

FINAL REPORT OF THE Agricultural Working Group



A PARTNERSHIP OF
VT Agency of Agriculture,
VT Dept of Environmental Conservation,
USDA Natural Resources Conservation Service
and the Agricultural Community.

Facilitated by The Environmental Mediation Center (EMC)
and the Consensus Building Institute (CBI)



The Vermont Agency of Agriculture Food and Markets and Vermont Department of Environmental Conservation extend their sincere thanks and appreciation to the farmers and agricultural service providers who shared their time and knowledge in this important process.

The Environmental Mediation Center, Consensus Building Institute, Vermont Agency of Agriculture Food and Markets and Vermont Department of Environmental Conservation also extend their thanks to the following for their support:

- >> United States Department of Agriculture
Natural Resources Conservation Service
- >> U.S. Environmental Protection Agency
- >> Green Mountain Coffee Roasters
- >> High Meadows Fund

This work was accomplished in part under Procurement Agreement No. EP-W-09-11 Task Order S955000078 awarded by the U.S. Environmental Protection Agency to SRA International. CBI served as a subcontractor to SRA International under Procurement Agreement No. RQ000755.



Background

Nearly 500 square miles in size, Lake Champlain forms over half of Vermont's western border with New York and is central to Vermont's tourism, recreation, transportation and natural resource sectors. During the 1980's and '90's, phosphorus was identified as a primary pollutant causing algae blooms in the lake and impairing recreation, tourism, property values, and – in certain instances – human health. Under the Clean Water Act, this impairment obligated Vermont and New York to develop Total Maximum Daily Loads (TMDL) – specific plans to reduce phosphorus loading to the lake. This included allocating pollution caps to the sectors contributing to the problem such that the total loading meets water quality standards. Wastewater discharges, stormwater runoff, and agriculture were identified as the leading sources of phosphorus loading.

New York and Vermont submitted a TMDL plan to EPA, which was approved in 2002. However, after a lawsuit by the Conservation Law Foundation and subsequent review of the decision, EPA revoked its approval of the Vermont portion of the plan in January 2011 and assumed the authority to revise this portion itself, in coordination with the state agencies. Among EPA's concerns was a lack of assurance in the original plan that the reductions assigned to the nonpoint sources of phosphorus (agriculture and stormwater, primarily) would be achieved. The state's agriculture and environmental agencies were assigned the co-lead role in figuring out how best to improve assurances that the necessary reductions in phosphorus could be achieved. Federal agencies, primarily the United States Department of Agriculture Natural Resources Conservation Service (NRCS), were interested in how existing conservation programs might support these water quality efforts and how creating new incentives or some form of certainty program might augment and integrate state and federal efforts.

Over the winter and spring of 2012, the Vermont Agency of Agriculture Food and Markets (VAAF), the Department of Environmental Conservation (DEC), and NRCS worked with the Environmental Mediation Center (EMC) and the Consensus Building Institute (CBI) to help design and facilitate the stakeholder engagement process. During the process design, the state agencies and facilitation team decided to focus their outreach efforts on the agricultural sector, as there was wide recognition that key actions would be needed from this sector and engaging farmers would be essential. In the past, engaging with and reaching out to a wide range of farmers and farm types had been challenging. By June 2012, the project team had secured grants to fund the process, and intensive engagement with Vermont's diverse farming sector began.

VAAF, DEC, and NRCS convened the process. Non-partisan EMC and CBI facilitated the initiative. Funding for efforts came from the NRCS, Green Mountain Coffee Roasters, the U.S. EPA via the Conflict Prevention and Resolution Center's national contract, and the High Meadows Fund.

