conservation law foundation

For a thriving New England

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July 7, 2016

Chuck Ross
Secretary
VT Agency of Agriculture, Food, and Markets
116 State Street
Montpelier, Vermont 05620

Sent via electronic mail

Re: Comments on the Third Draft Required Agricultural Practices

Dear Secretary Ross:

Conservation Law Foundation submits the following comments to the Vermont Agency of Agriculture, Food, and Markets (AAFM) on the third draft Required Agricultural Practices (3rd draft RAPs).

Recognizing the critical role the RAPs play in restoring Vermont's water quality, we appreciate the time and effort AAFM staff has committed to their development. Managing our land to protect water is as much a legal mandate as it is about economic vitality, public health, and buttressing our natural defenses to the extreme weather events associated with a changing climate.

While we continue to hold all of the concerns raised in our prior comment letters from December 2015 (Appendix A) and March 2016 (Appendix B), we want to specifically highlight the disconnect between the 3rd draft RAPs and the legal mandates set forth by the Phosphorus TMDLs for Vermont Segments of Lake Champlain.[1]

The 2016 TMDL requires the agriculture sector reduce its nonpoint contribution of phosphorus to the Lake Champlain basin by 53.6 percent.[2] In Missisquoi Bay this requirement surges to 82.8 percent and in South Lake A and B to 62.9 percent.[3] It is our

[1] Phosphorus TMDLs for Vermont Segments of Lake Champlain (June 17, 2016). (hereinafter 2016 TMDL).
[2] 2016 TMDL pg. 45 tbl. 8.
[3] *Id.*

understanding that such tremendous reduction requirements are unprecedented nationwide, and will demand a drastic plan of implementation.

The Environmental Protection Agency (EPA) has provided one scenario to reach the TMDL requirements. While AAFM is not limited to following this one scenario, it provides an important frame of reference. The scenario tool published alongside the Draft 2015 TMDL[4] indicates the need for widespread application of 11 best management practices (BMP) – ranging from 41 percent crop rotation to 57 percent conversion from crop to hay and 100 percent application of reduced phosphorus manure (Table 1).

Table 1. EPA's Scenario Tool Application of Best Management Practices[5]

BMP	Definition[6]	Total Area (ha)	Applied Area (ha)	Percent Cover (%)
Barnyard Management	Exclusion of clean water runoff from the barnyard and heavy-use area, and management of the remaining runoff in a way that minimizes its pollution.	3,876.54	3,488.89	90
Change in Crop Rotation	Introducing feasible changes in crop rotation. Currently, standard rotations consist of corn (2 years)/hay (4 years) and corn (1 year)/soybean (1 year). Example changes in crop rotation could be to change the corn-hay rotation to corn (2 years) followed by hay (6 years).	17,029.19	6,973.54	41
Conservation Tillage	Any tillage and planting system that leaves a minimum of 30 percent of the soil surface covered with plant residue after the tillage or planting operation (e.g., reduced till, no-till). For silage corn, this could involve required application of a cover crop or use of zip-till, zone-till, or minimum tillage equipment.	62,491.41	47,154.74	75
Cover Crop	Establishing a seasonal cover crop on annual cropland for soil erosion reduction and conservation purposes. Seasonal cover consists of a crop of winter rye or other	62,491.41	47,154.74	75

[4] *See* Phosphorus TMDLs for Vermont Segments of Lake Champlain (August 14, 2015) (hereinafter Draft 2015 TMDL) (While the Environmental Protection Agency released a revised scenario with the 2016 TMDL, this letter relies on the scenario released alongside the Draft 2015 TMDL because this is the scenario relied on by AAFM while drafting the RAPs)

[5] CLF created this chart using the scenario tool released alongside the Draft 2015 TMDL. It uses data from the columns "area," "BMP type," and "applied area" within the tool. Note that the "applied area" within the tool is different from the "applied area column within Table 1. Table 1 represents the accumulated applied area values across basin and land use types.

[6] Lake Champlain BMP Scenario Tool Requirements and Design (November 2013 draft) pg. 22 tbl. 10.

	herbaceous plants seeded at a minimum rate of 100 lb/ac or at the highest recommended rate to provide effective soil coverage. Planting dates are addressed in the modeling assumptions.			
Crop to Hay	Permanent conversion of cropland use to hay.	22,672.44	12,831.84	57
Ditch Buffer	Grassed strips along the drainage ditches that filter out pollutants from the adjacent land runoff.	59,452.32	39,119.88	66
Fencing/Livestock Exclusion	Exclusion of livestock from waterways and stream banks by installing fence.	14,472.48	12,221.89	84
Grassed Waterways	Stabilizing areas prone to field gully erosion by establishing grass-lined swales.	79,489.87	54,122.12	68
Manure Injection	Applying liquid manure below the soil surface.	35,208.03	30,172.73	86
Reduced P Manure	A 20 percent reduction of the total P content applied to fields, through either manure or fertilizer. This can be accomplished by reducing the amount of manure/fertilizer applied or by altering livestock feed formulation or treating manure prior to application, although specifying the "how" is not necessary at this time.	10,431.69	10,431.69	100
Riparian Buffer	Areas of grasses or shrubs (which may include trees) located adjacent to ponds, lakes and streams that filter out pollutants from runoff.	171,442.15	124,474.99	73

Given the necessary extent of BMP application across the landscape, we have serious concerns with the sufficiency of the 3rd draft RAPs. While the 3rd draft RAPs include standards for barnyard management, cover crop, buffers, and livestock exclusion many of the BMPs outlined in Table 1 are *anticipated* through the requirement of a nutrient management plan for certified small farm operations with a weaker nutrient planning requirement for even smaller farms.

Nutrient management plans (NMP) offer field-specific land treatment and nutrient application guidelines. While certain BMPs may be included in a NMP, both the extent to which these BMPs will be implemented and the degree to which phosphorus reductions will actually occur is largely unknown.

NMPs are heavily relied upon by AAFM to meet our phosphorus reduction obligations, however the effectiveness of these plans to reduce phosphorus is uncertain. A University of Vermont Extension study found that "… by implementing NMPs, farmers reduced fertilizer use, especially phosphorus applications. However, a shift away from purchased fertilizer may represent a stronger reliance on manure, and, therefore, it is unclear whether NMPs

actually encourage lower nutrient application rates or eliminate excess nutrients in the soil."[7]

CLF has additional concerns with the shortage of technical staff able to create or sign off on NMPs, as well as follow up with farmers. This is particularly troubling given the importance of education to ensure farmers follow their NMPs. Currently; most farms do not fully implement their NMP recommendations.[8]

It is equally unclear how the BMP standards outlined in the 3rd draft RAPs will meet the TMDL targets. We request AAFM provide its analysis of the phosphorus load reductions anticipated from the 3rd draft RAPs and the expected applied area and percent coverage of each BMP.

- Under section 6.04(c), grassed waterways and filter strips should be the required management strategy to prevent gully erosion. The scenario tool demonstrates application of grassed waterways on 54,122 ha of land, which represents nearly 70 percent coverage of this BMP. This degree of application assumes the implementation of grassed waterways wherever gully erosion is present.[9] To reflect this, 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." Gully erosion is a severe form of soil erosion caused by water moving in rills, which concentrate to form larger and more persistent erosion channels.[10] Gully erosion is, by definition, problematic for healthy soils and waterways – regardless of whether discharges to waters are apparent.

