



VERMONT

AGENCY OF AGRICULTURE, FOOD & MARKETS



2016 Annual Report

www.Agriculture.Vermont.gov

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Executive Summary

It was a dynamic year for agriculture in Vermont. Maple producers had their best year on record, producing 1,990,000 gallons of syrup, up from 1,410,000 in 2015. We remain the top maple state in the nation.

Challenging milk prices have made it a difficult year for the dairy industry. As 2016 comes to a close, the Vermont dairy industry has 841 remaining dairy farms, down from 878 dairies in January of 2016. Of those dairies, twenty-eight milk goats, and six are milking sheep. The number of cows in the state, and the volume of milk we produce, has remained steady, however, as farms find new and innovative ways to become more efficient. By far, dairy remains the most prominent sector of our ag economy, representing 70% of Vermont agricultural sales, and 80% of our total farm land.



This report outlines the major accomplishments of the Vermont Agency of Agriculture, Food, and Markets. The summary below provides highlights of the in-depth information included in this report.

Major accomplishments and milestones of 2016

Administration

Business office

- Ramped up efforts to bring unregistered products into compliance
- Created new tools to improve customer service
- Relocated to a new office space

Communications

- Continued to promote the Milk Matters campaign, funded by dairy check-off, which highlights the value of dairy in Vermont
- Laid the groundwork for expanding Agriview, the Agency newspaper, in 2017
- Worked with program teams to create communications strategies, project plans, and marketing tools
- Lead the transition planning effort by creating reports, contact lists, and summaries to ready the new leadership team

Information Technology

- Created new tools for constituents: CSA directory, farm stand directory, electronic file drop box for farmer permits
- Improved data security
- Increased GIS capacity
- Accelerated hardware replacement schedule, ensuring staff have the tools they need to do their job efficiently

Agricultural Development

- Organized “signature” events: Consumer Night at the Farm Show, Buy Local Market, Big E, Farm to School Conference
- Piloted Universal Meals, part of the Farm to School program, which offers free meals to all students in select, eligible Vermont schools
- Published new economic data to support the importance of buying local foods
- Laid the groundwork for the implementation of the Food Safety Modernization Act
- Played a key role in the statewide conversation about renewable energy, and the impact to prime agricultural soils
- Continued to address the complex issues associated with Rural Enterprises – working lands businesses that do not fit the traditional definition of “farming”
- Expanded the Working Lands program to include 0% financing opportunities for food, farm, and forestry businesses
- Hosted a trade mission to Japan, to explore new markets for Vermont businesses

Agricultural Resource Management

- Finalized the new Required Agricultural Practices, which defines practices all farms must follow to protect water quality
- Collaborated with state partners to address the new Total Maximum Daily Load for Lake Champlain, released this year by the Environmental Protection Agency
- Worked with the Conservation Law Foundation to come to an agreement which formed the basis of the Revised Secretary’s Decision in response to their petition. It will require all farms in the Mississquoi Basin to implement best practices where the RAPs are insufficient
- Added 12 new staff and opened a new office in Williston
- Organized a Pollinator Protection Committee, to make recommendations regarding the use of neonicotinoids.
- Expanded mosquito surveillance to include all of Vermont
- Launching a pilot program for sampling and analysis of industrial hemp for registered hemp producers
- Continues to move forward with plans for the new Ag and Environmental lab, which is set to break ground in Randolph in 2017

Food Safety & Consumer Protection

- Honed and refined emergency preparedness measures for animal disease response
- Launched new outreach efforts to identify and strengthen relationships with producers
- Increased capacity to support the growing dairy processing industry
- Provided new consumer protection enforcement information to the public
- Streamlined the new farmers’ market audit program
- Participated in the state-wide performance-based budgeting initiative

Mission Statement

VAAFM facilitates, supports and encourages the growth and viability of agriculture in Vermont while protecting the working landscape, human health, animal health, plant health, consumers and the environment.

About the Agency of Agriculture

The Vermont Agency of Agriculture, Foods and Markets is involved in all aspects of agriculture in the state. The Agency regulates, develops and promotes agriculture and agricultural products in Vermont. The agency currently has 112 classified employees, four exempts and twenty-four paid temps and interns.

Offices:

- Our main office is located at 116 State Street in Montpelier
- Our Business Office is located on the third floor at 100 State Street in Montpelier
- Our Water Quality team is stationed at the 94 Harvest Lane Office in Williston
- We also have temporary* laboratory facilities in Berlin at 322 Industrial Lane, and in the Hills Building, 105 Carrigan Drive on the University of Vermont campus.

**Temporary lab has been in place since the flood of the Waterbury lab complex in 2011 – new lab facilities anticipated in 2018.*



Our Main Office is located at the 116 State St. in Montpelier. Built in 1891, this historic building was originally home to the National Life Company

The Agency is organized into four divisions:

- The Division of Administration oversees and coordinates agency policy and promotes interests of consumers and producers.
- The Division of Agricultural Development plays a critical a role in developing local, regional, national and global markets for Vermont's agricultural products.
- The Division of Agricultural Resource Management (ARM) regulates pesticides, feed, seed and fertilizers. The division administers Vermont's agricultural water quality programs and enforcement of environmental and safety laws.
- The Division of Food Safety and Consumer Protection is organized into the following sections providing oversight in the areas of: livestock and poultry heath, consumer safety and protection, dairy inspection, and meat and poultry inspection.