The Process

To initiate the process, the project held over fifteen specialized focus group sessions throughout the Lake Champlain region, involving 13 watersheds, and almost 400 people. These included sessions at the annual Vermont Farm Bureau meeting and at two larger agriculture sector meetings convened by the Secretary of VAAFM and Commissioner of DEC. At each of these sessions, agency representatives participated actively to provide background information on the pollution problem in Lake Champlain, the TMDL process, and to explore issues and ideas. Participants in the groups – from small, medium and large farms, agricultural service providers, and others -- provided feedback on what pollution prevention practices were currently in place, which were working, which seemed less effective, what were strengths and weaknesses of federal and state incentives and other programs, what ideas they had for improvements, and what resources might be needed. After each session, comments and ideas were summarized by the facilitators without attribution and circulated back to participants for review. All comments were summarized in a final report that was made available to the state agencies, the U.S. EPA, and the public.

At the completion of the focus groups and workshops, the facilitation team compiled a summary list of ideas and recruited twenty-four (24) members of the agricultural community to form a more intensive Agricultural Working Group (AWG). The AWG was tasked with refining the list, developing final recommendations for the TMDLs, and considering how best to use incentives from state and federal programs. The AWG met seven times between February 2013 and August 2013. Members were geographically diverse and included dairy farmers, large and small, organic and conventional, livestock farmers, crop farmers and agricultural service providers. Secretary Ross and Commissioner Mears appointed the members of the AWG. Members of the AWG are all volunteers and were provided with a small travel stipend to defray the cost of transportation to the meetings. The AWG was asked to develop specific recommendations on near and longer-term steps that could be undertaken within the agricultural community to reduce phosphorus pollution from this sector. During the process, the facilitators also met with key stakeholders from the environmental advocacy community and brought feedback and input from this group to the sessions with the farmers.

During its time together, the AWG members evaluated the laundry list of ideas generated during the focus group meetings then refined the most promising ideas. After each meeting, EMC and CBI prepared meeting notes without attribution and distributed them to the participants for comment and approval. Meeting notes from the AWG were also posted on the Initiative's web page. Where the AWG was near consensus on an issue, EMC and CBI drafted a recommendation reflecting the discussion for the AWG to review and approve. This final report includes those recommendations as well as brief context for each recommendation.

Overall Recommendations

In the AWG meetings, three key broad recommendations emerged.

First, the AWG requests additional resources for the Agency of Agriculture in order for the Agency to adequately undertake education, technical assistance, and enforcement necessary for improved water quality. This is critical to the implementation and success of any of the following recommendations. The Agency of Agriculture does not currently have adequate resources to cover education, technical assistance and enforcement and reducing phosphorus pollution by implementing the interim recommendations will require stricter and more comprehensive regulations and a more robust enforcement program.

Second, the AWG recommends that the Agency of Agriculture require all farms subject to the Accepted Agricultural Practices (AAP) to certify that they are in compliance with the AAPs. This should enable the Agency of Agriculture to increase education, technical assistance, and compliance for all farms. Up to now, there has been uncertain compliance and resource-constrained enforcement of the Accepted Agricultural Practices (AAPs), particularly on smaller farms that do not fall within the medium and large farm operation programs.

Third, the AWG recommends a strategy that creates a more robust baseline of requirements and that also allows farmers the option to develop “smart” tailored plans that allow for deviation from the mandatory across-the-board requirement in order to improve on-the-ground benefits for both water quality and agricultural operations. When a farmer develops a robust, approved Nutrient Management Plan (NMP) tailored to their farm and its landscape, in some cases, they may be granted some flexibility from certain standard requirements as long as that flexibility provides the same or greater environmental benefit. The NMP would have to be approved by the Agency of Agriculture or a certified agricultural service provider.

