

**STATE FISCAL YEAR 2019 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 15, 2020

To: Vermont General Assembly

RE: Vermont Agency of Agriculture, Food & Markets annual report to the Vermont Legislature on financial and technical assistance for water quality.

The Vermont Agency of Agriculture, Food & Markets (VAAFM) 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.

## Report Contents

Executive Summary .....	4
Best Management Practices Program .....	8
BMP FY 2019 .....	8
BMP FY 2020 .....	10
BMP Program FY 2021 & Beyond.....	11
BMP Project Examples .....	13
Conservation Reserve Enhancement Program .....	14
CREP FY 2019.....	14
CREP FY 2020.....	15
CREP Program FY 2021 & Beyond .....	15
Capital Equipment Assistance Program.....	16
CEAP FY 2019 .....	16
CEAP FY 2020 .....	17
CEAP FY 2021 & Beyond.....	18
Farm Agronomic Practice Program .....	19
FAP FY 2019 .....	19
FAP FY 2020 .....	20
FAP FY 2021 & Beyond.....	21
Grassed Waterway and Filter Strip Program .....	21
GWFS FY 2019 .....	22
GWFS FY 2020 .....	22
GWFS FY 2021 & Beyond.....	22
Pasture and Surface Water Fencing Program.....	22
PSWF FY 2019 .....	23
PSWF FY 2020 .....	23
PSWF FY 2021 & Beyond.....	23
Looking Ahead.....	23

### List of Figures

Figure 1. Total State Agricultural Water Quality Program Expenditures in FY 2019.....	5
Figure 2. Total Phosphorus Reductions by State Cost-Share Program by FY.....	6
Figure 3. Summary of FY 2019 BMP Project Funding .....	8
Figure 4. FY 2019 State BMP Expenditure and Conservation Practice Implementation by Watershed.....	9
Figure 5. FY 2019 State BMP Expenditure by County .....	9
Figure 6. FY 2019 BMP Implementation by Conservation Practice Type .....	10
Figure 7. Increased BMP Program Staff Capacity Compared to Grants Awarded 2016 - 2020.....	12
Figure 8. State BMP Expenditure Compared to Annual Percent Change in Average Milk Prices 2010-2020 .....	12
Figure 9. FY 2019 CEAP Total Number of Awards and Average Award Amount for Each Equipment Type .....	16

Figure 10. Types of Equipment Requested in the CEAP 2020 Funding Round..... 18  
Figure 11. Summary of FY 2019 Agronomic Practice Implementation (Acres)..... 19  
Figure 12. FAP Program Trends from FY 2017 - FY 2020..... 21

*List of Tables*

Table 1. Summary of FY 2019 Financial Assistance Programs ..... 4  
Table 2. Total Funding by Source and VAAFM Program from FY 2016 – FY 2019..... 6  
Table 3. BMP Recent Year Metrics ..... 11  
Table 4. Funding Caps, Examples, and Descriptions for Each Equipment Category for FY 2020 CEAP Program ..... 17  
Table 5. Current Payment Rates FY 2020 FAP Program ..... 20

*Attachments*

Attachment 1. List of All BMP Applicants from FY 2019 to November 1, 2019 ..... 25  
Attachment 2. BMP Applicant Prioritization Matrix..... 29

## Executive Summary

The Vermont Agency of Agriculture, Food and Markets (VAAFM) Water Quality Division provides State financial assistance to Vermont farmers in support of their construction 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 and with State water quality standards per 6 V.S.A. § 4821. In support of this charge, VAAFM administers six financial assistance programs available to 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 and the Pasture and Surface Water Fencing (PSWF) Program. In State fiscal year (FY) 2019, these conservation programs enabled \$3,733,346.65 in State expenditures and leveraged \$2,575,503.88 in Federal expenditures. Vermont farmers and agricultural landowners invested \$950,551.22 in water quality improvements through cost share contributions for the programs addressed in this report. Table 1 below summarizes FY 2019 financial assistance programs and associated impacts, and Figure 1 shows State expenditures by tactical basin for water quality programs. Please note, Figure 1 below does not include Education and Outreach grants awarded through the FAP program, totaling \$11,850.86 in FY 2019, as these were multi-basin efforts.

*Table 1. Summary of FY 2019 Financial Assistance Programs*

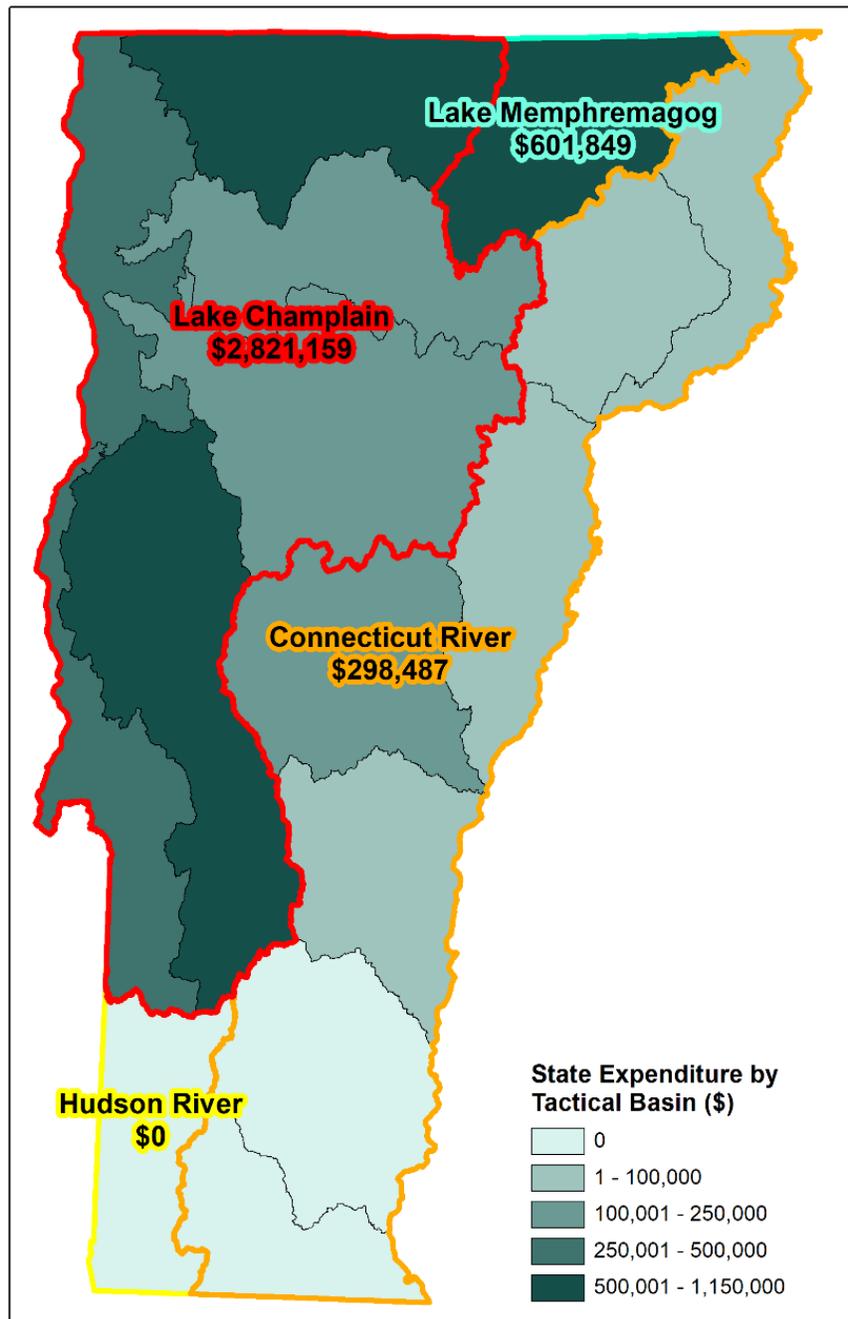
<b>PROGRAM</b>	<b>EXPENDITURE</b>	<b>AWARDS</b>	<b>IMPACT</b>
<b>FAP</b>	<b>\$265,076.76</b>	<b>\$326,433.06</b>	<b>11,468 Acres Improved</b>
Sample FAP Practices Installed	7087 Acres : Cover Crop		Average 28% reduction in total P per acre <sup>1</sup>
	1671 Acres : Conservation Tillage		Average 27.5% reduction in total P per acre <sup>1</sup>
<b>BMP</b>	<b>\$2,238,469.51</b>	<b>\$3,331,677.26</b>	<b>76 Practices Installed</b>
Sample BMP Practices Installed	34 Waste Storage Structures		42% reduction in total P <sup>2</sup>
	36 Heavy Use Area Protection & 16 Clean Water Diversion		53% reduction in total P for barnyard runoff management <sup>2</sup>
<b>CEAP</b>	<b>\$1,187,417.05</b>	<b>\$1,138,700.00</b>	<b>34 Pieces of Equipment/Technology</b>
Sample CEAP Equipment Acquired	17 Cover Crop Equipment		Average 28% reduction in total P per acre <sup>1</sup>
	4 Silage Management Equipment		1 acre of feed storage can lose as much nutrients as 120 acres of cropland <sup>3</sup>
<b>PSWF</b>	<b>\$24,533.33</b>	<b>\$50,922.73</b>	<b>9 Practices Implemented</b>
<b>GWFS</b>	<b>\$17,850.00</b>	<b>\$21,950.00</b>	<b>21.83 Acres Improved</b>
<b>CREP</b>	<b>*No new contracts due to FSA National Office determination that land subject to environmental regulations is ineligible. CREP should be available to VT Farms in FY20.</b>		

<sup>1</sup> Vermont Agency of Natural Resources, Department of Environmental Conservation - Current Methods to Measure Nutrient Pollutant Reductions

<sup>2</sup> A tool for estimating best management practice effectiveness for phosphorus pollution control. MW Gitau, WJ Gburek, AR Jarrett - Journal of Soil and Water Conservation, 2005.

<sup>3</sup> Evaluation of silage leachate and runoff collection systems on three Wisconsin dairy farms. A Wunderlin, E Cooley, B Larson, C Herron, D Frame, A Radatz, K Klingberg, T Radatz, and M Holly - Discovery Farms Wisconsin, 2016.

Figure 1. Total State Agricultural Water Quality Program Expenditures in FY 2019



VAAFM leverages several State funding sources with local and federal match to provide technical and financial assistance towards the implementation of conservation practices on farms in Vermont. Table 2 below shows total expenditures by VAAFM program and by funding source from State FY 2016 – 2019. Collaboration between partners and leveraging funds is a critical piece to improving and protecting water quality on Vermont farms. Since FY 2016, VAAFM cost-share programs have leveraged approximately \$9.8 million in federal match. Furthermore, an additional \$4.0 million was leveraged in local match from farmers despite the significant challenge of tight profit margins caused by low milk and commodity prices facing the agricultural community in Vermont.

