

**STATE FISCAL YEAR 2022 ANNUAL REPORT ON FINANCIAL AND  
TECHNICAL ASSISTANCE FOR  
AGRICULTURAL WATER QUALITY**

Prepared for the Vermont General Assembly in Accordance with  
6 V.S.A. § 4825

Submitted by Vermont Agency of Agriculture, Food and Markets  
January 13, 2023



*A herd of rotationally grazing Jersey cows in the Otter Creek Watershed. Rotational grazing is a conservation practice supported by the Farm Agronomic Practices Program and the Pasture and Surface Water Fencing Program. (VAAFMM/Sonia Howlett)*

To: Vermont General Assembly

The Vermont Agency of Agriculture, Food & Markets (VAAFMM) presents this annual report to the General Assembly of Vermont regarding activities in support of the objectives of Subchapter 3: Water Quality; Financial And Technical Assistance of 6 V.S.A. Chapter 215, including use of State, federal, and private funds: (1) undertaken during the preceding fiscal year; (2) in progress during the current fiscal year; (3) projected for the following fiscal year; and (4) remaining to be undertaken after the following fiscal year (6 V.S.A. § 4825).

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## COMPANION REPORT

### [Water Quality Division – Interactive Data Report](#)

The Interactive Data Report illustrates the data and outcomes of VAAFMM’s technical and financial assistance programs described in this narrative report. Readers of this report are encouraged to open and read in tandem the Interactive Data Report. The Interactive Data Report can be accessed via the link and infographic in the top right corner of each page. The Interactive Data Report includes various interactive pages illustrating program investments, conservation practice implementation, regulatory and technical assistance efforts, estimated phosphorus reductions for practices occurring in the Lake Champlain and Lake Memphremagog watersheds, and more based on VAAFMM water quality technical and financial assistance programs.



## COMPLEMENTARY REPORTS

### [Vermont Clean Water Initiative 2022 Performance Report](#)

Per Act 64 of 2015 – The Vermont Clean Water Act, VAAFM annually reports the clean water efforts to the Vermont Agency of Natural Resources (ANR) Department of Environmental Conservation (DEC) Water Investment Division (WID), to account for the financial investments and progress being made towards meeting the State’s clean water goals. The [Vermont Clean Water Initiative 2022 Performance Report](#) includes both the Vermont Clean Water Investment Report as well as the Lake Champlain Basin Total Maximum Daily Load (TMDL) Progress Report and summarizes investments and progress made towards State water quality goals in all sectors.

### [2023 Report on Federal Funding Related to Water Quality Improvement Efforts in Vermont](#)

This report fulfills the requirement contained in 10 V.S.A. §1389a(d)(3) and provides a summary of available federal funding related to, or for, water quality improvement efforts in the State. VAAFM annually reports the available federal funding related to, or for, water quality improvement efforts to the Vermont Agency of Natural Resources (ANR) Department of Environmental Conservation (DEC) Water Investment Division (WID) who compiles this report on behalf of the Vermont Agency of Administration.

## Introduction

The Vermont Agency of Agriculture, Food and Markets (VAAFM) Water Quality Division provides financial and technical assistance to Vermont farmers in support of their construction and implementation of on-farm improvements and maintenance of acceptable operating standards designed to abate nonpoint source agricultural waste discharges into the waters of the State of Vermont, consistent with the goals of the federal Water Pollution Control Act, the State Water Quality Standards, and Vermont’s Required Agricultural Practices Regulations (RAPs). In support of this charge, VAAFM administers eight financial and technical assistance programs for Vermont farms. These programs include the Best Management Practices (BMP) Program, the Conservation Reserve Enhancement Program (CREP), the Capital Equipment Assistance Program (CEAP), the Farm Agronomic Practices (FAP) Program, the Grassed Waterway and Filter Strip (GWFS) Program, the Pasture and Surface Water Fencing (PSWF) Program, and the Vermont Pay for Performance (VPFP) Program. VAAFM supports water quality improvement on farms through the Agricultural Water Quality Initiative Program (AgCWIP) which provides funding to partner organizations to provide education, outreach, technical assistance and services to farmers.

State Fiscal Year (FY) 2022 program accomplishments are summarized in this narrative report, with results of program implementation and investment information available through the [Water Quality Division – Interactive Data Report](#).



