation practices designed to prevent agricultural pollutants from entering the waters of the State. When requiring implementation of a conservation practice, the Secretary shall inform the person engaged in farming of the resources

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available to assist the person in implementing the conservation practices to comply with the requirements of this rule.

### **Section 12. Severability Clause**

If any provision of this rule, or the application thereof to any person or circumstance, is held invalid, such determination shall not affect other provisions or applications of this rule which can be given effect without the invalid provision or application, and to that end the provisions of this rule are severable.

### **Section 13. Effective Dates**

(a) Sections 1 – 6.04(c), 6.05(a), and 6.05(c) – 13 of this regulation shall become effective on [date of adoption]; and

(b) Sections 6.04(d), 6.05(a), and 6.05(b) of this regulation shall become effective on April 15, 2017.

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## **Appendix A: Process for obtaining variances and exemptions**

### Farm Structures/Municipal Setbacks: Variances

(a) A complete petition for an alternative setback shall include:

- (1) the location of the parcel, and contact information where the applicant can be reached for additional information or clarification;
- (2) a detailed description of the farm operation and description of how the applicant is engaged in Required Agricultural Practices as defined in Section 3 of the RAPs;
- (3) a statement of the reason why less restrictive setbacks are necessary and why the setback is the least deviation possible to provide relief;
- (4) a copy of the zoning ordinance governing the tract on which the structure will be built outlining the setback requirements or a letter from the municipality with the required setback information;
- (5) the name and contact information for your town's Zoning Administrator or Town Clerk, including an affirmative statement that the town has been notified of the intent to construct a Farm Structure;
- (6) a plan of the existing structure(s) and proposed structure(s) showing the distance to all property lines from the furthest projection of the structure, including overhangs. For property lines along highway rights-of-way, measure the setback appropriately as outlined in the municipal regulations;
- (7) name(s) and address(es) of the affected adjoining property owner(s) and a description of each adjoining land use;
- (8) any letter(s) from adjoining landowners where applicable; and
- (9) certification that the farm is in compliance with all Required Agricultural Practices rules.

The Secretary bases his or her decision on facts provided by the petitioner. Failure to provide information to the Secretary could result in denial of request.

### (b) Public Notice and Issuance Requirements

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The Secretary will notify the municipality in writing by certified mail and copy the affected adjoining property owner(s) of his or her intent to consider a petition for an alternative setback. The notification shall include a description of the proposed project, submitted plan, and shall be accompanied by information that clearly states where additional information may be obtained. The Secretary will request that the notice be posted in a public place in the municipal office.

Any comments resulting from this posting or from the municipality must be received in writing at the Agency by 4:30 p.m. on the seventh business day following receipt of the notice.

(c) Standards

The Secretary may grant a petition for an alternate setback or grant a petition for an alternate setback with conditions, except as otherwise outlined in this rule or statutorily required, when:

- (1) there are unique existing physical conditions or exceptional topographical or other physical constraints peculiar to the particular property that would create a hardship for the farm operation;
- (2) because of such physical conditions or constraints, there is no possibility that the property can be developed in strict conformity with the provisions of this rule and that the authorization of an alternative setback is therefore necessary to enable the reasonable operation of the farm;
- (3) the hardship has not been created by the applicant;
- (4) the alternative setback, if authorized by the Secretary, will not substantially or permanently impair the appropriate use or development of adjoining property, nor be detrimental to the public health, safety, and welfare; and
- (5) the variance, if authorized by the Secretary, will represent the minimum alternative that will afford relief and will represent the least deviation possible from this rule.

\* The Agency cannot approve alternate setbacks from State wetland regulations, nor approve construction within Highway rights-of-way.

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## **Roles of Other State Agencies: Information**

**Public Drinking Water Supplies and Wastewater Management:** Nutrients, sediment, organic matter, and microorganisms may also impact drinking water supplies derived from surface waters. Farm operations should be aware of the locations of surface drinking water source intakes and appropriately manage agricultural activities to reduce potential negative impacts. Information regarding public water supplies as well as information pertaining to wastewater systems requirements may be obtained at (802) 828-1535.

**Wetlands:** Farm operations should be aware of existing rules pertaining to wetlands under state and federal jurisdiction. The Natural Resources Conservation Service, U.S. Army Corps of Engineers, and the Vermont Department of Environmental Conservation coordinate all agriculture and wetland issues in Vermont. It is strongly suggested that landowners contact the U.S. Army Corps of Engineers at (802) 872-2893 and the Vermont Department of Environmental Conservation at (802) 828-1535 before initiating farm-related projects in or near wetlands.