Leadership Team

Administration

Anson Tebbets, Secretary (effective 1/5/17)
Alyson Eastman, Deputy Secretary (effective 1/5/17)
Diane Bothfeld, Director of Administrative Services IV
Thea Schwartz, Assistant Attorney General for Agriculture, Food, and Markets
Marcey Hodgdon, Director of Finance
Hunter Thompson, IT Director
Alison Kosakowski, Director of Communications and Policy
Terry Smith, Executive Assistant

Agricultural Development

Chelsea Bardot Lewis, Business Development Section Chief
Abbey Willard, Food Systems Section Chief
Stephanie Smith, Land Use Section Chief

Agricultural Resources Management

Jim Leland, Director
Laura DiPietro, Deputy Director
Guy Roberts, Lab Director
Cary Giguere, Pesticides Regulation Section Chief
Tim Schmalz, Plant Industry Section Chief
Nate Sands, Ag Water Quality Section Chief
Rob Achilles, Engineering Section Chief

Food Safety & Consumer Protection

Dr. Kristin Haas, State Veterinarian & Division Director
Dr. Kathy McNamara, Assistant State Veterinarian & Deputy Division Director
Dr. Shelley Mehlenbacher, Assistant State Veterinarian & Animal Health Section Chief
Henry Marckres, Consumer Protection Section Chief
Randy Quenneville, Meat Industry Section Chief
Dairy Industry Section Chief (currently vacant – hiring in 2017)

Administration Division

The Division of Administration oversees and coordinates agency policy and promotes interests of consumers and producers.

Business Office

The Business Office continues to seek out new ways to improve efficiency and service delivery. They are focused on honing processes and working smarter, in an effort to increase capacity.

The team has relocated to the third floor at 100 State Street in Montpelier, inside the Capitol Plaza. The move has created more space for the team, and also freed up desks at the 116 office. With added distance, and fewer face-to-face opportunities, the team has sought out creative ways to stay engaged with the staff and keep relationships strong.

The Licensing and Registration team has developed a Retail License Fact sheet to make it easier for business owners to understand the license requirements associated with running their operations. From scales, to scanners, to feed and commodities, the Agency is required to issue licenses for a broad spectrum of retail-related items – over 45,000 licenses are issued annually, in 33 different categories. The team created this new resource to alleviate confusion and help retailers understand their licensing obligations, so they can fulfil them.

Building on the success seen in 2015, the Licensing and Registration team increased the number of retail “field trips” to scout for unregistered products this year. The goal of these outings is to spot unregistered products on retailers’ shelves, so the team can reach out to the manufacturer and let them know of their obligation to register with the State of Vermont. This year, the team recouped more than \$45,000 of outstanding fees from manufacturers who’d previously failed to register. In 2017, the team hopes to continue to invest more staff time in this effort to improve equity amongst manufacturers, retailers, and other licensees in support of the Agency’s regulatory function.

Communications

The Communications team continues to provide the Agency with strategic guidance related to constituent outreach, public education, and promotion efforts.

The dairy promotion program, funded by dairy check-off, had another strong year. The program continued to leverage the key messaging from Milk Matters Campaign, launched in 2015. Highlights from the 2016 effort include a print campaign in eight local Vermont publications, including the Burlington Free Press, Rutland Herald, and Vermont Life, reaching an audience of 401,435 viewers.

The team continued to work in partnership with program managers to help communicate key messages and build awareness for programming. From Domestic Export, to Meat Inspection, to Water Quality, the team collaborated with nearly every section at some point this year to help amplify their programming and communicate critical information.



The “Milk Matters” campaign, funded by dairy check-off, continues to highlight the role of dairy in Vermont

In 2016, the team explored ways to expand the reach of the Agency's monthly newspaper, Agriview. We are investigating the potential of making Agriview available at no charge to all Vermont farmers. In the coming year, this potential expanded Agriview presence could serve as an important tool for connecting with farmers, building relationships, and ensuring the agricultural community has the critical information it needs to succeed.

As 2016 came to a close, the Communications team played a critical role in the administration transition, creating summaries, reports, contact lists, and timelines to ready the new leadership team.

Information Technology

Hunter Thompson joined the Agency as IT Director in September 2015, and under his leadership, the IT team continues to emphasize process improvement, self-service, and efficiency.

As part of the merger of the Natural Resources and Ag laboratories, the IT team managed the process of absorbing the lab information systems into an Agency IT infrastructure.

In an effort to provide consumers with better access to local, fresh food, the IT team worked with the Local Foods team to create a searchable online database of all farms offering Community Supported Agriculture (CSA) shares. This new tool fulfills the vision of the Local Food team to make this information easily available for public use, and complements the searchable online farm stand directory, created by the IT team at the end of 2015.

The IT team retired the outdated dairy server and moved the data to a virtual location at the state data center. Not only was this old hardware clunky and inconvenient, the threat of losing critical information due to a hardware malfunction or power outage was ever-present.

The IT team continues to develop and hone capabilities related to mapping and Geographic Information System (GIS). We now have dairy farms mapped in Farmviewer. (Farmviewer is an internal tool that enables us to map our producer locations and attribute specific data to each.) All other farms in the USA Herds and USA Food Safety databases have also been mapped. The team developed a process to automatically geocode farm data captured in the field, which makes data entry seamless.

The team now runs some of our GIS services on Agency owned and operated GIS software, which allows us to host some of the information shown in Farmviewer. By hosting this data ourselves, we now have the ability to share select data with partners, enabling greater collaboration. Previously, there were only two options; either all of the data was private, or all of it was available to the public. We can now slice and share the data in the ways that make the most sense for business purposes, and meets the statutory public records requirements for privacy protection.

The IT team also made great strides towards expanding our in-house reporting capabilities. Staff can now run self-service reports on key data sets. From farm counts to overdue licenses, most Agency data is now available in a self-service format. Previously, staff had to wait several days for data to be extracted and delivered in Excel format. Now they can download the data they need themselves, easily.

Another process improvement added in 2016 was the creation of a document drop box for farmers submitting files to the Agency. The process of submitting large files such as nutrient management plans, which were often too big for email, used to be messy and cumbersome. Now farmers and crop

consultants have an easy way to electronically share the compliance information they need to maintain their permit.