More specifically, the AWG has developed a series of detailed recommendations in the following areas that reflect the general consensus of the group: Farm Compliance with Regulations; Farm Certification; Livestock Exclusion from Surface Waters; Buffers, Erosion to “T;” Winter Spreading Ban; Nutrient Management Planning; and, a Whole Farm Incentives Program. *Please note that individual members may have varying views on the recommendations. This document should not be seen as an endorsement by each and every AWG member on each recommendation.*

Specific Recommendations

1. Farm Compliance with Regulations

Key Findings

- a. Increased resources for education and technical assistance are essential to improving compliance with AAPs and other regulatory programs.
- b. Many farmers are not aware of the requirements of the AAPs or are only aware of a few high profile requirements such as the winter spreading ban.
- c. The Agency has insufficient resources to inspect and enforce the current regulatory framework. Some farms do not comply with the AAPs because there is little chance that they will be inspected.

Recommendations

- >> The Agency of Agriculture (Agency) should undertake a broad outreach effort on AAPs including web-based material, reader friendly brochures, and posters of the most important requirements.
- >> In order to maximize the effectiveness of available resources, the Agency shall prioritize inspections on impaired watersheds and critical source areas.
- >> In order to increase compliance, the Agency needs additional resources, especially if the regulations become stricter or there is an expectation that the Agency inspect more than MFOs, LFOs, and farms that are the subject of citizen complaints.
- >> Custom applicators shall have mandatory training to ensure compliance with AAPs and NMPs.
- >> Mandatory education for farmers on AAPs shall be required.



2. Farm Certification

Key Findings

- a. The state does not have a complete inventory of the range of farms that engage in practices that may enhance or harm water quality.
- b. While Accepted Agricultural Practices (AAPs) have been in place for many years, there is no current widespread means, other than inspection of permitted medium to large farms, to ensure that farms are meeting these basic AAPs.

Recommendations

- >> Farms that are subject to the Accepted Agricultural Practices (AAPs) shall be required to provide an annual certification to the Agency of Agriculture that they understand and are in compliance with the AAPs. For farms already submitting annual plans, reports, or other documentation (permitted medium and large farm operations), such submittals will be considered the annual certification.
- >> The certification will enable the Agency of Agriculture to identify and prioritize the need for and location of water quality initiatives and increase compliance with AAPs as well as provide targeted educational and technical assistance.
- >> Additional funding to the Agency of Agriculture and other entities is necessary for education, technical assistance, and inspections. Efforts directed at improving water quality will not produce positive results without additional resources.

3. Livestock Exclusion from Surface Water

Key Findings

- a. The primary purpose of fencing to exclude livestock from waterways is to maintain riparian habitat and reduce stream bank erosion. This in turn reduces sedimentation and contributions of soil phosphorus to waterways. Secondly, fencing can prevent livestock from excreting directly into the water.
- b. Livestock exclusion from water channels is an effective BMP to reduce nutrient inputs to surface water where a water quality impact exists from trampling of stream banks within a stream corridor.
- c. Other BMPs on a farm may be far more effective in reducing nutrient inputs to waterways than livestock exclusion. It depends on, but not limited to, the livestock stocking rate, the frequency, seasonality, condition of the waterways, and the waterways connectivity to larger water bodies of concerns (i.e. lakes and rivers).
- d. Appropriate and well managed or intensive grazing in some riparian areas can actually restore, not degrade, stream banks and waterways.
- e. Livestock in waterways is visibly detectable and of public concern, however the actual environmental impact of such conditions may vary significantly.
- f. The estimated expense of permanently fencing off livestock from all of Vermont's waterways ranges from \$33 million for temporary fencing to \$72 million for high tensile fencing with trees planted in the buffer zone.
- g. The annual and periodic maintenance, repair, and replacement of fencing across the state over time has not been estimated nor is it adequately covered in current incentive program opportunities. In areas of flooding, heavy snows, and other more extreme weather conditions, fencing could have to be replaced as often as annually.
- h. Livestock exclusion fencing will affect recreation access and use (hunting, hiking, fishing, and snowmobiling), and wildlife. Some recreationalists may cut or damage fencing in an effort to gain access.