Table 1. Total VAAFMM Investment and Source by Program from FY 2016-2022

VAAFMM Program	General Fund	Capital Fund	Clean Water Fund	Federal Funding Programs*	State Total	Federal Match	Local Match	VHCB Match	Match Total	Grand Total
Best Management Practice Program	\$0	\$17,934,756	\$1,928,474	\$0	\$19,863,230	\$15,632,538	\$5,391,444	\$425,589	\$21,449,570	\$41,312,800
Farm Agronomic Practice Program	\$1,318,992	\$0	\$21,000	\$1,512,517	\$2,852,509	\$0	\$0	\$0	\$0	\$2,852,509
Capital Equipment Assistance Program	\$0	\$5,140,767	\$0	\$0	\$5,140,767	\$90,050	\$1,962,409	\$590,518	\$2,642,977	\$7,783,743
Conservation Reserve Enhancement Program	\$0	\$120,613	\$0	\$29,936	\$150,548	\$1,243,713	\$88,862	\$0	\$1,332,575	\$1,483,123
Vermont Phosphorus Innovation Challenge	\$0	\$832,700	\$233,860	\$0	\$1,066,560	\$0	\$86,973	\$0	\$86,973	\$1,153,534
Agricultural Clean Water Initiative Program	\$1,543,987	\$188,117	\$8,855,022	\$522,497	\$11,109,622	\$198,729	\$10,000	\$38,736	\$247,465	\$11,357,087
Pasture & Surface Water Fencing Program	\$0	\$682,159	\$223,924	\$0	\$906,083	\$76,923	\$120,527	\$0	\$197,450	\$1,103,533
Grassed Waterway & Filter Strip Program	\$0	\$0	\$64,066	\$0	\$64,066	\$0	\$33,527	\$0	\$33,527	\$97,592
Pay for Performance Program	\$0	\$0	\$0	\$189,833	\$189,833	\$0	\$0	\$0	\$0	\$189,833
<b>Total</b>	<b>\$2,862,978</b>	<b>\$24,899,111</b>	<b>\$11,326,346</b>	<b>\$2,254,783</b>	<b>\$41,343,218</b>	<b>\$17,241,953</b>	<b>\$7,693,741</b>	<b>\$1,054,842</b>	<b>\$25,990,536</b>	<b>\$67,333,755</b>
Percent of Total	4%	37%	17%	3%	61%	26%	11%	2%	39%	100%

\*Federal Funding Programs include Lake Champlain Basin Program, USDA NRCS Vermont State Conservation Innovation Grant, and USDA RCPP Alternative Funding Arrangement.



### Trends and Highlights from FY 2016 – 2022:

- **Farm Visits:** VAAFAM staff completed 678 technical assistance and regulatory visits in FY 2022. These visits are an essential component of ensuring compliance with the Required Agricultural Practices and supporting farmers to implement effective conservation practices that result in improved water quality.
- **Investment:** \$9.4 million was invested in agricultural water quality improvements through VAAFAM’s technical and financial assistance programs, leveraging an additional \$2.9 million from federal funding sources and \$1.1 million from farmers in FY 2022.
- **Results:** FY 2022 regulatory inspections and investments through technical and financial assistance programs resulted in 43,135 acres of conservation practices implemented, 70% compliance on farm facilities inspected, and 22,857 kg of phosphorus reductions in the Lake Champlain and Lake Memphremagog Basins.
- **Partnerships:** In addition to State investments and cost-share programs, partner organizations and farmers play a crucial role in agricultural water quality improvements. Partners providing education and technical assistance to Vermont farmers through the Agricultural Clean Water Initiative Program (AgCWIP) conducted 439 visits to farms in FY 2022.
- **Farmer Investment:** Farmers contributed \$1.1 million toward on farm water quality improvements in FY 2022. Farmer funded conservation practices account for 16% of the total estimated phosphorus reductions resulting from programs included in this report. This information was collected through technical assistance services provided to farms and Conservation Practice Surveys completed with farms by agricultural service providers funded through the AgCWIP. Conservation Practice Surveys document and verify the investments made by farmers to implement conservation practices without state or federal cost-share assistance. These opt-in survey tracking efforts do not reflect all practices implemented by farmers outside of cost-share programs and depend on the availability and interest of service providers to conduct the surveys and the willingness of farms to participate.

For more information about the tracking and accounting of agricultural conservation practices for nutrient reductions please reference the [Standard Operating Procedures for Tracking & Accounting of Agricultural Conservation Practices](#) which was developed in collaboration with the Agency of Natural Resources (ANR) Department of Environmental Conservation (DEC).

The following sections provide a narrative summary intended to complement the [Water Quality Division – Interactive Data Report](#) and summarize the eight VAAFAM Water Quality programs technical and financial assistance FY 2022 activities, FY 2023 activities in progress, and projections for FY 2024 and beyond.

## Best Management Practice Program

The Best Management Practice (BMP) Program assists farmers with on-farm improvements designed to abate agricultural waste discharges into the waters of the State of Vermont. The Program was created to provide State technical and financial assistance to Vermont farmers to improve water quality. The BMP Program identifies and assists in resolving risk of surface and ground water contamination from agricultural wastes. Technical assistance, which includes a combination of agricultural, civil, and environmental engineering consultation and design, is available on a priority basis at no cost to the farmer. Financial assistance is available to help assist the farmer with the construction costs of the designed practice(s).

To account for nutrient runoff results from farm production areas, phosphorus reductions are modelled for compliant production areas rather than for individual BMPs installed within the production area. BMPs are typically implemented within a farm’s production area and BMP implementation may be correlated with compliance. BMPs are essential to improve farm infrastructure and prevent discharges.

For more information about the BMP Program, visit: [agriculture.vermont.gov/bmp](http://agriculture.vermont.gov/bmp).

### BMP FY 2022

BMP-supported water quality infrastructure investment increased significantly since FY 2021, a year of program delivery which was significantly impacted by the COVID-19 pandemic. In State FY 2022, the BMP program invested \$4,758,358 in clean water projects on 57 Vermont farm operations, the greatest investment made in a single FY between 2016 and 2022. State investment through the BMP program leveraged \$2.5 million dollars in federal and farmer match.

Figure 1. below shows the number and type of conservation practices installed in FY 2022 with technical and financial support from the BMP Program. In total 53 practices were installed, with the most frequent practices being Heavy Use Area Protection and Waste Storage Facilities.

