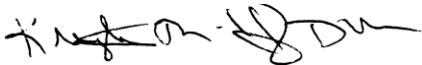


ADVANCING ANIMAL DISEASE TRACEABILITY
THREE YEAR ROAD MAP FOR VERMONT
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1. EXECUTIVE SUMMARY

Vermont's Animal Disease Traceability (ADT) program has become more robust in recent years, thanks to buy-in from the Vermont Legislature, Vermont Agency of Agriculture (VAAF) animal health program staff and leadership, and many industry stakeholders. The document that follows outlines the key components and benefits of Vermont's current ADT program, which comprises policies and requirements at least equal to the USDA- APHIS-VS ADT rule and is an improvement upon it in some instances.

Vermont's ADT program helps state animal health officials prevent foreign and emerging livestock disease introduction and effectively mitigate domestic disease outbreaks. The VAAF animal health team prioritized making additional improvements to its ADT program in its 2020-2025 strategic plan and will work to implement the objectives identified therein during coming years. This effort will help lessen the economic impact of a high consequence disease outbreak by shortening Vermont's return-to-normalcy interval within its animal agriculture sectors following an outbreak. Continued improvements on Vermont's already-robust ADT program will maintain other states', territories' and provinces' confidence in Vermont's livestock and livestock products, thereby ensuring Vermont producers can cost-effectively engage in interstate and international commerce during peace-time.

Strict attention to several key elements is critical to continued implementation and maintenance of a successful ADT program in Vermont. These include the following:

- Developing internal data management systems and IT hardware that supports the collection, maintenance and dissemination of ADT-pertinent records (Certificates of Veterinary Inspection and official ID distribution records) in electronic format. These systems must allow for efficient sharing of information between internal and external in-state stakeholders; between Vermont and other states, territories and tribes; and between VAAF and its federal partners.
- Ensuring that resources supporting an effective Vermont ADT program are available to stakeholders, including electronic and visual official identification devices, IT systems that enable electronic data capture, and subject matter expertise to assist stakeholders with ADT implementation.
- Maintaining effective outreach programs that ensure the compliance of all pertinent stakeholders with state and federal ADT standards and regulations.
- Implementing and adhering to a transparent tiered compliance and enforcement system that holds livestock owners, livestock industry licensees and veterinarians accountable to state and federal ADT requirements.
- Ensuring effective collaboration that leads to sharing of personnel, IT and monetary resources necessary to implement this program. This is essential since the resources of any single entity are likely insufficient to develop a robust ADT program.
- Engaging in activities and promoting policies, laws and rules that support the application of official identification in all livestock species *prior* to leaving the farm(s) of birth/origin. This is critical given the way in which livestock moves in Vermont and the large percentage of animals, especially bob calves, that are commingled during transport, shipped interstate, and whose final disposition is often not known at the time of pick-up from the farm of origin.

The cost of ADT program implementation/maintenance is significant and includes monetary costs and in-kind contributions. The annual federal funding provided by the ADT cooperative agreement offsets only a

small portion of the cost of program implementation and maintenance in any given year. Vermont depends heavily on the continued availability of General Fund money and on the in-kind contributions of VAAFM animal health specialists and veterinarians to implement and maintain its ADT program.

2. CURRENT TRACEABILITY SITUATION

2.1. Who are we?

The primary responsibility for advancing animal disease traceability in Vermont rests with VAAFM's animal health team, comprising 1.25 veterinary FTEs, three animal health specialists and one administrative support professional. Key internal supporters of ADT advancement include the Office of the Secretary, the director of administrative services, meat inspection and dairy regulatory section personnel, and the business office. Vermont is considered a single traceability unit as it is a small state with diversified, highly mobile, long standing livestock agriculture industries. The most significant of these industries is still dairy, but the number of commercial dairies has decreased by approximately 40% over the past decade. In contrast, the number of smaller diversified farms and farmstead dairy processing plants has increased over time. Over the past year, the number of first-time livestock owners in Vermont has increased considerably as residents explore options to ensure food security. These demographic changes present a unique ADT challenge for regulatory officials because many of the producers who sell animal-based food products directly to consumers (e.g., raw milk, small diversified farms) are skeptical of regulatory authority and the application of official ID in their livestock. Others simply are unaware of the value of animal traceability and are refractory to explanations by government officials.