In the coming year, the team hopes to continue this trend toward enhancing ease-of-service and offer credit card renewals online. They also aim to make self-service training videos available for lab customers, to educate them about specific topics such as “how to prepare a sample for testing,” with the aim of reducing improper sample submissions.

Finally, the team has worked hard to provide staff with the tools and technology they need to do their daily work better. Previously, hardware, such as laptops and cell phones, were replaced every four years. The team has accelerated the replacement schedule down to three years. With better equipment, our staff are able to get their work done more efficiently, with fewer hassles.

Agricultural Development Division

The “Ag Dev” team continues to support the growth and viability of Vermont’s diversified agricultural economy. In 2016, the team once again increased in size and scope.

Local Foods Section

Events

The Local Foods team once again organized two of the Agency’s “signature events” – Consumer Night at the Vermont Farm Show, and the Buy Local Market on the Statehouse lawn. Public participation in these events continues to grow. They are a touchpoint for the Agency to engage with constituents, enhance awareness for the importance of local food, and deepen connections across the industry. Fifty producers showcased their wares on Consumer Night in January, which was attended by several hundred shoppers who sampled and purchased local foods and watched legislators compete against the Agency in the Annual Capital Cook-off. More than forty producers participated in August’s Buy Local Market on the Statehouse lawn, which was attended by over a thousand members of the public.

Farm to School

In November, the Local Foods team organized and hosted a highly successful statewide Farm to School Conference. Held at Lake Moree Resort, the event was attended by 200 participants, including partners, educators, farmers, and community members interested in strengthening Vermont’s Farm to School network.

Another key development for the Local Foods team this year was the inclusion of Universal Meals funding in the Farm to School grants, as directed by the legislature in the 2016 session. The Universal Meals program provides free meals to all



Legislators compete in the Capital Cook-Off on Consumer Night at the 2016 Farm Show



The 2016 Buy Local Market on the Statehouse lawn

students, regardless of economic need, in eligible districts. 2016 was a pilot year – funding was available for five schools to test out the feasibility of this offering. The team administered these five Universal Meals grants while also continuing to support five planning and four implementation grants. (Planning grants allow schools to prepare to build their F2S programming – implementation grants support the execution of existing programs).

The team continues to further the mission of supporting the inclusion of local foods in Vermont schools and institutions. They are working closely with food service directors across the state to identify and address barriers. To that end, in 2016, the team developed a best practices guide for offering milk to students in schools. The guide addresses the challenges and benefits of serving packaged milk, versus dispensed milk, and offers cafeteria managers strategies for serving milk to students successfully. The guide has been well received across Vermont, and is now sought out by partners in states across the country.

Furthering the theme of institutional buying, the team succeeded in securing a commitment from state government to purchase 10% of their food locally at the Northeast Correctional Facility. VAAFM helped to build the relationship as part of our role in the Local Procurement in State Government Advisory group.

The Local Foods team also published an economic study that quantifies the impact of Farm to School purchasing on local communities. Researched by the Center for Rural Studies and funded by the Vermont Community Foundation, the report determined that for each dollar schools spend on local foods, sixty cents circulates back within the local community. The health, educational, and social benefits of Farm to School programming have been long established – this report sheds new light on the local, economic benefits of Farm to School purchasing.

The team also published a wholesale readiness survey analysis which describes the key characteristics of producers ready to scale up to supplying for wholesale markets. After gathering input from 125 producers, the team assessed what a business needs to succeed at wholesale. This will be a helpful tool for local farmers exploring the best way forward in growing their businesses, and for service providers in determining the most valuable technical assistance to support increased wholesale production.

The team also published a statewide farm stand and community-supported agriculture directory, enabling consumers to easily search for local, direct-to-consumer food options in their area.

A price comparison study, that provides an analysis of the price differential between local and organic foods sold direct-to-consumers at farmers’ markets or CSAs, versus through a third-party retailer, such as a local grocery store. The study determined that commonly purchased local food items can be affordably priced at farmers’ markets, and that purchasing decisions are driven by price as well as other values, including local and organic attributes. Findings from the study help dismantle the preconception that local food is universally less affordable.



A guide to help food service directors serve more milk in Vermont schools

FSMA

The local foods team has been part of the cross-Agency effort to prepare for the Food Safety Modernization Act (FSMA). In 2018, produce operations will need to be in compliance with FSMA, which will require a significant shift in practices for Vermont's fruit and vegetable farmers. The Agency team has spent the past year laying the groundwork for an extensive producer education and outreach initiative, which will launch in 2017. Their goal is to support public health and safe food production, while also ensuring Vermont's fruit and

vegetable farmers maintain access to key markets, and remain competitive in this new regulatory environment. The Agency secured \$3.625 million in federal funding to stand up a produce safety program in Vermont, which will enable the Agency to hire staff and design the systems to support this new regulatory compliance framework. This has been an Agency-wide effort, leveraging staff and resources from the Food Safety and Consumer Protection Division, the Ag Dev Division, as well as the Ag Resource Management Division. To support the FSMA effort, the Agency is adding five new staff positions, with a focus on communications, outreach, and education, IT, legal support, and inspections.

Land Use Section

As interest and momentum around alternative energy use grows in Vermont, so too does the role of the Agency's Land Use section.

During the 2016 legislative session, under Title 30, section 248, the Agency was given responsibility to review all proposed energy generation projects over 500kw when cited on primary agricultural soils. The Agency now has a duty to participate in an increased scope of work to protect this natural resource.

With the help of a very capable graduate student intern, the team mapped all on-site mitigation land permitted in the state of Vermont since 2006. This GIS resource is now available to all municipalities, and is used as part of municipal and regional energy planning efforts.

The Land Use team also working with the Department of Environmental Conservation to address questions related to the use of poultry in composting operations. In summary, there had been some outstanding issues related to farms that fed poultry from a compost pile. Is it feed, which would put it under the jurisdiction of VAAF, or compost, which means it is regulated by DEC? Indeed, it is still compost. VAAF and DEC continue to work together to develop a best practice guide to help farmers interested in composting with chickens. A draft is available for public comment.

