

April 26, 2016

Subsurface Tile Drainage Interim Report¹

Secretary Chuck Ross Vermont Agency of Agriculture, Food, & Markets 116 State Street Montpelier, VT 05620-2901 Secretary Deb Markowitz Vermont Agency of Natural Resources 1 National Life Drive - Davis 2 Montpelier, VT 05620-390

Vermont Council

VERMONT NATURAL

COUNCIL

RESOURCES

VIA ELECTRONIC MAIL

Dear Secretaries Ross and Markowitz:

The Subsurface Tile Drainage Interim Report (Interim Report or Report) is an important, though insufficient, first step towards the development and implementation of improved state policy to address the water pollution impacts of subsurface tile drainage. This set of initial comments is intended to assist the State of Vermont as it advances its analysis and review of the impacts of tile drain use on water quality and as the state agencies prepare a final version of this report in the coming months. These comments on the Interim Report are submitted on behalf of the Lake Champlain Committee, Conservation Law Foundation, Lewis Creek Association, Vermont Council of Trout Unlimited, Vermont Conservation Voters, Sierra Club - Vermont Chapter, and the Vermont Natural Resources Council.

These comments build on those offered to the State of Vermont by several of our groups in a letter dated December 21, 2015 to Secretary Ross, and attached as Appendix A to this letter. Among

¹ The referenced report was prepared by the State of Vermont Agency of Agriculture Food and Markets and Agency of Natural Resources (collectively "Agencies") to the Vermont General Assembly on February 15, 2016. See: http://agriculture.vermont.gov/sites/ag/files/pdf/water_quality/Tile-Drain/VAAFM-VANR-Subsurface-Tile-Drainage-Interim-Report-02152016.pdf. the information supporting these comments is information gleaned to date from responses to records requests made to the State of Vermont Agency of Agriculture Food and Markets (AAFM) and Agency of Natural Resources (ANR), as well as the United States Environmental Protection Agency (EPA), and Natural Resources Conservation Service. A partial list of reports and scientific research obtained through public records requests and other means is contained in Appendix B.

Overall, the Report reflects the Agencies' disturbing lack of urgency over tile drainage pollution. The sections within these comments reveal that the Agencies in their Report did not consider available and valuable information.

Section I debunks the Agencies' claim that Vermont-specific research must be conducted before tile drainage policies can be implemented.

Section II presents information on the environmental impacts of tile drainage discussed in the Report in light of the high rate of tile installation, and urges the Agencies to take immediate steps to address the issue.

Section III reveals that the Agencies relied on incomplete data to conclude that pollution from tile drains is not a serious matter.

Section IV highlights the regulation of tile drains as an opportunity to carry out the Agencies' responsibility under Vermont's Clean Water Act.

Section V provides examples that illustrate the Agencies' failure to consider the full economic effects of drainage pollution.

Section VI offers recommendations for tile drainage regulation based on other states' regulations, which the Agencies entirely disregarded.

Section VII lists immediate actions that the Agencies should take now to address tile drainage pollution.

Section VIII describes best management practices for tile drain use that the Agencies should adopt now.

I. <u>The State of Vermont Should Not Wait for Further Study to Implement New Policies</u> <u>Related to Tile Drains</u>:

We know enough to act now to develop and implement improved policies for addressing the impacts of tile drain pollution. In the Interim Report, AAFM and ANR suggest that the State should wait for the results of further study to implement improved tile drain policies. The research gap is not, however, nearly as significant as the Agencies suggest and is not a sufficient basis to postpone steps that can and must be taken now.

The Interim Report calls for more study on tile drains in Vermont despite the fact that there is a robust body of research that has been conducted across the country and around the world that is applicable to Vermont. Most of the existing studies provide information regarding soil type, hydrology,

and other parameters that can be extrapolated to Vermont. Vermont's cropland conditions, including soil types, cropping patterns, landscape, and climate may vary throughout the State, but that is insufficient to justify ignoring the large volume of scientific research. The knowledge gained through studies over the past several decades is applicable to tile drain usage in Vermont because those studies have considered the various conditions that exist in Vermont. Additional Vermont-specific research is not required to determine ways to address tile drains at a policy level.

While conducting more studies in Vermont could be beneficial, the claim that additional study would be helpful is an inadequate reason to delay action. The attached Appendix B includes a partial list of reports and studies relating to tile drains compiled through a preliminary review of the records of the State of Vermont and the United States. A careful review of these reports leads quickly to the conclusion that Vermont has already waited too long to take steps to address this source of water pollution.

