



# North Lake Farm Survey

Fall 2015 Interim Report

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An Impact Survey of Farms in the Missisquoi &  
St. Albans Bay Watersheds on Water Quality



"More than 1.2 million acres of Vermont land is devoted to farming, and agriculture is one of our most important industries. As a whole, agriculture preserves open land, provides us with healthy local foods, and is an essential part of Vermont's identity.

At the same time, Vermont's waters are critical to our economy and to our quality of life. We do not have to trade one for the other. Vermont's Required Agricultural Practices (RAPs) are an important tool designed to help farmers implement effective waste management practices that simultaneously promote the long-term viability of farms and the health of our state waterways.

In an effort to better understand the challenges facing farmers in the St. Albans Bay watershed and Missisquoi River Basin, the Agency of Agriculture has spent the past five months visiting farms to survey areas of need related to water quality and nutrient management. This interim report highlights these challenges."

**- *Chuck Ross, Secretary of the Agency of Agriculture, Food & Markets***

## What is the North Lake Farm Survey (NLFS)?

The North Lake Farm Survey (NLFS) is a pilot project launched by the Vermont Agency of Agriculture, Food & Markets (VAAFM) in May 2015 and is designed to begin quantifying the impacts of agriculture on Lake Champlain by surveying farm facilities located in the Missisquoi River Basin and St. Albans Bay watershed (Franklin and Orleans Counties). VAAFM employees have surveyed over 165 facilities since the project launched in May, and have worked closely with farmers to assess their potential impact on water quality and help them to understand Vermont's new water quality regulations. The project will continue until all farms in the region have been reached.

## What is the difference between a survey and an inspection?

The North Lake Farm Survey's (NLFS) primary goal is to work closely with farmers to assess their potential impact on water quality and help them to understand Vermont's new water quality regulations. VAAFM **will not** take enforcement action on violations found during a survey. However, VAAFM is required to refer direct discharges to the Agency of Natural Resources for further investigation.

**Official farm inspections** are conducted by VAAFM employees on an annual basis for Large Farm Operations (LFOs) and every 3 years for Medium Farm Operations (MFOs). In accordance with Act 64, Small Farm Operations (SFOs) will be certified and inspected every 10 years starting in July, 2017. If water quality violations are found during an inspection, VAAFM may take enforcement action to include written warnings or notice of violations with proposed penalties.

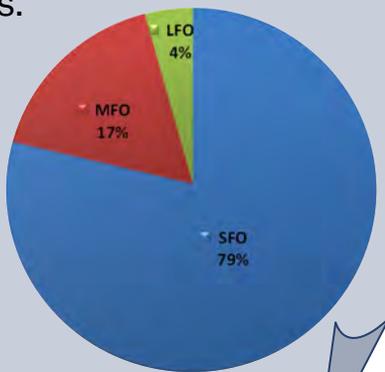
## Was NLFS launched in response to Vermont's new Clean Water Act?

Although the North Lake Farm Survey (NLFS) is not the direct result of Act 64, the survey is an integral part of a larger effort on behalf of the State to target regions that are challenged under EPA's Total Maximum Daily Load (TMDL) to meet the phosphorus reduction goals to clean up Lake Champlain. Governor Shumlin announced this initiative in December 2014 at the same time USDA announced increasing financial resources for farmers to implement conservation practices as a means to connect farmers to the resources they need to address identified concerns.