Vermont Produce Program Development

January 2017

- NECAFS Annual Meeting with all northeastern seaboard state and extension partners: 1/9-11 - Boston MA
- VVBGA Annual Meeting presentation on FSMA and Produce Program: 1/23 - Lake Morey

February - May 2017

- NOFA-VT Winter Conference workshop presentation: 2/19
- Buyer/Distributor Meeting
- Large Stakeholder Meeting
- Growers, Service Providers, Buyers/Distributors, Associations, Advocacy Organizations
- National Consortium for Produce Safety Program Development Meeting: 2/28-3/2 - FL
- Produce Program Advisory Group Meeting
- Release produce farm inventory registration

June - November 2017

- Vermont On-Farm Readiness Review Pilot: 6/26-29
- Hire & train first Produce Program Inspection staff

2018- 2020

- 2018: Launch Capital Infrastructure Grant Program
- Begin mandatory inspections for farms with \$500,000+ in annual produce sales
- 2019: Compliance begins for small businesses with less than \$500,000 in annual produce sales
- 2020: Compliance begins for very small businesses with less than \$250,000 in annual produce sales
- Compliance date for labeling requirements for Qualified Exemption

There's an ambitious scope of work to be accomplished to get Vermont FSMA-ready by 2018

Vermont entrepreneurs are increasingly seeking new ways to engage the working landscape, and the resulting operations often stretch the boundaries of the regulatory definition of “farming.” The Agency has been engaged in an ongoing effort to determine how to incorporate these businesses into a framework which would allow certain scaled, diversified business models to exist on working farms. The Land Use team is working closely with the Farm Bureau, advocacy organizations, and planners from across the state to assess this evolving situation, and expand business opportunities for rural enterprises that do not meet the traditional definition of farming.

In the coming year, the team plans to work with municipalities to navigate their role in regulating agricultural activities under the new Required Ag Practices (RAPS).

The Agency is also engaged in a scope of work to promote renewable energy production on farms. The Agency prioritizes initiatives where the energy project is integral to farming and where the farmer has a chance to get paid for non-energy benefits. Examples include: promoting biodigesters or manure composters where the equipment also separates the phosphorus from the manure; or where the carbon credits can be sold to help the financial proposition; promoting farming-friendly solar projects, where the rows are far enough apart and high enough to allow for grazing or haying.

In 2017, the team will be working with UVM Extension to develop a market for wasted sheep wool, by lightly processing it into an environmentally friendly building insulation product. They will also be working with UVM Extension and Efficiency Vermont to install a ground-source heat pump at a dairy farm, where the heat pump would both pre-heat most of the water for cleaning, and provide all of the cooling for the milk.

Business Development Section

Working Lands

The Working Lands program continues to adapt and evolve in meeting the needs of Vermont’s food, farms, and forest business community. In 2016, the team launched two loan pilot programs, in partnership with the Vermont Economic Development Authority (VEDA) and the Vermont Community Loan Fund (VCLF).

With VEDA, Working Lands funds now support interest-free loans to dairy farmers looking to transition to an organic model. These loans will enable dairy farmers interested in exploring a more stable price, committed to organic principles, to take the steps needed to make an organic transition

With VCLF, Working Lands funds now support 0% financing on SPROUT loans, available to producers and processors in the food, farm, and forest sectors. In both cases, Working Lands is essentially providing a “grant” to cover the interest which would be owed by applicants, who are responsible for paying back the principle on their own.

The Working Lands team continues to work with the forestry sector to explore how some of the tools available to agricultural businesses, such as tax exemptions and workers compensation insurance, could be applied to the forestry sector. They continue to host wood products meet-ups and policy discussions to explore how the state can best support growth in this industry.

Export

The Export team continues to support Vermont producers seeking to market their products outside of Vermont.

This year, the team forged a strategic relationship with the Good Food Mercantile, which hosts high-end events for specialty foods buyers in cities across the country. Unlike other food shows, Good Food Mercantile hosts highly targeted and curated events, marketing to high end retailers in an intimate setting. Fourteen Vermont companies, plus the Cheese Council, were among the 120 producers featured at the Mercantile this year. This high penetration of the Vermont brand is making a distinct impression on the specialty food buyers in attendance, who are seeking unique, high quality products with a distinctive back story. This effort is enhancing the perception of Vermont as a premiere destination for finely crafted ag and culinary products and is critical to the strength of the Vermont brand.



YOLO! Snacks was one of many Vermont companies to make meaningful connections at the Local Food Matchmaker event

Other efforts to connect local producers with buyers included the annual local food matchmaker event, hosted in partnership with the Vermont Fresh Network, which brings together grocers and local producers, and the annual Specialty Foods Show in New York City, at which 40 Vermont producers were represented.

The team had another successful year managing the Vermont Building at the Eastern States Exposition (The Big E), breaking all sales previous sales records for the building (\$1.7m in sales). They also convened eight Vermont companies for a highly successful trade mission to Japan, which resulted in new international market opportunities for several participants.

In 2015, the team obtained a Federal-State Marketing Improvement Program (FSMIP) grant to explore opportunities for Vermont-branded products. The team retained 5th Element Consulting to engage in a research project to assess the needs of Vermont producers and determine how VAAFM can best support a Vermont-branded marketing effort. The work is still underway, and results and analysis are expected in the first quarter of 2017. With the support of another FSMIP grant, the team is engaged in creating a “distribution toolkit” which will support producers in determining the best distribution methods for their products. FSMIP provides matching funds to State Departments of Agriculture, State agricultural experiment stations, and other appropriate State agencies to assist in exploring new market opportunities for U.S. food and agricultural products, and to encourage research and innovation aimed at improving the efficiency and performance of the marketing system.