- Under section 6.07, the standards for riparian and ditch buffers should reflect the language of the scenario tool. The 3rd draft RAPs' list of authorized activities in buffers, including grazing, fertilizer application, and harvesting undermines the effectiveness of buffers as a BMP and deviates from the definition used in the scenario tool, which does not specify these uses. While the scenario tool analyzes phosphorus load reductions based on 10 and 25-foot buffers, requiring a wider buffer could compensate for the overall relatively weak BMP standards as compared to the TMDL reduction requirements. Studies show that the "basic bare-bones buffer

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[7] Darby, H, Halteman, P., and D. Heleba. "Effectiveness of Nutrient Management Plans on Vermont Dairy Farms." *Journal of Extension* 53.2 (2015).
[8] *See Id*. ("The results suggested that most farms (60.6%) implemented the NMP recommendations on at least 75% of their acreage. Less than one quarter (22.8%) of farms implemented the recommendations on all of their acreage…").
[9] Personal interview with Eric Perkins, EPA Region 1, April 19, 2016.
[10] Environmental Protection Agency, *National Management Measures to Control Nonpoint Pollution from Agriculture* (July 2003), http://www.epa.gov/sites/production/files/2015-10/documents/chap4c.pdf.

is 50-feet from the top of the bank."[11] As a highly effective tool to protect Vermont's water resources,[12] riparian buffers are critical in addressing the 35.2 percent phosphorus load contributed by cropland.[13]

- Under section 7(c), livestock exclusion should not be qualified. The 3rd draft RAPs allow livestock to access streams outside of production areas that do not contain unstable banks or where erosion is present. This is inconsistent with Act 64[14] and will result in the degradation of stable stream banks by directing livestock toward areas that are not currently eroded. The phosphorus load associated with livestock results not only from trampling and erosion, but from direct manure deposits in waterways as well. Therefore, focusing on unstable banks is insufficient to address phosphorus contributions from livestock. While the Secretary is authorized to designate additional livestock exclusion areas, AAFM's limited resources calls into question its ability to adequately and effectively invoke this authority.[15] The scenario tool assumes livestock exclusion on 12,222 ha of land, or 84 percent coverage. This widespread application is necessary to address both erosion and direct manure deposits associated with livestock.

We recognize the RAPs are not the only mechanism for achieving phosphorus reductions from the agriculture sector.[16] However, they are the only regulatory tool that applies to the entire Vermont portion of the Lake Champlain basin and will impact on-the-ground

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[11] Connecticut River Join Commissions, *Introduction to Riparian Buffers*, http://www.crjc.org/buffers/Introduction.pdf. *Also see* Yale School of Forestry and Environmental Studies, *Riparian Buffer Zones: Functions and Recommended Widths*, http://eightmileriver.org/resources/digital_library/appendicies/09c3_Riparian%20Buffer%20Science_YALE.pdf pg. 4. ("… in most cases, a 49-foot natural, undisturbed buffer was effective at removing a majority of the nutrient from surface runoff.").

[12] *Id*.

[13] *See* Vermont Lake Champlain Phosphorus TMDL Phase I Implementation Plan (draft August 2015) pg. 75. ("Prioritizing these [eroding banks for livestock exclusion] targeted areas will also provide the opportunity to focus remaining resources on addressing the cropland loadings which are estimated to be 35.2% of the total Lake loading." AAFM is committed to focusing on phosphorus reductions from cropland, which are best achieved with 50-foot, no-touch riparian buffers.)

[14] *See* 6 V.S.A. § 4810a(a)(9). (Act 64 compels AAFM to establish livestock exclusion standards that "*prevent*" erosion and adverse water quality impacts. The use of the word "prevent" rather than "reduce" or "minimize" is significant because it sets a zero tolerance standard for additional erosion and adverse water quality impacts from livestock.)

[15] *See* 3rd draft RAPs at 11 § 4.3(b). (AAFM anticipates inspecting Certified Small Farms at least once every seven years. Should there be an area with livestock access that threatens water quality, what guarantee is there that the Secretary will require livestock exclusion before seven years pass?)

[16] Vermont Agency of Agriculture, Food, and Markets, *Current Water Quality Initiatives*, http://agriculture.vermont.gov/sites/ag/files/pdf/water_quality/RAP/VAAFM-WQ-Initiative-Factsheet.pdf.

activities in the upcoming year. For these reasons, the RAPs are the most significant strategy for meeting the TMDL mandates for agriculture.

The RAPs are also referenced in the 2016 TMDL as part of the demonstration of "reasonable assurance" that relied-upon nonpoint source reductions will occur.[17] One of the cornerstones of the EPA's conclusion that there is reasonable assurance rests on the scenario tool.[18] However, the significant deviation in the extent of BMP application between the 3rd draft RAPs and the scenario tool calls into question any assurance that the necessary phosphorus reductions can and will be achieved.

EPA not only relies on the RAPs for reasonable assurance that agricultural source reductions will occur, but also to demonstrate that streambank source reductions will take place. "Both the 25 foot buffer requirement for agricultural lands and the livestock exclusion requirement will lead to more stable (well vegetated) stream banks and *eliminate* erosion caused by livestock trampling" (emphasis added).[19] As noted above, the RAPs reduce erosion from trampling by excluding livestock from areas that already display signs of erosion. However, the RAPs will not eliminate erosion since livestock still have access to trampling along stream banks.

AAFM should provide its analysis of the expected phosphorus reductions associated with RAP implementation. This will allow Vermonters to keep track of our commitments to EPA, assess gaps and potential areas of concern, and ensure clean water in Lake Champlain.

Sincerely,

Rebekah Weber
Lake Champlain Lakekeeper
Conservation Law Foundation

Elena Mihaly
Staff Attorney
Conservation Law Foundation

[17] 2016 TMDL p. 51.
[18] *Id*. at p. 50
[19] *Id*. at p. 53.

Appendix A

Comments on the Draft Required Agricultural Practices, December 18, 2015.

Please find attached.

Appendix B

Comments on the Second Draft Required Agricultural Practices, March 21, 2016.

Please find attached.

December 18, 2015

Agency of Agriculture, Food and Markets
116 State Street
Montpelier, Vermont 05620

Sent via electronic mail

Re: Comments on the Draft Required Agricultural Practices

Dear Agency of Agriculture, Food and Markets:

Thank you for the opportunity to submit comments to the Vermont Agency of Agriculture, Food and Markets (AAFM) on the draft Required Agricultural Practices (draft RAPs).

The Vermont Chapter of the Sierra Club, Conservation Law Foundation, Connecticut River Watershed Council, Vermont Natural Resources Council, Vermont Conservation Voters, Lewis Creek Association, and Lake Champlain Committee are member-supported, non-profit organizations that use educational, legal, scientific, and policy tools to protect and enhance water

resources in Vermont. We have played a key role in advocating for strong protections for Vermont's surface and ground waters. However, despite decades of cleanup efforts, many lakes and rivers throughout the state continue to decline due, in part, to agricultural runoff. The draft RAPs are therefore critically important to addressing Vermont's water quality concerns.

We appreciate the time and effort that AAFM staff has committed to this process as well as the outreach, stakeholder meetings, and preliminary comment period that has encouraged widespread public input. While the draft RAPs are an improvement over the Accepted Agricultural Practices, more is required to safeguard Vermont's water resources and ensure consistency with Act 64 and the federal Clean Water Act.

If we are to comply with state and federal water quality laws, Vermont must implement widespread agricultural reform. Vermont's agricultural regulations are tasked with preventing and controlling activities on all farms that may be harmful to water; sustainably improving water quality; and improving water quality sufficiently to attain unprecedented phosphorus reductions within the Lake Champlain watershed – which accounts for half of Vermont's land area. The current draft RAPs are inadequate to fulfill these legal requirements. Embracing a statewide transition to sustainable agricultural systems and providing greater strength and specificity to the RAPs will help drive the necessary changes.