# Where have the surveys been conducted?

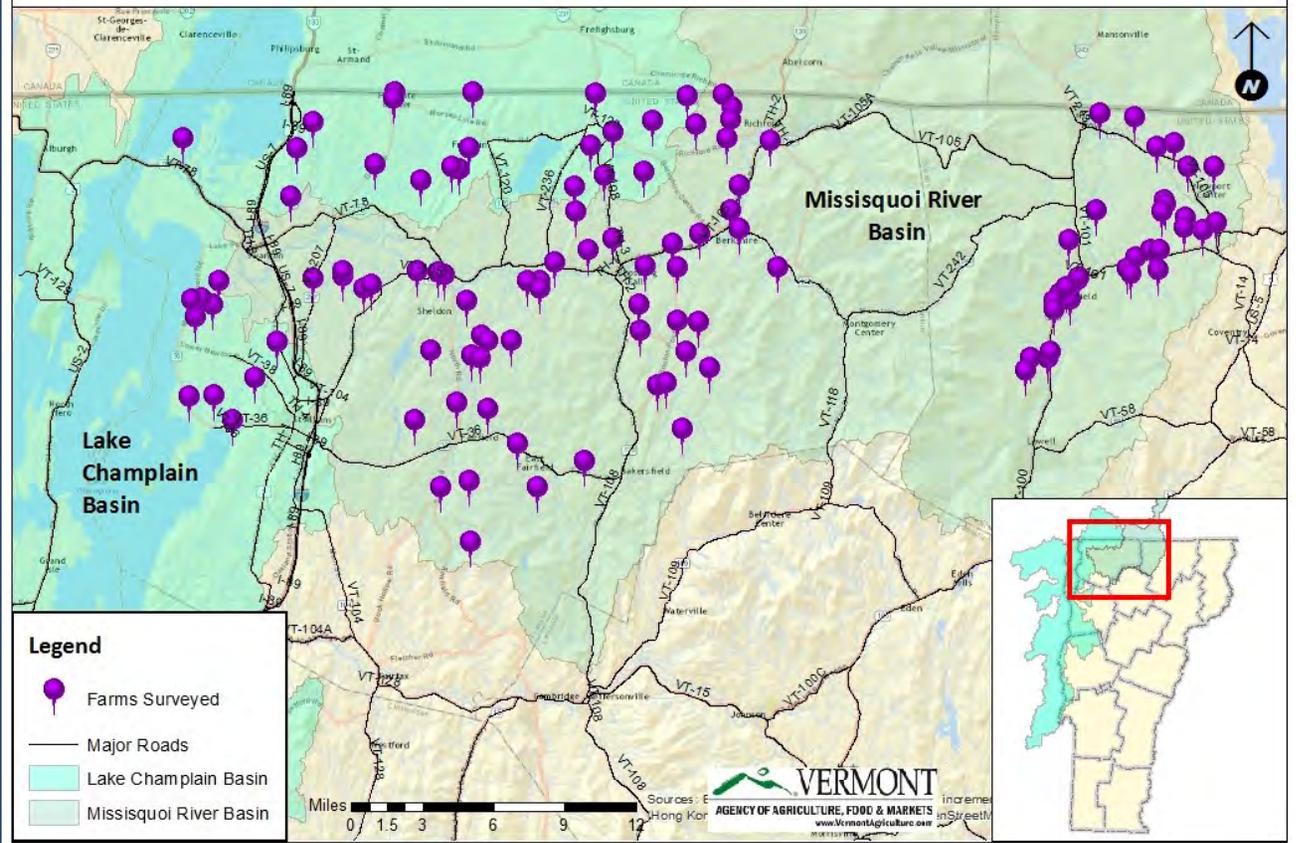
There are over 350 farm facilities within the NLFS region. As of September 15th, 167 surveys (48% of farm facilities in the region) have been conducted on a variety of small, medium, and large farms with the Missisquoi River Basin and St. Albans Bay watershed. Each survey (driving time + survey + processing) takes on average 10 hours to complete. Data included in this interim report are from these 167 surveys.

**Distribution of Facilities Surveyed by Farm Size**



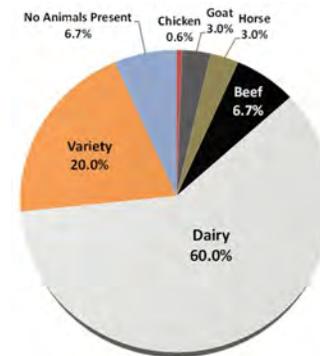
## Locations of Surveyed Facilities in the NLFS

(Updated as of 9/1/2015)