Recommendations

- >> **Amend the Definition of Livestock.** The AAP Definition is likely sufficient with one change noted in “strikeout” below: Livestock, for purposes of this regulation means: cattle, sheep, goats, equines, fallow deer, red deer, American bison, swine, water buffalo, poultry, pheasant, Chukar partridge, Coturnix quail, camelids, ratites (ostriches, rheas, and emus), and ~~cultured trout propagated by commercial trout farms.~~
- >> **Clarify the Definition of Waterways of Concern.** The waterways of concern for livestock exclusion need to be perennial (refer to 10VSA s. 1251 (13)), meaningfully connected to water bodies of concerns (lakes, ponds and rivers) and their banks pose some kind of sedimentation/nutrient contribution. Impaired waters should be of primary concern though the AWG recognizes that one must seek to avoid degradation of non-impaired or recovered waters as well.
- >> **The current livestock exclusion policy in the AAPS should be amended as follows.**
 1. Livestock exclusion from waterways of concern as defined above, shall be required and apply if any of the following conditions exists on any livestock operation of any size, unless a waiver is provided:
 - a. Where an eroding bank exists on waterways of concern; and
 - b. Where adequate vegetative cover is not maintained, except at defined crossings.
 2. Livestock exclusion shall be required in all production areas from all surface waters.
 3. Reinforced stream crossings shall be required where appropriate.
 4. Provide education to livestock owners about the resource concerns, program opportunities and technical assistance.
 5. There needs to be a process to receive a waiver where appropriate and each application for a waiver will be reviewed on a case-by-case basis by the Agency.
 6. BMPs for this action should not be prioritized over other BMPs because livestock exclusion may not be the most significant or important contributor to nutrient water impact. Livestock owners should be encouraged to apply for EQIP or CREP prior to being considered eligible for state funding in order to maximize use of federal dollars for the state.

4. Buffers

Key Findings

- a. Vegetated buffers between exposed soil used for annual cropland and adjacent waterways help reduce sedimentation and therefore decrease inputs of phosphorus into water.
- b. Vegetated buffers take up land that would otherwise be farmable for row and other annual crops, potentially reducing yield and production value on that land.
- c. Buffers play an important role in management of nutrients moving off farms and are important regardless of size of farm or operation. Buffer widths should take into account soil type, slope, and distance to surface water.

Recommendations

- >> All farms regardless of size where nutrients are applied shall maintain a perennial buffer of a minimum of 25 feet unless they have an approved NMP based on NRCS standards and their requirements for buffers (but no less than 10 feet).

5. Erosion to T

Key Findings

- a. T is the maximum amount of soil loss in tons per acre per year that can be tolerated and still permit a high level of crop productivity to be sustained economically for the long-term.
- b. T was designed to create a metric for a tolerable amount of soil loss. Although managing erosion is an essential part of improving water quality, the T criteria was not specifically designed as a water quality parameter.
- c. Management of gully erosion presents challenges to farms and should be addressed.

Recommendations

- >> The current AAP regulation requires limiting soil loss to 2T. The AAP regulation should be reduced to T.
- >> The AWG recommends the above change to T but also to explore over the longer-term alternative metrics other than T that could be better suited to directly addressing water quality.

6. Winter Spreading Ban

Key Findings

- a. The current winter spreading ban should be modified. Current weather patterns have resulted in stronger rainfall events and less predictable weather that require greater flexibility for farmers to spread manure in a manner that minimizes impacts to water quality.
- b. Under the current ban, farmers need to spread manure just before the winter ban begins to ensure storage room for winter manure, and as soon as possible afterwards to empty storage. Unpredictable weather conditions during these times of the year can result in increased run-off.
- c. There are environmentally sound strategies for site-specific winter spreading that could allow for safe spreading during the winter, and alleviate the negative impacts of fall and spring spreading.
- d. Nutrient management plans (NMP) should serve as a tool to develop environmentally sound strategies for winter spreading tailored to the specific conditions of an individual farm.

