



# Water Quality Division

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*Laura DiPietro, Director*

*Nina Gage, Assistant Director*

**VT Agency of Agriculture, Food and Markets**



# Overview

- Education, Technical and Financial Assistance
- Inspection and Enforcement



**OTTER CREEK, LITTLE OTTER CREEK, AND LEWIS CREEK WATERSHED BASIN 3**  
 December 2024 | FINAL PLAN

Tactical Basin Plan was prepared in accordance with 10 VSA § 1253(d), the Vermont Water Quality Standards, the Federal Clean Water Act and 40 CFR 135.6, and the Vermont Surface Water Management Strategy.

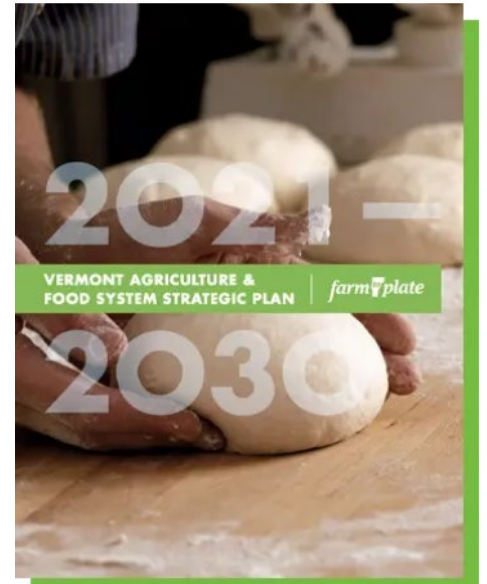
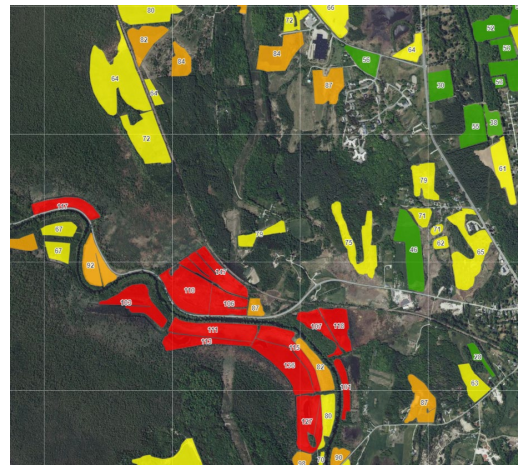
# Agricultural Water Quality Planning

- **Statewide** – Vermont Nonpoint Source Management Plan
- **Regional** – Tactical Basin Plans
- **Field Scale** – Strategic Watersheds, targeted conservation efforts and critical source area fields
- **Sector wide** – Farm to Plate Vermont Agriculture and Food System Strategic Plan

**Vermont Nonpoint Source Management Program Plan 2021-2025**

Submitted to U.S. Environmental Protection Agency  
 September 4, 2020

Vermont Department of Environmental Conservation  
 1 National Life Drive  
 Montpelier, VT 05602