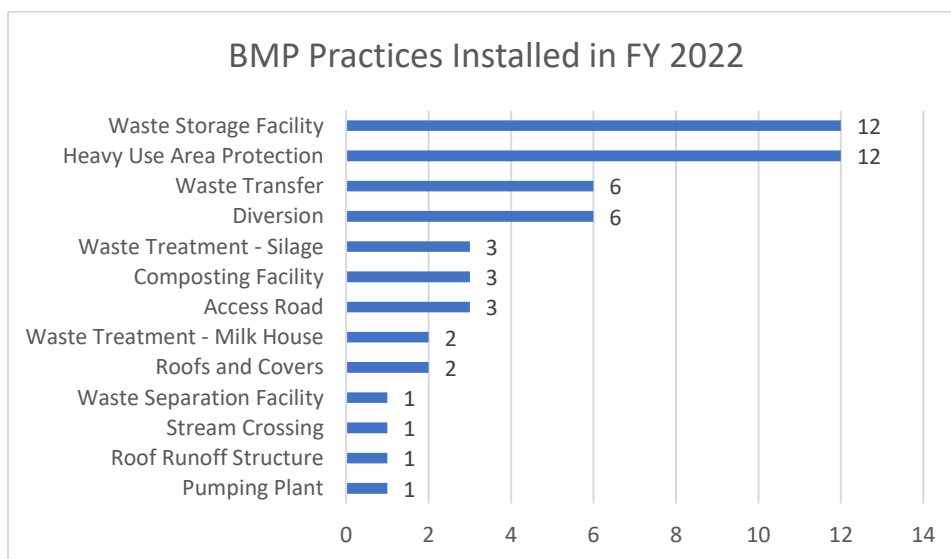


Figure 1. Number and Type of BMP Practice Installed in FY 2022



### FY 2022 BMP PROJECT HIGHLIGHT – HEAVY USE AREA PROTECTION



*Before (left) and after (right) of a heavy use area and waste storage facility project in the Otter Creek watershed (VAAF/Bradley).*

A next generation dairyman recently purchased his organic Jersey cow dairy from his father and the farm was due for upgrades to their waste management infrastructure. The cows' winter barnyard was damaged beyond repair, solid manure was being stacked in the adjacent eroded field, waste runoff was not being contained, and an old in-ground milkhouse waste system was failing and draining to a nearby wetland. Over the course of two years and two grants, the **BMP program installed a new pump station for milkhouse waste, a new concrete barnyard and a gravel manure stacking area, all of which are now directed to a new earthen manure lagoon.** The farm was additionally able to leverage funds from a VHC Water Quality grant to help fund a concurrent barn improvement.

### BMP FY 2023

There continues to exist a strong demand for funds within the BMP Program. Requests for funding show farmers are willing to adopt farmstead conservation practices to improve water quality, despite the economic challenges farmers have faced in recent years. Financial assistance is necessary to enable the timely adoption and implementation of these infrastructure projects that improve and protect water quality.

Starting in FY 2023, American Rescue Plan Act (ARPA) funds will be utilized in lieu of the previously Capital Bill funding for the BMP program budget. Launching the use of these funds and incorporating them into the BMP Grant Program process encountered new guidance and eligibility requirements that required time and council to work through and incorporate into the application, granting, and reporting process. Due to these new ARPA requirements, FY 2023 BMP grant awards were delayed in execution as program staff worked diligently and thoroughly to ensure ARPA program requirements will be satisfied.

As of December 20th in FY 2023, a total of \$625,695.70 of State funding has been awarded through 8 grants to farmers. These grants will support practices such as Heavy Use Area Protection, Diversion, Waste Storage Facilities, and Waste Transfers. Funds will continue to be awarded throughout the remainder of FY 2023 for spring, summer and fall implementation in 2023 and beyond.

### BMP FY 2024 & BEYOND

As farmers continue to face volatile milk and commodity prices, tight profit margins, and continued impacts from the COVID-19 pandemic, technical and financial assistance remains necessary for implementation of conservation practices.

Based on program trends from FY 2016-2022 and the BMP program anticipates fully utilizing funding approved by the 2022 General Assembly and the Clean Water Board Final Proposed SFY 2024 Clean Water Budget. Whether the demand will exceed available funding remains subject to volatile milk and commodity prices, an approaching new federal Farm Bill and farmers' ability to pay the 10% minimum cost share requirement for the BMP program.

#### FY 2022 BMP PROJECT HIGHLIGHT – WASTE STORAGE FACILITY

Woodnotch Farms completed a liquid Waste Storage Facility project with joint funding from the Natural Resources Conservation Service's Environmental Quality Incentives Program (EQIP) and VAAFMs BMP program. Woodnotch Farm's old, vegetated treatment system for silage leachate was allowing the high flow storm runoff to distribute to a small Vegetated Treatment Area where it was becoming overloaded with nutrients. Additionally, the low flow tank was not able to hold all the leachate, causing it to overflow toward nearby waters. **With the help of the two programs, Woodnotch Farms was able to expand their Waste Storage Facility so it can now hold all the silage leachate and contaminated runoff from the feed bunk complex.**



*The expanded Waste Storage Facility collecting and storing silage leachate and nutrient runoff from the farm. The water bottle shows an up-close look at silage leachate being collected. (VAAFMs/Jason Bradley)*

This program "gives the farmers flexibility to deal with it when it is convenient for them and is the right time for the field as well," said Jason Bradley, the BMP Engineer that helped the farm with the project. And while it has helped the farm not have to constantly monitor and pump out leachate from the tank to avoid overflow and runoff, it also allows the farm to comply with state requirements. "The state is strict with their rules, as they should be, but they can't pick on me about this anymore," Loren Wood of Woodnotch Farms said, "at the end of the day, we are really glad about the project."