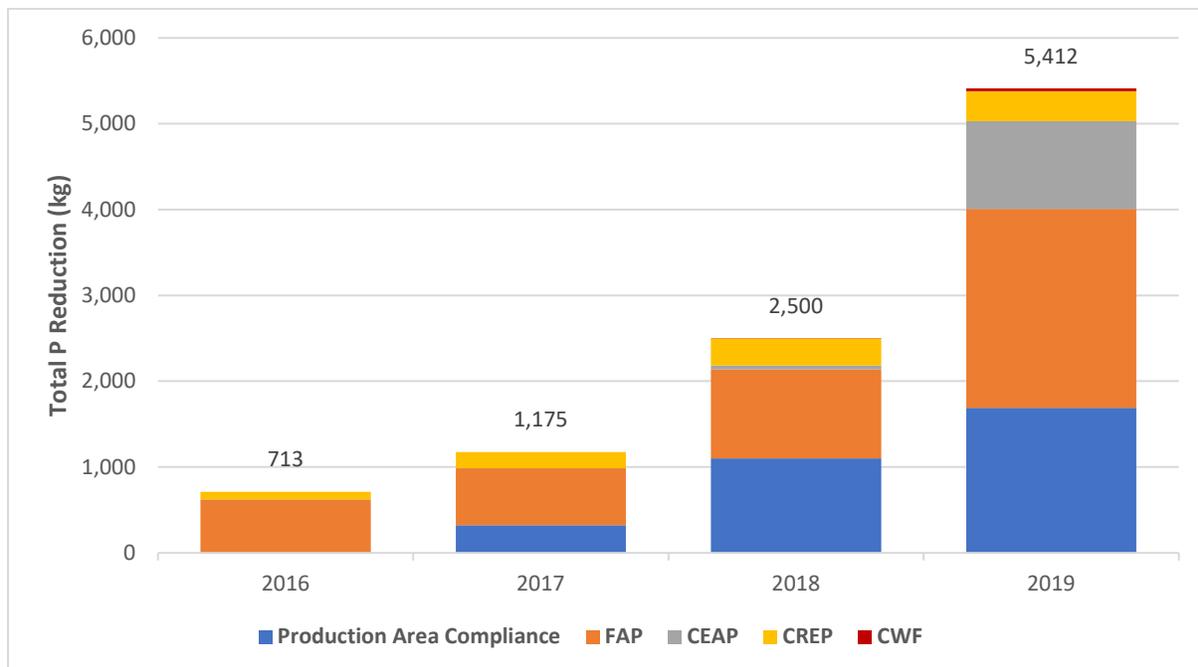
Table 2. Total Funding by Source and VAAFM Program from FY 2016 – FY 2019

VAAFM Program	General Fund	Capital Fund	Clean Water Fund	State Total	Federal Match	Local Match	Match Total	Grand Total
Best Management Practice Program	\$0	\$9,311,947	\$0	\$9,311,947	\$8,374,875	\$3,356,771	\$11,731,646	\$21,043,593
Farm Agronomic Practice Program	\$711,780	\$0	\$0	\$711,780	\$0	\$0	\$0	\$711,780
Capital Equipment Assistance Program	\$0	\$1,937,324	\$0	\$1,937,324	\$0	\$556,890	\$556,890	\$2,494,213
Conservation Reserve Enhancement Program	\$0	\$107,307	\$0	\$107,307	\$871,242	\$61,919	\$933,161	\$1,040,468
Vermont Phosphorus Innovation Challenge*	\$0	\$240,000	\$0	\$240,000	\$0	\$0	\$0	\$240,000
Clean Water Fund Grants and Contracts*	\$606,987	\$0	\$5,921,582	\$6,528,568	\$599,469	\$71,524	\$670,993	\$7,199,561
Pasture & Surface Water Fencing Program	\$0	\$0	\$48,663	\$48,663	\$0	\$0	\$0	\$48,663
Grassed Waterway & Filter Strip Program	\$0	\$0	\$19,650	\$19,650	\$0	\$0	\$0	\$19,650
Water Quality Grants	\$523,000	\$0	\$0	\$523,000	\$0	\$0	\$0	\$523,000
<b>Total</b>	<b>\$1,841,766</b>	<b>\$11,596,578</b>	<b>\$5,921,582</b>	<b>\$19,359,926</b>	<b>\$9,845,585</b>	<b>\$4,047,104</b>	<b>\$13,892,690</b>	<b>\$33,252,616</b>
Percent of Total	6%	35%	18%	58%	30%	12%	42%	100%

\*The Vermont Phosphorus Innovative Challenge and Clean Water Fund Grants and Contracts are not included in this report. Investments and outcomes for these programs are included in the Vermont Clean Water Initiative 2019 Investment Report.

Beginning in FY 2016, VAAFM annually reports the clean water efforts made through VAAFM programs to the Vermont Clean Water Initiative Program (CWIP), managed by the Vermont Agency of Natural Resources Department of Environmental Conservation (DEC), to account for the financial investments and progress being made towards meeting the State’s clean water goals. VAAFM has enhanced the tracking efforts of its cost-share program outcomes through internal process improvements and through the reporting framework to CWIP. Conservation practice implementation tracking provides the data required for modelling phosphorus reductions from VAAFM cost-share programs in the phosphorus impaired Lake Champlain and Lake Memphremagog watersheds. Modelled phosphorus reductions from production area compliance assessed through VAAFM’s regulatory program are also highlighted in the CWIP report. Figure 2 below shows the total phosphorus reduction (kg) by State cost-share program and by State FY for the Lake Champlain and Lake Memphremagog watersheds based on VAAFM water quality program data reported to DEC from FY 2016 to FY 2019. For a full report on investments and progress made towards State water quality goals in the Agricultural Sector, please read the [Vermont Clean Water Initiative 2019 Investment Report](#).

Figure 2. Total Phosphorus Reductions by State Cost-Share Program by FY



VAAFM programs have experienced recent expansion and increased participation resulting in substantial increases in phosphorus reductions since FY 2016. For example, total phosphorus reductions more than doubled from FY 2017-2018 and then doubled again from FY 2018-2019. Current trends indicate continued increase in phosphorus reductions as a result of VAAFM cost-share programs. Highlights from FY 2016 – 2019:

- **Production Area Compliance** accounts for significant reductions since reporting began in FY 2017.
- **FAP** accounts for the largest reductions among VAAFM programs and continues to grow with increased program expansion and participation by farmers.
- **CEAP** has the largest increase in reductions since program expansion in FY 2018.
- **CREP** accounts for consistent and long-term reductions with significant cumulative reductions.
- **CWF**, which includes GWFS and PSWF programs, are programs recently launched.

Production area compliance is assessed through VAAFM's inspection and enforcement program and phosphorus reductions are modelled for the whole production area rather than for individual BMPs within the production area. BMP practices 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.

The increase in program availability and participation by farmers is leading to increased implementation of conservation practices on the ground resulting in phosphorus reductions and improved water quality.

## Best Management Practices Program

The Best Management Practice (BMP) Program is a program to assist 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).

### BMP FY 2019

In the FY 2019, 43 BMP grants were awarded to Vermont farmers and 76 conservation practices were implemented that addressed water quality concerns. Figure 3 below summarizes State, federal United States Department of Agriculture (USDA), landowner and other funding spent on practice implementation. Funding contributed by the landowner or farmer represents at least 10% of total funds spent on the cost of construction implementation. Other funding spent represents private grant funding resources used to meet match requirements. Overall, through FY 2019, these conservation programs enabled \$2,238,469.51 in State expenditures to leverage \$2,575,503.88 in federal expenditures, as well as \$626,564.62 in cost-share contributions from Vermont farmers and agricultural landowners.

*Figure 3. Summary of FY 2019 BMP Project Funding*

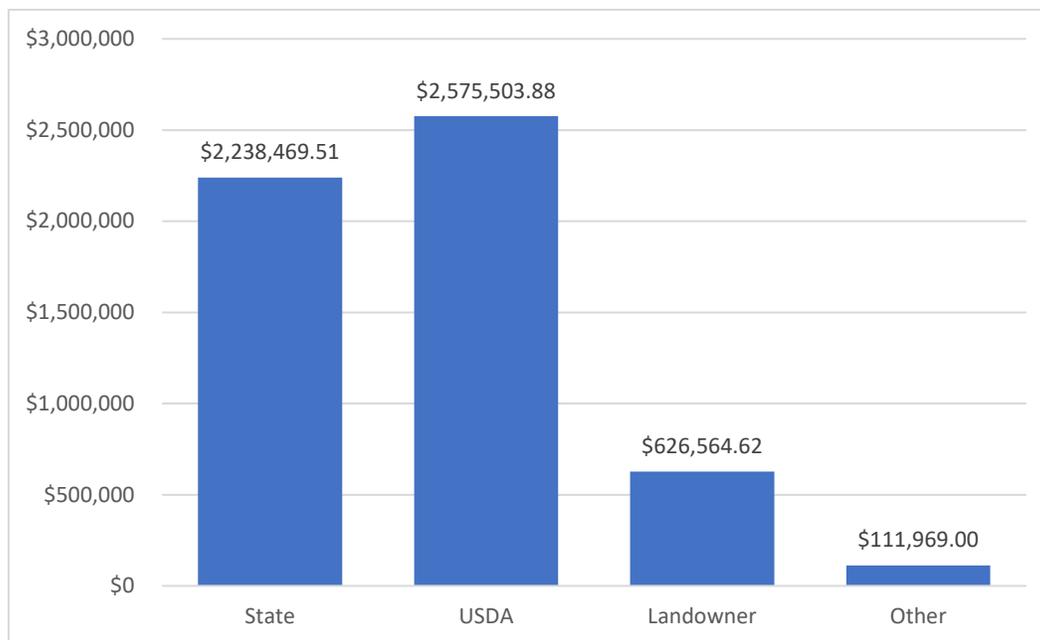


Figure 4 below summarizes State expenditure and the number of conservation practices implemented in each major watershed basin. Most practices were implemented in the Lake Champlain Basin accounting for 68% of practices implemented. Figure 5 below displays total funds spent per county; with most of the spending occurring in Orleans, Franklin, and Chittenden counties. In support of planning, development, and implementation of BMP projects in FY 2019, VAAFM staff made 397 site visits to farms.