We encourage AAFM to incorporate flexibility into the draft RAPs to account for farms that engage in organic, biodynamic, regenerative, and/or restorative practices, as long as the farms can demonstrate that their practices are achieving the same level of water quality protection as the draft RAPs require. Additionally, we recognize that complying with regulations can be difficult for some farms. While we believe that all farms must be accountable for the pollution they create, just as other businesses or individuals are, we support outreach and incentive systems that will help farms be good stewards of the environment and provide comparable support mechanisms as those proposed for other land use sectors, such as stormwater, transportation, and developed lands.

We offer our comments in three main areas:

1. The draft RAPs must satisfy state and federal legal mandates.
2. The draft RAPs should foster a statewide transition to sustainable agricultural systems.
3. The draft RAPs must provide greater strength and specificity, including science-based justifications that the RAPs are sufficiently stringent to meet water quality goals (section-by-section comments).

1. The draft RAPs must satisfy state and federal legal mandates.

Act 64 recognizes that "Vermont's surface waters are vital assets that provide the citizens of the State with clean water, recreation, and economic opportunity." Vermont Act No. 64 (2015) Sec. 1(a)(2). It also recognizes the importance of addressing "all activities harmful to water" and of "sufficiently addressing, improving, and forestalling degradation of water quality in the State in a sustainable and effective manner…." Vermont Act No. 64 (2015) Sec. 1(a)(4), (8). The purpose of Act 64 is to improve water quality; engage *all* agricultural operations to improve water

quality; and to provide the necessary mechanisms, staffing, and financing to improve water quality. Vermont Act No. 64 (2015) Sec. 1(b)(1), (5), (6) (emphasis added); *see also* 6 V.S.A. § 4810a(a).

We understand from the plain language of Act 64 that the draft RAPs must address all farming activities harmful to water quality as well as promote sustainable and effective farming. While costs and time are real considerations in regulating the agriculture sector, Act 64 envisions and sets up a process for ensuring that adequate staffing and financing will be provided. 10 V.S.A. §§ 1387, 1388, 1389. Therefore, financial considerations cannot justify regulations that do not ensure water quality goals are met. The draft RAPs must be revised to apply to all farms and to improve water quality sufficiently to meet the goals and requirements of Act 64.

Further, under the Clean Water Act (CWA), Vermont must ensure that Lake Champlain meets water quality standards. 33 U.S.C. §1313(d)(1)(C). The lake is currently impaired by the nutrient phosphorus, which regularly causes toxic algal blooms, impaired aquatic life, and reduced recreational use.[1] The current load of phosphorus discharged into Lake Champlain from Vermont sources is 630.6 metric tons per year, while the loading capacity, or amount of phosphorus Lake Champlain can receive and still meet its water quality standards, is 417.64 metric tons per year.[2] The amount of phosphorus discharging into Lake Champlain is therefore 33.7 percent above the legally compliant level.

Lake Champlain's largest source of phosphorus originates from farm fields, which contribute 41 percent of the phosphorus load.[3] To meet the loading capacity, the agriculture sector must reduce phosphorus discharges by 51.5 percent.[4] In some lake segments, these federally mandated reduction requirements reach nearly 60 and even 83 percent.[5] The draft RAPs therefore need to be sufficiently stringent to attain these reduction requirements.

Vermont's agricultural standards are critical to ensuring clean water and compliance with state and federal law. The targets set by Act 64 as well as the federal Clean Water Act, including cleanup requirements for Lake Champlain, are significant. The draft RAPs cannot simply support minor adjustments to the status quo farming system. Rather, applied RAPs must result in targeted watershed pollution reductions and reflect our commitment to preserve the uses, benefits, and values of our lakes, rivers, and streams. Vermont Act No. 64 (2015) Sec. 1(a)(4).

2. The draft RAPs should embrace a statewide transition to sustainable agricultural systems.

Sustainability rests on the principle of meeting the world's current needs without compromising the ability of future generations to meet their own needs. Congress defines sustainable agriculture as "an integrated system of plant and animal production practices having a site-specific application that will, over the long term: satisfy human food and fiber needs; enhance

[1] Phosphorus TMDLs for Vermont Segments of Lake Champlain ("Draft 2015 TMDL") (Aug. 14, 2015), p.12.
[2] Draft 2015 TMDL, p. 18 tbl. 3, p. 43 tbl. 7.
[3] Draft 2015 TMDL p. 47 fig. 7.
[4] Draft 2015 TMDL p. 44, tbl. 8.
[5] Draft 2015 TMDL p. 44 tbl. 8.

environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole." 7 U.S.C. § 3101(19).

Sustainable agriculture integrates environmental health, economic profitability, and social justice.[6] We recognize the range of innovative practices farmers use to improve sustainable farming and encourage AAFM to incorporate flexibility into the RAPs to account for variance across farm fields. However, the fundamental principles of sustainability should be applied consistently to Vermont's agricultural sector. Appendix A is a list of practices that we believe provide a baseline of options for supporting land and water stewardship as well as satisfying Vermont's legal commitments. We believe these practices should inform Vermont's agricultural regulations.

3. The draft RAPs must provide greater strength and specificity, including science-based justifications that the RAPs are sufficiently stringent to meet water quality goals.

The draft RAPs must provide greater strength and specificity as to some requirements, and contain more provisions for education, oversight, and transparency. Please find our detailed comments below:

Introduction and Applicability

- The RAPs should apply to "all farms," as required by Act 64 and as stated in the Introduction to the Draft RAPs. 6 V.S.A. § 4810a(a) ("the Secretary shall amend by rule the required agricultural practices in order to improve water quality in the State [and] assure practices *on all farms* eliminate adverse impacts to water quality") (emphasis added); Draft RAPs at 1, Introduction ("In accordance with 6 V.S.A. §§ 4810a and 4810, these regulations are intended to establish statewide requirements designed to improve water quality in the State and to assure practices *on all farms* eliminate adverse impacts to water.") (emphasis added).

- Similarly, the language in the "Applicability" Section should be revised to reflect Act 64. Act 64 does not limit the applicability of the RAPs to "agricultural activities" (which is not defined in the Act), or to only "animal waste management and disposal, soil amendment applications, and crop production and management." Draft RAPs at 1, Applicability. Rather, as stated above, the Act applies to "practices on all farms." 6 V.S.A. § 4810a(a). The list of RAP requirements in Act 64 is not an exclusive list, but a "minimum" set of requirements that must be addressed. 6 V.S.A. § 4810a(a).

- There should not be a presumption that compliance with the RAPs equals no discharge. The proposed presumption is problematic for several reasons. First, Act 64 does not authorize this presumption. Instead, it states that RAPs must assure that farm practices "eliminate" adverse impacts to water quality. 6 V.S.A. § 4810a(a). Second, as a practical matter,

[6] *See* Sustainable Agriculture Research & Education (SARE), What Is Sustainable Agriculture?, http://goo.gl/frcZ7Y; National Sustainable Agriculture Coalition, What Is Sustainable Ag?, http://goo.gl/USo7Gu.

allowing a presumption of "no discharge" does not encourage either farms or AAFM to identify and address discharges that *are* actually occurring. Third, AAFM has not provided any data or assurances that compliance with the RAPs actually *will* mean "no discharge." Finally, this presumption is inconsistent with Vermont's Water Pollution Control Law and the federal Clean Water Act because it seeks to apply to "discharge[s] of agricultural pollutants to waters of the State." Draft RAPs at 1, Introduction. However, any unpermitted discharge of agricultural pollutants from a point source is an enforceable violation of the Clean Water Act, and Vermont's Water Pollution Control Law likewise prohibits discharges. 33 U.S.C. § 1311(a); 10 V.S.A. § 1259(a). The presumption could give false assurances to farms regarding their compliance with other water quality laws.