External ADT stakeholders include these traditional and new producers of multiple livestock species; accredited food animal veterinarians; livestock auction market and comingling site personnel; dairy cooperatives; licensed livestock dealers, haulers and transporters; dairy service providers, and industry organizations such as the Vermont Farm Bureau and species-specific organizations. The VAAFM animal health team has adopted a grass roots method of outreach to gain compliance from these stakeholders, and that process is ongoing. This approach has increased ADT literacy among Vermont stakeholders, and there has been less resistance in recent years to VAAFM's efforts to ensure bookend traceability of its livestock populations. VAAFM convened an ADT working group in 2019 to seek input on USDA's intent to mandate RFID by 2023, and sector representative members can be called upon for ADT input at any time. VAAFM communicates with external stakeholders re. ADT through its publication of record, newsletters and multiple social media outlets. The VAAFM website was recently updated to include information re. acquisition and types of official ID and to educate stakeholders on the value of RFID use.

Since 2010, USAHerds has been VAAFM's repository for all ADT data. This is expected to continue to ensure that state ADT data is maintained in an easily searchable electronic format. VAAFM benefits from the state consortium model supported by Acclaim, the USAHerds vendor company, because costs associated with system enhancements can often be split among multiple users, thereby decreasing Vermont's share of the enhancement costs. Acclaim is currently developing VET CVI, an electronic CVI that is compatible with the USAHA data standards and will be available to Vermont veterinarians and those in other USA Herds states at no charge. It is anticipated that this will increase the number of veterinarians utilizing electronic CVIs for import and export and decrease the amount of data entry required by VAAFM to maintain these ADT documents electronically in a fully searchable format.

Funding in the 2020 and 2021 ADT cooperative agreement workplans was and is dedicated to support the VET CVI enhancement.

VAAFM is currently transitioning from an education and outreach effort to compliance and enforcement re. two laws enacted by the Vermont Legislature in support of ADT. Act 30 (2017) requires all livestock being transported *within* Vermont to satisfy the requirements for official identification for interstate movement under USDA's ADT rule prior to leaving the property of origin, regardless of the reason for movement or duration of absence from the property. Livestock include dairy and beef cattle, sheep, goats, pigs and camelids. Examples of livestock movement within the state that this requirement applies to include transport from the farm of origin to a slaughter facility, movement to a new farm location, and transport to a fair or exhibit. Act 64 (2019) requires the owners/managers of Vermont slaughter establishments to record and maintain for three years the consignors' names and physical addresses and official identification numbers of all slaughtered livestock and make these records available to the VAAFM animal health team upon request. VAAFM has issued targeted correspondence to Vermont-licensed slaughter establishments to make them aware of this requirement and is following up with visits to establishments during the first quarter of CY2021. Following completion of the site visits, violations of these two laws will be remedied through issuance of letters of warning or notices of violation depending on the case details.

2.2 Where are we now?

Robust animal disease traceability is a critical component of the successful implementation of all livestock regulatory and disease programs for which VAAFM is responsible. The two most significant tenets of that success are data management and stakeholder compliance, and VAAFM is well positioned in both areas, thanks to recent progress resulting in the following successes:

- Vermont has a comprehensive data management system that enables staff to trace livestock traveling in interstate commerce.
- Later in 2021, Vermont will have access to a free eCVI for use by Vermont veterinarians when exporting livestock and veterinarians in other USAHerds states when shipping livestock to Vermont. Other eCVI formats will continue to be available to Vermont veterinarians.
- Vermont will continue to take advantage of USAHerds enhancements at a fraction of the cost necessary if shouldering 100% of the enhancement costs.
- Vermont has the necessary state statutory framework in place to support ADT.
- Vermont is shifting from an education/outreach phase of program implementation to compliance/enforcement activities for those stakeholders who are unable or unwilling to comply with Acts 30 and 64.
- Vermont animal health team members engage in consistent communication with stakeholders re. ADT and have adopted a tiered ADT compliance and enforcement program.