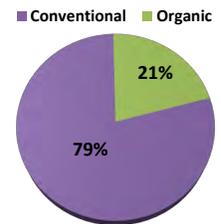


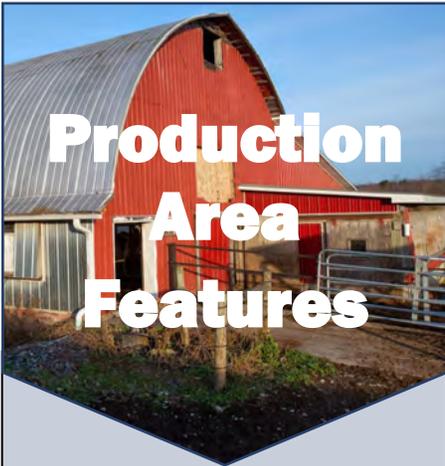
**48%** of the surveyed facilities have been analyzed in this Interim Report

**Type of Facilities Surveyed**



**Dairy Facility Type**





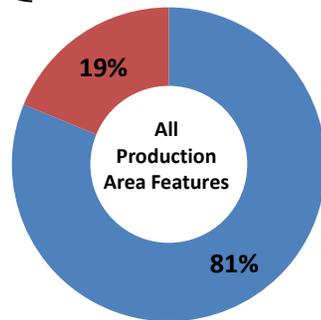
## Production Area Features

Production Area Features being surveyed include:

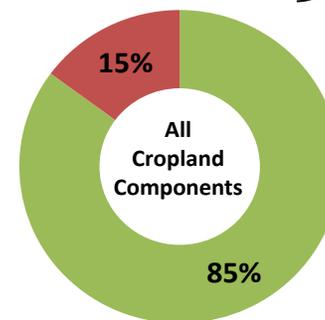
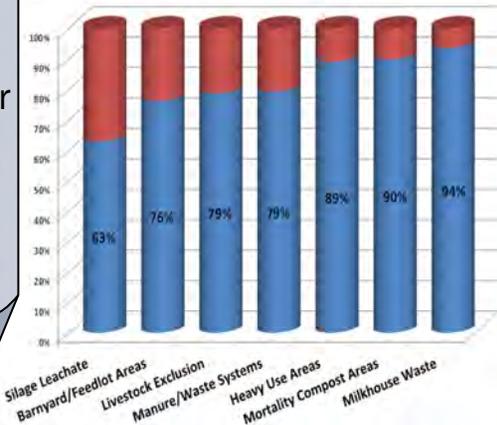
- Barnyard/Feedlot Areas (area connected to barn where animals are fed);
- Heavy Use Areas (animal confinement areas with no vegetation);
- Livestock Exclusion from surface water in barnyards or heavy use areas;
- Manure/Waste Systems (including manure pits or stack pads);
- Milkhouse Waste Systems;
- Mortality Composting Areas; and,
- Silage Leachate Systems.

# Production Area Features versus Cropland Components

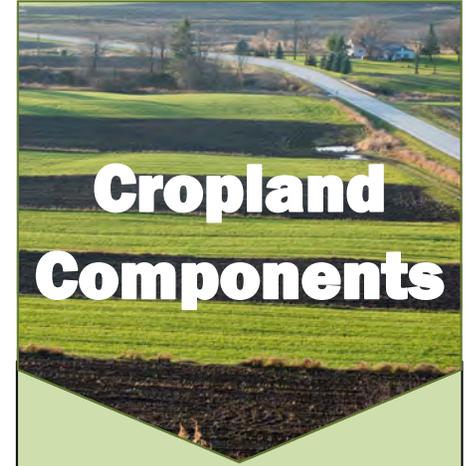
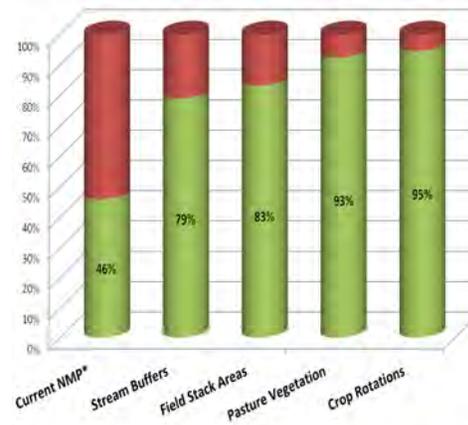
**Cropland Components are more compliant than Production Area Features**



■ Compliant  
■ Non-Compliant



■ Compliant  
■ Non-Compliant



## Cropland Components

Cropland, for this survey, consist of row crops, annual crops and pastured lands.