Agricultural Resource Management Division (ARM)

The Division of Agricultural Resource Management (ARM) regulates all pesticides, feed, seed and fertilizers. The division administers Vermont's agricultural water quality programs and enforcement of environmental and safety laws. The division also oversees vector management, pathology, entomology, export certification, nurseries, pest survey, and the Ag and Environmental lab.

Water Quality Section

The past twelve months have been marked by tremendous growth and change for the ARM division, as they work to implement the regulatory framework mandated by the Clean Water Act, which was signed into law in June of 2015. This legislation set into motion a vast scope of work for the Agency, which will continue throughout 2017 and beyond.

RAPs

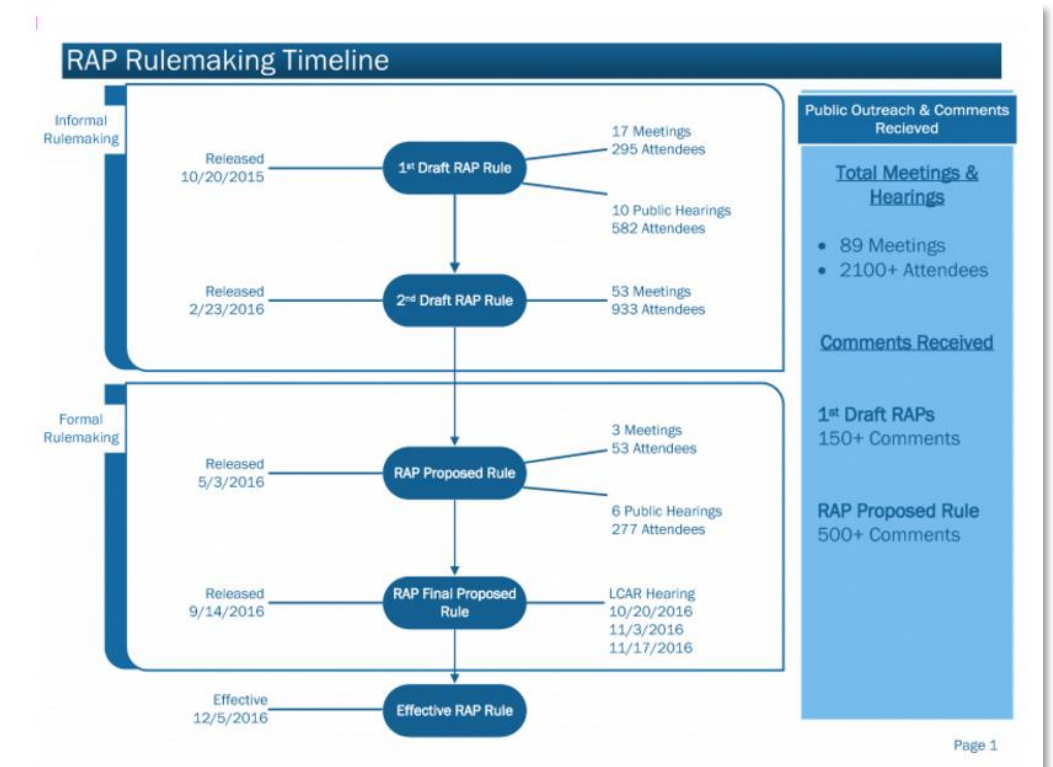
The cornerstone of the Agency's work to enact the Vermont Clean Water Act is the new Required Agricultural Practices (RAPs), which build upon the existing Accepted Agricultural Practices (AAPs) to bring more Vermont farms into the inspection framework, and enhance the measures all farms must take to protect natural resources and water quality.

Beginning in October 2015, and continuing throughout 2016, the Agency engaged in a massive public outreach effort to engage regulated stakeholders and members of the public from across the state in the rulemaking process for the RAPs.

The team understood that, for the new regulations to be meaningful and effective, it was critical to involve the farming community, and the public-at-large, every step of the way. The Agency hosted eighty-nine meetings, including six public hearings, which were attended by more than 2100 individuals. The Agency also received over five hundred written comments in response to a draft of the rule, which were all considered during the rule-making process. On September 14, the Agency filed the final rule with the Legislative Committee on Administrative Rules, and on December 5, the rules became effective.

The RAPs are the most significant change to the rules governing agriculture in Vermont, to date. The rulemaking process was extensive and elaborate, and consumed the team's focus throughout 2016. In the year ahead, the Agency will undertake the significant task of educating farmers about the new practices they will need to employ.

Although VAAFM sought the guidance and feedback of ag stakeholders during the rulemaking process, and their input was considered and incorporated, significant fears and concerns from the farming



Throughout the rulemaking process, the Agency sought to involve stakeholders every step of the way

community remain. The spirit of partnership that traditionally existed between farmers and ARM regulators has been challenged by this process. Some have voiced concerns that “the Agency is trying to put farmers out of business.” Coupled with challenging milk prices that do not currently cover the cost of production, dairy farmers are feeling especially stressed and frustrated. Likewise, the Small Farm Certification Program will require many new, previously uninspected farms, of all types, to be regularly inspected, a prospect many find intimidating. In light of these circumstances, the team is dedicating additional time, effort, and resources to the task of public outreach and education. Effective communication is a top priority, and will continue to be a key team focus in the coming year. Change management takes time, and the team is dedicated to “education before regulation,” ensuring all farmers have the knowledge, information, and resources to successfully implement the RAPs.