Figure 4. FY 2019 State BMP Expenditure and Conservation Practice Implementation by Watershed

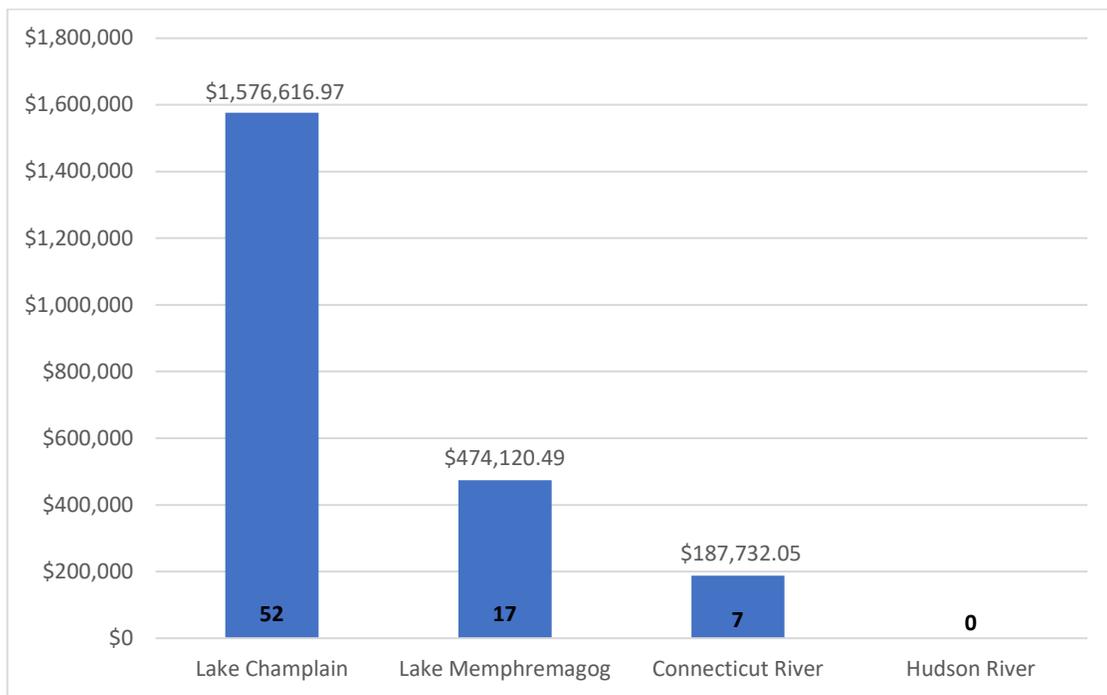


Figure 5. FY 2019 State BMP Expenditure by County

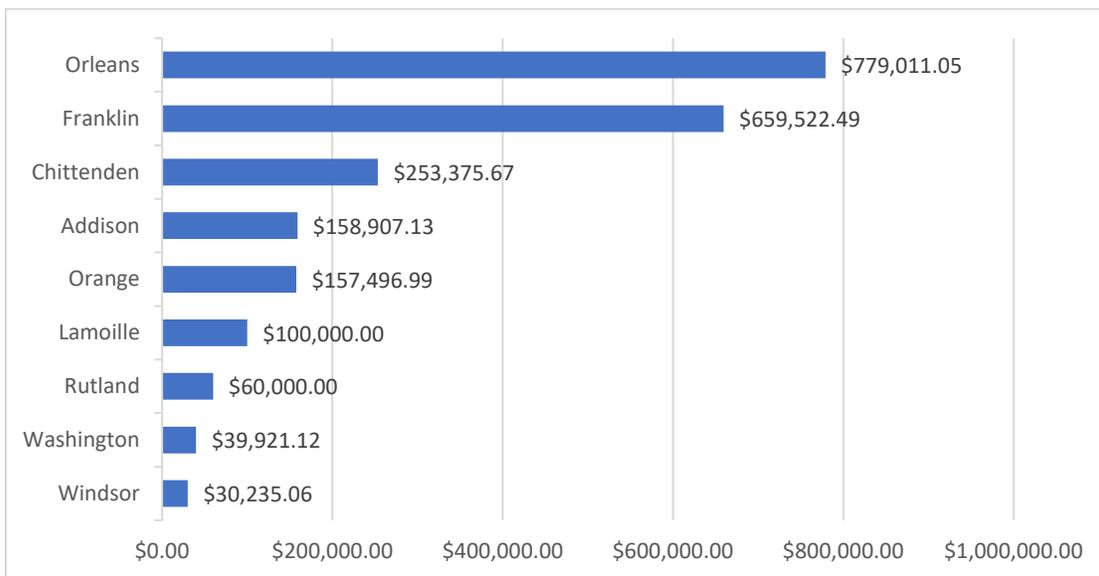
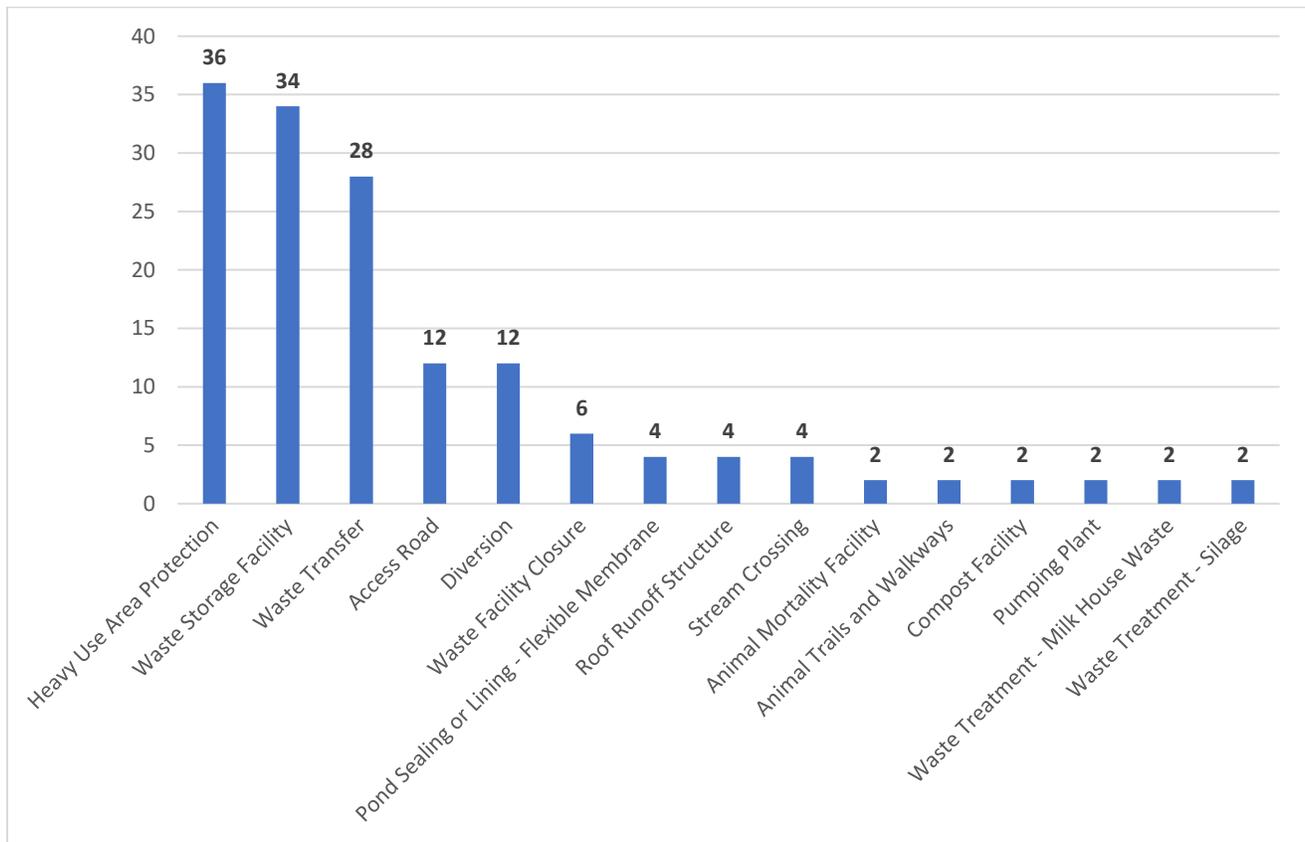


Figure 6 below illustrates each type of practice implemented in FY 2019 and the number implemented for each type of practice. Of the 76 practices implemented, the majority were Heavy Use Area Protection (47%), which includes barnyards and improved surfaces that are typically high traffic and are prone to erosion. The next most implemented practices under the BMP Program were Waste Storage Facility (45%), which includes manure pits, silage leachate management systems, solid manure stacking facilities, 'Slurrystores', and in-ground pits lined with clay, concrete, or geosynthetic liner, and Waste Transfer (37%) which includes waste holding tanks, pumps and plumbing installed to transfer waste from a collection point to a storage point. Descriptions of the conservation practices can be found on the Vermont NRCS website at this site address:

[https://efotg.sc.egov.usda.gov/references/public/VT/TABLE\\_OF\\_CONSERVATION\\_PRACTICES.pdf](https://efotg.sc.egov.usda.gov/references/public/VT/TABLE_OF_CONSERVATION_PRACTICES.pdf)

Figure 6. FY 2019 BMP Implementation by Conservation Practice Type



To augment VAAFM BMP engineering capacity, additional projects are contracted to external Architecture and Engineering (A&E) consultants. VAAFM engineers facilitate project management and assign projects requiring specific expertise to A&E consultants. During FY 2019, \$223,935.02 was spent on contracting A&E consultants to serve 20 farms. The consultants are hired to produce preliminary plans, final designs including construction documents and specifications, engineering cost estimates, construction oversight and project certification.

### BMP FY 2020

As of November 1<sup>st</sup>, the BMP Program has received 38 applications in FY 2020. These applications will be reviewed for funding by July of 2020 and prioritized for funding in FY 2021 unless otherwise determined to be an immediate priority for water quality. So far in FY 2020, 27 applicants from FY 2019 and FY 2020 have been awarded BMP grants and a total of \$326,998.58 has been spent on construction costs for practices associated with these and prior year grants.

In 2017 the BMP Program established a priority due date of April 1<sup>st</sup> of each year for application ranking. The 2019 ranking cycle was from April 1, 2018 to March 30, 2019. During the 2019 ranking cycle, the engineering section reviewed 100 applications.

In 2019, the BMP Program established three sub-programs within the BMP Program to more effectively meet the needs of the agricultural community. The three sub-programs are:

1. **EQIP-Assist:** Applications accepted on a rolling basis. Apply when your farm has ranked out for an EQIP contract to receive additional cost share on the practices installed as part of the EQIP contract.
2. **Technical Assistance:** Applications accepted on a rolling basis. Apply when a water quality concern is identified to receive engineering consultation and design services.
3. **Farmstead BMP:** Apply annually by April 1. Apply when preliminary design and cost estimates are completed to receive financial assistance.

See Attachment 1 for a list of BMP applicants from FY 2019 to November 1, 2019. Applications are prioritized utilizing the Prioritization Matrix, a tool that ranks projects on criteria that weights applications pursuant with 6 V.S.A. Chapter 215 shown in Attachment 2.