## Conservation Reserve Enhancement Program

The Conservation Reserve Enhancement Program (CREP) is part of the Conservation Reserve Program (CRP), the country’s largest private-land conservation program. CREP is administered via a partnership between the State of Vermont and the United States Department of Agriculture (USDA) Farm Service Agency (FSA) and NRCS. The program compensates agricultural landowners who remove environmentally sensitive riparian land from agricultural production and convert it to forested buffers, filter strips, or grassed waterways. Landowners are provided upfront financial incentive payments for participating in the Program and are paid an annual rental rate for the 15-year agreement period. Federal cost-share has provided 90% of the conservation practice implementation costs for CREP and, in most instances, 100% of implementation costs for forested riparian buffers are covered with the last 10% coming from the U.S. Fish and Wildlife Service Partners for Fish and Wildlife (PFW). VAAFMs provides the technical assistance for the program along with an additional incentive payment which leverages federal cost share funds making the CREP program more feasible for agricultural landowners.

For more information about CREP visit: [agriculture.vermont.gov/crep](http://agriculture.vermont.gov/crep).

### CREP FY 2022

In State FY 2022, 53 acres of newly established riparian buffers were installed on agricultural lands through 5 new CREP contracts. Additionally, CREP planners worked with 8 farmers currently enrolled in CREP to enhance 134 acres of riparian buffer for re-enrollment in CREP. In FY 2022 75 site visits were completed by CREP Conservation Planners to support new and existing projects. Riparian Buffer conservation practices have long term benefits for water quality and are an integral part of meeting State water quality goals.

#### FY 2022 CREP PROJECT HIGHLIGHT



A farmer in Stowe enrolled 9.83 acres of pasture in the CREP program. This pasture planted is along both sides of Moss Glen Brook a tributary to the Little River in Stowe. Livestock have grazed the pasture for decades denuding the stream banks and prevents trees and shrubs from establishing. This CREP enrollment was part of a larger whole farm conservation easement with a river corridor easement. 300 native trees and shrubs per acre were planted throughout the buffer. (Photo: VAAFMs/Phillip Wilson)

### **CREP FY 2023**

Thus far in FY 2023, two new grant awards have been executed encompassing 28 acres of new riparian buffers. Additionally, 23 acres are planned to be enhanced through re-enrollments. There are several projects already approved by FSA which will be planted in 2024 as they missed the deadline to secure plant material and contractor labor for 2023. In addition to the outreach and development of new projects and re-enrollments, the CREP Conservation Planners continue to work with existing contract holders to steward their existing buffers as well as coordinate with program partners to deliver the program.

### **CREP FY 2024 & BEYOND**

Looking forward to FY 2024 there are at least 16 planned projects waiting for FSA approval for enrollment in the program. As CREP riparian buffer projects are seasonal implementation projects, planning is often completed 1-2 years in advance of implementation. In FY 2024 and beyond, VAAFM anticipates the continuation of this program as it serves as an important conservation practice in meeting Vermont's water quality goals.

## Capital Equipment Assistance Program

The Capital Equipment Assistance Program (CEAP) offers financial assistance to farms, nonprofit organizations, and custom applicators in Vermont. CEAP assists in the purchase of innovative equipment or technology that will aid in the reduction of surface runoff of agricultural wastes to State waters, improve water quality of State waters, reduce odors from manure application, separate phosphorus from manure, decrease greenhouse gas emissions, and reduce costs to farmers when they apply manure.

For more information about CEAP visit: [agriculture.vermont.gov/ceap](https://agriculture.vermont.gov/ceap).

### CEAP FY 2022

High demand continues for the CEAP program as farmers seek assistance to purchase equipment for increased conservation practice adoption and implementation. In FY 2022 VAAFM invested \$1 million dollars and awarded 27 grants to Vermont farmers, organizations, and custom applicators to assist with purchasing conservation equipment. At time of report, just over \$905,000 in VAAFM funds had been expended to support equipment purchases under FY 2022 CEAP grant agreements, leveraging close to \$165,000 in farmer expenditure and over \$125,000 from VHCB agreements.

In FY 2022, with the equipment acquired through CEAP, farmers, nonprofits, and custom applicators implemented best management practices and improved nutrient management on approximately 11,600 acres of agricultural land. Since FY 2018, program grantees have reported more than 74,300 acres of conservation practice implementation with the equipment cost-shared through the program.

#### FY 2022 CEAP PROJECT HIGHLIGHT



Mark Vosburg, of Vosburg Farm in St Albans VT, manages 372 acres in the Hungerford Brook Watershed. In his own words, he applied to purchase a no-till drill through the FY 2022 CEAP program **“to improve water quality and soil health by growing better cover crops which will reduce erosion and improve water infiltration in the soil”**. In addition to seeding cover crops, Mark hoped that the drill

would assist the farm to establish perennial crops and to perform pasture and hayland rejuvenation in the spring and summer. Despite COVID-related equipment delays in 2022, the Vosburg Farm was excited to receive the drill in Summer 2022, just in time for the fall cover crop planting. Mark sent in this beautiful photo of the drill at the farmstead when it arrived. (Photo: Mark Vosburg)

### **CEAP FY 2023**

In September of 2022, a CEAP funding opportunity for 90% cost share on conservation equipment was made available to Vermont farmers, custom operators, and nonprofit organizations. This funding round included a variety of eligible equipment categories with specific funding maximums based on each category correlated to water quality impact as well as relative cost of equipment.