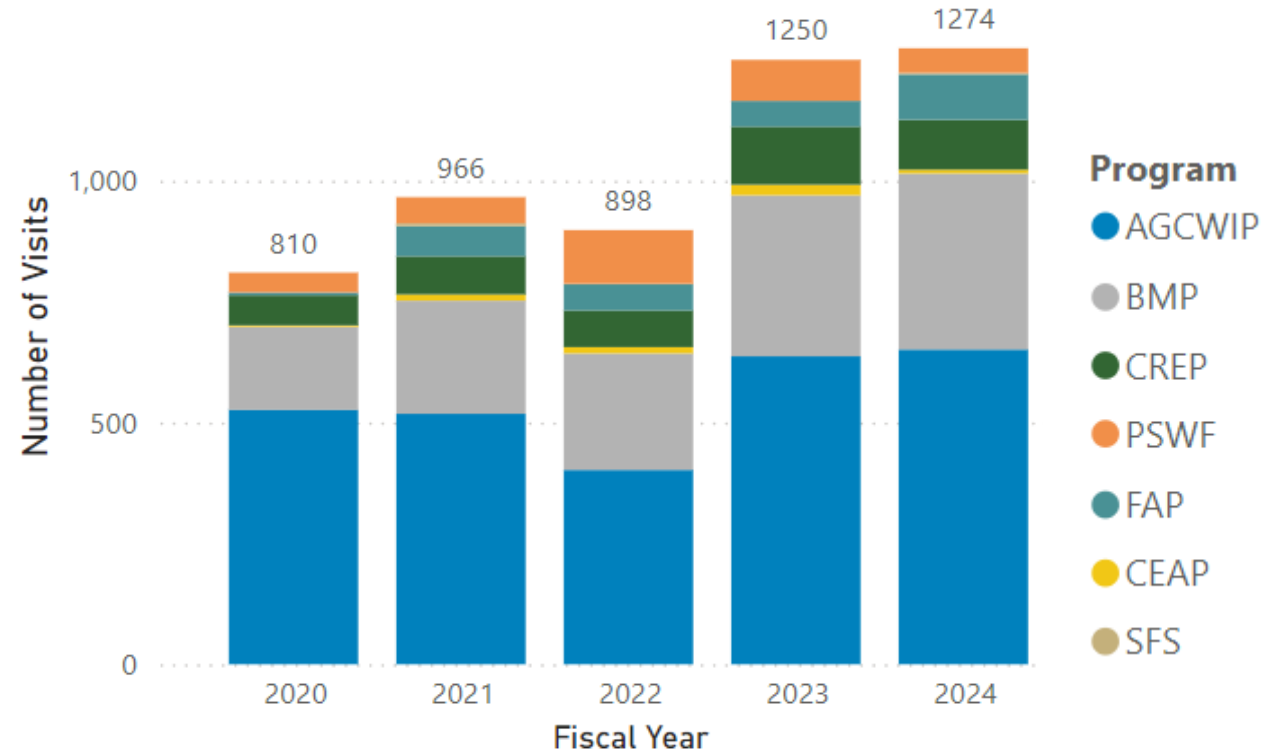
# Technical Assistance & Education



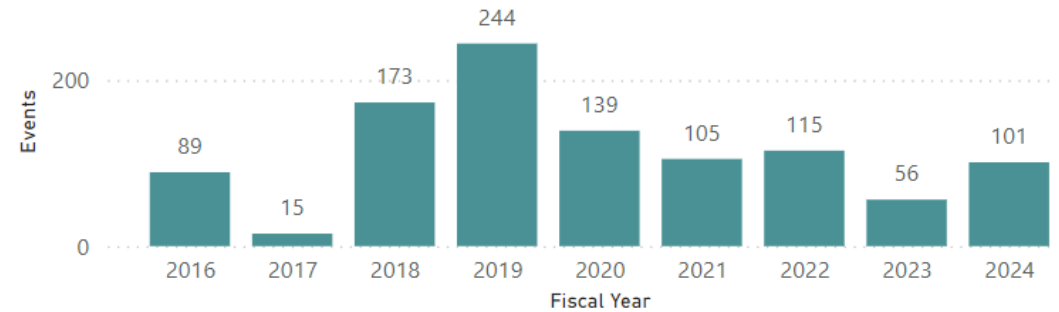
# Technical Assistance & Education








Visits by Fiscal Year and Program



Events by Fiscal Year



# Financial Assistance Programs

| PROGRAM  | PROGRAM FOCUS  |   |
|--|--|---|
| <p>Farm Agronomic Practices Program</p> <p><b>FAP</b></p>          | <p>Per acre payments for agronomic practices that improve soil quality and reduce runoff and erosion. Support for educational or instructional activities also available.</p>                      |    |
| <p>Best Management Practices Program</p> <p><b>BMP</b></p>         | <p>Technical engineering consultations, financial assistance, and federal project cost assistance for structural on-farm improvements to protect or improve water quality.</p>                     |    |
| <p>Conservation Reserve Enhancement Program</p> <p><b>CREP</b></p> | <p>Technical and financial assistance for removing land from agricultural production and establishing vegetative buffers.</p>  |    |
| <p>Capital Equipment Assistance Program</p> <p><b>CEAP</b></p>     | <p>Financial assistance for new or innovative equipment that will improve water quality, improve manure management, or decrease greenhouse gas emissions.</p>                                      |   |
| <p>Seeding and Filter Strip Program</p> <p><b>SFS</b></p>          | <p>Technical and financial assistance to address erosion and surface runoff through the establishment of perennially vegetated and harvestable filter strips, seedings, and grassed waterways.</p> |  |

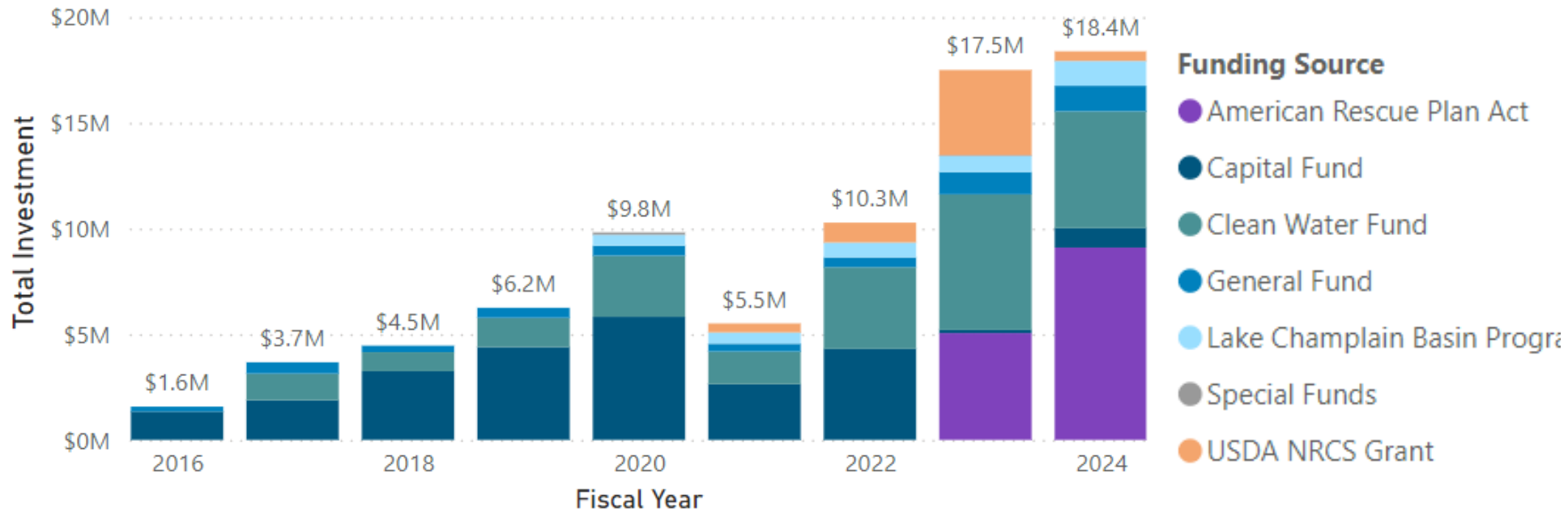
# AAFM WQ Programs

| PROGRAM  | DESCRIPTION   |   |
|--|---|---|
| <p>Pasture and Surface Water Fencing Program</p> <p><b>PSWF</b></p>      | <p>Pasture management technical and financial assistance for livestock exclusion from surface waters and grazing system improvements.</p>   |    |
| <p>Vermont Farmers Ecosystem Stewardship Program</p> <p><b>VFESP</b></p> | <p>Supplemental financial assistance to support farmers to enroll in the USDA-NRCS Conservation Stewardship program (CSP).</p>  |    |
| <p>Vermont Pay for Performance Program</p> <p><b>VPPF</b></p>            | <p>Innovative, performance-based program which provides financial compensation for reducing phosphorus (P) losses from farms.</p>   |   |
| <p>Agricultural Clean Water Initiative Program</p> <p><b>AGCWIP</b></p>  | <p>Funding for local and regional partners to improve water quality through education and outreach, technical assistance, organizational capacity development, and conservation practice surveys.</p> |  |