Protocol for the NLFS is to survey 3 cropland fields on the first facility, and 1 field per additional facilities.

**Cropland Components** being surveyed include:

- Current Nutrient Management Plans (NMPs)\*;
- Buffers along streams;
- Setbacks on field manure stacks;
- Adequate pasture vegetation; and,
- Crop rotations being followed.

\*NMPs are only required by LFOs and MFOs.

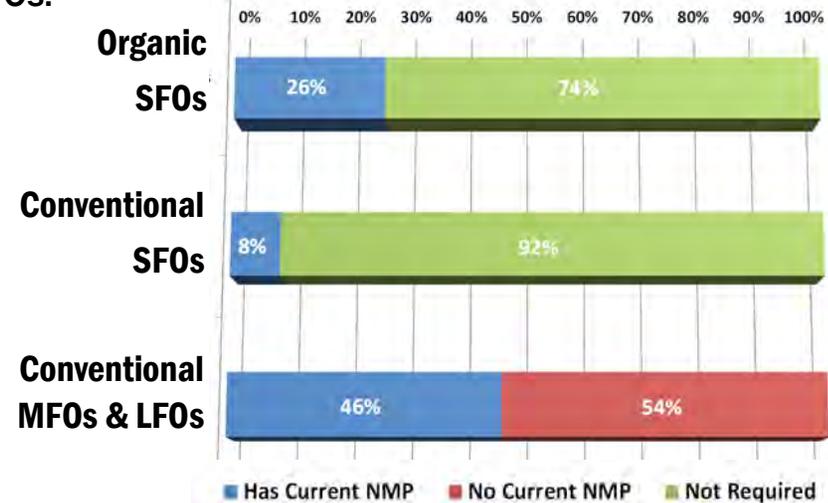
# Nutrient Management Planning

A Nutrient Management Plan (NMP) is a field-by-field plan designed to help farmers meet the nutrient needs of their crops while minimizing movement of the nutrients from the field. NMPs include:

- Current **Soil Tests**
- Current **Manure Analysis Tests**
- Manure Production Information (# of animals, amount of manure, and amount of storage)
- Field Maps (highlighting environmental concerns, topography, and soil types)
- Erosion Potential Calculations (RUSLE2)
- Crop Rotations and Yield Goals
- Environmental Factors that affect nutrient transport (P-Index)
- Manure & Fertilizer Application (including timing, amount and method)
- Recordkeeping that includes **Manure Spreading Records**

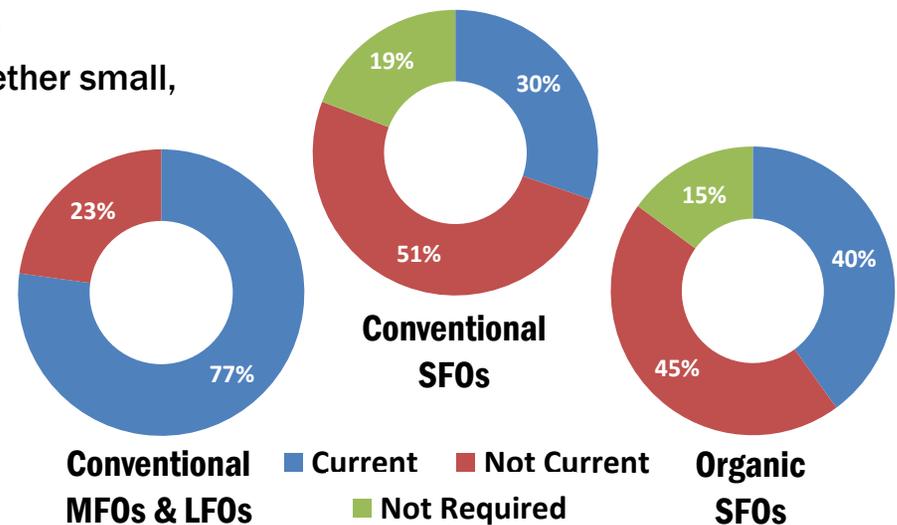
## Nutrient Management Plans (NMPs)