We understand that this provision may be an effort to provide some assurances to farmers regarding compliance with the RAPs and enforcement of Vermont's agricultural water quality law. A better approach would be for AAFM to use its enforcement discretion when addressing discharges that occur despite a farm's compliance with the RAPs.

Section 1: General

- The wording of the final sentence under Section 1.3, in particular the word "verifiable," reads as an effort to limit the enforcement authority of the Vermont Agency of Natural Resources and the Attorney General's Office, which AAFM cannot do. Draft RAPs at 1, § 1.3. The water pollution control enforcement authorities of ANR and the Attorney General are already laid out in statute (10 V.S.A. §§ 1274, 8001-8221) and include, among other things, the authority to "issue a written warning" when ANR "determines that a violation will or is likely to occur." 10 V.S.A. § 8006. We recommend revising the sentence as follows: "These rules do not in any way prevent the ANR or Attorney General from enforcing the state's Water Pollution Control statutes and regulations."

Section 2: Definitions

- In the definition of "small farm," the language in subsection (d) that limits the rationales the Secretary may use in designating a small farm should be deleted ("based on the [farm's] management, agricultural inputs used by the farm, tillage practices used by the farm"). Draft RAPs at 5, § 2.25(d). Act 64 provides that the Secretary's determination regarding whether to designate a small farm must be based on whether "the farm poses a threat of discharge to a water of the State or presents a threat of contamination to groundwater." 6 V.S.A. § 4871(b).

Section 3: Required Agricultural Practices Activities

- In Section 3.1, there should not be a presumption that compliance with the RAPs equals no "discharge to waters of the state and groundwater." Draft RAPs at 6, § 3.1. (See above.)

- Most of Section 3 is unnecessary because, as explained above, Act 64 is clear that the Required Agricultural Practices apply to "all farms." 6 V.S.A. § 4810a(a) ("the Secretary shall amend by rule the required agricultural practices in order to improve water quality in the State [and] assure practices *on all farms* eliminate adverse impacts to water quality")

(emphasis added). The Act does not authorize AAFM to exempt categories of farms from the RAPs, whether for concerns about agency implementation resources or for other reasons. Rather, AAFM should distinguish between those farms that are subject to Small Farm certification, and those that are only subject to the RAPs (which are all remaining farms). 6 V.S.A. § 4810a(a)(1). This would not bring every backyard chicken coop under the realm of the RAPs, because a parcel of land is not a "farm" unless it is "devoted primarily to farming." Draft RAPs at 2, § 2.07; *see also* 6 V.S.A. § 4802(2) (designating multiple activities that qualify as farming).

- Our understanding is that there may be large numbers of farms in Vermont that would not be covered by the RAPs under the exemption in this Section. We have also heard concerns that some RAPs could not be implemented on the smallest farms because, e.g., there would not be enough space for a required buffer. Rather than exempt large numbers of farms that may be significantly contributing to Vermont's agricultural water pollution problems, a better approach—and one that would be consistent with Act 64—would be to establish a different set of standards for farms that fall under a certain size. *See* 6 V.S.A. § 4810a(11) (authorizing AAFM to allow for "alternative techniques or practices" where site-specific conditions prevent compliance with the RAPs).

Section 4: Small Farm Certification

- The RAPs should specify the requirements for the annual certification form, so that the public can provide comments and input. Draft RAPs at 7, § 4.10.

- The language of § 4.10(f) must make clear the Secretary has the authority to inspect small farms, "at any time for the purpose of assessing compliance by the small farm with the required agricultural practices and determining consistency with a certification of compliance submitted by the person who owns or operates the small farm." 6 V.S.A. §4871(e).

- Small farms should be inspected more than once. Under the current draft, a small farm must only be inspected once, ever, and only sometime within the first ten years of certification. Draft RAPs at 8, § 4.10(f). Inspections are key to identifying problems, sharing information, and finding solutions. This is especially true where lack of information and education about water quality requirements has been identified as a primary cause of pollution problems on farms. Additionally, without regular, meaningful inspections, the small farm certification program becomes little more than voluntary. Small farms should be inspected, at the very least, once every five years on an ongoing basis. Relevant inspection results, such as land use changes, should be included in a database management tool that monitors land use change and phosphorus reduction progress by subwatershed.

- Required Farm Operator Training should be required on an annual, or at the most, semi-annual basis. Draft RAPs at 8, § 4.12. As mentioned, education and outreach are key to helping to prevent pollution problems, and often it is the small farms that have the most difficulty obtaining helpful guidance.

Section 5: Required Agricultural Practices; conditions, restrictions, and operating standards

We firmly believe the practices of section 5 should incorporate the activities and perspective of sustainable agriculture outlined in this letter. In addition, we encourage AAFM to adjust the draft RAPs accordingly:

- We recommend adjusting the language of Section 5.1 to help inform farmers that point source discharges from *any* part of the farm (not just the production area or waste management system) require a permit from ANR. Draft RAPs at 9, § 5.1.

- Field stacking of manure should be prohibited in floodplains as well as "lands in a floodway or otherwise subject to flooding." Draft RAPs at 9, § 5.2(e).

- Nutrient Management Plans should be renewed at least once every five years, and more often as needed to ensure appropriate agricultural utilization of nutrients. Draft RAPs at 10, § 5.3. The current draft of the RAPs appears to require one-time development only.

- The final sentence of Section 5.3(c) should be moved to create a new subsection (d) to specify that NMPs and records of soil analyses, manure application, and waste analyses must be maintained by all farms subject to Section 5.3 (not just those farms in subsection (c)). Further, these records should be provided to the Secretary on an annual basis, not just provided to the Secretary "upon request." Draft RAPs at 10, § 5.3(c).

- We recommend adding to Section 5.4 that cover crops may not be sprayed with harsh pesticides, such as glyphosate, in order to remove them each year. Rather, cover crops should be killed through non-chemical practices such as mow-down and rolling/slicing/crimping techniques.

- The provision regarding gully erosion should be more specific. Draft RAPs at 11, § 5.4(d). Though it is mandatory ("shall be managed"), the actual requirements are too vague to provide adequate guidance to farmers or adequate requirements to protect water quality. We recommend adding language specifying that gully erosion shall be managed to "*prevent discharges to waters* through the use of appropriate management strategies, etc."

- The "Waste Application Standards" section of the RAPs should require all persons who land apply wastes to comply with the same requirements with which custom manure applicators must comply (see Section 10). This will help to ensure that applicators at all farms are fully knowledgeable and aware of best practices for preventing water pollution. Draft RAPs at 11, § 5.5.

- We recommend adding language to Section 5.5 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, e.g., the responsibility to check a given weather tracker site. Draft RAPs at 11, § 5.5(d).