II. <u>The Interim Report Includes Sufficient Information to Take Immediate Steps to</u> <u>Address Water Pollution from Tile Drains</u>:

The report includes many important contributions to the dialogue regarding Vermont's response to our growing understanding of the water quality impacts of tile drains. The logical outgrowth of those conclusions is, however, not to limit further action to simply studying the problem as recommended, but to take immediate action to address this source of pollution.

A. <u>Environmental Impacts of Tile Drains</u>: As the Report states on page 7, tile drains cause significant environmental impacts. A preliminary review of the scientific literature, some of which is contained in the state and federal agency records, confirms that the use of tile drains causes:

- Changes to Hydrology: Hydrology is the way in which water flows through and across the landscape. Instead of providing filtering and water storage functions after heavy precipitation events, water flowing through tile drains moves quickly off fields after rainfall events and exacerbates erosion and flood damage by increasing the volume of flow in streams and rivers. Instead of allowing surface water to seep into the ground and recharge groundwater so that it flows gradually back into streams and rivers following precipitation events, farm fields that have been tiled behave more like developed land and impervious surfaces. These functions, which are so critical to clean water and safe communities, are provided by un-tiled farmland. Water moves quickly through tile drains, causing spikes in flow, washing out stream banks, destroying roads, and flooding downstream communities.
- Permanent Loss of Wetlands and Wetland Functions: Draining fields that would otherwise exhibit wetland functions may cause a permanent loss of the hydric soil characteristics necessary for the recovery of wetlands. This impedes the ability of state and federal agencies to implement long-established and successful wetlands restoration programs. Draining wetlands also creates a loss of benefits, including water storage, groundwater recharge, pollution filtering, and wildlife habitat.
- <u>Increased Water Pollution</u>: Tile drains are frequently a direct conduit for pollutants, including pesticides, harmful bacteria, liquid manure, and artificial fertilizers. Most significantly, tile

drains are documented to increase levels of nutrient pollution, including nitrogen, which has long been known to move through tile drain systems rapidly in a dissolved form. Disturbingly, early assumptions that tile drains reduce phosphorus loads by reducing surface runoff and sediment load have been proven wrong. Dissolved, reactive phosphorus levels have been shown repeatedly to increase following applications of manure on tile-drained fields. (See Appendix B, Manure Contamination.)

These effects are not hypothetical or potential or uncertain. There is always room for more study of complex environmental challenges, as well as a need to take into account developing technologies and scientific understandings. However, many impacts are already known, and the magnitude of their consequences demonstrates the need for the State of Vermont to act now.

B. <u>Growth in Use of Tile Drains</u>: Another important contribution of the Interim Report is that AAFM and ANR note the changing nature and increased use of tile drains. Modern technologies allow for the rapid installation of tile drains across vast areas of the state. Any person who has spent time in rural Vermont, particularly in Franklin County, can attest to the thousands of acres of new farmland drained by plastic tile drain tubing that has been laid across our state's farm fields in just the past decade. As noted in the Report, estimates are that up to 70 percent of cropland in some sub-watersheds is tile drained. The increase in the use of tile drains, while not fully quantified, is working at cross-purposes with other efforts to control water pollution in Vermont and needs to be addressed now.

C. <u>Practices for Addressing Tile Drain Pollution</u>: The Interim Report provides an important initial effort to catalogue the practices that should be considered as part of a strategy to reduce the water pollution impacts of tile-drained fields. There are known best management practices (such as those included in nutrient management plans; crop rotations with increased use of pasture; reduced tillage; and use of cover crops to improve crop yields, maintain soil health, and reduce soil erosion) that may offset the negative impacts of tile drains. On the other hand, the use of manure injection may have the unintended effect of increasing nutrient pollution on tiled fields. (See Appendix B, Manure Contamination.)

Constructed or restored wetlands and saturated buffer zones show promise in the area of structural controls discussed in the Report. The installation of treatment systems and drainage control structures may also provide opportunities to reduce pollution from tile drains – though this is an area where the research to date has not yet identified any obvious and effective solutions. One significant risk of relying on the hope for a technological solution is that the State may just be postponing the need to change practices now. The best option would be to take action on the knowledge we currently possess and incorporate technological advances as they are discovered.

The most cost-effective means of reducing the impacts of tile drains, taking the full costs of water pollution into account, is simply to not install them in the first place. For this reason, given what we know about tile drains' impact on the environment along with the uncertainty about the best means of controlling those impacts, it is unfortunate that the Agencies do not suggest limitations or even a ban on the installation of new tile drains.