### BMP Program FY 2021 & Beyond

By looking at recent year metrics as shown in Table 3, Figure 7 and Figure 8 the BMP Program can project future spending by trends in the:

- Number of BMP applications received
- Number of grants awarded indicating the amount of funds obligated
- Amount of funds spent on construction indicating the expenditure of the funds previously obligated by grants
- Percent change in the milk price
- The BMP program staff capacity and cumulative years of staff experience

*Table 3. BMP Recent Year Metrics*

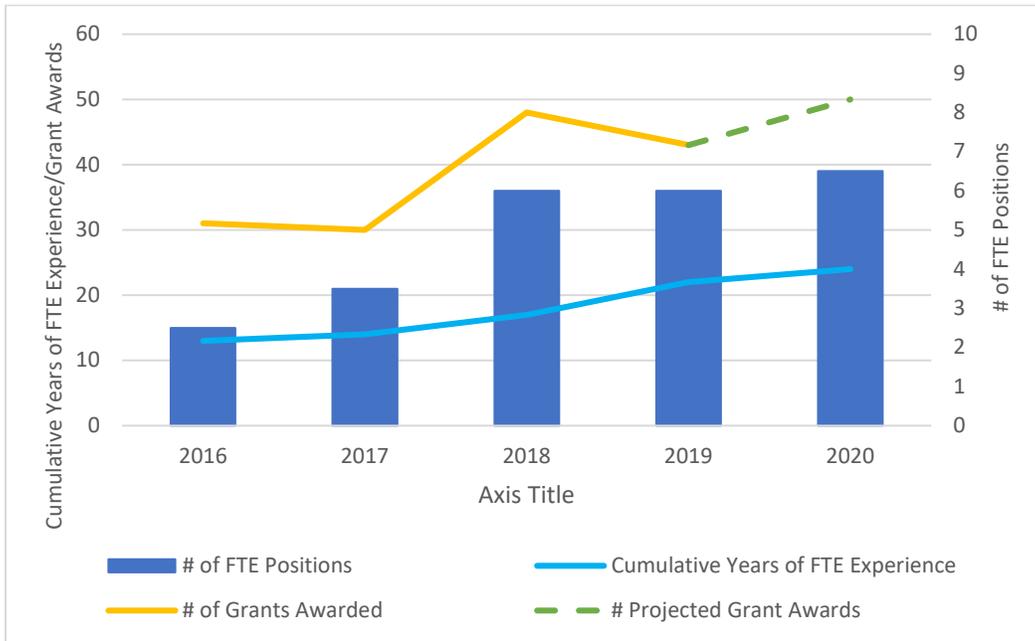
FY	# of Applications	# Grants Awarded (obligated funds)	State Funds Spent during FY on Project Construction (funds previously obligated)
2016	95	31	\$ 1,386,728.44
2017	124	37	\$ 1,131,778.21
2018	100	47	\$ 2,516,842.61
2019	89	43	\$ 2,238,469.51
2020*	38	27	\$326,998.58

*\*As of November 1, 2019.*

In FY 2019, a total of 89 BMP applications were received. In comparison 100 applications were submitted in FY 2018 and 124 applications were submitted in FY 2017. The increase in application submission in FY 2017 can be partly attributed to the 2016 revision of the Required Agricultural Practices (RAPs). The RAPs increased the number of farms scheduled for inspections through the Certified Small Farm Operation Program. When water quality issues are identified during the farm inspection process often the farmer elects to submit a BMP application. VAAFM believes a decrease in number of BMP applications in FY 2019 can be attributed to low market prices for agricultural commodities as well as program revisions resulting in fewer, but more developed, applications. BMP Engineers and partner organizations are dedicating more technical assistance for project prioritization and planning, often including processes such as financial analysis and business planning related to water quality improvements. The result is more intentional farmers with increased commitment to project implementation.

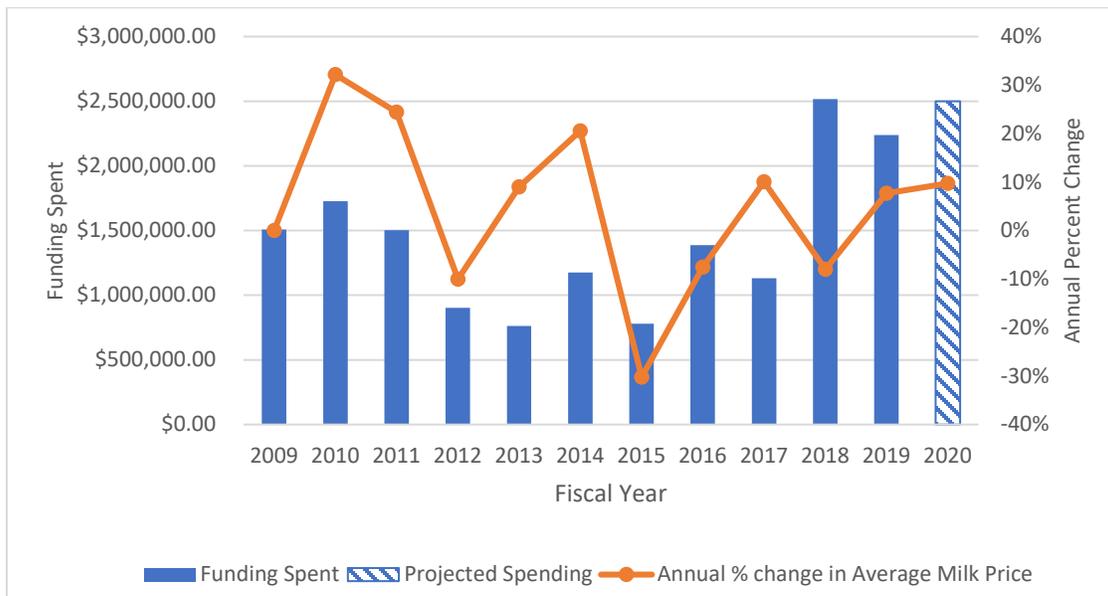
Figure 7 below shows BMP program staff capacity compared to grant awards. In the beginning of FY 2020, the BMP program experienced three position turnovers. All positions have been re-hired in FY 2020, and 0.5 FTE positions were added through an agreement with NRCS, totaling 6.5 FTE positions in the BMP program. Agricultural Engineers who can provide outreach, education, technical assistance, planning and design work, and project management are key to the adoption of conservation practices on farms.

Figure 7. Increased BMP Program Staff Capacity Compared to Grants Awarded 2016 - 2020



Historically, the most notable correlation between funding spent on the construction of BMP practices is the annual percent change in the milk price as reported by USDA and shown in Figure 8. When milk prices increase from the year prior farmers are more likely to invest in capital water quality improvements that often do not have a financial return on investment. With milk prices showing improvements between FY 2019 and FY 2020, the BMP program anticipates an increase in program demand. In addition to the funding sources discussed in this report, farmers have access to water quality grants through the Vermont Housing Conservation Board, an important funding source that helps farmers meet their cost share requirements and leverage all funds available on BMP projects. Based on program trends from FY16-20, the BMP program anticipates State expenditures between 2.5 and 3.5 million in FY 2020. This remains subject to volatile milk prices which often indicates a farmers’ ability to pay for the 10% minimum cost share requirement for the BMP program.

Figure 8. State BMP Expenditure Compared to Annual Percent Change in Average Milk Prices 2010-2020



## BMP Project Examples

### *MILKHOUSE WASHWATER AND MANURE COLLECTION PROJECT LEVERAGES NRCS EQIP*



*From left to right, before and after photos of waste storage facility installation to collect milkhouse wash water and manure*

An organic, pasture-based dairy farm in the Otter Creek watershed worked in collaboration with the State BMP program and NRCS EQIP to implement a waste storage facility to collect milkhouse wash water and manure. Prior to the implementation of the waste storage facility, the farm did not have collection of milkhouse or parlor wash water and manure. Waste was clearly visible overland downhill of the milkhouse and was several feet thick in places. From there, wastewater and runoff would flow overland downhill towards surface waters that eventually flow into the Dead Creek. The farm decided to implement a waste storage facility to better manage the waste stream in accordance with the RAPs, and to address the identified water quality concerns and risks of agricultural waste reaching surface waters. The BMP program supported the implementation of the waste storage facility and piping infrastructure to intercept, transfer, and store all the milkhouse and parlor wash water and manure.

### *HEAVY USE AREA AND WASTE STORAGE FACILITY*

During the Fall of 2019, a Certified Small Farm Operation that raises beef cattle in the town of Benson proactively undertook the construction of a new concrete barnyard Heavy Use Area and an earthen Waste Storage Facility (WSF). During previous winters, when cattle were not out on green summer pasture, the animals were kept in an open covered barn with access to an adjacent earthen feedlot near the main farmstead. Excessive erosion was allowing manure-laden runoff and sediment to reach a direct tributary of the nearby Hubbardton River, which is on Vermont's 303(d) List of Impaired Waters due to the presence of excessive nutrients. Additionally, the Hubbardton River is a major tributary to the Poultney River, which flows into the highly eutrophic Southern Segment of Lake Champlain.

Construction of the new concrete Heavy Use Area provides the farm with a dedicated outdoor area for the cattle during winter and the sensitive fall and spring months when the ground is wet and erosion potential is highest. In time, this will allow the surrounding feedlot to return to a vegetated state that limits nutrient transport into adjacent streams. The new barnyard was constructed above the WSF, so that all manure runoff and other farm wastes are contained until the farm can field apply at healthy agronomic rates according to a Nutrient Management Plan.



*From top to bottom, implemented Waste Storage Facility and Heavy Use Area on a CSFO in Benson*

## WASTE STORAGE FACILITY

VAAFM BMP Program engineers worked with a Medium Farm Operation (MFO) in the Barton River watershed to improve the farm's waste management system. The farm takes pride in their commitment to water quality improvements and when they recently decided to diversify the farm's operations to include cheese making, saw an opportunity to reconfigure their waste management systems for increased efficiency and to address issues noted on the farms most recent water quality inspection. The farm formerly manually cleaned and scraped manure from their heifer barn across the production area, pushing it into their main pit, potentially creating a risk of manure entering a nearby ditch. As part of their larger reconfiguration the farm relocated their heifer barn and a new Waste Storage Facility (WSF) was installed through the BMP program. This WSF creates additional storage capacity in combination with the main pit, eliminates the need to manually transfer manure across the production area, gives the farm the ability to relocate calves from an aging satellite facility, and store waste from the cheesemaking facility. In addition, the new WSF gives the farm additional

capacity to capture leachate runoff from new feed bunks. All waste entering the main pit now does so through a silage leachate collection system or in-barn manure hopper. A complete WSF system built only using BMP funding is a rarity and was made possible due to the farm contributing greater than the 10% cost share generally required in these projects.



*Runoff from the east end of the heifer barn (photo left) before the installation of the new WSF (photo right) on the northeast end of the heifer barn.*

## 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 a program administered via a partnership between the State of Vermont and the United States Department of Agriculture (USDA) Farm Service Agency (FSA). 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 contract period. Federal cost-share has provided 90% of the 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 US Fish and Wildlife Service Partners for Fish and Wildlife (PFW).



*Photo courtesy of Katherine Kain, US Fish and Wildlife Service, Image shows a 50-foot wide CREP riparian buffer planting at Chapman Family Farms with students from nearby Farm-to-School Programs in Tunbridge, VT along the first branch of the White River.*

### CREP FY 2019

In the State FY 2019, no new conservation contracts or acres were enrolled in the CREP program as a result of a 2015 change to the Code of Federal Regulations (CFR) for the CRP program that was codified in the CRP manual in January of

2018. This change revised characteristics for ineligible lands, and the Vermont Farm Service Agency (FSA) has been directed that this change makes any agricultural lands affected by the RAP's 25 foot vegetated buffer requirement ineligible for enrollment in CRP/CREP.