- All buffer zones and waste application setbacks should, at a minimum, be doubled and be justified by best available science. Draft RAPs at 11, 13, §§ 5.5(e), 5.7. River corridors must be allowed to regain and maintain equilibrium with 50 ft buffers. VTDEC river corridor procedures must inform working lands land use guidance, similar to all other land use sectors in Vermont. The guidelines provided in Act 64 are *miminum* distances with the further requirement that buffers must adequately address water quality needs on a site-specific basis. 6 V.S.A. § 4810a(a)(6). We are not aware of any data or studies showing that the proposed buffers in the draft RAPs are sufficient to protect water quality and to reduce sediment mobilization and nutrient runoff in accordance with specified watershed pollution reduction targets. Additionally, stream buffers should be comprised of woody vegetation with deep roots first, wherever possible, and then grasses or other perennial vegetation demonstrated to aid in the filtering of sediment and reduction of erosion.

- We recommend adding a requirement that all farms practice integrated pest management rather than starting with the application of chemical pesticides, through the use of techniques such as crop rotation, the planting of crops that are natural pesticides, identification and removal of pests before they become harmful, and weeding. This will not only help to reduce the use of chemical pesticides and associated pollution of waterways and groundwater, but will encourage ecological health of farms more generally.

- This Section should be revised to require that livestock actually be excluded from surface waters. Draft RAPs at 14, § 6; 6 V.S.A. 4810a(9) (AAFM must "[e]stablish standards *for the exclusion of livestock* from water of the State to *prevent erosion and adverse water quality impacts*") (emphasis added). In particular, allowing livestock outside production areas to have access to surface waters unless there are already unstable banks with erosion neither excludes livestock, nor prevents erosion and adverse water quality impacts. Relying on AAFM to go farm-by-farm to designate all areas where water quality may be impacted by livestock stream access is insufficient; it could encompass every stream in the State. Draft RAPs at 14, § 6(b).

- The "and" in subsection (a)(iv) should be changed to an "or" to make it clear that the Secretary may conduct groundwater sampling under any of the listed conditions. Draft RAPs at 15, § 8(a).

Conclusion

We believe that adopting Vermont's new Required Agricultural Practices provides an important opportunity for taking much-needed, innovative steps that will not only protect Vermont's water quality, but can also support transitioning to sustainable systems that will ensure the vitality of Vermont's farms and environment for the long term. Therefore, we urge you to revise the draft RAPs consistent with these recommendations.

Thank you for your consideration.

Sincerely,

Mark Nelson
Chair
Vermont Chapter of the Sierra Club

Rebekah Weber
Lake Champlain Lakekeeper
Conservation Law Foundation

David Deen
Upper Valley River Steward
Connecticut River Watershed Council

Brian Shupe, AICP
Executive Director
Vermont Natural Resources Council

Lauren Hierl
Political Director
Vermont Conservation Voters

Marty Illick
Executive Director
Lewis Creek Association

Lori Fisher
Executive Director
Lake Champlain Committee

Appendix A

Plant Production Practices[7]

Selection of site, species, and variety: Preventative strategies, adopted early, can reduce inputs and enable sufficient planning to lessen water quality impacts. When possible, pest-resistant crops should be selected which are tolerant of existing soil or site conditions. When site selection is an option, factors such as soil type and depth, previous crop history, and location (e.g. climate, topography, including proximity to surface waters, floodplains, inundation areas, and wetlands) should be taken into account before planting.

Diversity: Diversified farms are typically economically and ecologically resilient. While monoculture farming has advantages in terms of efficiency and ease of management, the loss of the crop in any one year can put a farm out of business and seriously disrupt the stability of the community dependent on that crop. By growing a variety of crops, farmers spread economic risk and are less susceptible to the radical price fluctuations associated with changes in supply and demand. Properly managed, diversity can also buffer a farm from pest infestations, which can result in fewer synthetic chemicals entering waterways.

Soil management: Activities that increase organic matter, reduce compaction, promote biological activity, reduce erosion and maintain nutrient levels are necessary to provide long-term sustainability of agricultural soils and protection of surface water areas and continuous riparian buffers. Practices that promote these goals include reduced tillage, avoiding tillage and traffic on wet soils, addition of organic matter using manure, green manures and compost, sod and legume rotations and the use of cover crops.

Efficient use of inputs: The application of any synthetic, petroleum-based fertilizers and/or pesticides and/or herbicides should be prohibited. The active ingredients of these chemicals degrade many of Vermont's water bodies. Soil fertility and crop nutrients should be managed through mechanical tillage and cultivation practices, crop rotations and cover crops, supplemented with animal and crop waste materials and, under specified conditions, certain permitted synthetic materials. The use of sewage sludge should also be prohibited.

Consideration of farmer goals and lifestyle choices: Management decisions should reflect not only environmental and broad social considerations, but also individual goals and lifestyle choices. For example, adoption of some technologies or practices that promise profitability may also require such intensive management that one's lifestyle actually deteriorates. Management decisions should promote water quality improvement, sediment and nutrient reduction targets, as well as nourish the community and individual.

Animal Production Practices[8]

Management planning: Including livestock in the farming system increases the complexity of biological and economic relationships. The mobility of the stock, daily feeding, health concerns,

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[7] Adapted from: SARE, Plant Production Practices, http://goo.gl/O9egFX.
[8] Adapted from: SARE, Animal Production Practices, http://goo.gl/3YGgTb.

breeding operations, seasonal feed and forage sources, and complex marketing are sources of this complexity. Therefore, a successful operation plan should include enterprise calendars of operations, stock flows, forage flows, labor needs, herd production records, and land use plans to give the manager control and a means of monitoring progress and mitigating water quality infractions.

Animal selection: The animal enterprise should be appropriate for the farm and natural resources. Farm capabilities, potential impacts on water bodies and aquatic features, and constraints such as feed and forage sources, landscape, climate, and skill of the manager should be considered in selecting which animals to produce.

Animal nutrition: Feed costs are the largest single variable cost in any livestock operation. While most of the feed may come from other enterprises on the farm, some purchased feed is usually imported from off the farm. Feed costs can be kept to a minimum by monitoring animal condition and performance and understanding seasonal variation in feed and forage quality on the farm. Producers should feed livestock feed products that are 100 percent organic, but may also feed permitted vitamin and mineral supplements. All animals should have ready access to pasture and, for the entire length of the grazing season, should get 30 percent of their feed on a dry-matter basis from pasture. Minimizing the use of feed supplements can reduce excess nutrients discharging into waterways.

Reproduction: Using quality germplasm to improve herd performance is another key to sustainability. In combination with good genetic stock, adapting the reproduction season to fit the climate and sources of feed and forage reduces health problems and feed costs. The benefits also extend to minimizing synthetic inputs.

Herd health: Animal health greatly influences reproductive success and weight gains, two key aspects of successful livestock production. Unhealthy stock waste feed and require additional labor and inputs that may negatively impact water quality. To maintain health, animals should be raised in clean environments with adequate space to reduce animal-stress and the likelihood of infections. The use of antibiotics should be prohibited except in the case of acute infections in sick animals.

Grazing management: The stocking rate must be correct for the landscape and the forage sources. Prolonged concentration of stock that results in permanent loss of vegetative cover on uplands or in riparian zones should be avoided. Livestock should be excluded from surface waters, river corridors, and inundation areas. Livestock may have temporary access to surface waters at defined livestock crossings.

Confined livestock production: Animal health and waste management are key issues in confined livestock operations. Confined livestock production is increasingly a source of surface and ground water pollutants, and should be avoided. All livestock must have ready access to pasture and, for the entire length of the grazing season, should get 30 percent of their feed on a dry-matter basis from pasture. Livestock production systems that disperse stock in pastures so the wastes are not concentrated and do not overwhelm natural nutrient cycling processes are strongly

encouraged. Animals should only be temporarily confined, and only for reasons of health, safety, to protect soil or water quality, and/or the animal's state of production.