Required Agricultural Practices Effective Dates Discussion: Spring 2017

Section	Description	Effective Date	Discussion
6.04(d)	Cover Cropping of Floodplain Fields	April 15, 2017	Cover crops will not be required to be established on floodplain annual crop fields for Fall 2016
6.05(b)	Extended Winter Spreading Ban on Floodplain Fields: 10/15 - 4/15	April 15, 2017	The extended winter manure spreading ban for floodplain fields will not be in place for Fall 2016
6.07(a) & 6.07(b)	Vegetative Buffer Zone Establishment: - 25' Surface Water, - 10' on Ditches; - 100' on Annual Cropland, Vegetable Cropland or Small Grain Cropland with greater than 10% slope	April 15, 2017	25' Vegetative Buffer Zones on surface water, 10' on ditches, and 100' on annual, vegetable or small grain cropland with 10%+ slope will be required to be established prior to the 2017 cropping season. Fall 2016: No tillage will be allowed in the buffer zones on streams and ditches, unless it is for preparing a seeding of perennial vegetation. Fall is an ideal time to establish a perennial vegetative buffer on an annual crop field prior to next spring's cropping season.
6.07(d)	No Application of Manure or Ag Waste within: - 10' of a ditch - 25' of surface water or surface inlet - 100' of surface water on a 10%+ average slope Annual Crop Field	On Adoption	Upon passage of the RAP Rule, manure and ag waste spreading restriction within vegetative buffer zones will become effective and will be enforced. Manure and ag waste spreading restrictions also apply to private (100') and public water supplies (200').
4	Small Farm Certification Program	July 1, 2017	The Certified Small Farm Program will go into effect on July 1, 2017 as outlined in Act 64 of 2015.
6.03(a)	590 Nutrient Management Plan (NMP) Requirement for Certified Small Farm Operations	July 1, 2017	The requirement for Certified Small Farm Operations (CSFO) to develop a 590 Nutrient Management Plan will become effective July 1, 2017. VAAFM will be working with partners on developing another equivalent standard in the interim which will serve as a stopgap NMP until a farm can access TA resources to develop a 590 NMP. VAAFM is also reminding farmers that soil sampling has been a requirement of all farms in the state since 1995 and that soil samples should be no more than 5 years old. Records will need to be kept of manure and ag waste applications per the RAP Proposed Rule.
10	Custom Manure & Ag Waste Applicator Certification	January 2017	The Custom Applicator Certification Program will not be effective for the Fall 2016 Manure Spreading Season. The program will be implemented in Winter of 2016/2017 for the Spring of 2017 field season.

2017 will include many key mile stones for the Required Agricultural Practices

Conservation Law Foundation Petition and Revised Secretary’s Decision

On February 3, 2016, the Secretary issued a revised decision regarding the Conservation Law Foundation (CLF) petition to require mandatory Best Management Practices (BMPs) for farms in the Missisquoi Bay Basin. The Revised Secretary’s Decision makes a threshold determination that BMPs are necessary in the basin to achieve compliance with Vermont’s water quality goals.

In May 2014, CLF petitioned the Agency to impose mandatory BMPs on farms in the Missisquoi Bay Basin. In a November 2014 decision, the Secretary denied the petition. CLF appealed to the Vermont Superior Court in December 2014. On June 16, 2015, Governor Shumlin signed into law Act 64. The new

legislation changed considerations that formed the basis for the Secretary's initial decision. Given the new legislation and CLF's appeal, the Secretary revised his earlier decision.

The Revised Decision provides a framework for outreach, education and assessment of farms in the watershed and a process for farm-specific development and implementation of a Farm Plan to address identified water quality resource concerns, where needed. Farm assessments may conclude that practices required by the RAPs are sufficient to protect water quality and that BMPs may not be required due to a farm's specific characteristics or management.

Throughout 2017, the Agency continue to engage in a comprehensive awareness campaign to educate farmers about the measures they must take, over the next ten years, to comply with the Revised Decision.

Total Maximum Daily Load

In June of 2016, the federal Environmental Protection Agency (EPA) finalized the Total Maximum Daily Load (TMDL) for Lake Champlain, finalizing a multi-year process that began when the Conservation Law Foundation sued the EPA in 2008, challenging the calculations in the TMDL first issued by the EPA in 2002. The TMDL sets the standard for the maximum amount of Phosphorous the lake can safely assimilate daily and still meet water quality standards.

Vermont now has a TMDL for Lake Champlain, and an implementation plan, which includes the measures required by the Vermont Clean Water Act of 2015. The next step for the state is to identify the \$1.3 billion of funding that the Department of Environmental Conservation estimates is needed for implementation over the next 20 years.

New Office, Growing Staff

To accommodate the scope of work mandated by the Vermont Clean Water Act, the ARM division needed to hire new staff. Over the past year, the team has added twelve additional positions, and reorganized the division to increase efficiency and streamline workflow. The new organizational structure was designed to provide growth and advancement opportunities for staff, and builds upon the career ladders the team developed in 2015. The team also opened a new office location in Williston, to centralize water quality operations and make space for the growing headcount.

New staff were provided significant training to acclimate them to the work of the Agency and prepare them for working with farmers in the field. The team has been fortunate to hire many new staffers with a



The Water Quality team at a stream biology training on the Mississquoi River



The new office on Harvest Lane in Williston

background in agriculture, but nevertheless recognized the importance of providing inspectors with the training needed to address the unique needs of the farming community.

The team continues to develop and refine the systems and process for enforcement actions, with an emphasis on clear, consistent documentation.

DEC Partnership

The ARM division worked closely with the Department of Environmental Conservation this year to improve communication and clarify roles. The two teams worked with staff the Center for Achievement in Public Service to identify and address communications barriers. A Memorandum of Understanding (MOU) was developed to clarify roles and develop a consistent process for enforcement matters.

Tile Drainage Report

As part of the Vermont Clean Water Act, the legislature directed VAAF and ANR to prepare an assessment of the impact of tile drainage on water quality. In the winter of 2016, an interim report was submitted. The interim report provided context regarding the use of subsurface agricultural tile drainage in Vermont, outlined changes in the practice over time, and summarized the benefits and impacts to farms, and water quality.

Throughout 2016 a working group of farmers, industry professionals, academics, and other stakeholders met to review research, discuss the use of tile drainage in Vermont, and explore alternative management strategies available to farmers.