Preliminary grant awards will be offered in January of 2023 for at least \$1.5 Million in State funding to be awarded for innovative equipment acquisition enabling conservation practice implementation on Vermont farms. This is an increase of 50% compared to prior years of the CEAP program. The CEAP program continues to be competitive with 72 applications received through the Fall 2022 funding round. Applicants for FY 2023 CEAP funds represented a wide range of farm sizes from all over the state. The total request for funding, which considers the relative equipment funding rate or cap, was about \$2.38 million. This request represents a close to 30% increase in demand for this program. Of the applications submitted, most (35%) of funding requests were for Manure Management equipment, followed by Cover Crop equipment (25%).

### **CEAP FY 2024 & BEYOND**

VAAFM anticipates the demand for this program will continue at or above its current capacity into FY 2024 and beyond. The substantial response VAAFM received through all prior years of CEAP indicate a high and sustained demand for this program. With low market prices for milk and extremely tight profit margins across the Vermont farming industry, many other operational costs on farms are prioritized before investments in new or innovative capital equipment. Equipment is often identified as a major barrier to implementation of conservation practices or improving existing conservation efforts. The CEAP program incentivizes Vermont farmers to voluntarily invest in innovative equipment and technology upgrades that are beneficial for water quality, furthering the reduction of nonpoint source agricultural pollution.

## **Vermont Phosphorus Innovation Challenge**

The Vermont Phosphorus Innovation Challenge (VPIC) is an initiative launched by Governor Phil Scott in 2018. It is designed to support solutions for reducing phosphorus loading to Vermont's landscape and waterways by utilizing innovative technologies. Since 2018, Vermont has partnered with businesses and entrepreneurs through three project scoping and development stages. In FY 2022, three projects continued to be ongoing in Stage 3 – Final Round which supports investments in construction and operation of the proposed solutions. The three ongoing projects are with Agrilab Technologies, Digested Organics, and the Village of Essex Junction.

To learn more about VPIC and the ongoing projects, please visit our website:  
[agriculture.vermont.gov/Vermont\\_Phosphorus\\_Innovation\\_Challenge](https://agriculture.vermont.gov/Vermont_Phosphorus_Innovation_Challenge)



## Farm Agronomic Practice Program

The FAP Program incentivizes agronomic practices through financial assistance for on-farm conservation field practices that improve soil quality, reduce erosion, and improve water quality. Financial assistance is also available for educational and instructional activities that increase farmer understanding of the impact of agricultural waste discharges as well as any federal or state water quality regulations and requirements.

Farm agronomic practices are a critical component of the successful implementation of the various TMDLs for Vermont's waters. Between State FY 2016 and FY 2022, agronomic practice implementation has accounted for the vast majority of phosphorus reductions in Vermont. Grant funding through the FAP program is provided on a per acre payment rate, based on relative costs of implementation. FAP practice payment rates are detailed in Table 2 below. In developing FAP payment rates, VAAFAM seeks to pay slightly below USDA NRCS payment rates, which are developed based on regional cost estimates, and thus promotes and leverages federal funding to improve water quality in Vermont. For more information about the FAP Program visit: [agriculture.vermont.gov/fap](http://agriculture.vermont.gov/fap).

*Table 2. FAP Agronomic Practice, Payment Rates and Practice Description*

<b>Agronomic Practice</b>	<b>Payment Rate</b>	<b>Practice Description</b>
<b>Cover Cropping</b>	<b>\$30 per acre for broadcast or inter-seeded \$45 per acre for drilled or otherwise incorporated</b>	Planting of non-primary crops on annual cropland to provide effective soil coverage during the non-growing season.
<b>Crop to Hay</b>	<b>\$35 per acre \$45 per acre with a nurse crop</b>	Rotation of annual crop land into perennial forages for pasture, hay or biomass production
<b>Rotational Grazing</b>	<b>\$30 per acre</b>	Rotation of ruminant livestock for optimal forage production while ensuring adequate residual vegetation and livestock exclusion from surface water.
<b>No Till</b>	<b>\$15 per acre</b>	Planting of annual crops in a no-till system with no full-width soil disturbance, ensuring soil surface cover.
<b>No-Till Pasture and Hayland Renovation</b>	<b>\$20 per acre</b>	Use of no-till equipment to improve and re-seed pastures and/or hay to provide full soil coverage
<b>Manure Injection</b>	<b>\$25 per acre</b>	Subsurface manure injection below soil surface with a single implement. Nutrient application through this method must be within agronomic recommendations and meet Required Agricultural Practices.

## FAP FY 22

In FY 2022, the FAP program invested \$861,693 to support the adoption and implementation of farm agronomic practices on 173 individual farm operations. Funds invested resulted in over 23,000 acres of agronomic practices resulting in 10,964 kg of P reductions from agriculture in the Lake Champlain Basin. The FAP program accounts for approximately 48% of total phosphorus reductions achieved through VAAFMM financial and technical assistance programs. The FAP program continues to be one of the top contributors to estimated phosphorus reductions accounted for both in the agricultural sector and statewide.