Along with Vermont, many other states with CRP/CREP have similar baseline, water quality requirements for farms and VAAFM believes producers should be able to utilize CRP/CREP to keep producers competitive across the country. Only about half the states have non-point source requirements and farmers working to comply with those requirements should not be considered ineligible from programs where neighboring farms in other states would be eligible.

In December 2018, the United State Congress passed a Farm Bill which included language that required a change to the Code of Federal Regulations that should allow land subject to "local laws, ordinances, or other regulations requiring any resource conserving or environmental protection measures or practices" to be eligible for CREP. Senator Leahy was the author of that amendment and intended landowners to be eligible for the full rental rate. However, the updated CFR requires a 25% reduction on the annual rental payment for land that's subject to the RAP's. VAAFM staff will continue to work with the Senator's staff to address this unfair rental reduction. As VAAFM waited on the release of the new program regulations and corresponding manual, program staff have continued to do project scoping, education, and outreach to Vermont landowners on CREP and other programs, completing approximately 70 site visits in State FY 2019. Further information regarding this program can be found in the Annual Performance Report to the FSA for CREP FY 2019.

### **CREP FY 2020**

Despite program challenges in FY 2019, VAAFM and NRCS developed an agreement to hire an additional full-time position to work on the CREP program. With a backlog of interested landowners due to program challenges in FY 2019, and the increasing number of farms interested in participating in CREP, the additional staff is necessary to aid farmers as they work towards addressing on-farm resource concerns. The position was filled in August 2019 and will provide additional program outreach, project planning, implementation, and contract follow up. Because many of the older CREP projects are coming to the end of their first contract period and most are eligible for re-enrollment, there's now an additional assessment and re-contracting workload to manage, as well.

With the impending release of new program regulations and the corresponding manual for the 2018 Farm Bill, several dozen projects encompassing 300 acres of riparian forest buffers are currently in draft stage. Depending on the date of the manual release, many of these projects will be implemented in FY 2020 and FY 2021. In addition to recent cuts in the Federal annual rental rates there may be changes to the program that will significantly reduce the amount of cost share that FSA has provided in the past. If this were to occur, VAAFM staff are gravely concerned about the impact on program participation.

### **CREP Program FY 2021 & Beyond**

VAAFM anticipates the continuation of this Program for FY 2021 and into the future. The current goal for the CREP program in Vermont is to enroll 200 acres annually into the program. Although this goal has not been met in recent years, it is anticipated that this goal can be attained in future years with the sizeable backlog and renewed focus on the program, if VAAFM is able to surmount the challenges of further-reduced rental rates, and potentially, reduced federal cost share for buffer, fence, stream crossings and alternative water systems. A second goal in Vermont for the past few years has been to enroll more annual crop land into the program. Annual cropland is the largest contributor of phosphorus to Vermont's portion of Lake Champlain. Unfortunately, in FY 2018, only 22.14 Cropland-rate acres were enrolled, and 0 acres were enrolled in FY 2019. This level of cropland enrollment speaks to the value of cropland in Vermont and the strong reluctance to taking land out of production. Another factor in the reduction of cropland acres enrolled is the continued reductions to cropland soil rental rates established by the FSA. Since 2010 the average cropland soil rental rate has been reduced by 44% while land values have increased by 25%. This contradiction needs to be rectified if water quality and program enrollment goals are to be met.

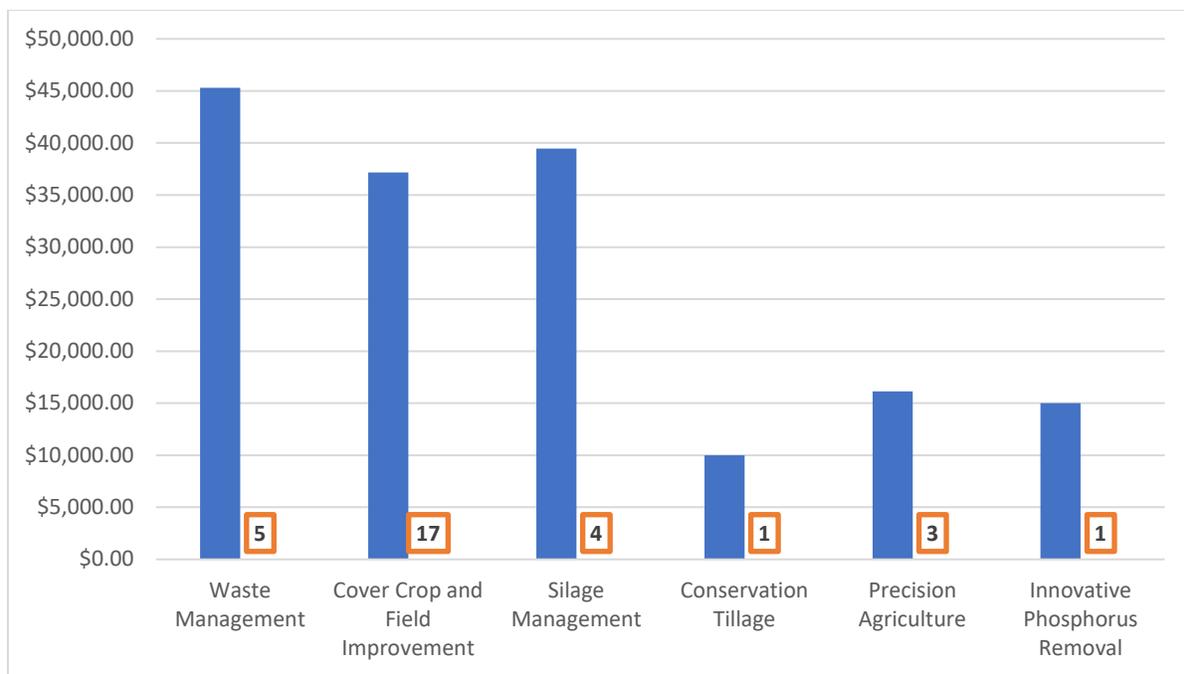
## Capital Equipment Assistance Program

The Capital Equipment Assistance Program (CEAP) is a program which 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.

### CEAP FY 2019

In FY 2019, there were 34 pieces of equipment or technology acquired through CEAP grants, providing a total of \$1,187,417.05 in State expenditures. Landowner contributions towards these State expenditures amounted to roughly \$318,374.00. Figure 9 below provides a summary of the different types of equipment awarded in the FY 2019 funding round, as well the average award amount for each type of equipment.

Figure 9. FY 2019 CEAP Total Number of Awards and Average Award Amount for Each Equipment Type



While there are many different types of field and farm equipment that can improve water quality on an agricultural operation, those that provide a more direct and higher reduction in surface runoff are prioritized for funding. See Table 4 below for a complete list of eligible equipment types, relative funding rates, and descriptions for the different equipment uses.

In addition to the equipment mentioned below, CEAP funds are also available for physical or chemical methods of phosphorus removal. In the spring of 2019, a funding round was made available for Innovative Phosphorus Removal Equipment or Technologies and two companies were awarded grants. One company was awarded funds to purchase a Dissolved Air Flotation (DAF) System and associated equipment as part of a larger nutrient-recovery and renewable energy project. The DAF System and associated equipment will be used to recover phosphorus from digested material, before the final nutrient liquid fertilizer is stored and later land-applied to corn and hay crops. The other company was awarded funds to purchase a pyrolysis unit that will process separated solids from manure into biochar. The pyrolysis unit will utilize a pre-existing screw press separator to separate a portion of solid fibers from, on average, 3,000 gallons of raw dairy manure per day. The pyrolysis unit will process these solids into biochar which will retain phosphorus. The biochar is lower in weight and mass than the original solids allowing for more cost-effective transport.

**CEAP FY 2020**

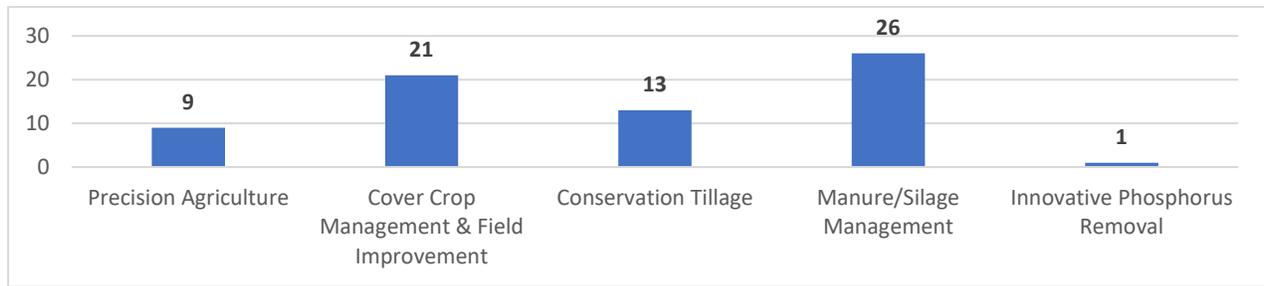
In October of 2019, a CEAP funding opportunity was made available to Vermont farmers, custom operators and organizations. This funding round included a variety of eligible equipment categories with specific funding maximums based on each category correlated to water quality impact as well as relative cost of equipment, all with no more than a 90% cost-share opportunity. Table 2 below provides details on the funding caps and equipment categories for the FY 2020 CEAP Program.