Further, AAFM is presently amending Vermont's Accepted Agricultural Practices into Required Agricultural Practices (RAPs) as mandated by the Vermont Clean Water Act (Act 64). The first and second drafts for the RAPs do not include any proposed changes related to the use of tile drains or to field practices on cropland that has been tiled. Act 64 requires the RAPs "include requirements for reducing nutrient contribution . . . from subsurface tile drainage" by January 15, 2018. Between what we currently know about the impacts of tile drains and what we can easily learn from what other states are doing, the RAPs can be amended to include provisions related to tile drains now. A delay is unnecessary and will only lead to further unmitigated harm.

In sum, given the rapid proliferation of tile drains in Vermont and the known impacts of the use of this farming method on water quality, the State of Vermont must act quickly. Vermont is moving in the wrong direction by allowing the continued installation of tile drains at a time when the State and EPA have both acknowledged the need to take strong actions to improve water quality in the major watersheds across the State. Failing to address the issue of tile drains will undermine the investments being driven by new state water quality programs as established in Act 64, and the cleanup and restoration plans for addressing nutrient and sediment pollution into Lake Champlain, Lake Memphremagog, and the Connecticut River.

III. The Interim Report Understates the Growing Risk of Pollution from Tile Drains:

Ongoing litigation in Iowa illustrates the very real risk of pollution from tile drains. In 2015, the Des Moines Water Works Board (DMWW) sued various Iowa Drainage Districts for the discharge of pollution into the Raccoon and Des Moines River through tile drains. The DMWW provides drinking water obtained from those rivers. The unregulated discharge of nutrient pollutants through the use of tile drains has contaminated these sources of drinking water. Blue baby syndrome and endocrine disruption are among the health risks linked to this pollution. The estimated millions of dollars it will take to remove the pollution from drinking water was a significant factor that led DMWW to file suit.

Census data from the 2012 USDA Agricultural Census was used in the Interim Report to support the contention that tile drained fields comprise only 4% of the cropland in Vermont. Later in the Report, however, the Agencies acknowledge the fact that they have little information about the location and extent of tile drain installation. A careful evaluation of the 2012 USDA Agricultural Census reveals that the federal government also lacks this information. The Census data about tile drains is not based on any direct observations but on compilations from a vast set of raw data that the USDA acknowledges is incomplete. This Census data should be supplemented by a careful review of existing information, on-the-ground inspections, and the use of aerial photography and satellite imagery of Vermont farms.

Similarly, the data relied upon in the Interim Report to discern trends in the rate of tile drain usage are inadequate to support any firm conclusions about short-term trends. The Report acknowledges a significant change in the type and extent of tile drain usage in Vermont over time on page 4. The Agencies admit on page 5 that they only relied on information obtained from Vermont dairy farmers and drainage installation companies in coming to their conclusion that the rate of tile installation has slowed. The Report did not take into account that farmers may be installing tile drains without the help of a professional installer, or that by only including dairy farmers when reaching their conclusions, ANR and AAFM may have failed to consider a significant amount of newly tiled fields. Some former dairy farmers have shifted to growing corn and other annual crops exclusively in light of changes in farm pricing, namely the increasing price of corn and reductions in the price of milk. AAFM and ANR are reduced to making guesses about the extent and rate of tile drain installation because, as the Report notes on page 10, farmers are not required to report information on tile drains to AAFM.

The Report also failed to acknowledge the demonstrated trend in Vermont of increased frequency and intensity of precipitation events due to climate change. Combined with the incomplete data on tile drain installation, as noted above, these increased precipitation factors suggest that the level of pollution from tile drains is, if anything, more significant than the Agencies estimate.

Finally, the fact that we do not have perfect information about tile drains does not justify the conclusion that the only possible solution is more scientific study. Instead, a simple and immediate step that the Agencies should take is to collect more information from Vermont farmers about the location and extent of tile drains already installed, as well as the quantity of pollution that results. One way to obtain such information from farmers is to tie funding to the disclosure of tile drains. The Agencies specifically claimed on page 10 of the Report that information is lacking in tilling methods, manure injection, and constructed wetlands. There are many funding mechanisms to implement such practices that are available both nationally and on the state level to Vermont farmers. (See Appendix B, Funding Solutions.) Further scientific study about the potential impacts of tile drains alone will not meaningfully advance our understanding of the impacts of tile drains in Vermont without a more concrete understanding of which fields have been tiled, the locations of tile drain outlets, and the quantity of the flow and pollutants in the water draining from those fields. We know enough about tile drains now to justify taking immediate steps to require collection of this information from farmers across the State.