Economics and Social Context[9]

Profitability: Farms are businesses that rely on turning a profit. Transitioning to an agricultural system that internalizes the costs of production can affect the farmer's bottom line. Therefore, farmers should adhere to business models that increase their price point, including but not limited to organic, value-added, and diversified farming operations that supply local and regional markets. Economic stability is an important driver that enables environmental protection. Oftentimes producers do not feel they have the option of conserving water quality and stewarding their land because of financial constraints.

- *Organic*: American consumer demand for organic products has grown by double-digits every year since the 1990s. Organic sales have increased from $3.6 billion in 1997 to over $39 billion in 2014. The vast majority of Americans purchase some organic products with a recent *Consumer Reports* survey demonstrating that 84 percent of American consumers purchase organic food.[10] With restrictions on synthetic chemical use under the new RAPs, transitioning to organic would be fairly straightforward. Vermont farmers could also take advantage of large organic consumer hubs in Boston, New York, and Philadelphia.

- *Value Added*: Value-added production changes the state of a product or alters the production process to enhance the value of the end product.[11] Providing value can be in the form of marketing a unique product, filling a market niche, simplifying the supply chain, providing a service, and many other ways. Examples of value added products include organic milk or yogurt.[12]

- *Diversified*: Diversified farming systems are a set of methods and tools developed to produce food sustainably by leveraging ecological diversity at plot, field, and landscape scales. While there is no single template, an example of diversified farming includes multiple crops and/or varieties and integration with livestock.[13] If adequate management and labor resources exist, diversification reduces financial risk. Diversification hedges against drought and economic pressures from increased input costs, commodity price declines, and regulations that affect the supply of certain commodities.[14]

- *Local and Regional*: In 2012, 163,675 farms in the U.S. were marketing foods locally, defined as either direct-to-consumer or intermediated sales of foods. The number of farms with direct-to-consumer sales increased by 17 percent and sales increased by 32 percent between 2002 and 2007. Overall, sales of local foods were estimated to have

[9] Adapted from: SARE, The Economic, Social, & Political Context, http://goo.gl/51l0Ap.
[10] Organic Trade Association, State of the Industry, http://goo.gl/iMf2c2.
[11] USDA, Value-Added Producer Grant, http://goo.gl/7h96GJ.
[12] Agricultural Marketing Resource Center, What Is Value-Added Agriculture?, http://goo.gl/ieeWbz.
[13] Berkeley Food Institute, Center for Diversified Farming Systems, http://goo.gl/lyMsbi.
[14] UW-Madison, Center for Integrated Agricultural Systems, http://goo.gl/OsBzOJ.

grown from $4 billion in 2002 to $6.1 billion in 2012.[15] Vermont, in particular, has a rich farm to plate culture with potential for significant increase in direct-to-consumer sales.[16]

Land use: Conversion of agricultural land to urban uses is a particular concern in Vermont as rapid growth and escalating land values threaten farming on prime soils. Existing farmland conversion patterns often discourage farmers from adopting sustainable practices and long-term perspective on the value of land. Adopting sustainable farming practices can play a key role in building public support for agricultural land preservation.

Conservation and preservation of productive agricultural land and water resources for long-term stewardship should be a priority over development. Those seeking to convert needed agricultural land to other uses bear the burden of proving that the proposed new use is more important to current and future public welfare than agriculture and that there is no other feasible location for the proposed use. Comprehensive statewide land use planning is necessary to ensure a balance of lands for all purposes. It is important that there be wide public and professional participation in the land use planning process.

Labor: In Vermont, the conditions of agricultural labor are generally far below accepted social standards and legal protections in other forms of employment. On-the-farm policies should provide adequate wages, safe working conditions, health benefits, and changes for economic stability. The needs of migrant labor for year-round employment and adequate housing are a particularly critical issue. Labor exploitation, like environmental degradation, is often an economic issue. Social and environmental considerations are overlooked because of the upfront costs. It is critical to encourage fair working conditions at the same time as demanding water quality protection – as both are proxies for farm stability.

Rural community development: Locally based sustainable agriculture encourages strong, rural communities by creating jobs, developing a community ethos, protecting water resources, providing food security, and connecting rural and urban areas.[17]

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[15] USDA, *Trends in U.S. Local & Regional Foods Systems* (Jan. 2015), http://goo.gl/bRxHMk; John Ikerd, *The Economics of Sustainable Farming*, http://goo.gl/i7hBxY.
[16] Farm to Plate, 3.7: Nutrient Management, http://goo.gl/b4pRMt.
[17] Duke Law Community Enterprise Clinic, *Developing Whole Communities: Community Economic Development & Locally Based Sustainable Agriculture*, https://goo.gl/sYf5jK.

March 21, 2016

Secretary Chuck Ross
VT Agency of Agriculture, Food, and Markets
116 State Street
Montpelier, Vermont 05620

Sent via electronic mail

Re: Comments on the Second Draft Required Agricultural Practices

Dear Secretary Ross:

Conservation Law Foundation, Connecticut River Watershed Council, Lewis Creek Association, Vermont Council of Trout Unlimited, Lintilhac Foundation, Vermont Conservation Voters, Vermont Natural Resources Council, Vermont Chapter of the Sierra Club, Lake Champlain International, and Lake Champlain Committee submit the following comments to the Vermont Agency of Agriculture, Food and Markets (AAFM) on the second draft Required Agricultural Practices (2nd Draft RAPs).

Promulgating forward-thinking agricultural regulations is imperative to meeting state and federal legal mandates as well as promoting economic stability and environmental health. Vermont's agricultural regulators are tasked with preventing and controlling activities on all farms harmful to water, improving water quality, and attaining unprecedented phosphorus reductions within the Lake Champlain watershed, which accounts for half of Vermont's land area. Vermont Act No. 64 (2015) § 1(b)(1), (5), and (6). Reducing phosphorus runoff from farmland is particularly important considering agriculture – at 41 percent of the aggregate pollutant load – represents the single largest contributor of phosphorous pollution to Lake Champlain.[1]

The RAPs play a crucial role in protecting Vermont's substantial investment in clean water, including its tourism and real estate industries, and strengthening Vermont's resilience to the mounting challenges of climate change. Restoring our water resources is as much a legal and ecological mandate as it is about economic vitality, public health, and buttressing our natural defenses to extreme weather events.

Though we encourage AAFM to incorporate provisions into the RAPs to account for farms that engage in practices that protect water quality, such as regenerative, integrated, and organic agriculture, the 2nd Draft RAPs do not reflect this nuanced approach. Instead, they exempt large numbers of farms and relax requirements for all farms. Again, we encourage AAFM to include provisions in the RAPs that truly foster practices leading to long-term sustainability and clean water. We also reiterate our support for outreach and incentive systems that will help farms be good stewards of the environment. Vermont is fortunate to have many diversified farms leading the way with environmentally friendly and economically profitable models, and AAFM should encourage and promote these models through the RAPs not only for the health of Vermont's waters, but for the long term vitality of agriculture in the State.

Unfortunately, the 2nd Draft RAPs fail on several counts. They conflict with the legislative intent of Act 64 – Vermont's clean water law; they are in several respects unenforceable; and they are inadequate to meet Vermont's water quality standards.

[1] Phosphorus TMDLs for Vermont Segments of Lake Champlain ("Draft 2015 TMDL") (August 14, 2015), pg. 47 fig. 7.