All MFOs and LFOs are required to have a current Nutrient Management Plan (NMP). Current NMP implies that all soil and manure tests are up-to-date, manure spreading rates are being applied at the recommended rates, and manure spreading records are kept. SFOs are encouraged to have NMPs. In the new Required Agricultural Practices (RAPs), NMPs may be required for SFOs.



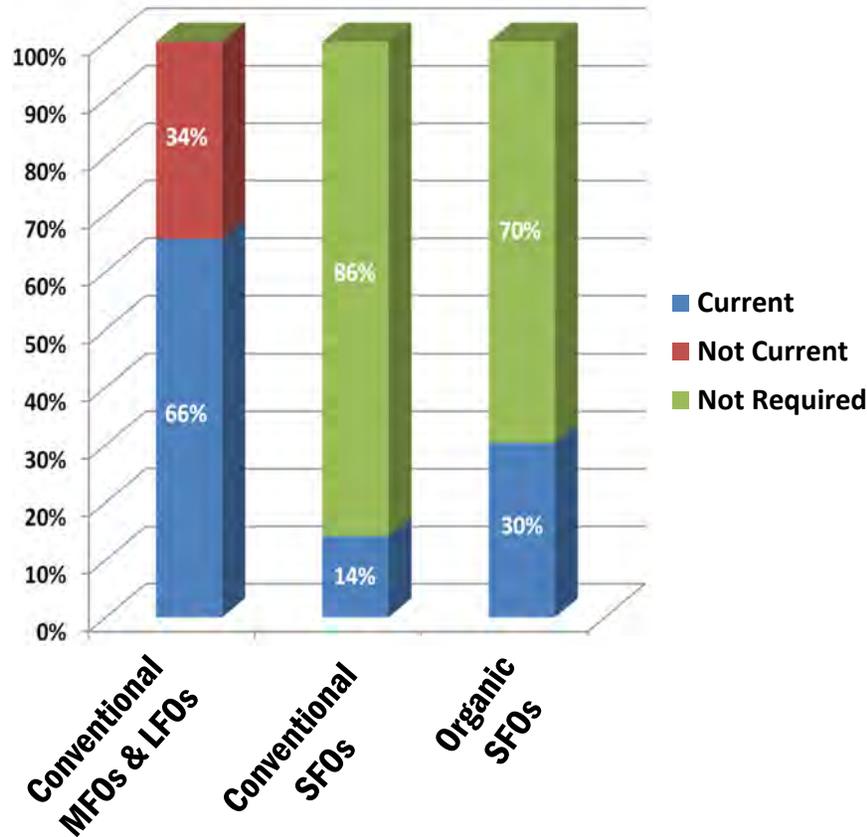
## Soil Tests

All size farms - whether small, medium or large - are required to have soil tests taken on all fields that receive mechanical application of nutrients.