A final report, due in January of 2017, will more fully describe current scientific research relating to the environmental management of agricultural tile drainage and how tile drains contribute to nutrient loading of surface waters. The final report will also include options for how to best manage tile drainage to prevent or mitigate the contribution of nutrient losses through tile drainage to water quality in Vermont's surface waters. Likewise, the final report will identify knowledge gaps and areas where further study is needed, as well as opportunities for further investment in this field of research.

North Lake Farm Survey

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 eighteen months redirecting staff resources in order to survey areas of need related to water quality and nutrient management. The Agency has now completed this effort, which began in May of 2015. The results will be available on our Agency website this spring; however, findings identify significant opportunities for improvement on farms of all sizes, and all types.

Enforcement

As part of education with the Ag community around water quality regulations, the division dedicated much of their enforcement resources this year to meetings with all Large Farm Operators (LFOs) to review their permits and nutrient management plans, and discuss the implications of the new RAPs. The goal of these meetings was to explain the nuances of the regulatory framework with farmers and their planners in face-to-face setting, to open the lines of communication and strengthen relationships. With added capacity, the ARM division is now able to more closely monitor the details of each nutrient management plan. The Agency has worked to create a penalty matrix to ensure transparency and

fairness in the enforcement process. The Agency generates a separate enforcement report, which will be available on our website.

Vermont Environmental Stewardship Program

In cooperation with federal and university partners, the team is poised to launch the new Vermont Environmental Stewardship program, which recognizes and rewards farmers who go above and beyond state and federal requirements to achieve environmental goals on their farm. The focus of this program is to achieve on-farm soil health, implement feed management on farms and achieve a net-zero nutrient balance, and apply whole-farm conservation planning to achieve outstanding environmental stewardship. We estimate that ten farms will be accepted into the program during the 2017 pilot.



Working Lands for a Better Vermont

The VESP will recognize and reward farmers with outstanding stewardship practices

Agrichemical Management Section

The use of herbicides in the railroad right-of-way caused consternation among some residents in Montpelier. The Agency consulted with the state Pesticide Advisory Council to develop best practices for herbicide application in public spaces. The Council determined that herbicides are an acceptable tool for use in the right of way, when manual or alternative removal of invasives is not an option.

Pollinator Protection Committee

In 2016, the legislature passed a bill (Act 83) creating a Pollinator Protection Committee. The committee convened beekeepers, ecologists, government officials, researchers, and the farming community to assess the impact of the use of neonicotinoids on Vermont's pollinators. The committee met four times over the course of the fall, and is in the process of drafting a report for the legislature, including recommended next steps.

The passage of H.861 gives VAAFM the authority to regulate "treated articles," a term coined by the Environmental Protection Agency (EPA) to denote products treated with pesticides, such as utility poles, commercial crop seeds, and lumber. This expanded authority will allow the Agency to address the ongoing challenges related to treated utility poles and their potential impacts to groundwater when improperly installed.

Plant Industry Section

Hemp/Cannabis

As the state continues to explore the potential of a regulated cannabis industry, VAAFM has begun sketching out a potential framework for consumer assurance and testing. In addition, the Plant Industry section is launching a pilot program for the sampling and analysis of industrial hemp for registered hemp producers.

Vector Surveillance

In 2016 the Vector Surveillance program quadrupled the number of towns surveyed for tick-borne diseases from twenty-one to eighty-five, representing all fourteen Vermont counties. The survey was done following findings in 2015 where 659 ticks were collected and tested (21 towns in 7 counties). Ticks collected in 2016 will be tested in the VAAFM lab in Burlington for three known tick-borne pathogens in Vermont: *Borrelia burgdorferi*, *Anaplasma phagocytophilum*, and *Babesia microti*. If possible, two additional pathogens will also be added to the testing, Powassan virus and *Borrelia miyamotoi*.

Mosquito surveillance is now occurring statewide, and specific surveillance efforts were made in southern Vermont to monitor for Zika vectors.



Agency staff “flag” for ticks, to survey the population

Vermont Ag and Environmental Laboratory (VAEL)

In September 2011, the Agency’s laboratory, part of the Waterbury Complex, was flooded by Hurricane Irene. Since then, the Agency of Agriculture and the Vermont Department of Environmental Conservation have worked together to merge their respective labs, which became effective July 2015. Buildings and General Services (BGS) is planning construction of a new laboratory building on the campus of Vermont Technical College. BGS has secured funding for this project through the Capital Bill in FY ’16, ’17; BGS will be requesting the remaining \$8+ million in the FY ’18/’19 Capital Bill. Groundbreaking is anticipated in 2017.

Under the leadership of lab director, Dr. Guy Roberts, the lab is working to rebuild its analytical capabilities and testing capacity to its pre-Irene levels and to branch out in new directions, including developing abilities in the area of DNA-based testing. The lab has received significant financial support from the Agency to replace aging equipment and instruments with equipment that not only functions reliably, but expands the lab’s abilities. Since the merger, the staff has been restructured into three departments; Organic Chemistry, Inorganic Chemistry, and Biology. Recent retirements have allowed new hires to be made in areas of greatest need. These combined changes have revitalized the former labs and put the combined lab on a track to provide improved services to its agency and industry clientele.

Food Safety & Consumer Protection Division

The Food Safety and Consumer Protection Division had a productive year, improving its ability to respond to contagious disease outbreaks, managing through staff vacancies, and continuing to serve Vermont consumers, and the meat and dairy industries.

Animal Health Section

In anticipation of a potential outbreak of Highly Pathogenic Avian Influenza (HPAI), which was seen in western and mid-western areas of the country, the Animal Health team honed and refined emergency preparedness and response capabilities. Several table top response exercises were held with participation from external support organizations and the Department of Emergency Management and Homeland Security. The Avian Influenza Response Plan was updated, and the VAAFIM Incident Command structure was further refined to include specific roles for staff. The Agency also engaged in a strategic outreach effort to identify and communicate with Vermont's major poultry producers about biosecurity protocols and disease prevention efforts. Fortunately, HPAI has not yet impacted Vermont, but these efforts will have lasting benefits. For example, employees in all divisions underwent respiratory fit testing to ensure they have appropriately-sized personal protection gear for responding to emergencies. Contact lists and communications protocols were also implemented, and can serve as a blueprint for future efforts.