*Table 4. Funding Caps, Examples, and Descriptions for Each Equipment Category for FY 2020 CEAP Program*

<b>Equipment Type:</b>	<b>Examples</b>	<b>Description</b>	<b>Funding Rates:</b>
<b>Precision Agricultural Equipment</b>	-GPS/Flow Meter -Hydraulic Downforce -Autosteer	Precision technology is used for accurate and precise nutrient application, to reduce overlap, as well as maintain accurate and precise records.	90% cost-share up to \$25,000 per applicant
<b>Conservation Tillage Equipment</b>	-No-Till Corn Planter -Ridge-Till	Conservation tillage minimizes the frequency or intensity of tillage operations reducing soil erosion and runoff.	90% cost-share up to \$10,000 per applicant, OR (90% cost-share up to \$20,000 only if applying for equipment AND precision agriculture component to be used in conjunction with equipment system)
<b>Cover Crop and Field Improvement Equipment</b>	-No-Till Grain Drill -Roller Crimper	Cover cropping establishes a seasonal cover on annual cropland for soil erosion reduction and conservation purposes while improving overall soil health.	90% cost-share up to \$40,000 per applicant, OR (90% cost-share up to \$50,000 only if applying for equipment AND precision agriculture component to be used in conjunction with equipment system)
<b>Manure Management Equipment</b>	-Injectors -Irrigation -Dragline system	Manure Injection implements separate manure into multiple streams for placement at or below the soil surface, providing a method of manure incorporation with minimal soil disturbance.	90% cost-share up to \$50,000 per applicant, OR (90% cost-share up to \$60,000 only if applying for equipment AND precision agriculture component to be used in conjunction with equipment system)
<b>Silage Management Equipment</b>	-Silage Balers/Wrappers	Silage management equipment can mitigate potential risk of silage leachate from entering surface water when located in close proximity to bunk silo. This equipment can be used to manage feed and silage in place of the existing silage bunk. In most cases, as a result of grant awards, certain silage bunks are retired, or will no longer be used to store or house any loose feed.	90% cost-share up to \$50,000 per applicant, OR (90% cost-share up to \$60,000 only if applying for equipment AND precision agriculture component to be used in conjunction with equipment system)
<b>Phosphorus Extraction, Separation, Treatment Technology</b>	-Dissolved Air Flotation Units	Physical or chemical methods of phosphorus removal, treatment, or separation for improved nutrient management and utilization across the landscape.	90% cost-share up to \$300,000 per applicant

The CEAP program continues to be highly competitive with 70 applications received for 87 pieces of equipment or technology from the October FY 2020 funding round. The total request for funding, which considers relative program caps, was about \$2.6 million. Of the applications submitted, most (37%) were for Manure/Silage Management Equipment. In comparing the types of applicants applying to the program, there was a rough split across all farm sizes, ranging from small to large. Overall, 87% of applicants were farms and 13% were other applicant types including custom applicators, businesses, and organizations. Preliminary grant awards will be offered in January of 2020 for at least \$1 Million in State funding to be allocated for innovative equipment acquisition and conservation practice implementation on Vermont Farms. Figure 10 below shows the type and number of equipment requested.

*Figure 10. Types of Equipment Requested in the CEAP 2020 Funding Round.*



### **CEAP FY 2021 & Beyond**

VAAFM anticipates the continuation of this program at or above its current capacity into the FY 2021. The substantial response VAAFM received through the most recent rounds of CEAP prescribe the demand for this program. Specifically, farmers are looking for financial assistance to aid in capital equipment acquisition that will help them foster enhanced conservation practice and nutrient management plan implementation. With low market prices for milk and extremely tight profit margins in the Vermont dairy industry, many other operational costs 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 program anticipates seeing increased requests for funding innovative manure management and application equipment. The past year has been a historic and unrelenting weather crisis for Vermont farmers, with almost an additional 10 inches of precipitation in the past year (a 28% increase over the past 365-day historic average). Over the past year, farmers had snow covered ground which did not thaw from November of 2018 through late May 2019 when they were then hit with a spring that never quite dried out. Crops were planted late this spring and recent rainfall has resulted in record flooding this fall as soon as the corn came off the ground. Yet again, in a second unprecedented year in a row, very early season and persistent snows are again covering fields and creating a weather crisis for farming in Vermont. As our climate continues to change, adoption of innovative equipment and management systems is critical for environmental viability on Vermont Farms. Specific equipment VAAFM anticipates increasing grant awards for are innovative manure management equipment. For example, manure injection places manure a few inches below the soil surface to ensure optimum crop uptake of the nutrients available while reducing the risk of runoff and volatilization, and dragline systems that pump manure directly from a waste storage facility through pipelines to the manure spreader or injector as the farmer drives through a crop field. The dragline system reduces the truck traffic on the road when manure can be spread right from a manure storage and reduces field compaction.

The CEAP program incentivizes Vermont farmers to invest in innovative equipment and technology upgrades that are beneficial for water quality, furthering the reduction of non-point source agricultural pollution.

## Farm Agronomic Practice Program

The Farm Agronomic Practices (FAP) Program is a program which offers financial assistance to farms, nonprofit organizations, and custom operators in Vermont. The FAP Program incentivizes agronomic practices, improving soil quality, reducing erosion, and improving 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.



*The photo on the left shows established cover crop through broadcast helicopter seeding in the Missisquoi watershed and the photo on the right shows no-till hay land renovation in the North Lake Champlain watershed.*

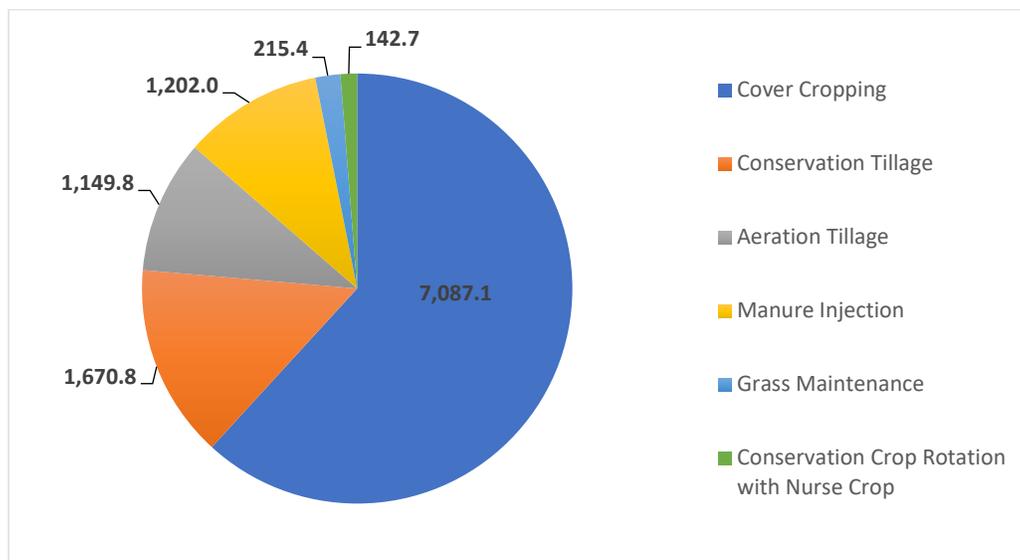
Grant funding through the FAP program is provided on a per acre payment rate (see Table 5 below), based on relevant cost of implementation. VAAFM references USDA NRCS payment rates which are developed based on regional cost and develops FAP rates in a way to promote and leverage federal funding to improve water quality in Vermont.

### FAP FY 2019

In FY 2019, a total of \$326,433.06 of State funding was awarded and \$265,076.76 was expended. Awards supported 81 farms to implement agronomic practices and three organizations to provide and/or attend 10 educational and instructional opportunities.

Figure 11 below summarizes the percentage of total acreage of agronomic practices implemented in the FAP Program per practice type in FY 2019. The majority of agronomic conservation practice implementation that occurred with financial assistance from this program was Cover Crops (62%), followed by Conservation Tillage (15%), Aeration Tillage (10%) and Manure Injection (10%).

*Figure 11. Summary of FY 2019 Agronomic Practice Implementation (Acres)*



In FY 2019, VAAFAM started using geospatial informational system (GIS) verification of all acreage claimed under this program in addition to existing field check verification of practice implementation. This ensures more accurate data on the acreage reported for statewide phosphorus reductions, as well as provide an additional guarantee for payments under this program. Accurate GIS data of all practice implementation increases the opportunity to target regions of the State for improved technical assistance to transition farm management to agronomic best practices, as well as education and outreach about the benefits and financial assistance opportunities available to farms for implementation of agronomic practices.

### FAP FY 2020

Total State expenditure for the FAP program in FY 2020 is \$98,038 as of November 7, 2019, and it is anticipated total expenditures for FY 2020 will be between \$500,000 and \$730,000 for this Program. So far in FY 2020, 150 grants have been awarded under this program for fall and spring agronomic practices, including four grants awarded for educational and instructional activities under this program. This equates to a 78% increase in the number of awards under this program from FY 2019 to FY 2020 so far.

Changes to the FY 2020 FAP program included increased grant maximum award, increased cover crop payment rates for drilled or otherwise incorporated cover crops and the addition of a rotational grazing practice. A number of practices that have seen little to no implementation in the previous years were removed as eligible practices under this program. These include cross slope tillage and strip cropping. Additional funding for financial assistance under this program has been secured through an agreement with Vermont Agency of Natural Resources Department of Environmental Conservation with funding through the Lake Champlain Basin Program. This additional funding has augmented the program's existing funding and enabled an increase in agronomic practice implementation across Vermont.

*Table 5. Current Payment Rates FY 2020 FAP Program*

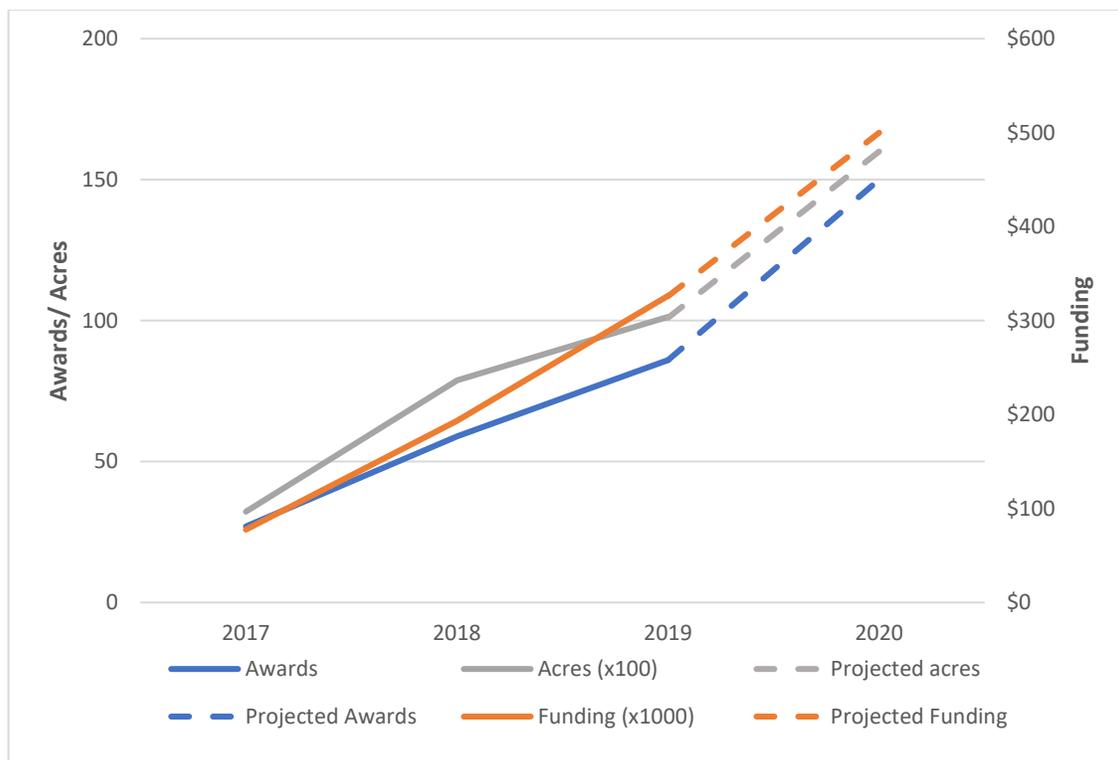
<b>Agronomic Practice</b>	<b>Payment Rate</b>	<b>Program Requirements</b>
<b>Cover Cropping - Broadcast</b>	\$30 per acre	Broadcast cover crops must be seeded at highest recommended rate to provide effective soil coverage. Seeding is expected to be completed by October 1 <sup>st</sup> to be eligible.
<b>Cover Cropping - Drill</b>	\$40 per acre	Drilled or otherwise incorporated cover crops must be seeded at highest recommended rate to provide effective soil coverage. Seeding is expected to be completed by October 15 <sup>th</sup> to be eligible.
<b>Conservation Crop Rotation</b>	\$35 per acre	Program participants are eligible for a one-time payment only at the period of the rotation where annual crop land is seeded down into perennial forages
<b>Conservation Crop Rotation with Nurse Crop</b>	\$45 per acre	Program participants are eligible for a one-time payment only at the period of the rotation where annual crop land is seeded down into perennial forages. Nurse crop cover crops must be seeded at the maximum recommended rate for the variety and seed blend used.
<b>Rotational Grazing</b>	\$25 per acre	Pastures are eligible for payments on an annual basis if livestock are excluded from surface water and adequate perennial vegetation, at least three inches residual vegetation, is maintained on pastures.
<b>Conservation Tillage (Zone Till, No Till &amp; Mulch Till)</b>	\$12 per acre	No full width tillage shall be performed regardless of tillage depth (except for mulch till as needed to properly implement the practice), previous crop residues cannot be burned, and residues must be uniformly distributed over the entire soil surface where the practice is to be implemented. Manure injection is allowable under this practice.
<b>No-Till Pasture and Hay Land Renovation</b>	\$12 per acre	This program is limited to use of no-till drill equipment to improve pastures and/or hay.