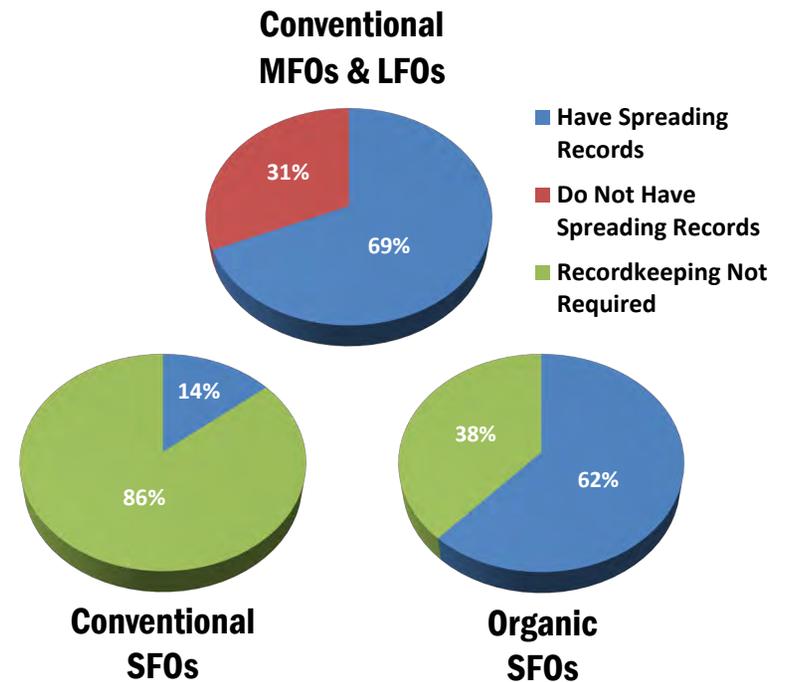
# Manure Analysis Tests

All MFOs and LFOs are required to have annual (current) manure samples. SFOs are required to have them if they have a Nutrient Management Plan (NMP).



# Manure Spreading Records

All MFOs and LFOs are required to have manure spreading records per NMP requirements. Organic SFOs are required to have spreading records per NOFA requirements. Conventional SFOs are encouraged to have manure spreading records. In the new Required Agricultural Practices (RAPs), manure spreading records may be required for all SFOs.



# Summary Compliance Status by Farm Size

Primary components of the production area, cropland area, and NMPs were analyzed by farm size. The rate of compliance for each category is summarized by farm size in the table on this page. It is important to note that many of the NMP requirements are not required of SFOs at this time.

With the help of increased financial and technical assistance now available as a result of Vermont's Clean Water Act and Federal programs, farms will be able to continue to plan and install conservation practices which will help them meet and exceed current water quality rules and standards.

		Summary Compliance Rate for Each Component		
		Conventional Medium/Large Farms 45% surveys completed	Conventional Small Farms 41% surveys completed	Certified Organic Small Farms 97% surveys completed
Production Area	Silage Leachate	48%	68%	89%
	Barnyard Area	59%	77%	84%
	Livestock Exclusion in Production Area	86%	72%	84%
	Manure/Waste Systems	85%	82%	67%
Field Checks	Stream Buffers	59%	92%	88%
	Field Stack Areas	88%	79%	89%
	Pasture Vegetation	100%	91%	93%
Nutrient Management Plan	Completed Current NMP	46%	★ 8%	★ 26%
	Current Soil Tests	83%	45%	56%
	Current Manure Analysis	66%	★ 66%	★ 73%
	Current Manure Spreading Records	69%	★ 72%	★ 85%

★ NMPs are encouraged but not required for SFOs. Current manure analysis and current manure spreading records are not required for SFOs unless they have a current NMP.

## Facilities Accessing Financial Assistance

Significantly expanded Financial Assistance resources are currently available from federal, state and local partners to assist farmers in developing a NMP, as well as in implementing conservation practices in the production area, cropland and pastures.

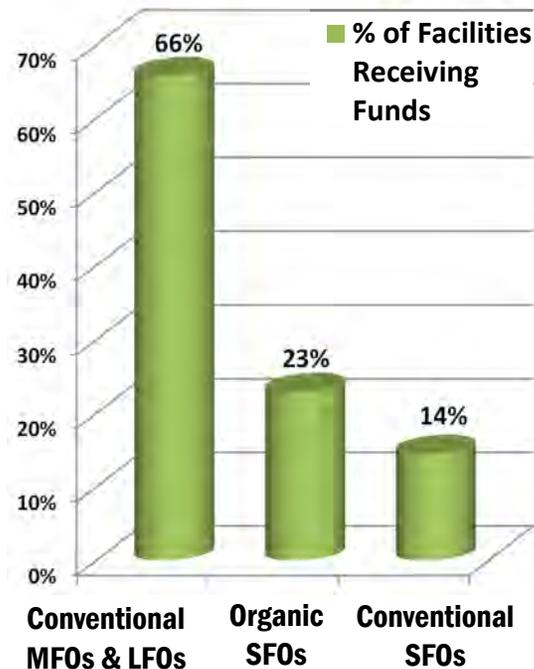
Through this survey, VAAFM has identified a gap in rates of access of financial assistance between permitted LFO/MFO farms and small farms.