Although Vermont has not yet been impacted by HPAI, there was a devastating instance of fowl cholera at a turkey farm in Orwell this fall, which resulted in the death more than 10,000 birds shortly before Thanksgiving. This unfortunate situation is yet another reminder why biosecurity and emergency preparedness and response measures are so critical to the Agency's work.

The team continues to find new and innovative ways to build relationships with producers. This year, with a grant from USDA, the Agency made biosecurity tool kits, valued at \$100, available to swine farmers at no charge. The kits are intended to help farmers implement disease prevention practices, stop the transmission of diseases on Vermont farms, and assist the Agency in building stronger relationships with the swine producer community.

The Animal Health team also secured a two-year grant from FDA that will enable section employees to develop and education and technical assistance program focused on judicious use of veterinary medications on farms. The team is focusing on the implementation of the Food Armor program in Vermont, a HACCP-based program (Hazard analysis and critical control points) intended to provide farms with the necessary tools to reduce violative residues in food producing animals.

As part of the 2016 fee bill, the Agency is no longer required to register animal shelters and rescue organizations. This was an important step towards honing our focus on agricultural animals, and away from companion animals. The Agency still regulates pet shops.

Meat Inspection Section

Changes to the on-farm slaughter statute were enacted during the 2016 legislative session. The Agency has responded by creating a comprehensive document, which will be presented at various industry events over the course of 2017, that describes the nuances of the regulations. Plans are also underway to record this presentation in a webinar format, which will be made available on the Agency's website.

As consumer preferences shift, Vermont's meat industry has had to evolve and adapt. The meat inspection team has worked with producers to provide technical assistance to help farms and processors address the demands of the marketplace. As consumer interest in food and farming grows, it stands to reason that the need for this sort of technical assistance will grow, as well. The team has been engaged in on-going conversations with the industry to understand their needs and provide the appropriate resources.



Agency staff underwent fit testing to improve emergency preparedness and response efforts

Dairy Section

The dairy team continues to support the industry through technical assistance and consumer protection efforts. The team plays a critical role in helping to sustain the industry, which accounts for over 70% of Vermont agricultural sales, and 80% of our total farm land. At the close of 2016, the Vermont dairy industry has 841 remaining dairy farms, down from 878 dairies in January of 2016. Of those dairies, twenty-eight milk goats, and six are milking sheep.

Processing is a consistent area of growth for Vermont's dairy industry. There are currently 141 milk handlers licensed in the state of Vermont, which is more than double the number of processors in Vermont in 2010. The team added a new dairy plant inspector position this year, to keep up with the growth in processing. The majority of our processors are small in scale - more than half are processing 500lbs of milk, or less, daily. There continues to be interest in raw milk, with twenty-nine Vermont farms currently offering raw milk for sale under Title 6, Section 152.

Staffing vacancies have been a challenge for the dairy team in 2016. The dairy administrative position was vacant for most of the year. Fortunately, new hire was brought on in October to fill this vacancy.

Additionally, the Agency has been unable to fill the Dairy Section Chief position vacated by Dan Scruton, who retired in the fall of 2015. It has been difficult to recruit candidates to fill this highly-specialized position. Several private sector candidates have expressed interest, but the state has not been able to be competitive with the private sector salary expectations, and out-of-state candidates have opted not to relocate to accept the position. The team has broadened the job description and posted it for a fourth time, and is in the process of interviewing once again. The Dairy Chief has historically played an important role as a policy advisor, technical expert, and industry resource.

Despite these vacancies, the team has managed to maintain productivity and meet its regulatory obligations.

The Dairy Section continues to leverage technology to provide improved services to Vermont farmers and operate more efficiently. With the help of the IT team, they implemented a modernized, comprehensive software program allows field-based inspectors to file regulatory work electronically. The dairy plant inspection data was brought on-line in May of 2015, and the farm data was brought on-line in January 2016. The system is currently being fine-tuned to meet the expectations of employees and the dairy community.

Consumer Protection Section

Beginning in May, the Weights and Measures team began posting enforcement information on the Agency website. The posts are intended to notify the public about businesses that repeatedly violated the weights and measures laws designed to protect consumers in the marketplace. The information posted includes business names and locations, types of violations, and penalties.

The Weights and Measures team was also able to make some critical equipment upgrades this year, which allow the Agency to maintain its National Institute of Standards Technology (NIST) certification. This certification is critical, because it enables our Weights and Measures lab to accept out-of-state work, thereby allowing it to continue as an important revenue generator for the Agency, and to provide services to constituents in the region.

The team has been engaged in a strategic planning process to determine how the Food Safety Modernization Act, and the regulatory duties associated with the law, should be incorporated into the Division. They have also begun the task of succession planning for personnel programming, in anticipation of some potential upcoming retirements.

The 2016 season was strong for Vermont maple producers. Vermont remained the top Maple State in the nation, producing 47.3% of the country's maple syrup, a record high production. Vermont produced 1,990,000 gallons of syrup in 2016, up from 1,410,000 in 2015. Despite initial concerns from some producers, the industry seems to have adapted well to the new, consumer-friendly labels adopted in 2014.

The Section has maintained its ability to provide critical services to Vermont beekeepers. Despite the retirement of the state apiculturist in September 2015, the Division ensured a seamless transition of these duties to another experienced employee. Ensuring a productive relationship between the Agency and Vermont beekeepers is especially important now, as the industry and regulatory officials adjust to the new landscape created by the implementation of the FDA's Veterinary Feed Directive.