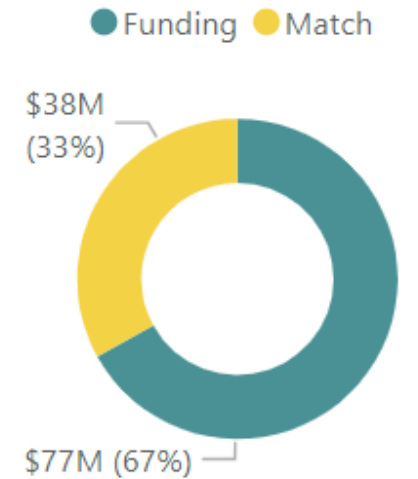
# Financial Assistance



Total Investment by Fiscal Year and Funding Source

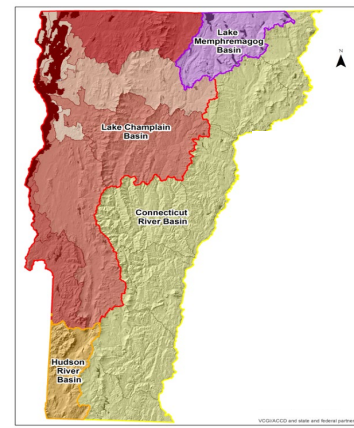


Total Investment by Type



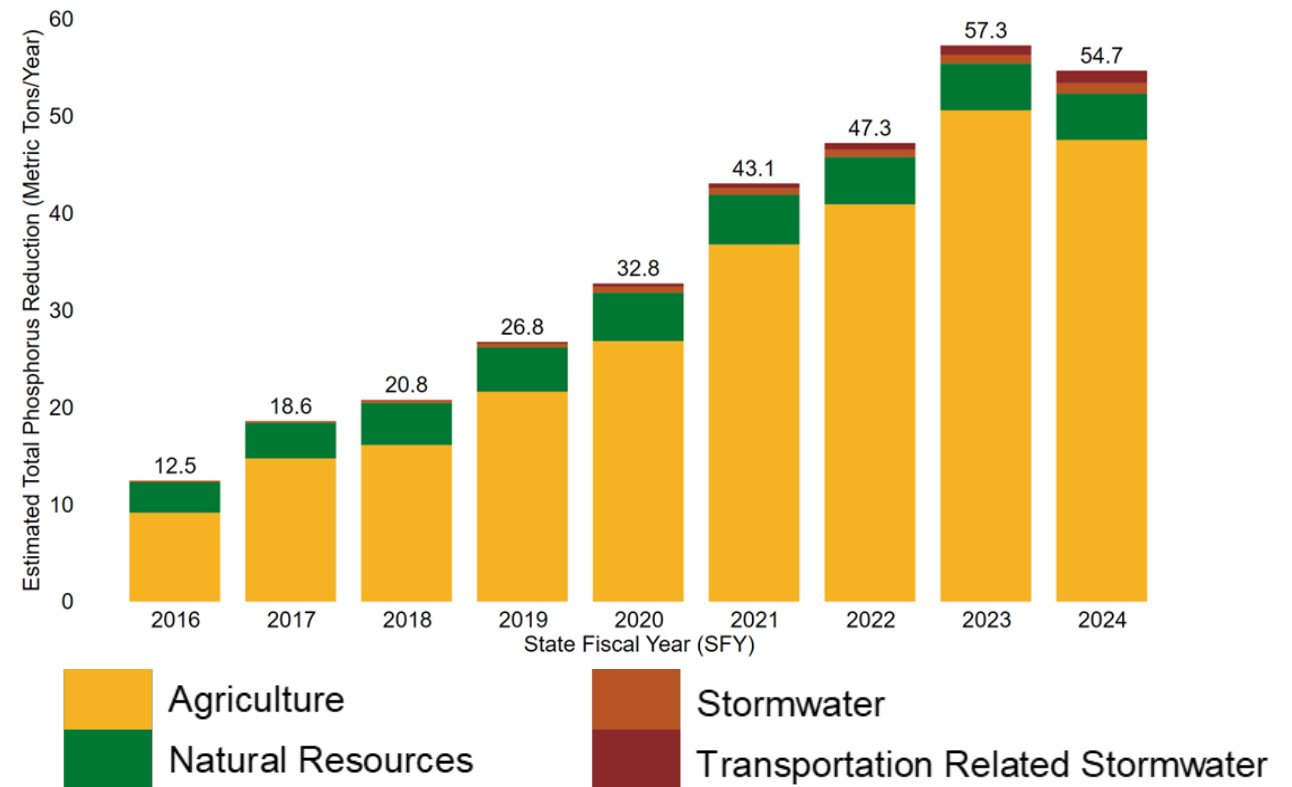


# Total Maximum Daily Load (TMDL) Progress – Lake Champlain

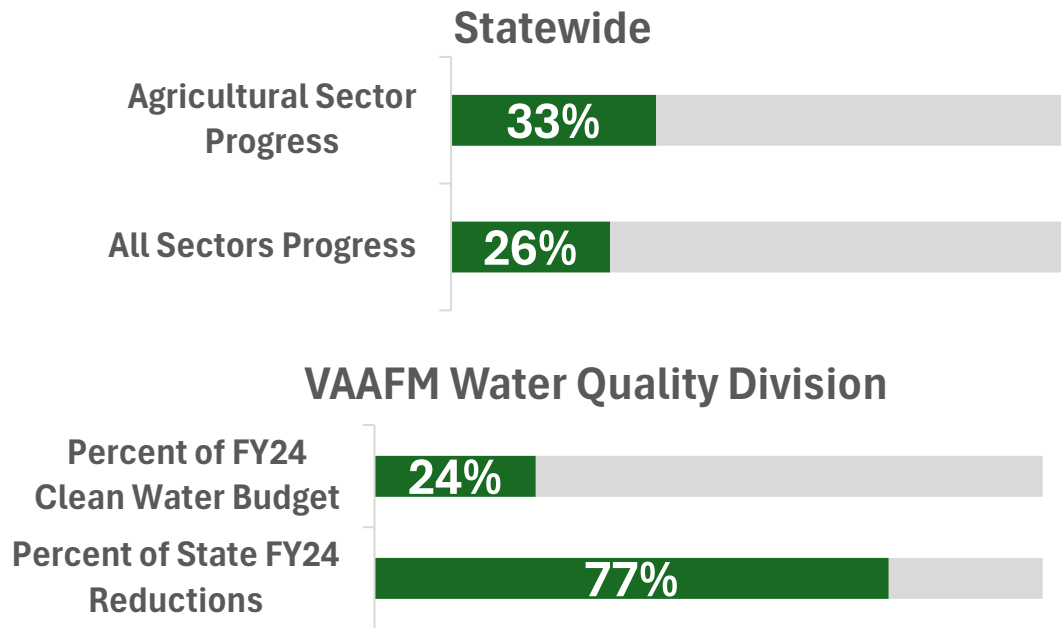
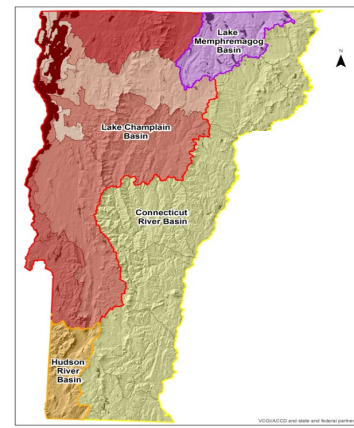