**Construction of New Farm Structures:** Construction of new farm structures, specifically buildings and other farm-related structures, or other construction on the farm that disturb one or more acres of land, must obtain authorization from the ANR before commencing with land disturbance or construction activities. Approval will be issued by the ANR upon receipt of a Notice of Intent (NOI) which certifies that adequate measures for the control of erosion and sedimentation will be used during land disturbance and construction efforts. Persons needing additional information about the Construction General Permit or NOI concerning one or more acres of land disturbance are advised to contact the Watershed Management Division of the Vermont Department of Environmental Conservation's Environmental Assistance Hotline at 1-800-974-9559. Authorization by the ANR is not needed for construction or land disturbance related to cultivation, irrigation, drainage, and fencing.

**Flood Hazard Area and River Corridor General Permit:** An ANR General Permit for activities exempt from municipal regulation in Flood Hazard Areas and River Corridors may be required. The primary purpose for the General Permit is to fully implement the Vermont Flood Hazard Area & River Corridor Rule (effective 03/01/2015) which requires the Agency to regulate activities exempt from municipal regulation in Flood Hazard Areas and River Corridors. These activities include state-owned and operated institutions and facilities, required agricultural and silvicultural practices, and power generating and transmission facilities regulated under 30 V.S.A. §§ 248 and 248a. More information can be obtained by calling (802) 828-1535.

**Solid and Hazardous Waste Management:** Farm operations are required to manage all wastes generated on the farm consistent with all applicable solid waste rules and hazardous waste rules. Information regarding the proper management, storage, and disposal of hazardous waste, universal waste, used oil, and petroleum products can be obtained from the Vermont Waste Management & Prevention Division by calling (802) 828-1138. Information regarding the proper management, storage, and disposal of pesticidal waste and empty pesticide containers can



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be obtained from the Vermont Agency of Agriculture, Food and Markets by calling (802) 828-2431. On-farm composting or anaerobic digestion of food residuals and food processing residuals may require registration or permitting by the Vermont Waste Management & Prevention Division. More information can be obtained by calling (802) 828-1138.

**Wastewater Management and Residuals Management:** Farm operations generating wastewater indirect discharges or discharges to underground injection wells are advised that permits may be required from the Department of Environmental Conservation Watershed Management Division or Groundwater Protection and Management Division. The management of sewage, biosolids, and septage on a farm must be conducted consistent with the Vermont Solid Waste Management Rules and any Solid Waste Management Facility Certification authorizing these activities. Information regarding these requirements can be obtained by calling (802) 828-1535.

**Water Withdrawal and Irrigation:** Farm operations utilizing surface waters for irrigation purposes are advised that water withdrawals above a *de minimus/minimis* rate are required to obtain a permit from the Department of Environmental Conservation consistent with the *Procedure for Determining Acceptable Minimum Stream Flows*. More information regarding water withdrawals for irrigation purposes and permitting requirements can be obtained by calling the Watershed Management Division at (802) 828-1535.

**Alteration of Streams:** Stream alteration permits regulate activities that take place in or along streams. The permit program is intended to prevent the creation of flood hazards, protect against damage to aquatic life, and protect the rights of neighboring landowners. The types of activities that are regulated include streambank stabilization, road improvements that encroach on streams, bridge construction or repair, and utility crossings under streambeds. More information regarding stream alteration and permitting requirements can be obtained by calling the River Management Division at (802) 828-1535.

**Spill Prevention, Control, and Countermeasure (SPCC):** EPA's oil pollution prevention regulation requires facilities that are subject to regulation to prepare and implement a plan to prevent any discharge of oil into navigable waters or adjoining shorelines of the U.S. A farm must prepare a SPCC Plan if it has an aggregate aboveground storage capacity of greater than 1,320 gallons. Only containers of oil with a capacity of 55-gallons or greater are counted toward this aggregate capacity threshold. The plan is referred to as a Spill Prevention, Control, and Countermeasure (SPCC) plan. More information regarding SPCC and permitting requirements can be obtained by calling the Environmental Assistance Office at 1(800) 974-9559.

## 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:**

AAFM 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 2<sup>nd</sup> 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, VAAFM 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 16<sup>th</sup> or before April 14<sup>th</sup>].

#### **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 1<sup>st</sup> 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 2<sup>nd</sup> 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 1<sup>st</sup> 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 VAAFM 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](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 1<sup>st</sup> 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 expectations 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, VAAFM 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 VAAFM 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](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 VAAFMs 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:**

VAAFM 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, VAAFM 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 VAAFM'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 VAAFM

**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 VAAF. M.

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 VAAF. M. 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.