VAAFM intends to design and implement a strategy to increase participation and access by small farms of financial and technical assistance resources available To farms in Vermont.

**Only 25% of 167 facilities surveyed were accessing financial assistance**



**Of these 25%, the majority of facilities accessing funding are LFOs and MFOs.**



## Partners Offering Financial Assistance to NLFS Farmers

- Agency of Natural Resources (ANR/DEC)
- Farmers Watershed Alliance (FWA)
- Friends of Northern Lake Champlain (FNLC)
- Northeast Organic Farming Association of Vermont (NOFA - VT)
- University of Vermont Extension (UVM Extension)
- USDA Natural Resources Conservation Service (USDA-NRCS)
- Vermont Association of Conversation Districts (VACD)



# Financial Analysis Of the 167 Surveyed Facilities

Estimates include the cost to bring up to water quality standards the six primary components identified in this survey. NMPs are a prerequisite for a farm to access NRCS financial assistance to implement the five additional practices included in this financial analysis.

Programs and funds are available to address the practices identified below, however these items were NOT included in the \$6.57 million figure due to the need for assessments to be completed on a site-by-site basis:

- Site Specific Cropland BMPs (ex: cover cropping or crop rotation)
- Livestock Exclusion;
- Mortality Management;
- Pasture Management;
- Stream Buffers and Grassed Waterways

## NMP Development



## Interim Financial

Estimated cost to address these six Primary Components is **\$6,570,000**

## NMP Implementation



## Waste Storage Facilities



# Analysis Summary



Developing a Conservation Plan with NRCS can be one of the first steps towards designing and implementing BMPs on Farms

## Milkhouse Waste



## Barnyards



## Silage Treatment



## Moving Forward with Financial Assistance

VAAFM is available to assist producers with accessing technical and financial assistance throughout the state. There are many resources available for North Lake Farmers, a partial list of programs is included below.

- NRCS EQIP: \$45 Million to Lake Champlain Basin
- VAAFM RCPP: \$16 Million dollars for Lake Champlain Basin
- VAAFM BMP Program : \$1.8 Million annually, statewide
- VT Clean Water Fund: \$1.75 Million direct to farms statewide
- VACD RCPP: \$800K for SFO NMPs in Lake Champlain Basin with UVM Extension Collaboration
- VAAFM North Lake TA Program: \$250,000 for TA assistance to North Lake farmers through FNLC, FWA, VACD

# Key Facts & Figures of the NLFS Interim Report

- ▶ The NLFS is a pilot program launched to assess baseline farm management conditions on North Lake Farms; it is not a regulatory inspection.
- ▶ 48% of the facilities identified in the North Lake have been surveyed in this report, 60% of those are dairy cow facilities.
- ▶ Six areas of farms have been identified as being most in need of additional measures to meet regulatory standards including: Nutrient Management Planning, Cropland Management and Production Area structures.
- ▶ Financial Assistance programs are available for North Lake Farms—75% of facilities surveyed have not yet accessed these programs.



The benefits that farming brings to Vermont are clear: from robust economic activity to maintaining our beautiful working landscapes; we are thankful for the many ways agriculture helps to enrich our state. Although there are challenges ahead, VAAFM is aware that many farmers are working hard to reduce their environmental impacts and improve water quality in the state of Vermont. For those farmers that still have work to do, we are confident that with an increased effort, and the increased availability of technical and financial assistance resources, we will successfully work together towards restoring the health of Lake Champlain.

## Further Questions

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