The VAAFM animal health team members work closely with Vermont-based USDA-APHIS-VS personnel on ADT surveillance, outreach and compliance/enforcement. Within the last month, a recurring weekly meeting has been established between VAAFM veterinarians and the USDA VMO to ensure efficient management of ongoing compliance cases between organizations. USDA-APHIS-VS refers numerous ADT violations to VAAFM for follow up, and some of these cases are referred back to USDA-APHIS for IES follow up once the state action is concluded. Depending on the case, communication via phone, email and text with other SAHOs is sometimes necessary. After-hours contact information is available for all these individuals; however, the ability to contact outside of normal business hours other industry

officials who may have records critical to effective trace back of a particular case is unreliable. The USAHerds database is web-based and fully searchable based on animal ID, but there are limitations on accessibility of the database by those not employed by the Agency as access is password protected. In instances where data is needed by other state and federal animal health regulators, reports from the USAHerds database can be generated and shared on a need to know basis.

2.3 Strengths and Weaknesses

The ADT-related strengths that allow the Agency to successfully implement a robust traceability program include the following:

- Experienced animal health field personnel and capable veterinarians who have a comprehensive working knowledge of Vermont's industries and who can identify and communicate with key ADT stakeholders effectively
- Experienced administrative support staff with aptitude for USAHerds
- Diversity of official ID (including NUES, AIN and RFID) available to stakeholders for use in multiple species.
- Use of an animal health software system that allows for electronic storage of ADT-pertinent documents and data
- Agency participation in the USAHerds state consortium, which is useful for sharing ideas on how to streamline database functions and share in the cost of software upgrades
- External stakeholders who are willing to upgrade their record keeping systems to facilitate more effective information sharing and information searching (DVM's use of electronic CVIs and GVL EIA test charts)
- Small state size and relatively few external stakeholders make communication and outreach easier than it otherwise would be and ensure that even a single enforcement action can serve as a deterrent for other stakeholders who may be inclined to otherwise disregard ADT
- Fostering of excellent working relationships with partner agencies such as USDA and VT DMV, which enhances the Vermont Agency of Agriculture's ability to enforce ADT requirements
- Willingness of VAAFM to dispense official ID and applicators to a wide variety of stakeholders, including veterinarians, producers and licensed dealers/transporters
- Acts 30 and 64, which provide the state-level statutory framework in support of ADT

The ADT-related challenges that the Agency faces and that may hinder efforts to maintain a robust traceability program include the following:

- Retirement eligibility of 50% of the VAAFM animal health team, which could result in a loss of institutional knowledge about the ADT-pertinent industries and stakeholders
- Inadequate staffing in the administrative support personnel category to keep up with the data entry requirements associated with paper based ADT records
- Insufficient ADT cooperative agreement funding to fully cover ADT-related work completed by state staff
- The existence of a very vocal opposition in some external stakeholder groups who refuse to comply with the traceability rule and other associated regulations/laws
- Insufficient personnel to do spot checks on DVM and other external stakeholder record keeping systems

- Lack of communication between state and federal databases (USAHerds and EMRS, USAHerds and VSPS) which prevents data exchange or automatic uploads.
- Insufficient personnel to monitor activity at out of state markets
- Some inconsistency re. surrounding states' ability to dispense official ID and applicators to a wide variety of stakeholders, including veterinarians, producers and licensed dealers/transporters, who also transact business in Vermont
- DMV checkpoints do not always align with common areas where livestock cross the Vermont border

2.4 Opportunities and Threats

Through its ADT-related activities, the VAAFM animal health team has been able to capture more animal movement and identification information and a greater number of geo-coded agricultural premises. In turn, this facilitates communication with those producers and mobilization of resources to them during the response phase of a myriad of emergency incidents. The one on one interactions with numerous livestock owners and stakeholders enables these constituents to develop trust in VAAFM staff during peace-time, which increases the likelihood of successful interactions and compliance during emergencies like disease outbreaks. The ability to trace individual animals more effectively has been improved under the ADT framework, which would make the response to a livestock FAD more efficient and productive. The Vermont Emergency Management Agency depends on VAAFM to provide essential data farm mapping information during emergency exercises and real-life events.