<b>Aeration Tillage</b>	\$12 per acre	Soil aeration is only applicable to perennial forage crops and does not include chisel, moldboard, disk, subsoil or other forms of conventional tillage.
<b>Manure Injection</b>	\$25 per acre	This program is limited to subsurface injection including disk, shank, and grassland manure injection

### FAP FY 2021 & Beyond

VAAFM anticipates the continuation of this program far above its current capacity into FY 2021. VAAFM and its partners have secured additional funding for the FAP program for FY 2021 and FY 2022 through an agreement with ANR Department of Environmental Conservation with funding through the Lake Champlain Basin Program. This will continue to augment the program’s existing budget and enable an increase in implementation of agronomic practices across Vermont. This program provides an incentive for significantly effective agronomic practices that reduce surface runoff from agricultural fields, improving water quality statewide. Figure 12 below shows the increased demand for agronomic assistance through the State’s FAP program. This increase may be attributed to a higher rate of agronomic practice adoption by farmers and expiring NRCS EQIP contracts that fund these practices at a higher rate, but only for three years.

Figure 12. FAP Program Trends from FY 2017 - FY 2020



### Grassed Waterway and Filter Strip Program

The Grassed Waterway and Filter Strip (GWFS) Program can provide 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. § 4900). Contrary to similar existing financial assistance programs, the benefit of this program is that all the practices implemented under GWFS can be harvested.

### **GWFS FY 2019**

In FY 2019, a total of \$21,950.00 of State funding was awarded to two farmers in the Black River and Pike River watersheds. A total of \$17,850.00 was expended to leverage \$1,786.80 in cost-share contributions from agricultural landowners enabling conversion of 21.83 acres of critical source land to be seeded and converted from annual crop land to harvestable perennial grassland with limited manure application for a ten-year practice lifespan. This acreage included five practices total; three filter strips directly adjacent to surface water and two forage and biomass plantings.

### **GWFS FY 2020**

In FY 2020, as of November 1<sup>st</sup>, a total of \$25,865.00 of State funding has been awarded to two farmers in the Dead Creek and Goodsell Brook-Missisquoi River watersheds. As of November 1<sup>st</sup>, four grassed waterways have been installed to stabilize gully erosion in fields, and one forage and biomass planting completed, with another forage and biomass seeding prepared for a spring planting totaling 13.43 acres of projects in process from these and prior year grants.

There are a number of projects on two different sites, one in Black River, and another in the Headwaters of the Black Creek in the planning stage, that will move to granting with landowner commitment and final conservation plans in FY 2020.

### **GWFS FY 2021 & Beyond**

VAAFM anticipates this new program will be expanded through the current FY. While it is difficult to estimate landowner interest within the first two years of the program, VAAFM anticipates the program to evolve in its first few years of development as contractors and partners statewide provide outreach to the agricultural community about this new program opportunity. Grassed Waterways are often a difficult conservation practice to manage for operations that rotate their fields through corn and hay, and 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 soil, sediment or pollution to nearby waterways. More success has been observed with seeding critical source areas as forage and biomass plantings as well as filter strips under this program.



*Before (left) and after (right) installation of a perennially vegetated filter strip in the Lake Memphremagog watershed to filter field runoff from the adjacent field and reduce sediment and nutrient runoff from making its way to nearby surface waters.*

---

## **Pasture and Surface Water Fencing Program**

---

The Pasture and Surface Water Fencing (PSWF) Program (the 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 to farmers under this Program addresses and mitigate water quality concerns on their farms. The goal of this Program is increase participant understanding of best pasture practices for water quality, 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 the Conservation Reserve Enhancement Program (CREP) and the Environmental Quality Incentives Program (EQIP). Providing pasture management assistance and grazing assistance where water quality benefits can be realized from improved management is also a large component of this Program.

## **PSWF FY 2019**

The PSWF program was developed and launched in FY 2018. Administration of the Program has been contracted to University of Vermont (UVM) Extension's Center for Sustainable Agriculture Pasture Program, while VAAFM manages practice implementation funds.

In FY 2019, a total of \$50,922.73 of State funding was awarded and \$24,533.33 was expended to leverage \$9,905.21 in federal expenditures, as well as \$3,826.51 in cost-share contributions from agricultural landowners. Four grants were awarded to farmers in the Southern Lake Champlain, Missisquoi Bay, Passumpsic, and Otter Creek watersheds. Practices implemented in FY 2019 included exclusion fencing and pipeline, two watering facilities, one spring development, and one pumping plant to improve permanent watering areas and water transport.

## **PSWF FY 2020**

As of November 1<sup>st</sup>, in FY 2020, a total of \$106,500.00 of State funding has been awarded through five grants to farmers in the Otter Creek, Lamphcan Brook-Black River, White River, Lake Champlain, and Southern Lake Champlain watersheds. As of November 1<sup>st</sup>, in FY 2020, \$23,884.20 total State funds have been expended on completed practices from these and prior year grants. Completed practices include animal trails and walkways, watering facilities, watering pipelines, and fencing.

## **PSWF FY 2021 & Beyond**

With many projects in the planning phase of this Program, VAAFM and the UVM Center for Sustainable Agriculture's Pasture Program predict that the rate of implemented projects and grant agreements will increase in the third year of this Program. VAAFM is extending this contract for an additional year to provide assistance for the predicted increase in projects and grant agreements generated through the ongoing and extensive outreach and technical assistance provided by the Contractors. Contracted staff from the UVM Center for Sustainable Agriculture's Pasture Program have engaged in over 55 technical assistance visits statewide. Over 30 projects are in the planning phase at this point, and outreach for this Program is scheduled to be increased to reach a wider audience that will hopefully bring additional producers into the Program.

## **Looking Ahead**

---

Moving forward, and looking ahead to FY 2020, VAAFM anticipates an increase in program demand with improving milk prices and will need to increase capacity to serve customer needs as well as improve process and efficiency as increased funding is awarded. Major improvements have been made in our program processes and systems for grant implementation tracking with the launch of the Multi-Partner Agricultural Conservation Practice Tracking and Planning Geospatial Database (Partner Database) and the related Quality Assurance Project Plan. State and conservation partners providing agricultural services track State and farmer funded conservation practice planning and implementation in the Partner Database. This database also provides a mechanism for improved coordination between conservation partners working with farms, as well as a mechanism to track assistance over time. Moving forward with the launch of the Partner Database in FY 2019, conservation practice data exports from the Partner Database will be entered into the VT DEC's Clean Water Reporting Framework and nutrient pollution reductions will be estimated using the BMP Accounting and Tracking Tool (BATT) each FY. Estimated nutrient pollution reductions will be used to track and report on progress in meeting the State's water quality standards, including the Total Maximum Daily Load (TMDL) for Lake Champlain and Lake Memphremagog.

As implementation of the revised RAPs occurs across Vermont, farms previously not required to have scheduled farm water quality inspections are actively working toward RAP compliance. In many instances this requires conservation practice implementation and/or major management changes for the farm operation. In the current climate of low milk prices and threatened livelihoods for Vermont dairy farmers, funding for education, outreach, technical assistance, and practice implementation is essential to support conservation on private agricultural land.

Currently, VAAFM supports financial and technical assistance to farmers for implementation of conservation practices through the programs described in this report: BMP Program, CREP, CEAP, FAP, GWFS Program, and PSWF Program. These programs provide opportunities to significantly offset costs for Vermont farmers and agricultural landowners to implement conservation practices and best management practices that improve water quality on farms in the State of Vermont.

**For more information on the Agency of Agriculture, Food & Markets Water Quality Division grant opportunities, regulations, or educational opportunities visit**

**[Agriculture.Vermont.gov/water-quality](http://Agriculture.Vermont.gov/water-quality),**

**or call 802-828-2431.**

*Subscribe to Agriview in print or online to stay up to date on agricultural news and events by visiting [agriculture.vermont.gov/news\\_media/agriview](http://agriculture.vermont.gov/news_media/agriview)*