## SFY2024 Progress – 26%

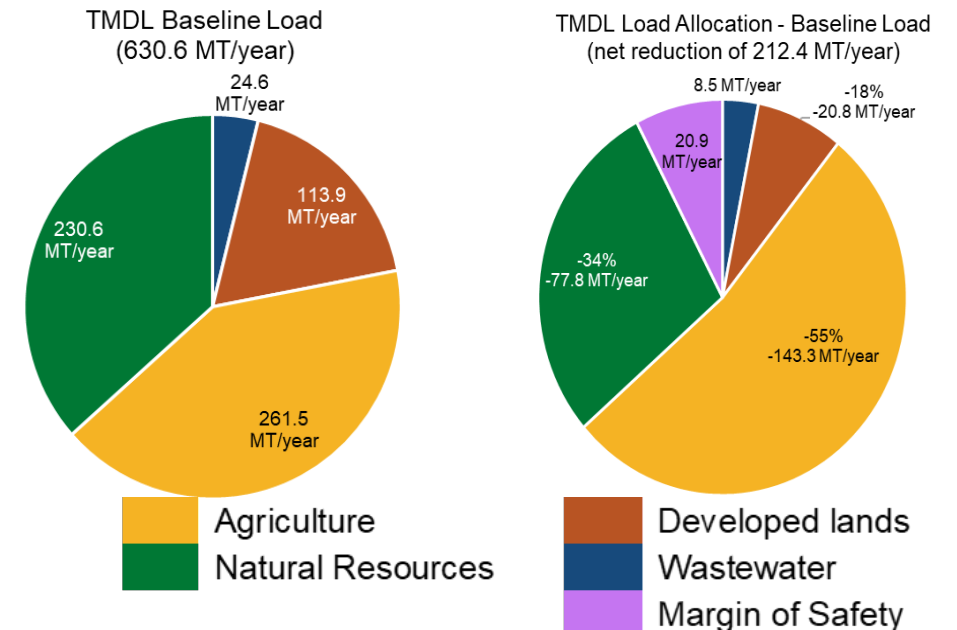
Estimated total phosphorus load reductions in effect during SFY 2016–2024.



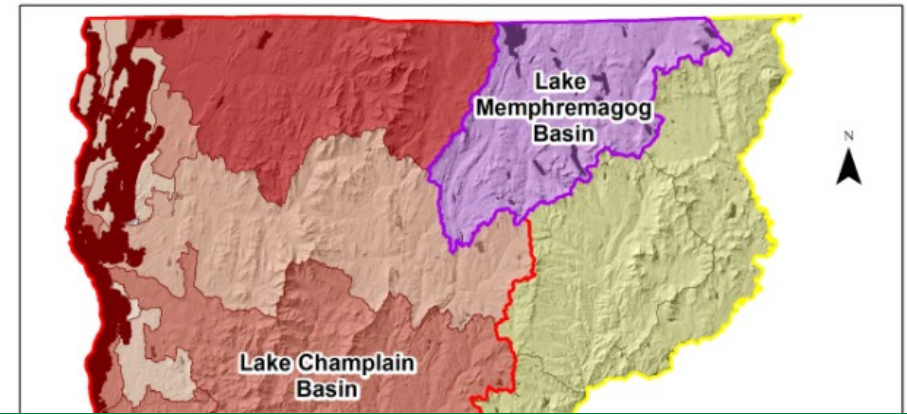
# TMDL Progress – Lake Champlain



Lake Champlain TMDL Baseline Load, and Modeled Load Increase (+) or Reduction (-) by Sector. Percentage indicates percent reduction from baseline for sectors with a required reduction.