### FY 2022 FAP PROJECT HIGHLIGHT



*Brian McGarry walks through one of his corn fields. Incorporating farm agronomic practices has resulted in environmental and farm management benefits. (Photo: Brian McGarry)*

With the help of an FAP grant, Brian McGarry of McGarry Dairy installed cover cropping and manure injecting. Through these practices, he's reduced nitrogen fertilizer use and had a slight uptick in yield. Even as the farm has expanded, he is still buying less fertilizer and grain than ever before while also getting the nutrients down to where they need to be more efficiently, in the roots and soil. The use of these two FAP practices has made McGarry feel like he is creating "less waste, less runoff, and releasing less nitrogen into the atmosphere." And with the success of the FAP grant, McGarry has started looking at other grants offered through VAAFMM.

**McGarry's big draw and what he sees as one of the leading rewards through the FAP program is being able to "balance economical and environmental benefits when making decisions."**

## FAP FY 2023

As of December 30, 2022, the FAP program has invested \$1.2 million in FY 2023 to support the adoption and implementation of farm agronomic practices on 218 individual farm operations. This is the highest demand ever seen for FAP and represents a significant number of farms who have never worked with the FAP program before. Currently, program staff are reviewing payment requests and practice verifications associated with Fall 2022 cover crop. Additional investments may be made to support spring practices if additional applicants apply in the spring.

## FAP FY 2024 & BEYOND

VAAFMM anticipates the continuation of this program at or above its current capacity into FY 2024 and beyond. Exploring trends through the [Interactive Data Report](#) reflects the increased implementation of agronomic practices and increased participation through the State's FAP program over the last seven years. Requests for assistance have increased exponentially in the last several years as outreach, education, funding, and resources for implementing these practices are leading to widespread adoption.

This increase can also be attributed to Lake Champlain Basin Program (LCBP) funding that has been secured through agreements with the Department of Environmental Conservation since FY 2018. The LCBP funds have made a significant contribution to the expansion and availability of the FAP program for farmers in the Lake Champlain Basin, resulting in increased implementation statewide from 13,803 acres in FY 2019 to more than 23,200 acres accounted for so far in FY 2022. Lake Champlain Basin Program funding accounts for approximately 53% of overall funding for the FAP program payments to farmers between FY 2016 and FY 2022. In the fall of 2022, VAAFPM was awarded additional LCBP funds that will support the FAP program through FY 2026.

Farmer participation in NRCS EQIP practices may also influence participation in the VAAFPM FAP program. NRCS EQIP contracts fund these practices at a higher rate, but often only for three years. Some level of decreased FAP program demand is anticipated in FY 2024 when a new federal Farm Bill is passed and more farms become (re-) eligible to request practice reimbursement under NRCS programs. However, it remains to be seen how this effect will interact with the historic increased trend of FAP demand and enrollment.



## Grassed Waterway and Filter Strip Program

The Grassed Waterway and Filter Strip (GWFS) Program provides technical and financial assistance to Vermont farmers for in-field agronomic best practices to address critical source areas, erosion, and surface runoff. This program provides compensation to farmers via incentive payments for participation (\$500/acre) and cost-share to cover 90% of the installation costs for establishing perennially vegetated grassed waterways, filter strips, and forage and biomass seedings, and associated infrastructure, if necessary, on agricultural cropland adjacent to surface waters and ditches (6 V.S.A. § 4831). Contrary to similar existing financial assistance programs such as CREP that support these practices, the benefit of this program is that all the practices implemented under GWFS can be harvested. For more information about the GWFS Program visit: [agriculture.vermont.gov/gwfs](https://agriculture.vermont.gov/gwfs).

### GWFS FY 2022

In FY 2022, a total of \$8,500 of State funding was awarded to one farmer in the Passumpsic watershed and 23 acres of perennial planting was implemented to replace annually cropped agricultural fields to reduce erosion and runoff from those fields.

### GWFS FY 2023

At the time of this report writing, there are no projects under development in this program. VAAFMM plans to consider revising the program, including modified branding, outreach, and educational materials to make the program more relevant for the agricultural community.

### GWFS FY 2024 & BEYOND

The GWFS program has been available for Vermont farmers for five years. Grassed Waterways are often a difficult conservation practice to manage for operations that rotate their fields through corn and hay, and thus often a difficult practice to persuade operators and landowners to implement. Vermont farm fields are small, often making it a better use of field space to convert the entire field to perennial crop, especially if a field area is contributing a high proportion of sediment or pollution to nearby waterways. Therefore, more success under this program has been observed with seeding critical source areas to hay as pasture and hay plantings, as well as filter strips.

There is vast potential for this program to support perennial buffer implementation and improvements on Vermont farms pending staff capacity to provide outreach, technical assistance, and project planning support for producer enrollment in this program.



## Pasture and Surface Water Fencing

The Pasture and Surface Water Fencing (PSWF) Program provides technical and financial assistance to Vermont farmers to improve water quality through improved and expanded pasture management, as well as on-farm livestock exclusion from surface waters statewide. Technical assistance available to farmers under this Program addresses and mitigates water quality concerns on their farms. The goal of this Program is to increase participant understanding of best pasture management for water quality and to identify water quality improvement projects, in addition to providing technical service to farms that cannot, or choose not to, meet the requirements of other programs that promote livestock exclusion from surface waters, such as CREP and NRCS’s EQIP. Providing pasture management and grazing assistance where water quality benefits can be realized from improved management is also a large component of this Program.