<u>The 2nd Draft RAPs conflict with the legislative intent of Act 64 by exempting a category of farmers from the RAPs.</u>

The 2nd Draft RAPs section 3.1, which defines the applicability of the Required Agricultural Practices, violates the plain language of Act 64 because it fails to include all farms under the purview of the RAPs. Under the Act, "Required Agricultural Practices (RAPs) shall be management standards to be followed by *all persons engaged in farming* in this State." 6 V.S.A. § 4810(b) (emphasis added). The Act further mandates that "the Secretary shall amend by rule the required agricultural practices in order to improve water quality in the State [and] assure practices on *all farms* eliminate adverse impacts to water quality." 6 V.S.A. § 4810a(a) (emphasis added). Under Act 64, "farming" means cultivating the land for food or fiber, raising animals or bees, producing maple syrup, operating greenhouses, and managing agricultural or fuel products from the farm. 6 V.S.A. §4802(2) (incorporating farming definition from 10 V.S.A. § 6001(22)). The *only* size limitation in the statutory definition of farming relates to horses (four or more equines).

The Act does not authorize AAFM to exempt categories of farms from the RAPs, whether for concerns about agency resources or for other reasons. AAFM may distinguish between farms that are subject to the small farm certification and those that are only subject to the RAPs (which are all remaining farms). 6 V.S.A. § 4810(a)(1). This would not bring every backyard chicken coop under the realm of the RAPs because a parcel of land is not a "farm" unless it is "devoted primarily to farming." 2nd Draft RAPs at 2 § 2.12; *see also* 10 V.S.A § 6001(22) (designating multiple activities that quality as farming), and would lawfully address AAFM's concerns about having sufficient resources to administer the RAPs.

AAFM has committed to regulating all farming operations under the RAPs within the Vermont Lake Champlain Phosphorus TMDL Phase I Implementation Plan (Phase I Plan) and in the Revised Secretary's Decision from Conservation Law Foundation's petition to require mandatory pollution controls in Missisquoi Bay basin. "The Phase I Plan commits to … increasing the base regulatory standards in the RAPs (formerly called Accepted Agricultural Practices (AAPs prior to Act 64 of 2015), which are applicable to all farming operations regardless of size or type."[2]

Further, as some farmers in the State have pointed out, leaving regulation of smaller farms to municipal bodies is an invitation for inconsistent regulation and unfairness across the State, where some small farms may be subject to meaningful water quality requirements and others remain exempt. This would also be an abdication of authority by AAFM, the agency charged with implementing the RAPs under Act 64, and could impose substantial burdens on municipal governments that may lack the resources and expertise to develop agricultural regulatory systems where AAFM has failed to.

We are extremely concerned that despite the continued decline of Lake Champlain, the 2nd Draft RAPs limit AAFM's authority to regulate farms. Currently, the "Accepted Agricultural

[2] Revised Secretary's Decision, In re: CLF Petition to Require Mandatory Pollution Control Best Management Practices for Agricultural Non-Point Sources Identified in the Missisquoi Bay Basin, AAFM Docket #: 2014-6-04 ARM, pg. 10.

Practices are basic practices that *all farm operators* must follow as a part of their normal operations." AAPs at 2 § i. General (emphasis added). Relaxing agricultural regulations beyond the current standards causes us to question AAFM's commitment to improving water quality and implementing the mandates of Act 64.

<u>The 2nd Draft RAPs conflict with the legislative intent of Act 64 by authorizing livestock access to waters of the State.</u>

Act 64 compels AAFM to establish livestock exclusion standards that *prevent* erosion and adverse water quality impacts. 6 V.S.A. § 4810a(a)(9). The use of the word "prevent" rather than "reduce" or "minimize" is significant because it sets a zero tolerance standard for additional erosion and adverse water quality impacts from livestock. Studies have shown that livestock with access to streams cause phosphorus, sediment, and pathogen pollution by depositing manure in the water and by trampling and destabilizing stream banks.[3] Therefore, any regulation that grants livestock access to waters of the State violates the plain language and intent of Act 64.

The 2nd Draft RAPs allow livestock to access streams outside of production areas that do not contain unstable banks or where erosion is present. 2nd Draft RAPs at 20 § 7(c)(1). This provision is inconsistent with Act 64 and will result in the degradation of stable stream banks by directing livestock toward areas that are not currently eroded. In addition, the 2nd Draft RAPs permit livestock in water crossings and watering areas, neither of which is limited in size or clearly defined in the regulation, causing any intended restriction to be meaningless.

The approach of section 7(c)(2), which provides the Secretary the authority to revoke livestock access to areas that have "actual or potential threat to water quality as a result of livestock access," is illogical. It is well recognized that livestock *always* have the potential to threaten water quality. Moreover, placing the burden on AAFM to hear complaints and determine restricted areas is an inefficient use of limited state resources and fiscally unsound. Preventing erosion is cost effective compared to mitigating its effects. Instead, livestock should be restricted from all waters of the State except in areas designated by the Secretary. Off-stream water sources must be established and, where absolutely necessary, livestock should only have access to streams with access ramps.

<u>Key provisions of the 2nd Draft RAPs are practically unenforceable.</u>

AAFM includes language in the 2nd Draft RAPs that is ambiguous, rendering much of the rules unenforceable. In several provisions, AAFM unnecessarily concedes authority to regulate the farming community. Please find a list below of the specific sections that should be revised to ensure enforceability.

- Under 6.03(d), AAFM allows a drawdown approach to manure application when soils are saturated with phosphorus. The phrase "implement practices to reduce

[3] Water Quality Remediation, Implementation and Funding Report ("Act 38 Report") (January 14, 2013) pg. 14 § 1.5.

phosphorus levels over time" should be changed to "immediately implement practices to reduce phosphorus." To allow farmers to continue to apply manure despite soil analyses demonstrating 20 ppm phosphorus levels will directly lead to increased phosphorus loading into Vermont's waterways. In addition, the wording "eliminating or reducing" is in conflict. AAFM should require farmers to eliminate manure application once soils are saturated with phosphorus, as indicated by a 20 ppm soil test.

- Section 6.03(f) should require a standard form for record keeping on all farms. These records should be provided to the Secretary on an annual basis – not just "upon request" – so that records are incorporated into the public domain. For Medium and Large Farm Operations, AAFM should establish and implement an IT system designed to track the transport and application of manure and other agricultural wastes, similar to the electronic manifest system developed for hazardous waste. Once developed, users of the system would be able to create manifests electronically and transmit them through the system.

- Under 6.04(a), AAFM should establish specific standards for each of the mentioned conservation practices, as mandated by Act 64. *See* 6 V.S.A. § 4810a(10) (stating that AAFM shall "[e]stablish standards for soil conservation practices"). The wording "considered and implemented as practicable" should be changed to "implemented as practicable." That is, the sentence should read: Conservation practices, including 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 shall be implemented as practicable). The inclusion of the word "considered" unnecessarily weakens AAFM's position; qualifying implementation with "as practicable" ensures AAFM's ability to require actual action where practicable, as opposed to mere consideration.

- Under 6.04(c), the word "minimize" should be changed to "prevent" and the wording "reduce or eliminate" should be changed to "eliminate." Gully erosion is a severe form of soil erosion caused by water moving in rills, which concentrate to form larger and more persistent erosion channels.[4] Gully erosion is, by definition, problematic for healthy soils and waterways – regardless of whether discharges to waters are apparent. Grassed waterways should be strongly encouraged to mitigate gully erosion.