IV. <u>The Interim Report Does Not Acknowledge the Opportunity for Vermont to Meet a</u> <u>Significant Portion of its Federal Clean Water Act Obligations Through Addressing</u> <u>Pollution Associated with Tile Drains</u>:

The draft Lake Champlain Phosphorus TMDL, expected to be issued in final form this spring, assigns as much as 40% of the phosphorus loads to agriculture. (See Appendix, Environmental & Economic Impacts.) To its credit, the State of Vermont, through its proposed Implementation Plan and Act 64, has committed to taking significant steps in order to achieve phosphorus reductions. Those steps, among others, include a new small farm certification program and updates to the RAPs. AAFM has also agreed to take additional steps in the form of developing enhanced management practices for certain sub-watersheds in the Lake Champlain Basin as part of an agreement resolving a lawsuit filed by Conservation Law Foundation.

The anticipated gains from these additional steps will be undermined if AAFM and ANR do not also address tile drain pollution. The current draft TMDL does not acknowledge tile drains as a separate source of phosphorus or nitrogen pollution. To be effective, the Agencies must include strategies for addressing tile drain pollution when developing and implementing plans for controlling polluted runoff. To do so is consistent with the Critical Source Areas approach that the State has touted as a central feature of its TMDL Implementation Plan.

The State may, for instance, want to prioritize placing controls on the use of tile drains, and implementation of manure application practices specific to tile-drained fields based on the location of those fields. Cropland proximate to surface waters in watersheds and sub-watersheds, particularly stressed by agricultural sources of pollution, is an obvious target for such controls and practices. Given the resources being applied to the implementation of new practices and strategies for agriculture in the Lake Champlain Basin and across the State at this time, it makes little sense to proceed separately to address tile drain pollution. The strategy to reduce overall phosphorus amounts as necessary to meet the TMDL will not succeed unless tile drain pollution is considered.

V. <u>The Interim Report Fails to Consider the Full Effects of Nutrient Pollution on</u> <u>Vermont's Economy</u>:

The Agencies included the economic benefits for farmers from the use of tile drains but overlooked the adverse impacts of tile drainage on other sectors of the State's economy. The cyanobacteria outbreaks (or blue-green algae blooms), which are increasingly impacting the State's economy, are caused by phosphorus- and nitrogen-contaminated runoff, the most significant portion of which originates on farms. In recent years, Vermont has experienced record-breaking cyanobacteria outbreaks on Lake Champlain and Lake Carmi in addition to other lakes and ponds across the State. These outbreaks and the other impacts on these shared public resources have widespread impacts on real estate and public health, including the cost of monitoring risks to drinking water from cyanobacteria toxins.

If the Agencies do not act to impose minimal yet crucial tile drainage requirements on farmers, then the resulting economic impact will fall on everyone else. Under Vermont's Total Maximum Daily Load (TMDL) Implementation Plan, municipalities will be responsible for water pollution cleanup. Likewise, property owners, particularly on the lakefront, who intend to sell will feel the effects of pollution when they are either unable to sell or forced to sell their properties at decreased values. For example, in Franklin County last year, the assessed values of 37 lakefront properties decreased by \$50,000 each. (See Appendix B, Environmental & Economic Impacts.)

This information is not news to the Agencies, which have catalogued the costs and causes of water pollution in various reports over the past several years. Among these reports, the recent draft Lake Champlain Phosphorus TMDL developed by the state and EPA, and the associated State of Vermont implementation plan, set forth a broad strategy addressing nutrient and sediment pollution from a wide spectrum of sources, including landowners, businesses, and municipalities, in addition to agriculture. Act 64 also requires significant action from all of these sectors. As a result of these new legal obligations, individuals, businesses, cities, and towns across the State have to invest substantial amounts of money to meet their obligations to reduce pollution. Landowners and businesses are now required to retrofit their developed areas to install new stormwater controls. Municipalities are required to develop and implement plans for controlling polluted runoff from their roads, and the State must

create similar plans for highways. Cities and industries are required to invest in upgrades to their wastewater treatment facilities.

The magnitude of these needed investments reaches tens of millions of dollars per year, based on the Agencies' own estimates. The Agencies' failure to note these costs as offsetting any economic benefits to agriculture from the use of tile drains is an obvious and major shortcoming of the Report. Public and private investments in efforts to protect and restore Lake Champlain may not produce the projected improvements if the State does not take prompt corresponding efforts to address pollution from tile drains.