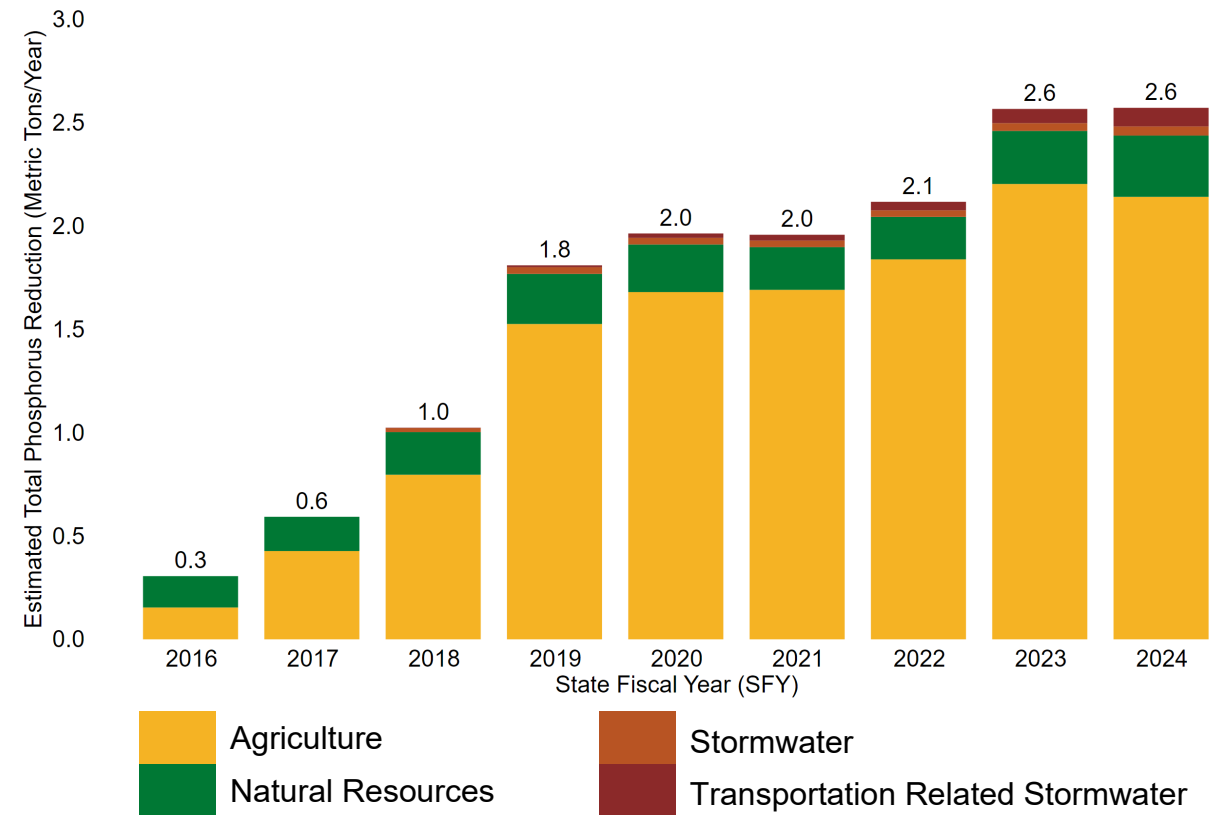


# TMDL Progress – Lake Memphremagog

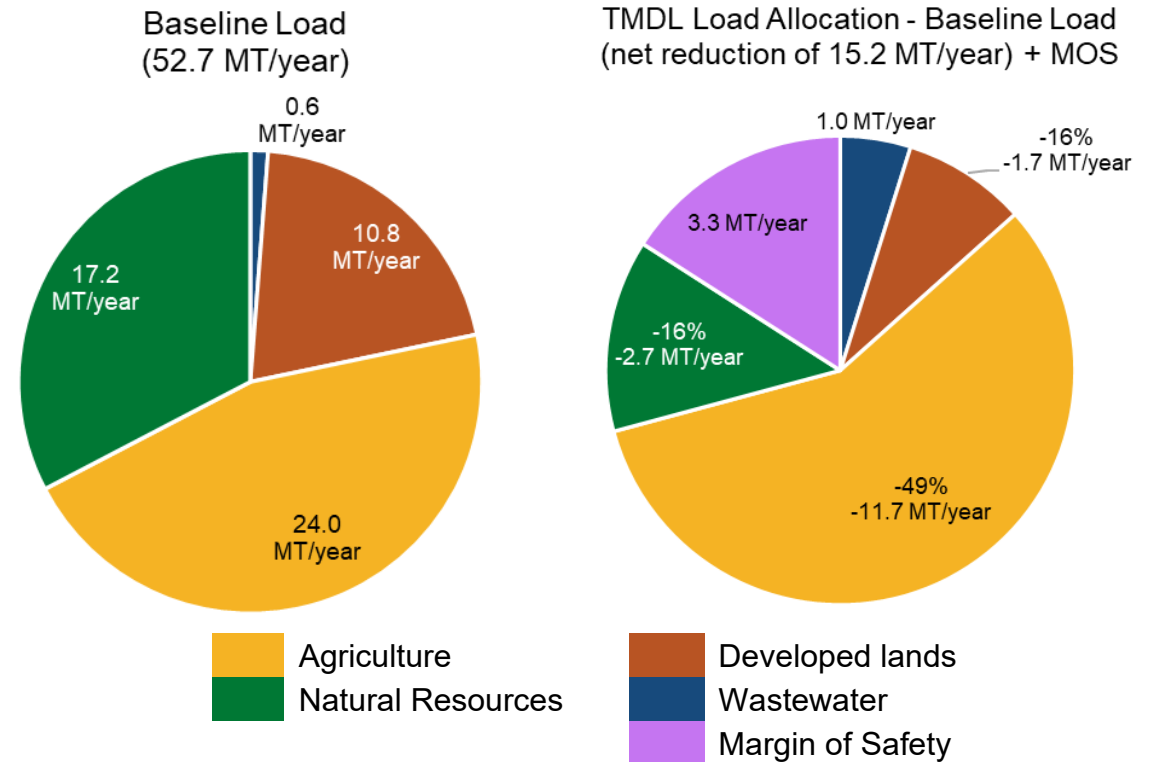
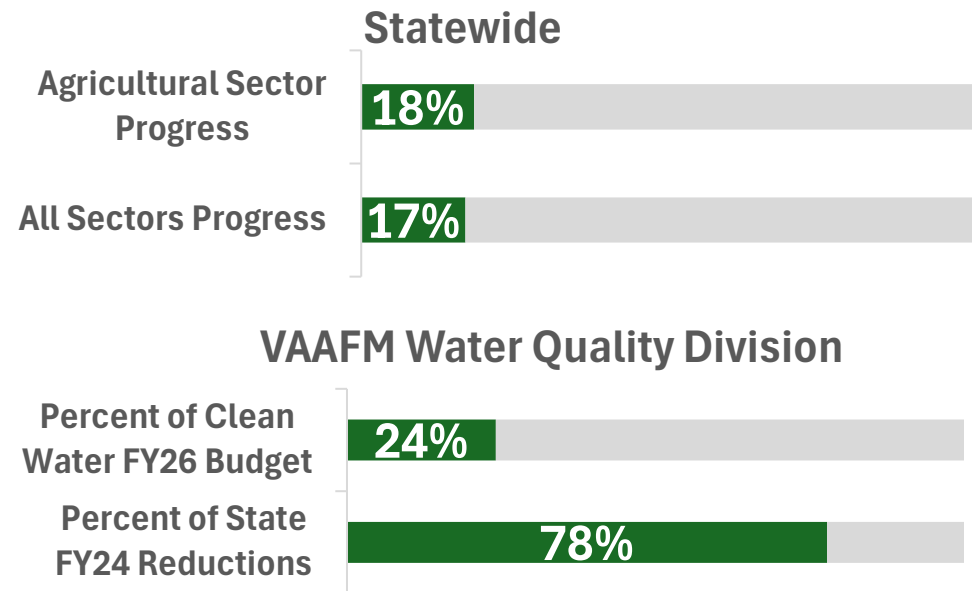
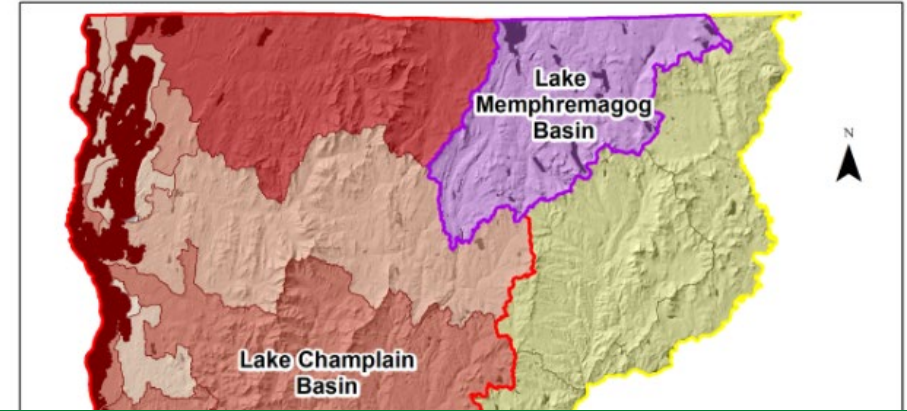


## SFY2024 Progress - 17%

Estimated total phosphorus load reductions in effect during SFY 2016–2024.



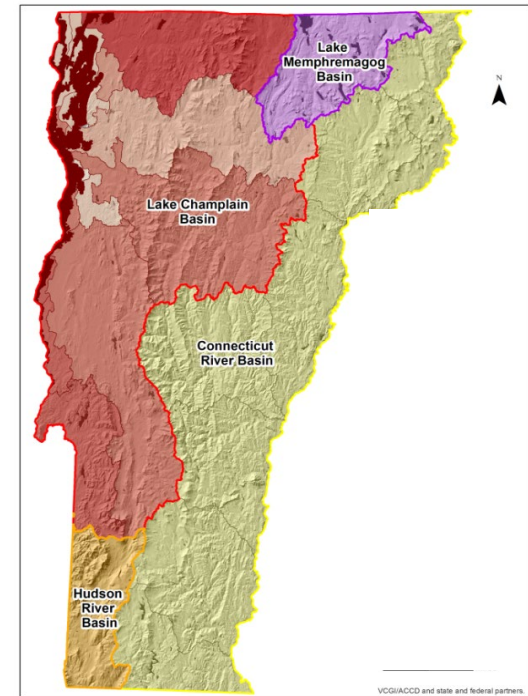
# TMDL Progress – Lake Memphremagog



# TMDL Progress – Long Island Sound

## Under Development

- Nitrogen (N) reduction estimates dependent on the development of baseline loading rates and N reduction efficiencies for clean water projects in the Connecticut River Basin
- EPA efforts underway to develop consistent methods for all five states in the Long Island Sound drainage.