- Under 6.04(d), the first sentence should be revised to read: "annual croplands shall be required to be planted to cover crops." Extreme weather conditions should be the only reason for allowing an exemption. Qualifying the cover crop requirement by including the phrase, "as soil, weather conditions, and generally accepted agronomic practices allow" puts too much discretion in the hands of the regulated community to determine whether conditions may or may not allow for cover cropping. In

[4] Environmental Protection Agency, *National Management Measures to Control Nonpoint Pollution from Agriculture* (July 2003), http://www.epa.gov/sites/production/files/2015-10/documents/chap4c.pdf.

addition, cover crops are an important practice for maintaining soil health and should be encouraged throughout the state, and not only on land subject to frequent flooding.

Furthermore, cover crops should not be sprayed with harsh pesticides, such as glyphosate and atrazine, in order to remove them each year. This would only add to Vermont's ever-increasing use of chemical pesticides and associated environmental and public health concerns. Rather, cover crops should be killed through non-chemical practices such as mow-down and rolling, slicing, and crimping techniques.

<u>The 2nd Draft RAPs are inadequate to meet water quality standards.</u>

Under the federal Clean Water Act, Vermont must ensure that Lake Champlain meets water quality standards. 33 U.S.C. § 1313(d)(1)(C). The lake is currently impaired by phosphorus, which regularly causes toxic algal blooms, impaired aquatic life, and reduced recreational use.[5] The amount of phosphorus currently discharging into Lake Champlain is 33.7 percent above the legally compliant level,[6] and to achieve attainment, the agriculture sector must reduce phosphorus loading by 51.5 percent.[7] The 2nd Draft RAPs are inadequate to sufficiently reduce phosphorus discharges and reach water quality standards.

Certification Applicability for Small Farm Operations is Unreasonably High

The 2nd Draft RAPs raise the threshold for small farm certification by 150 percent compared to the first draft RAPs. This represents a significant increase that exempts many more farmers from needing to certify as a Small Farm Operation and comply with the associated requirements. We are troubled that AAFM is continuing to relax regulations despite strict water quality mandates.

The Soil Loss Tolerance Tool is Inappropriate to Manage Water Quality

The 2nd Draft RAPs require cropland to be cultivated in a manner that results in an average soil loss less than or equal to the soil loss tolerance (T). 2nd Draft RAPs at 14 § 6.04(b). This means that managing to T, which is not tied to water quality protection, would equate to some accepted annual loss of soil and associated nutrients at the farm. However, loss of soil through erosion is a major contributor to nutrient loading. Moreover, the average annual acre of cropland in the United States is already eroding at an alarming rate of seven tons per year.[8]

AAFM should develop and implement alternatives to management based on soil loss tolerance such as management based on a Phosphorus Index. In the meantime, the 2nd Draft RAPs should require management to half T, considering that seven tons of annual

[5] Draft 2015 TMDL pg. 12.
[6] Draft 2015 TMDL pg. 18 tbl. 3; pg. 43 tbl. 7.
[7] Draft 2015 TMDL pg. 44 tbl. 8.
[8] Act 38 Report pg. 15.

erosion (or soil loss at T) is equivalent to 1.3 large dump trucks per acre per year.[9] Agricultural regulations should not defend such obvious and significant phosphorus discharges into Lake Champlain.

Buffers Zones are Inappropriately Defined

Under Vermont statute, a buffer is defined as an "undisturbed area consisting of trees, shrubs, ground cover plants, duff layer, and generally uneven ground surface…." 10 V.S.A. § 1422(10). Undisturbed, vegetated buffers are critical for providing wildlife habitat, infiltrating pollutants, mitigating flood and erosion hazards, and serving as water temperature controls. The 2nd Draft RAPs' list of authorized activities in buffer zones, including grazing, fertilizer application, and harvesting completely warps the definition and purpose of a buffer. *See* 2nd Draft RAPs at 17 § 6.07(d), (e), and (g). The result is that agricultural buffers will serve as phosphorus sources rather than sinks and lead to water quality degradation.

In addition, adjacent surface waters, including tributaries and intermittent streams should be buffered from croplands and other agricultural land uses by a minimum of 50 feet and from ditches by 20 feet to reflect best available science. The Vermont Department of Environmental Conservation river corridor procedures must inform land use guidance, similar to all other land use sectors in Vermont. The guidelines provided in Act 64 are *minimum* distances with the further requirement that buffers must "adequately address water quality needs" on a site-specific basis. 6 V.S.A. § 4810a(a)(6)(B). We are not aware of any data or studies showing that the proposed buffers in the 2nd draft RAPs are sufficient to protect water quality and reduce sediment loss. Moreover, stream buffers should be comprised of woody vegetation with deep roots, whenever possible, and then grasses or other perennial vegetation demonstrated to aid sediment filtering and erosion reduction.

AAFM Should Take Action Now to Address Tile Drains

The State lacks much-needed information on tile drains specific to Vermont. We do not know the extent of existing tile drainage systems, but estimates range upwards of 50 percent of agricultural fields in some watersheds. In addition, tile drains are being installed at an extremely high rate in the Lake Champlain Basin, particularly Franklin County, yet there are not practices in place to ensure that the systems do not result in the discharge of more phosphorus into the lake. Existing research demonstrates there is significant cause for concern.[10,11]

Until research is completed that demonstrates tile drains can be utilized in Vermont without causing unacceptable contributions of phosphorus pollution, continuing to allow

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[9] Sullivan, P., Appropriate Technology Transfer for Rural Areas, Sustainable Soil Management, http://soilandhealth.org/wp-content/uploads/01aglibrary/010117attrasoilmanual/010117attra.html

[10] King, K.W., Williams, M.R., and N.R. Fausey. 2015. Contributions of Systematic Tile Drainage to Watershed-Scale Phosphorus Transport. *J. of Environ. Qual*. 44: 486-494.

[11] Kleinman, P.J., Smith, D.R., Bolster, C.H., and Z.M. Easton. 2015. Phosphorus Fate, Management, and Modeling in Artificially Drained Systems. *J. of Environ. Qual*. 44: 460-466.

tile drains to be installed is in conflict with water quality standards and our State's legal obligations to clean up Lake Champlain. While the Vermont General Assembly extended AAFM's deadline for rulemaking on tile drains to 2018, we strongly urge AAFM to address the issue now.

Accordingly, we recommend that until AAFM promulgates rules governing the use of tile drains, AAFM impose a moratorium on the installation of any new tile drainage systems using its existing authority to protect water quality.

AAFM should include in this version of the proposed RAPs requirements for mapping and monitoring of existing tile drains, including the locations of all existing drainage systems and outfalls, and regular monitoring data from the outfalls. Longer-term actions to regulate tile drains should, at a minimum, include a baseline of practices for reducing phosphorus pollution from tile drains.

Conclusion

We believe the 2nd Draft RAPs conflict with the legislative intent of Act 64, lack enforceability, and are not adequate to meet water quality standards. We urge AAFM to incorporate and address our comments before engaging in the formal rulemaking process.

Thank you for your consideration.

Sincerely,

Rebekah Weber
Lake Champlain Lakekeeper
Conservation Law Foundation

David Deen
Upper Valley River Steward
Connecticut River Watershed Council

Marty Illick
Executive Director
Lewis Creek Association

Clark Amadon
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Vermont Natural Resources Council

Mark Nelson
Chair
Vermont Chapter of the Sierra Club

James Ehlers
Executive Director
Lake Champlain International

Lori Fisher
Executive Director
Lake Champlain Committee

cc: House Committee on Fish, Wildlife and Water Resources, House Committee on Agriculture and Forest Products, Senate Committee on Natural Resources and Energy, and Senate Committee on Agriculture