*Attachment 1. List of All BMP Applicants from FY 2019 to November 1, 2019*

County	Size	Practice/Application Type	Date App'l Received
Caledonia	CSFO	Silage or feed leachate treatment Barnyard or heavy use Clean water diversion Exclusion	7/9/2018
Orleans	CSFO	Manure/waste storage Waste transfer system Access road Clean water diversion Laneway development Exclusion	7/9/2018
Orleans	CSFO	Manure/waste storage Waste transfer Waste/wash water storage Access road Barnyard or heavy use Clean water diversion	7/9/2018
Franklin	CSFO	Unspecified	7/12/2018
Franklin	MFO	Waste/wash water treatment Barnyard or heavy use Laneway	7/16/2018
Orleans	CSFO	Waste transfer system Exclusion	7/16/2018
Orange	CSFO	Manure/waste storage Silage or feed leachate Access road Barnyard or heavy use	7/19/2018
Caledonia	CSFO	Waste transfer system Waste/wash water storage	8/6/2018
Windsor	SFO	Manure/waste storage Access rd	8/9/2018
Caledonia	CSFO	Waste/wash water storage Waste/wash water treatment Laneway development Mortality/compost improvement	8/22/2018
Rutland	CSFO	Exclusion fencing	8/29/2018
Orleans	LFO	Manure/waste storage Silage or feed leachate treatment	8/31/2018
Chittenden	SFO	Manure/waste storage Access road	9/7/2018
Chittenden	SFO	Laneway development	9/7/2018
Addison	Non-RAP	Woodchip pad	9/18/2018
Washington	SFO	Manure/waste storage Waste/wash water storage Waste/wash water treatment	10/1/2018
Rutland	CSFO	Waste transfer system Silage or feed leachate treatment	10/11/2018
Orleans	CSFO	Manure/waste storage Waste transfer system Access road Barnyard or heavy use	10/18/2018
Addison	CSFO	Manure/waste storage Waste transfer system Waste/wash water storage	10/24/2018
Orleans	CSFO	Manure/waste storage Waste transfer system Barnyard or heavy use Clean water diversion Exclusion fencing	10/29/2018
Rutland	CSFO	Manure/waste storage	10/30/2018
Franklin	CSFO	Barnyard or heavy use area Clean water diversion	11/1/2018
Addison	LFO	Manure/waste storage Silage or feed leachate treatment Barnyard or heavy use	11/2/2018
Orange	MFO	Manure/waste storage Silage or feed leachate treatment	11/5/2018
Orleans	CSFO	Manure/waste storage Silage or feed leachate treatment Access road	11/6/2018
Addison	SFO	Manure/waste storage Barnyard or heavy use Clean water diversion Laneway development Exclusion Unsure	11/7/2018
Addison	LFO	Silage or feed leachate EQIP assist	11/7/2018
Addison	MFO	Manure/waste storage Barnyard or heavy use	11/7/2018
Windham	LFO	Waste transfer Silage or feed leachate Access road Barnyard or heavy use area Clean water diversion	11/12/2018
Franklin	CSFO	Silage or feed leachate Barnyard or heavy use area Clean water diversion	11/15/2018
Grand Isle	SFO	Manure/waste storage Waste/wash water storage Access road Barnyard or heavy use area	11/19/2018
Orange	CSFO	Manure/waste storage Barnyard or heavy use	11/21/2018
Addison	Non-RAP	Woodchip heavy use area Barnyard or heavy use	11/29/2018
Caledonia	CSFO	Barnyard or heavy use	11/29/2018
Bennington	CSFO	Waste transfer system Waste/wash water storage Barnyard or heavy use area	12/10/2018
Orleans	CSFO		12/18/2018
Orleans	CSFO	Manure/waste storage Waste transfer Waste/wash water storage Barnyard or heavy use Clean water diversion	12/18/2018
Orange	CSFO	Waste/wash water storage/treatment	12/18/2018

VAAFM Annual Report on Financial and Technical Assistance for Agricultural Water Quality

Orange	CSFO	Manure/waste storage Waste/wash water storage	1/2/2019
Addison	LFO	Unsure	1/3/2019
Franklin	MFO	Manure/waste storage	1/15/2019
Windham	Non-RAP	Manure/waste storage Waste/wash water storage Access road Barnyard or heavy use	1/15/2019
Orange	MFO	Manure/waste storage	1/18/2019
Grand Isle	CSFO		1/23/2019
Franklin		Waste/wash water storage & treatment	1/31/2019
Orleans	CSFO	Manure/waste storage Waste/wash water treatment Barnyard or heavy use Clean water diversion Laneway development/stream crossing	2/4/2019
Orange	SFO	Exclusion fencing Unsure	2/7/2019
Orleans	LFO	Manure/waste storage Waste transfer system Access road Barnyard or heavy use area Clean water diversion	2/8/2019
Grand Isle	MFO	Silage leachate	2/12/2019
Orleans	LFO	Access rd Barnyard or heavy use Cleaner water diversion	2/18/2019
Washington	LFO	Manure/waste storage Waste transfer system Silage or feed leachate treatment Mortality compost site Access road	2/20/2019
Grand Isle	CSFO	Manure/Waste Storage	3/4/2019
Rutland	CSFO	Barnyard or heavy use	3/6/2019
Addison	CSFO	Manure/waste storage Access road	3/6/2019
Caledonia	SFO	Barnyard or heavy use	3/6/2019
Addison	MFO	Manure/waste storage	3/11/2019
Orleans	MFO	Manure/waste storage	3/12/2019
Orleans	CSFO	Barnyard or heavy use	3/12/2019
Franklin	CSFO	Manure/waste storage Access road Barnyard or heavy use area Clean water diversion Exclusion	3/14/2019
Grand Isle	CSFO	Waste/wash water storage Clean water diversion	3/18/2019
Franklin	CSFO	Manure/waste storage Access road Barnyard or heavy use area	3/20/2019
Addison	MFO	Manure/waste storage	3/21/2019
Franklin	MFO	Manure/waste storage Waste transfer system Silage or feed leachate treatment Clean water diversion	3/22/2019
Rutland	SFO	Waste/wash water storage & treatment	3/22/2019
Franklin	CSFO	Revision compost pad Unsure	3/25/2019
Windham	CSFO	Barnyard or heavy use Exclusion fending	3/25/2019
Franklin	MFO	Silage or feed leachate treatment	3/26/2019
Washington	SFO	Heavy use area Clean water diversion	3/26/2019
Orange	CSFO	Manure/waste storage Waste transfer Access rd Barnyard or heavy use Laneway development Livestock watering facility	3/27/2019
Franklin	Non-RAP	Barnyard or heavy use Cement Barnyard and Feeding Area	3/28/2019
Caledonia	CSFO	Clean water diversion	3/28/2019
Chittenden	SFO	Manure/waste storage Waste/wash water treatment	3/29/2019
Washington	SFO	Manure/waste storage-Closure	3/29/2019
Franklin	MFO	Manure/waste storage	3/30/2019
Rutland	SFO	Laneway development/stream crossing Exclusion fencing/livestock watering facility	3/30/2019
Orange	SFO	Waste/wash water storage Clean water diversion	3/31/2019
Addison	MFO	NRCS EQIP-Assist	4/29/2019
Rutland	MFO	Technical Assistance	5/21/2019
Orleans	MFO	Technical Assistance	5/28/2019

VAAFM Annual Report on Financial and Technical Assistance for Agricultural Water Quality

Caledonia	SFO	Technical Assistance	5/29/2019
Washington	CSFO	Financial Assistance	5/29/2019
Franklin	MFO	NRCS EQIP-Assist	6/3/2019
Addison	CSFO	Technical Assistance	6/6/2019
Rutland	CSFO	Technical Assistance	6/6/2019
Lamoille	SFO	Technical Assistance	6/7/2019
Orleans	CSFO	Technical Assistance	6/7/2019
Windsor	CSFO	Technical Assistance	6/14/2019
Caledonia	SFO	Technical Assistance	6/18/2019
Lamoille	SFO	Technical Assistance	6/28/2019
Franklin	CSFO	Financial Assistance	7/10/2019
Caledonia	CSFO	NRCS EQIP-Assist	7/10/2019
Rutland	SFO	NRCS EQIP-Assist	7/10/2019
Addison	SFO	Technical Assistance	7/11/2019
Orange	CSFO	Financial Assistance	7/19/2019
Franklin	CSFO	Financial Assistance	7/19/2019
Franklin	CSFO	Technical Assistance	7/25/2019
Essex	MFO	Technical Assistance	7/29/2019
Bennington	CSFO	Technical Assistance	7/29/2019
Franklin	CSFO	Technical Assistance	7/30/2019
Addison	MFO	NRCS EQIP-Assist	7/31/2019
Chittenden	Non-RAP	NRCS EQIP-Assist	7/31/2019
Essex	MFO	NRCS EQIP-Assist	8/10/2019
Addison	MFO	NRCS EQIP-Assist	8/12/2019
Addison	MFO	NRCS EQIP-Assist	8/12/2019
Orleans	CSFO		8/12/2019
Lamoille	CSFO	NRCS EQIP-Assist	8/21/2019
Addison	CSFO	Financial Assistance	8/30/2019
Franklin	LFO	NRCS EQIP-Assist	9/4/2019
Orange	CSFO	NRCS EQIP-Assist	9/5/2019
Orleans	CSFO	NRCS EQIP-Assist	9/11/2019
Orleans	CSFO	Technical Assistance	9/12/2019
Addison	MFO	Technical Assistance	9/17/2019
Chittenden	SFO	NRCS EQIP-Assist	9/17/2019
Washington	Non-RAP	Technical Assistance	9/17/2019
Franklin	CSFO	NRCS EQIP-Assist	9/20/2019
Caledonia	SFO	NRCS EQIP-Assist	9/25/2019
Chittenden		Financial Assistance	9/25/2019
Grand Isle	CSFO	Technical Assistance	9/27/2019
Franklin	CSFO	Technical Assistance	9/27/2019
Grand Isle	CSFO	Technical Assistance	9/27/2019
Orleans	CSFO	Technical Assistance	10/23/2019

VAAFM Annual Report on Financial and Technical Assistance for Agricultural Water Quality

---

Orleans	CSFO	Technical Assistance	10/23/2019
Franklin	CSFO	Technical Assistance	10/24/2019
Orleans	CSFO	NRCS EQIP-Assist	10/25/2019
Orleans	CSFO	NRCS EQIP-Assist	10/25/2019
Franklin	CSFO	Technical Assistance	10/29/2019
Franklin	CSFO	NRCS EQIP-Assist	

*Attachment 2. BMP Applicant Prioritization Matrix*

BMP Prioritization Matrix  
 Vermont Agency of Agriculture  
 Engineer:

Date of Application:

Last Name, First Name - Farm Name

					Points	
1	In which watershed is this farm located?	Champlain	Memphremangog	Connecticut	Hudson	
		30	20	15	10	
2	Is the water quality concern due to physical site constraints?			Yes	No	
				20	0	
3	How severe is the water quality concern that the applicant is proposing to mitigate?	Low Severity  High Severity	Ex. in order of severity: No improved waste storage Clean water contamination Potential for discharge Failed waste storage facility	Low	0	
				Moderate	10	
				High	20	
4	Does this farm have adequate waste storage?			Yes	No	
				0	10	
5	Is this farm under VAAFM or ANR investigation or enforcement?			Yes	No	
				20	0	
6	Have the resource concerns been documented in an inspection?			Yes	No	
				15	0	
7	Does the farm have a business or viability plan?			Yes	No	
				10	0	
8	Does the proposed project present innovative opportunities?			Yes	No	
				10	0	
9	Has the farm received a BMP grant of similar size and scope?			Yes	No	
				0	10	
10	Is the project receiving technical assistance from additional source(s)?			Yes	No	
				15	0	
11	Is the project receiving funding from additional source(s)?			Yes	No	
				15	0	
12	Is the applicant willing and able to construct?			Yes	No	
				10	0	
13	Rate the project based on the complexity of construction?	Low Complexity  High Complexity	Gutters and swales Cast in place slabs Infiltration / treatment areas Geomembrane lining Pour in Place Concrete	Low	15	
				Moderate	10	
				High	5	
<b>Total</b>				<b>Possible</b>	<b>200</b>	<b>0</b>
Is the application fast-track <sup>1</sup> eligible?				Yes	No	

1. The proposed practice(s) have a high water quality benefit to TA time investment ratio. These projects are identified to receive assistance as resources become available.