The most prominent threat that the Vermont's ADT program faces comes from the agricultural sector comprised of individuals who are generally philosophically opposed to identifying their livestock or interacting with the government in productive ways. Members of this agricultural sector are often difficult to reach and as a result ill-informed as to proper biosecurity principles and preventive health measures, and their livestock can be the most difficult to trace during a disease outbreak. Homesteaders who have acquired livestock during the COVID crisis also fall into the category. More work is needed to ensure animals moving in slaughter channels are traceable and the slaughter facilities those producers use are following ADT record-keeping requirements. Inadequate annual cooperative agreement funding to support ADT activities also poses a threat to Vermont's program.

2.5 Inventory of existing infrastructure and suitability assessment

One administrative support FTE routinely handles all ADT-related data entry for VAAFM, which sometimes creates a backlog of CVIs and test records to enter, thus rendering them unsearchable by field staff should the need arise. VAAFM animal health specialists and veterinarians are equipped with laptops and smartphones with data plans, but their access to the web-based USAHerds program and to each other is sometimes limited in the field by lack of state-wide high-speed internet capability and cell phone connectivity in general. These limitations may at times lessen the efficiency of performing tracebacks or other ADT related tasks. The USAHerds database contains ADT documents generated after 2010. It is password protected and resides on a virtual 425-megabyte capacity server that is housed in a secure state server room off site. The database can be accessed off site by personnel with usernames and passwords. All information entered from the office is backed up daily. Data entered into USAHerds may then be used to "virtually request" from the national premises allocator a national premises ID if the farm owner desires or if VAAFM policy dictates the same. Otherwise, premises data

resides at the state level under a unique searchable identifier. The USAHerds database is compatible with multiple eCVI products, which allows for automatic data upload in many instances on an interval determined by the user.

III. VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1 Vision Statement

Protect the health and welfare of Vermonters and their livestock through the advancement of a safe and secure food supply within a marketplace that provides fair and equal access to consumers and processors while enhancing Vermont’s working landscape, rural character and local economies.

3.2 Mission Statement

Maintain the ability of Vermont’s food and livestock products to be sold locally, nationally and internationally. This is accomplished through working with the United States Department of Agriculture and other states to ensure that our livestock regulatory programs are equal to or exceed federal guidelines.

IV. TRACEABILITY REQUIREMENTS

4.1 Strategic goals

- To continue to implement a statewide infrastructure for advancing animal disease traceability compatible with state and USDA standards
- To identify and utilize novel ways of communicating to all internal and external stakeholders the benefit of a robust animal disease traceability system
- To monitor stakeholder compliance with ID and record keeping requirements and to use education, technical assistance and prudent enforcement to gain compliance

4.2 Program objectives

- Target, develop, and implement outreach communication regarding data quality and processing for animal health information forms and ADT standards
- Internally utilize relevant IT systems that facilitate the electronic recording and sharing of livestock disease surveillance and animal movement data
- Provide tools to external stakeholders and regulated constituents that will improve their ADT animal ID and record keeping compliance
- Ensure stakeholder compliance with state and federal ADT requirements
- Ensure that all VAAFMM animal health staff can efficiently collect and share ADT data pertaining to multiple species in field and office settings.
- Update Vermont import rules to comport with ADT standards
- Consider enhancing electronic tag distribution record system to allow for external stakeholders to enter information regarding distribution of tags to the end user

4.3 Animal disease traceability performance measures

ADT performance is measured by identifying the elapsed time between agency notification of an official ID number by another state or USDA in the context of an exercise or real trace and the identification of the implicated animal's farm of origin. To complete traces, Vermont relies upon CVI and ID information that is entered into USAHerds and correspondence with stakeholders who have received official ID devices from VAAFM or other information or have completed CVIs. In general, the baseline measure for successful tracebacks that occur wholly during weekday working hours is approximately 0.2 to 24 hrs., and usually VAAFM is closer to the shorter time frame. For traces that occur wholly or partially on the weekends, require outreach to livestock dealers, or involve records prior to 2010 (in paper format only), the baseline measure is generally increased and rarely can be up to three to four days.