VI. <u>The Interim Report Fails to Evaluate Existing Tile Drainage Regulation in Other</u> <u>States</u>:

Another major gap in the Interim Report is its failure to examine actions taken by other states. We offered references to existing regulations in other states in our December 21, 2015 letter to Secretary Ross and are disappointed that the Agencies did not evaluate and discuss those options in the Interim Report.

Across the United States, agricultural and environmental agencies have been engaged in a robust conversation about ways to address the pollution from tile drains. The Agencies should have included a survey of actions already taken by or under consideration in other states for the public and the Vermont General Assembly. Based on a cursory review of regulations in other states, we have compiled the following list of possible strategies that the State of Vermont should consider for immediate implementation. This list should be viewed in conjunction with the list of practices supported by scientific and technical literature discussed in Section VIII of these comments. Each recommendation below includes a reference to the states that have existing requirements that served as the basis for the recommendation (a more detailed, state-by-state list of relevant authorities is attached as Appendix C):

- Record and report the location, depth, and extent, among other details, of tile drains installed using maps developed by certified engineers or surveyors (Illinois, Iowa, Michigan, Minnesota);
- Inspect and monitor tile drains before and after manure application, as well as within 24 hours after a rain event of e.g. one-half inch or greater, to ensure that they are operating correctly and not resulting in the discharge of pollution (Iowa, Michigan, Wisconsin);
- Restrict and condition the application of manure on tile-drained fields, considering water quality impacts, and factors such as whether the ground is frozen, and the sensitivity of the receiving waters in the drainage area (Iowa, Michigan, Minnesota, North Dakota, Oregon, South Dakota).

VII. Immediate Action Steps Available and Necessary to Address Tile Drain Pollution:

A. <u>Map Existing Tile Drains</u>: A critical and necessary step to addressing tile drain pollution is to map the locations of all existing tile drainage systems in Vermont. A list of options for completing this work should include the following methods:

- Survey farmers to obtain information they will provide voluntarily about tile drains on their cropland. This is the quickest and easiest step to take and should be done immediately;
- Require farmers to map and create a record of existing tile drain installations, including location of tile drains, standpipes, and outfalls, along with the depth and method of installation. This work may require time to complete, but there is no reason to wait to begin this critical step;
- Visually inspect a statistically valid subset of cropland in impaired watersheds to develop better estimates of how many fields are currently tiled (tile drains can be identified by their outlets and standpipes);
- Review satellite imagery and conduct aerial surveys to establish a more complete data set and to enable more accurate estimates (aerial photographs can be taken after the spring thaw when tile lines will appear lighter in color than the surrounding soil because drained soils dry out faster; also, during the summer, soil moisture and crop growth patterns can be observed).

B. <u>Monitor Existing Tile Drains</u>: The State of Vermont should require farmers to monitor flow levels and the water quality of drainage from their tile systems. Application of commercial fertilizer and manure to tile drained fields should also be monitored including amounts applied, method of application, date and time of application, and weather conditions, including precipitation events before and after application.

C. <u>Moratorium on New Tile Drain Installation</u>: In light of the knowledge that tile drains cause or contribute to water nutrient pollution, and in the absence of an existing framework or program for monitoring or controlling tile drain impacts in Vermont, AAFM and ANR should place a moratorium on future tile drainage installation. To be clear, the purpose of a moratorium is not to allow for further Vermont-specific research, but rather to put a stop to the expanded use of tile drains while putting crucial regulatory measures in place. The moratorium on new tile drain installations should remain in place until existing tile drain systems are located and mapped, and a satisfactory program and controls are adopted to ensure that any new tile drains will not increase water pollution. At a minimum, the moratorium should remain in place until January 15, 2018, when the revised RAPs must include requirements for tile drains, per Act 64.

The Agencies have, either separately or together, sufficient existing authority to take all of these actions. To the extent that the Agencies believe that AAFM and ANR do not have this authority, the Agencies should seek the requisite authority from the Vermont General Assembly during this legislative session.

VIII. Adopt New Best Management Practices Relating to Tile Drains:

The Interim Report describes practices for addressing tile drain pollution as "potential" new practices and suggests that additional research is required before concluding that these practices can be known to be effective. These practices do not, however, require additional study before moving to require implementation of these practices. Instead, many of these practices and a number that were not listed in the Report should be implemented as part of the ongoing update to the RAPs and the development of enhanced Best Management Practices (BMPs). The final report should provide a

concrete list of tile management practices that will be adopted, not just practices proposed for future study. There will likely also be some new and innovative practices that the Agencies may want to propose for future study, but there is no reason that they cannot implement practices that are known to effectively reduce pollution from tile drains now.