# Vermont Agricultural Water Quality Partnership (VAWQP)



*“Conservation on farms can be a bit like completing a puzzle, taking one piece at a time and finding the best fit.” - Sarah Damsell, District Manager Orleans County Conservation District*

**PURPOSE & MISSION:** Improve agricultural water quality in Vermont by coordinating partner efforts to provide education, technical and financial assistance to the farming community.

## **GOALS:**

- 1) To improve water quality and wildlife habitat on all engaged farmland owner's and operators' properties
- 2) Deliver technical and financial assistance in the most efficient and effective manner
- 3) Provide the best service experience possible for the landowner

## **VAWQP Partners**

- USDA Natural Resources Conservation Service
- USDA Farm Service Agency
- Vermont Association of Conservation Districts
- United States Fish and Wildlife Service
- University of Vermont Extension
- Vermont Agency of Natural Resources Department of Environmental Conservation
- Vermont Agency of Agriculture, Food and Markets
- Vermont Housing and Conservation Board
- Lake Champlain Basin Program

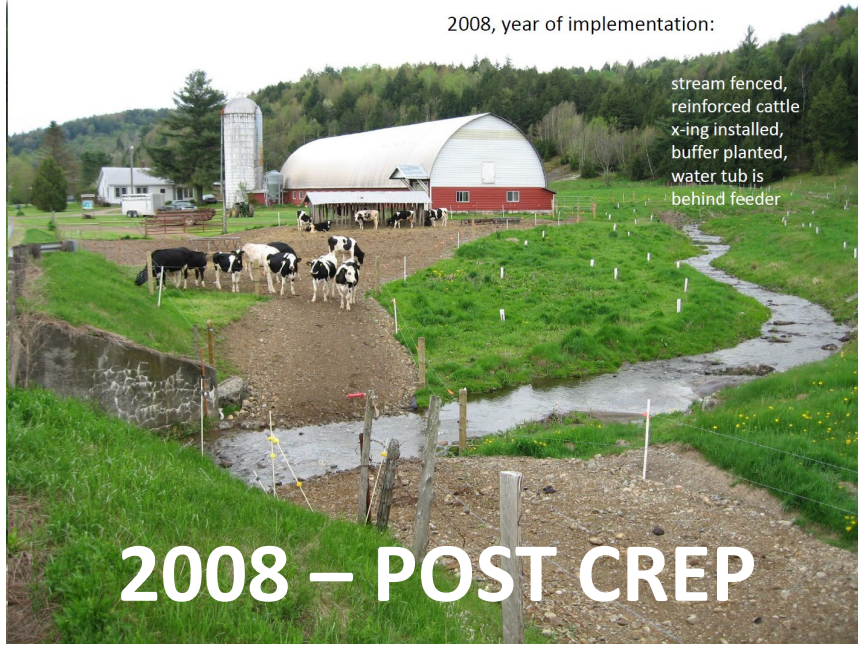


## Best Management Practices (BMP) Program

Before (left) and after (right) installation of a heavy use area protection BMP project on a small farm in Swanton, VT to reduce livestock impacts to nearby waters and provide an area that is more easily managed for livestock barnyard area.



2008 – PRE-CREP 04.16.2008



2008 – POST CREP



2022 – 14 Years Later

## Conservation Reserve Enhancement Program (CREP)

Riparian area pre- restoration, post-restoration and 14 years after restoration through the CREP Program. Additional conservation practices supported included livestock exclusion and fencing, a reinforced cattle crossing, riparian forest buffer planting and water source development for cows to replace stream access.





## **Pasture & Surface Water Fencing (PSWF) Program**

Before (left) and after (right) of a riparian area restored through the PSWF Program. This project included implementation of a grassed filter strip, fencing, and watering sources.



## Seeding and Filter Strip (SFS) Program

Before (left) and after (right) installation of a 50-foot-wide grass filter strips along a corn field in the Memphremagog watershed.

# Regulatory



# 10 Years since Act 64 of 2015

- Revised RAPs (2x)
- Certified Small Farms, Custom Applicators and Technical Service Providers (TSPs)
- Increased inspection timeframes (1yr LFO, 3yr MFO and 7 yr CSFO)
- Revised MOUs with ANR and AGO
- Required Farms to receive education
- Rules for TSPs, Revised BMP Rule and MFO GP (2x)
- Revised TMDL for Lake Champlain
- Implemented BMPs on Farms
- Increased transparency (sending more referrals)
- Fulfilled significantly large public records requests
- Created WQ Database
- Revolutionized SharePoint Record Management
- Streamlined implementation (\$2.2M in 2015; \$18.4M in 2024)
- Secured millions in federal funding for additional programming
- Hired staff (13 in 2014; 33 today)



**From 2016 – 2024, Vermont agriculture has lost:**

**350** dairy farms

**14,000** dairy cows

**72,000** acres of cropland and pasture

**In 2022, 57% of all Vermont farms were unprofitable and lost a combined \$85 million**

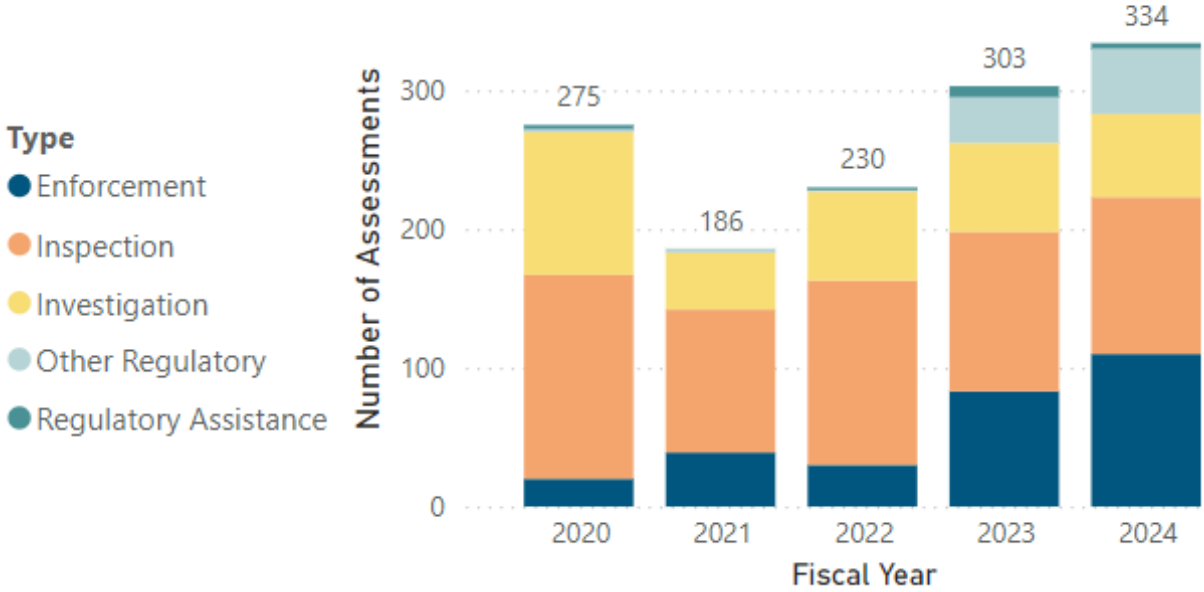
**From 2016 – 2024, Vermont farmers have implemented:**

**500,000** acres of new conservation practices to cleanup Lake Champlain which include: cover crop, no-till, rotational grazing.

