# Vermont Soil Health and Payment for Ecosystem Services (PES)

# Working Group

Waterbury, Vermont

October 21, 2019 DRAFT Meeting Summary

# Next steps

* AAFM will post meeting materials and webinar recordings to the website.
* AAFM will compile and calculate sources and amounts of current funding being spent on water quality issues.
* CBI and AAFM will explore potential future webinars, including:
	+ Landstream – discussion of monitoring and modeling technologies
	+ Ecosystem Services Market Consortium
* CBI and AAFM will investigate resources and expertise to help quantify the costs of inaction and costs avoided through the provision of ES.
* CBI will work with WG members to begin to capture stories to help illustrate the experienced benefits of soil health, to be used in the narrative of the group’s report.
* CBI will revise the September meeting summary to clarify statements about VESP requirements. The summary will then be considered final.
* CBI will revise the ground rules document to clarify that more than one alternate per seat is permitted if necessary.

# Summary

The Working Group (WG) reviewed a matrix of design criteria and possible options for a PES system to discuss the pros and cons of various approaches and generate additional options. The content of the matrix was based on ideas and priorities for a PES system that WG members articulated in their responses to a survey. The WG then delved into more detail on several key questions in small groups before reporting back to the full group. Members’ comments are summarized below.

## Should we build on what we have or consider whole cloth change?

### In support of a phased approach:

* We are not yet paying for performance that goes over and above minimum requirements. In the short-term, we should build on what we have and then in the longer-term do a more radical rethink of the system. Public awareness and support and funding would be needed for a more ambitious proposal. In the short-term, we should be pragmatic about how to target a likely small initial funding pot from the legislature.
* To get to the systemic reforms desired, we should take a first “pilot” step of building on the tools and regulations we currently have.

### In support of fundamental reform:

* Significant reform is needed. A proposal to build on what we have and build on the baseline of RAPs is in some ways designating a tolerable level of degradation and loss of soil. Rather, we should orchestrate the shift from exploitive practices to generative ones in which we pay for the building of natural capital.
* This is expensive and requires the state to be a significant customer. It will also require creative thinking to integrate public and private sources of funding, plus consideration of the possibility of trading internationally. The framework established could facilitate the electronic trading of commodities. The focus should be on creating the pathway for this market.
* At this point considering the state of farming, dairy, land quality, and climate change concerns, we need to take the risk to build a new program. This may initially involve filling in the gaps in the current framework, but requires us to change the system pathway to reverse the degradation of soil health and natural capital.
* We should avoid the risk of standing up something modest that could preclude the option of revisiting and creating a more ambitious plan later.

### Considering short time frame, choose something achievable:

* Considering the short time-frame of this group’s work, we should recommend small scale pilot evaluation efforts to answer questions this group identifies, including the effectiveness of shifting from practice- to performance-based approaches. We could report to the legislature what the group resolved and what it hopes the pilots answer. This information could inform recommendations for more systemic change.
* We should choose something achievable and that the legislature will implement.
* If this group created a pilot, the legislation would likely build in a sunset clause for when the program would end and be revisited for review and potential improvements. This work will not be completed quickly and this group may continue to meet.
* The final recommendation of this group should be to provide adequate funding and time for a compensated, more technically advanced group to fully address these questions.

## What ecosystem services should be included?

### Targeting soil health and soil capital, while incorporating measures to address nutrient issues:

* An approach to compensate for soil health improvements could be combined with compensation for the management of nutrients.
	+ Considering the amounts of P that are imported and can’t be assimilated, we may want to think about the specific questions of whole farm balance to deal with near-term nutrient issues. Soil health metrics do not alone measure nutrient management metrics, but by putting them together we could keep our eyes on the immediate nutrient problems while still identifying big mechanisms of change.
* If our pilot encompasses payments for soil or natural capital, we should be clear about what benefits and what “stock” we are paying for.
* Our nutrient problems are a result of poor management practices over many decades. A narrow focus on nutrients is using a snapshot view to attempt to find solutions to address a long-term issue. Nutrient issues should not be ignored, but a more fundamental shift to encourage land stewardship and rebuilding natural capital is preferable.
* We should test a pilot approach focused on soil/natural capital to help answer what we can measure, what benefits flow from those outcomes, and how much we can pay. If we can use this test to learn more, it would have the benefit of being simpler than enumerating many different benefits we want. For example, we need to test for the relationship between soil health and nutrient management. Considering the TMDL on P, we need to be able to demonstrate that a soil health-focused approach deals with the P issues that are a focus of the legislature.