For more information about the PSWF Program, visit: [agriculture.vermont.gov/pswf](http://agriculture.vermont.gov/pswf).

### PSWF FY 2022

The PSWF program was developed and launched in FY 2018. The first several years of the program were heavily focused on outreach, education, and project planning, resulting in a high interest in the program and implementation in recent years.

In FY 2022, the PSWF program invested \$346,428 through 32 awards supporting exclusion fencing and rotational grazing infrastructure. Grant awards provide technical and cost share assistance for fencing, water pipeline, water pumping plants, trails and walkways, water wells, stream crossings, and watering facilities. The program prioritizes practices that exclude livestock from surface waters.

#### FY 2022 PSWF PROJECT HIGHLIGHT



A Certified Small Farm Operation in the Northern Lake Champlain watershed sought to improve water quality locally through overall onsite pasture health improvement through intensive rotational grazing. The farmer had permanent fencing around 3 sides of a pasture and needed to complete the exclusion fencing on the side adjacent to Hollow Brook. With support from a FY 2022 Pasture and Surface Water Fencing grant, the farmer installed 2,680 linear feet of new high tensile fencing along the stream in two pastures for permanent livestock exclusion. (Photo: VAAF/Phillip Wilson)

### **PSWF 2023**

As of December 20th, in FY 2023, a total of \$108,735 of State funding has been awarded through 13 grants to farmers across the State of Vermont. With a FY 2023 budget of \$300,000 for the program and additional personnel able to assist in grant planning and implementation, it is anticipated the increasing practice implementation trend will continue through FY23 and into FY24 and beyond.

### **PSWF 2024 & BEYOND**

Farmers receiving PSWF grants include small, diversified farmers raising goats, cattle, sheep, horses, and dairy livestock. Many PSWF grantees in the last four years have been first-time VAAFAM grant program recipients. As the program continues to grow and the State continues to support diversified, pasture-based farming, VAAFAM expects the PSWF program to continue to be a highly sought-after grant program.



## Vermont Pay for Performance

The Vermont Pay for Performance Program (VPFP) is a new and innovative program that provides performance-based payments to Vermont farmers for reducing phosphorus (P) losses from their agricultural fields. While most current conservation programs pay cost-share for practice implementation, VPFP pays for the outcomes of practices: it recognizes that conservation practices generate value to the public and directly compensates farms for that value. This approach also allows VAAFM to target our water quality resources towards the highest impact farms and fields with respect to reducing phosphorus and improving water quality. Participating farmers use the Farm Phosphorus Reduction Planner (FarmPREP), a web-application tool that integrates farm management information, agronomic and hydrologic science, and numerical modeling to evaluate field-by-field reductions and average annual phosphorus losses. Reductions measured through FarmPREP represent improvements in farm management in comparison to management assumptions used in the Lake Champlain Basin Total Maximum Daily Load (LCB TMDL). Under this program a total of \$4.9 million in funding will be available to farms for management planning and phosphorus reduction payments across four years.

This program is supported by the U.S. Department of Agriculture, under Regional Conservation Partnership Program Alternative Funding Arrangement (RCPP AFA) Supplemental Agreement number 2145-A-0368, 2145-A-0553, 2145-A-0551, and 2145-A-0675.

For more information about the program, visit our webpage at <https://agriculture.vermont.gov/VPFP>.

### **VPFP 2022**

In FY 2022, the VPFP program was launched and began accepting applications from farmers in January 2022. To assist farms with their data management and data entry in the FarmPREP program, VAAFM contracted with the Vermont Association of Conservation Districts who are available to provide one-on-one support at no cost to the farmer. Farms are also able to opt-out of this assistance if they would prefer to learn how to use FarmPREP themselves or if they another source of technical support on their farm through a Technical Service Provider.

After a competitive ranking process, VAAFM enrolled 53 farms in Management Planning and Data Entry grants to participate in the first year of the program. During this first phase, farms work with their chosen assistance provider to enter all their field boundaries, manure and fertilizer rates, soil data, crop management, and conservation practices into FarmPREP on a field-by-field basis. This data entry process is the first phase of the program and provides the information necessary for FarmPREP to model both their current and baseline phosphorus losses so improvements in management can be accurately measured before moving into the next phase of the program. Regardless of their P-reductions measured in FarmPREP, farms are eligible for a data entry payment of \$15 per acre they enroll in the program (up to \$4,000) to compensate them for the time to work with a TA provider to enter their management data into FarmPREP. In FY2022, \$189,833 was invested in Data Entry Payments for 53 participating farmers for entering Farm management data into FarmPREP.

### **VPFP 2023**

Enrolled farm participants that are able to show they have achieved more than a 40% reduction in P-loss when compared to the baseline will be eligible to receive \$100 per pound of phosphorus reduced above that threshold per year, up to an annual cap of \$50,000. Additionally, farms that show they have a low average annual P-loss of 1 lbs. P/acre or 0.5 lbs. P/acre are also eligible to receive a stewardship payment of \$3 or \$8/enrolled acre, respectively.