Other states already require certain practices for controlling tile drain pollution. As noted above, existing studies and research demonstrate that there are a range of potential approaches for reducing tile drain pollution. Examples of specific practices that have been researched and which should be evaluated for use in Vermont include:

- Restricting the depth of tillage prior to manure application;
- Requiring the installation of drainage structures to control discharges;
- Setting minimum/maximum tile drain installation depths;
- Using tile drain patterns that take field soil conditions, shape, slope and proximity to surface water into account;
- Limiting the aggregate amount of water discharged through outlets per watershed and subwatershed;
- Mapping tile drains and adapting manure and commercial fertilizer applications to avoid tiled areas;
- Restricting the use of tile drains in areas proximate to surface waters;
- Restoring or constructing wetlands combined with the use of the wetlands to store and filter flow from tile drains; and
- Developing and implementing nutrient management plans specifically tailored for tile drained fields.

The final report should provide a data-driven analysis of which of these approaches can best be adopted in Vermont as a means of addressing the known pollution impacts of tile drains. The answer will be a combination of several approaches based on how impaired the adjacent water bodies are to specific farm locations. Sufficient information is available to evaluate BMP pollution reduction benefits now. Some of these practices may be more effective than others, and we look forward to discussing a set of concrete proposals with the Agencies.

An example of existing information that is sufficient for the Agencies to make determinations about tile drain management practices relates to the use of manure injection. The Interim Report describes a need for more research on the issue of whether manure injection is compatible with the use of tile drains. In a review of literature, we have identified several studies that review manure injection as it applies to subsurface draining. Our review of these studies suggests that the use of manure injection on tile-drained fields is already known to increase the risk of pollution from tile drains.

Other studies suggest that the use of cover crops on tile drained fields can play an important role in preventing nutrients from entering the tile drains and flowing into surface waters. (See Appendix B, Cover Crops.) Similarly, research has demonstrated that limited tillage on tile-drained fields can disrupt preferential pathways for the flow of nutrient pollution through macropores into tile drains. Further, there are a number of studies related to the effectiveness of drainage control structures that could be used now to inform the development of management practices to reduce tile drain pollution.

Finally, research has already been done on some filtering and treatment systems that could be required through updated RAPs and enhanced BMPs or tied to the various funding mechanisms that exist. (See Appendix B, Funding Solutions.) Sufficient funding is available to implement new management practices for controlling tile drain pollution now. Many of the practices that are proven to work can work synergistically with the RAPs being updated now and with any enhanced BMPs, and should be eligible for existing state and federal funds.

Conclusion:

Based on available data and research on tile drains and water quality, there is no reason for the Agencies to postpone action. The water quality impacts are known and justify taking immediate action, including placing a moratorium on the installation of new tile drains. Another immediate step that should be taken is to more effectively identify and map the location and extent of existing tile drains. Finally, the State should immediately require monitoring of drainage from tile drains that reaches surface waters.

The Agencies have the authority to move immediately and propose specific management practices that Vermont's farmers should be required to meet. In addition to including these recommendations in their final report to the General Assembly, the Agencies should include proposals for these practices in the ongoing processes for updating the RAPs and developing enhanced BMPs for certain critical watersheds.

We are disappointed that the Agencies did not address the suggestions made in our December 21, 2015 letter. We hope that this set of comments will be considered and that the Agencies will provide us with a detailed response. We look forward to the opportunity to discuss these comments with the Agencies in the future to the end that we collectively find a path forward that addresses this significant source of pollution into our State's waters.

Respectfully Submitted,

Lori Fisher Executive Director Lake Champlain Committee

arthe Slide

Marty Illick Executive Director Lewis Creek Association

Elena Mihaly Staff Attorney Conservation Law Foundation

Clark Amadon Chair Vermont Council of Trout Unlimited

aure Hil

Lauren Hierl Political Director Vermont Conservation Voters

Mark Nelson Chair Vermont Chapter of the Sierra Club

×n

Jon Groveman Policy and Water Program Director Vermont Natural Resources Council

 Cc: Alyssa Schuren, Commissioner, Vermont Department of Environmental Conservation Pete LaFlamme, Director, Watershed Management Division
James H. Leland, Director, Agriculture Resource Management
Laura P. DiPietro, Deputy Director, Agriculture Resource Management