Recommendations

- >> The current winter spreading ban should be modified. The existing dates of the winter spreading ban should remain unchanged for farmers who are following the current regulatory program. Please note that AAPs should be aligned with NRCS nutrient management standards for winter spreading.
- >> A farmer who has no history of violations of AAPs, MFO or LFO regulations, and has a NMP that was developed by a certified planner, and includes environmentally sound strategies for winter spreading tailored to the specific conditions of the farm, as approved by VAAFM may have the option of site-specific winter spreading.
 - i. The NMP shall identify the fields, if any, that are suitable for winter spreading. These fields may require additional mitigation practices such as buffers, cross slope plowing, manure injection or other practices. The factors to be considered include the distance from surface water, the slope of the field and other relevant factors. Under no circumstances shall the manure be applied within 150 feet of surface water and the slope of the fields must be 3% or less. The manure must be applied at winter rates as determined through the NMP.
 - ii. A NMP with winter spreading would be approved by the Agency of Agriculture or a Certified Nutrient Management Planner. Annual reporting and certification documents should include if winter spreading was part of the NMP and if it was exercised in the previous year.
- >> Custom Applicators including all employees and sub-contractors shall be certified by attending a class on the current regulatory programs concerning water quality.

7. Nutrient Management Planning

Key Findings

- a. Nutrient management planning is a linchpin tool for helping farmers and farms reduce phosphorus loading beyond their farm, maximize soil health, reduce erosion, and maximize efficient use of inputs for growing crops.
- b. Effective on farm nutrient management planning can provide greater flexibility to such actions as buffer distances, winter spreading dates, and other factors noted elsewhere in this document, as well as access to numerous state and federal cost share programs.
- c. Adherence to the NRCS 590 standard for NMPs is necessary for eligibility in state and federal cost-share programs for NMP development.

Recommendations

- >> The Agency of Agriculture and the U.S.D.A. should expand farmer education programs about nutrient management planning to many more farms across Vermont, as resources allow, and work to engage more farmers in effective nutrient management planning.
- >> The Agency of Agriculture should develop a screening tool that aids farmers and their service providers in determining if they need to develop a specific, detailed nutrient management plan. Currently, the U.S.D.A.'s 590 nutrient management planning approach is a standard to which many more farms should adhere. However, the exact kind and number of farms that need such plans will be determined through the screening tool. This screening tool should be based on such factors as farm topography, adjacency to waterways, intensity of livestock use, and other factors, and not by the scale nor size of the farm in and of itself.
- >> The screening tool would have at least two purposes. One, to identify which farms need nutrient management plans and two, completion of the screening tool might serve as at least one the basis for the farm certification noted elsewhere in these recommendations



8. Whole Farm Incentives Program

Key Findings

- a. In addition to regulatory requirements, which will be necessary to meet needed phosphorus loading reductions, farms and farmers should be rewarded for outstanding water quality improvement efforts, innovation, and best practices.
- b. Whole farm water quality conservation planning is the gold standard for today and over time, should become accepted and regular practice across most farms in the future.
- c. As part of a whole farm incentives program, regulatory certainty could supplement financial, technical assistance, and other kinds of incentives.

Recommendations

- >> The Agency of Agriculture, in conjunction with the NRCS and DEC, should develop the detailed outlines of a new incentives program to encourage whole farm water quality conservation planning and implementation.
- >> The goals of the program should include, but not be limited to:
 - 1) provide financial, reputational, and other incentives to outstanding actors;
 - 2) encourage the adoption of whole farm water quality conservation planning over time; and
 - 3) reward and advance best practice and innovation in on-farm practices that improve water quality.
- >> This program should not take monetary, technical and educational resources away from existing state and federal incentive programs that seek to address on-going problems and actions necessary for farms to meet water quality rules and regulations.
- >> The program could include elements of regulatory certainty that the agricultural community may value more as the regulatory baseline of required water quality practices to be implemented in order to reduce pollution in Lake Champlain becomes clear.