As of January 1, 2023, a total of \$1.7 million has been obligated to program participants for the 2022 and 2023 seasons. These two-year Phosphorus Reduction Payment agreements were signed with 46 farm participants that successfully completed the data entry phase and were able to demonstrate in FarmPREP that they have achieved significant reductions in phosphorus losses compared to their TMDL baseline. The average grant amount for these Phosphorus Reduction Payment agreements is \$18,560 per year. Final P-reduction payments are dependent on updated and verified assessments accounting for their actual 2022 farm management which will be complete in the first quarter of 2023.



#### **FY 2024 & BEYOND**

Under the current USDA grant, farms will be able to enroll in VPF for the 2023, 2024 and 2025 field seasons, but continuation of this program beyond those dates will require additional funding and is contingent on feedback from farmers and partners agencies.

*Farmers at an informational session learn about FarmPREP and how the program uses farm management data, soil layers, and weather data to simulate phosphorus runoff on their farm (Photo: VAAF).*



## Agricultural Clean Water Initiative Program

The Agricultural Clean Water Initiative program (AgCWIP) provides funding for partner organizations, business, and individuals who work with Vermont farms to support the improvement of water quality. Local and regional partners play a vital role in the education, outreach, implementation and verification of conservation practices that reduce nutrient runoff from agricultural operations. The AgCWIP program supports activities in four main categories: Organizational Capacity Development, Education and Outreach, Technical Assistance, and Conservation Practice Surveys. This program also supports a variety of mapping and analytical projects, research, and sampling efforts.

For more information about the program, visit our webpage: <https://agriculture.vermont.gov/agricultural-clean-water-initiative-program>

### AGCWIP FY 2022

Through AgCWIP funding opportunities, a total of \$1.9 million was invested in FY 2022. An additional \$3.4 million of awards was in progress during FY 2022 but obligated in FY 2023. Partner organization recently supported through AgCWIP funding awards include but are not limited to; Addison County River Watch Collaborative, Champlain Valley Farmers Coalition, Missisquoi River Basin Association, Natural Resources Conservation Council, Poultney Mettowee NRC, Scott Magnan Custom Services, UVM Extension, and Vermont Association of Conservation Districts.

Proposed work through FY 2022 partner agreements will occur over the next four years, supporting approximately 15 Full Time Equivalent positions in grantee organizations. Services supported through the AgCWIP program include, but are not limited to; farm support for grant applications and reporting, project management for farms (case managers, coordination, project oversight), Nutrient Management Planning and Implementation, project consultation and design, precision agriculture technical assistance, equipment rental programs, sampling services (water, soil, manure), conservation practice surveys, workshops, educational materials, farmer participation stipends and more. Grants and contracts awarded under this program follow a Results Based Accountability framework with anticipated outcomes and outputs defined in each grant agreement and reported on a regular basis.

### AGCWIP FY 2023

As mentioned in the previous section, projects selected but not yet obligated during FY 2022 totaled \$3.4 million invested during FY2023. In December 2022, an additional AgCWIP funding opportunity was made available to partner organizations, businesses, and individuals specifically focused on supporting discrete organizational capacity development activities that will result in increased and enhanced services to the agricultural community related to improving water quality. Applications are due February 15<sup>th</sup>, 2023, and VAAFAM anticipates awarding approximately \$500,000 through this funding opportunity.

### AGCWIP FY 2024 & BEYOND

VAAFAM anticipates the continuation of the AgCWIP program and anticipates annual and bi-annual funding opportunities and grant awards in support of the crucial work conducted by partner organizations, businesses, and individuals working with Vermont farmers. VAAFAM anticipates releasing a multi-million-dollar funding opportunity in the fall of 2023. As the AgCWIP program becomes a cornerstone to supporting staff and partners providing foundational services to farmers for water quality efforts, VAAFAM anticipates enhancing coordination with regional, state, and local partners to maximize funds available.



## Looking Ahead

Looking ahead, VAAFM anticipates continued demand for agricultural technical and financial assistance. Vermont farmers continue to demonstrate their resilience and commitment to adoption of conservation practices and improving water quality despite the challenging economic situation for farming with fluctuating milk and commodity prices, supply chain disruptions, and increased material costs. VAAFM will strive to continue serving the agricultural community to meet technical and financial assistance needs while improving process and efficiency. Additionally, the recently published Initial Vermont Climate Action Plan (CAP) outlines how agricultural water quality conservation practices and existing state water quality programming that delivers these services can help support climate action in Vermont. Where agronomic conservation practices deliver quantifiable water quality benefit, there exists significant opportunity for these same conservation practices – e.g. cover crop, no and reduced tillage, management intensive grazing – to provide climate mitigation, adaptation, and resilience benefits for farms. Increased demand and funding for these programs could expand the delivery of co-benefits for both state climate and water quality goals.

Funding for education, outreach, technical assistance, and practice implementation is essential to support conservation on private agricultural land and meet Vermont Water Quality Standards. VAAFM water quality technical and financial assistance programs are a cornerstone to providing farmers with the resources needed to meet Vermont’s water quality goals. Looking ahead, VAAFM is committed to continuing these programs and partnering with farmers and the agricultural community to meet Vermont’s water quality goals and ensure the viability of Vermont’s farming landscape.

**For more information on the Vermont Agency of Agriculture, Food & Markets Water Quality Division grant opportunities, regulations, or educational opportunities visit [Agriculture.Vermont.gov](https://agriculture.vermont.gov)**