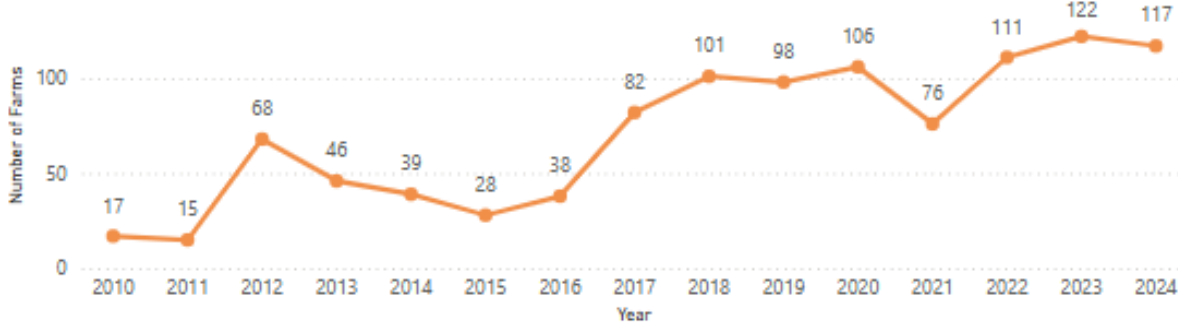
# Inspection & Enforcement



Assessments by Fiscal Year and Type



Farms Receiving Enforcement Actions by Year

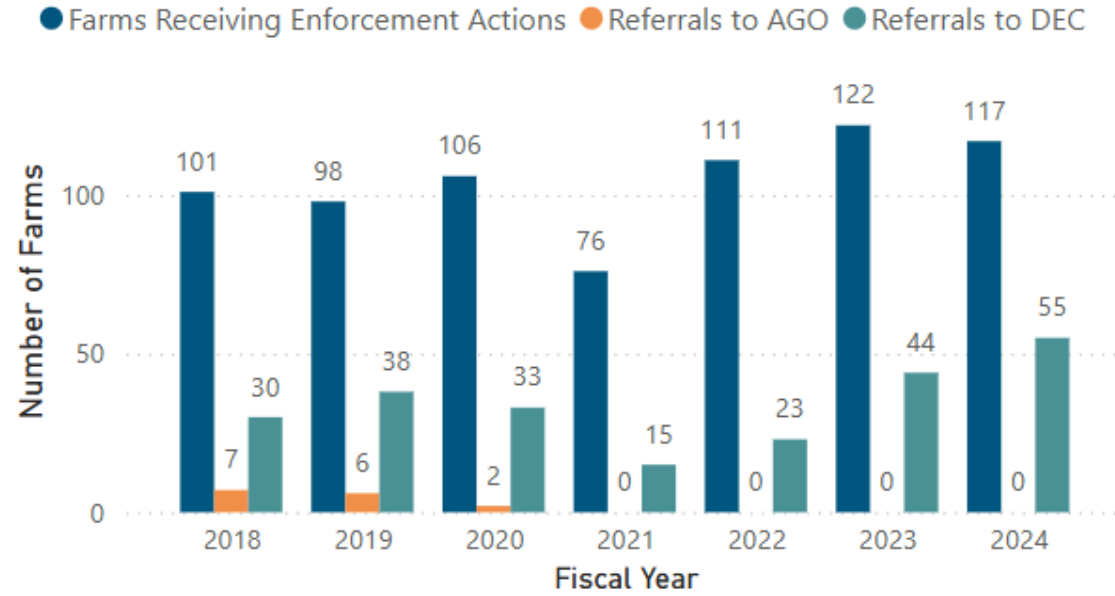




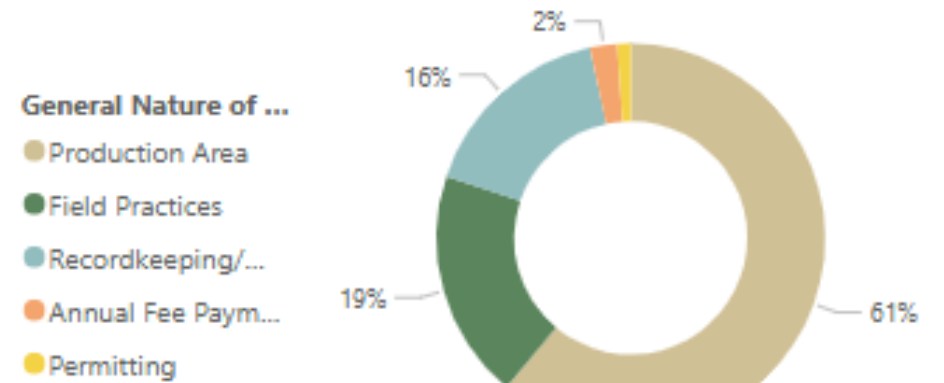
# Inspection & Enforcement



## Farms Receiving Enforcement Actions and Referrals



## Counts/Violations by General Nature of Violation



# **Federal vs. State Regulation of Agricultural Water Quality**

Point Source = Federal CAFO  
(Clean Water Act)

Non-Point Source = Agency of  
Agriculture State programs  
(RAP, MFO and LFO regulations)

# Legal Decisions of Federal CAFO

## 2003 CAFO Rule

Included a duty to apply for a CAFO permit for “potential” to discharge.

### Waterkeeper decision

“the regulatory scheme enacted by Congress; the Clean Water Act gives the EPA jurisdiction to **regulate and control only actual discharges** – **not potential discharges**, and certainly not point sources themselves.”

## Revised CAFO Rule 2008

Included that CAFOs “propose to discharge” if they are “designed, constructed, operated, or maintained such that a discharge would occur.”

### National Pork Producers decision

“we conclude that the EPA **cannot** impose a duty to apply for a permit on a CAFO that “**proposes to discharge**” or any CAFO before there is an **actual discharge**.”