### On whether a more comprehensive suite of benefits should be included:

* A comprehensive approach to measure for multiple benefits such as pollination, habitat, and others in addition to soil health would be too much to take on at once.
* If we create a trading framework focused on natural capital, adding in other benefits such as pollination and wildlife habitat—which already sees substantial investment from organizations and the public trust—could be done without too much added complexity.

## What is being measured and how? Establishing metrics and determining measurement tools

* Other metrics such as hydraulic conductivity, infiltration, soil aggregate stability, and photosynthetic activity help provide a fuller picture. Tools such as satellite measurements of UV radiation, remote sensing, soil mapping, and others can help provide a fuller picture for some cases. Soil scientists with more expertise than is represented on this group could help address the metrics needed.
* If there is funding for farmers to generate natural capital, private industry will fill the need to develop measurement technologies.
* We should avoid creating something so intricate that it is unintelligible to most people. It has to be simple enough to understand and not prohibitively expensive to measure.
* Avoided costs, such as protections for infrastructure from flooding, should be factored into benefits measured. More data to determine metrics for these may need to be gathered in a pilot. Quantifying avoided costs would be powerful to persuade the public and the legislature.
* Outcomes, rather than practices, should be paid for.

## Program design and eligibility

#### Program creation considerations:

* Building on VESP as an existing program would provide flexibility and would not require new rule-making, which was hard fought for VESP.
* Could an RFP process by initiated for bids to run a pilot project of some kind?
* Would a program make any funding available upfront to help with startup costs?
* Any program should make clear that it is not a handout or a subsidy, and that farmers are being hired to provide services. It should also acknowledge that farmers currently provide ES, including doing more than any other sector to address water quality issues.

#### Creating a market

* Some farmers may not capitalize on an invitation to participate in a less structured market and would be more likely to participate with clearer direction and a program to participate in.
* This group should focus on creating a pathway for the sale of ecosystem services, not a program. The state could commit a quantity of funding to purchasing natural capital and additionally provide funding to technical assistance providers to work with farmers, including VHCB, NOFA, and others. A small pilot targeting a particular watershed with high ambition and high potential for benefits could demonstrate the validity of the services and then potentially be expanded to a much larger scale in the form of a market. An industry would then spring up to support farmers to participate in the market.
	+ Markets need help to get started. The beginning stage of a market can look like a program, which can help establish consistency for and confidence in what benefits are provided, how they are measured, and that investments are worthwhile.
	+ It could prove challenging to create private markets for public goods. Additionally, could the design mitigate the potential for the market to drive the price down for these goods, making it less worthwhile for farmers?
	+ Ultimately, a funding stream could be secured through a conservation tax that everyone is subject to, with a resource tax for those who do not meet certain standards for stewarding the land.
* There is opportunity to learn from existing markets globally. This process should avoid reinventing the wheel.
	+ There are parallels to learn from in the forest carbon market.
* Building a market requires understanding what stimulates behavior change.
* Would services be stacked or bundled in a market? How could multiple payments for the same thing be avoided?
* Care should be taken to make sure that whatever form a market takes, it is equitable across scales.

### What baseline should be established for eligibility? Is there a minimum threshold?

* A baseline is needed to know what is being paid for and to ensure that what is being paid for is “new.”
* Statute language states that to be eligible for programs, farmers must be in compliance with RAPs or be in good standing, demonstrating that work is being done to fix the out-of-compliance issues.
	+ Could RAPs be an eligibility requirement, though perhaps not an appropriate baseline?
	+ Could compensation be offered only for what exceeds RAPs?
	+ Don’t worry about RAPs for eligibility for PES opportunity. RAPs are required practices, separate from consideration of a PES system.
* There is a gap between the RAPs and achieving the TMDL. PES could help farmers meet RAPs and TMDL.
* While separate sources of assistance are available to meet RAPs, the group should be mindful about how available resources for meeting RAPS compare with compensation for ES. Significant environmental benefits (such as water quality) can be gained by bringing farmers into compliance with the RAPs.

## Public comment

* Other metrics that may be considered in calculating ES provided include: diversity of plant species, biodiversity, photosynthesis, stream peak flows, algae blooms, and others.
* One concern regarding creating a market is market collapse. Some services are not easily monetized and where benefits are hyperlocalized, for example in avoiding roads washing out, a large-scale market would not capture these. In some cases, hyperlocal sources of funding would be helpful.
* Services should not be calculated based on one metric such as P retention or carbon sequestration. There are methods to measure benefits more comprehensively, which involve using a range of observed and modeled metrics.
* There are other programs that are focused on nutrient management and meeting the TMDL. A PES system should address positive gains, not only pay to mitigate the problem.
* This group should have a broader focus on natural capital rather than just nutrient management. The group should be realistic about what can be achieved in this timeframe, but create something that can be expanded with time.

The meeting was adjourned at 2 PM.