# Vermont Regulatory Framework

ANR CAFO (actual discharges)

MFO and LFO (prevent discharges)

RAPs (regulate all farms to prevent discharges)

# Differences between Permitting Schemes



| CAFO Permit (federal)   | MFO and LFO Permits (state)                                   |
|---|---|
| 25 year-24 hour infrastructure  | 25 year-24 hour infrastructure                                |
| NMP   | NMP   |
| Allows Discharges   | Prevents Discharges   |
| No erosion requirements   | Erosion standards   |
| No nuisance requirements  | Nuisance requirements   |
| No construction requirements  | Construction permitting                                       |
| Citizen suits (anyone)  | Aggrieved persons (impacted)                                  |
| 0 foot buffer (100' manure setback), or<br>35 foot buffer streams, or<br>Alternative (equiv. to 100' setback) | 25 foot buffers on streams, and<br>10 foot buffers on ditches |
| Winter Spreading  | Ban on winter spreading                                       |
| No soil phosphorus limits   | Required phosphorus reductions                                |
| No soil condition requirements  | Snow and saturated soil requirements                          |
| No min storage requirement  | 180 days of storage required                                  |
| No groundwater regulations  | Groundwater standards   |

# Regional State Examples

## Vermont

DEC manages CAFO permits, no permits issued to date. VAAFPM issues MFO (97) permits with minimum 3 year inspections, and LFO (36) permits with annual inspections.

## Maine

EPA approved delegation including a MOU between the Agriculture and Environmental Departments. Agricultural Department inspects majority of farms and issues LOP permits. Environmental Department manages 6 CAFO permits in 2023. They had 33 farms that were greater than 200 mature cows in the 2022 census. Inspect at least once every 5 years.

## New York

No CAFO permits in 2023. There were 633 farms with more than 200 mature cows in 2022 census. All alternative state “no discharge” permits issued by Environmental Department. Farms greater than 300 cows inspected once every 5 years. Farms between 200 and 300 cows are not inspected, complaint based.

## New Hampshire

One permit managed by EPA in 2023. 14 farms greater than 200 cows in 2022 census. EPA inspects once every 5 years. No inspection or alternative permit on remaining farms, complaint driven.

# Water Quality Regulatory Database

**Operation / Facility Information - Main Farm**

Details Toggle Facility Layer Pre-Visit Data Check Export All Farm Operation Data Upload Photos

Operation Edit Facility Edit Reassign Facility

Farm Name Contact Info Farm Mailing Address

Assets Visit Records Interactions People Involved **Enforcement Actions** Practices Permitting and Certification Map

Add Enforcement Action

| Date              | Docket        | Enforcement Action Type | Status | Link |
|-------------------|---------------|-------------------------|--------|------|
| September 4, 2020 | 2020-08-03 LF | CAL                     | Closed | Link |
| May 20, 2022      | 2022-05-19 LF | CAL                     | Closed | Link |
| May 3, 2023       | 2023-04-13 LF | NOV                     | Closed | Link |
| May 3, 2023       | 2023-04-14 LF | CAL                     | Open   | Link |
| June 12, 2024     | 2024-06-05 LF | 4991                    | Open   | Link |
| September 4, 2024 | 2024-08-12 LF | CAL                     | Open   | Link |
| September 4, 2024 | 2024-07-03 LF | NOV                     | Open   | Link |

**Operation / Facility Information - Main Farm**

Details Toggle Facility Layer Pre-Visit Data Check Export All Farm Operation Data Upload Photos

Operation Edit Facility Edit Reassign Facility

Farm Name Contact Info Farm Location Address

Assets **Visit Records** Interactions People Involved Enforcement Actions Practices Permitting and Certification Map

Add Visit Record Hide Background Assets Fill Transparency:

| Visit Record ID | Date         | Visit Type               | Inspector      |
|-----------------|--------------|--------------------------|----------------|
| 3955            | Nov 19, 2024 | Inspection               | Mianda Wood    |
| 3540            | Mar 27, 2024 | Enforcement              | Brittany Cole  |
| 3509            | Mar 8, 2024  | Admin/Office Review      | Brittany Cole  |
| 3486            | Nov 2, 2023  | Inspection               | Connor Steckel |
| 3487            | Nov 2, 2023  | Inspection (Field Check) | Connor Steckel |
| 3316            | Oct 3, 2023  | Admin/Office Review      | Brittany Cole  |
| 3164            | Dec 10, 2022 | Technical Assistance     | Sylvia Jensen  |
| 2924            | Dec 5, 2022  | Investigation            | Connor Steckel |
| 2950            | Nov 4, 2022  | Inspection (Field Check) | Connor Steckel |
| 2923            | Nov 4, 2022  | Inspection               | Connor Steckel |
| 1253            | Nov 5, 2021  | Inspection               | Connor Steckel |
| 1333            | Nov 5, 2021  | Inspection (Field Check) | Connor Steckel |
| 1096            | Jul 14, 2021 | Enforcement              | Connor Steckel |
| 965             | Dec 16, 2020 | Inspection               | Connor Steckel |
| 945             | Dec 16, 2020 | Inspection (Field Check) | Connor Steckel |
| 104             | Nov 7, 2019  | Inspection               | Connor Steckel |
| 494             | Nov 1, 2019  | Investigation            | Connor Steckel |
| 2152            | Dec 12, 2018 | Inspection               | Connor Steckel |

# Partner Database

**Map Controls**  
Export Map Tools

Map Theme:

Basemap:

Optional Layers:

- CLU Boundaries
- ANR Counties
- ANR Towns
- ANR Deer Wintering Areas
- ANR Rare and Endangered
- ANR Floodable Soils
- ANR Wetlands VSWI
- ANR Waterbody/Streams
- ANR Soils
- ANR Soil Hydrogroup
- ANR Tactical Basins
- ANR Watersheds HUC12
- ANR Watersheds HUC10
- ANR Watersheds HUC8
- ANR Roads

COUNTY: Washington

TACTICAL BASIN: Winooski

HUC12 WATERSHED: Nasmith Brook-Winooski River

NUTRIENT MANAGEMENT: NMP Implemented

MANURE MANAGEMENT: Solid

MANURE STORAGE: Stack

WATER SOURCE: Drilled Well

FARM WAIVER-FARM: Yes

FARM WAIVER-NRCS: No

Fields **Practices** Visits & Interactions People Involved

Status:  Program:  Year:

| Practice ID | Practice                  | Program         | Status          | Install Date |
|-------------|---------------------------|-----------------|-----------------|--------------|
| 9858        | Cover Crop                | [Not Specified] | [Not Specified] | Sep 25, 2019 |
| 8437        | Access Road               | BMP             | [Not Specified] | Aug 1, 2019  |
| 6222        | Fence                     | Farmer          | Installed       | Apr 16, 2019 |
| 6670        | Prescribed Grazing        | [Not Specified] | [Not Specified] |              |
| 9724        | Heavy Use Area Protection | BMP             | Planned         | Aug 5, 2019  |



# Let's Take a Drive through PowerBI

# Contact Us!

Laura DiPietro, Director

(802) 595-1990

[laura.dipietro@vermont.gov](mailto:laura.dipietro@vermont.gov)

Nina Gage, Assistant Director

(802) 622-4098

[nina.gage@vermont.gov](mailto:nina.gage@vermont.gov)