The Agency will continue to assess its ADT capabilities by completion of Trace Performance Measures sent by USDA that test the capabilities of animal health personnel to retrieve ADT data. TPMs activities measure the time it takes to answer four specific questions:

- In what state was an imported animal officially identified? Vermont has a reference animal and must determine the State in which the animal was officially identified.
- Where in the State was the animal officially identified? Vermont is the state where a reference animal was officially identified, and we must confirm that the official identification number was issued within our jurisdiction and that we have contact information for the person who received that identification device.
- From what State was the imported animal shipped? Vermont is the state that receives a reference animal and must determine the state from which the animal was moved interstate into its jurisdiction and notify that State of the reference animal's official identification number.
- Premises in your state the animal was shipped from when shipped interstate.

VAAFM has not yet received any TPMs from USDA during the current cooperative agreement cycle.

4.4 Data requirements

The USAHerds software program provides for the automated generation of an eight-digit unique location identifier for each premises entered into the database as long as a physical address is included in the data set for the premises. This address is also geo-coded in the database and may be mapped as needed. The alpha-numeric format for the location identifiers is consistent with current ADT standards and employs the format "VT123456", where the numeric fields are unique. USAHerds is also able to communicate with the federal allocator to generate federal premises IDs.

4.4.1 Official Animal ID

Vermont will continue to provide official NUES tags that begin with "13", designating Vermont, and that are compatible with ADT standards for as long as those tags can be acquired at no cost. Following that time, Vermont will consider utilizing cooperative agreement funds to purchase a smaller number of NUES tags to satisfy a subset of Vermont producers until USDA prohibits their use. In 2020, Vermont obtained the maximum number of free bovine RFID tags allowed by USDA and has been disseminating them to stakeholders. Veterinarians were the first stakeholder group to have access to these tags, but the order volumes were so small that VAAFM quickly extended access to licensed livestock dealers and

cattle owners. The annual number of RFID tags VAAFM makes available to producers is 100, 200 and 400 for small, medium and large farm operations, respectively. Licensed dealers have been allowed access to larger volumes in accordance with their business plans. VAAFM created outreach materials, including an educational video highlighting the benefits of on-farm RFID use. VAAFM notified stakeholders of the availability of free RFID tags through its publication of record, social media sites, direct correspondence from the animal health office, and at the end of the video. The animal health team has since been inundated with requests for RFID tags, and site visits to deliver them continue at this time.

Individual producers who receive tags from VAAFM must first sign a producer tag agreement that informs them that the dispensed tags are for use in their animals only, explains the Act 30 requirements and informs them that failure to comply with state and federal ADT requirements may result in a loss of their ability to obtain ID in the future. Producers who receive RFID tags from VAAFM must first obtain (or are assigned) a federal premises ID that is maintained in USAHerds. Stakeholders are provided with one set of applicators the first time they obtain tags from VAAFM. Recipient veterinarians apply NUES or RFID tags to clients' livestock when completing regulatory disease testing or processing animals for export. Cattle farmers apply them to satisfy Act 30 requirements or to augment their on-farm management of production animals. All NUES and RFID tags dispensed to stakeholders are entered into USAHerds so they are traceable. USAHerds has a "dashboard" search function that allows VAAFM to collate in one database location every "event" associated with a single tag, including testing, import/export, and movement to slaughter or change of ownership. Veterinarians and licensed dealers are required to maintain tag application records that may be reviewed by VAAFM staff during inspections, spot checks or disease traces.

4.4.2 Tag Categories

Categories of tags and associated alpha-numeric sequences currently employed in Vermont include the following. The letters in bold are consistent and unique identifiers for that category of tag.

- Vaccination – 13**VAA**0001 – orange
- Producer issued – 13**PAA** 0001 – silver
- Veterinary issued – 13**AAA**0001 – silver
- Slaughter – 13**SAA**0001 – green and lack USDA shield
- Dealer issued – 13**DAA**0001 – silver
- Johne's vaccination – 13**JAA**0001 – yellow (these are being phased out, and VAAFM has a very low inventory)
- DHIA – 13**WAA**0001 – silver – VAAFM orders these tags from the USDA warehouse at the request of DHIA, and USDA ships the orders directly to DHIA office in Lancaster, PA. Per a VAAFM-USDA-DHIA MOU, DHIA submits ID disposition reports to VAAFM approximately every two months. VAAFM enters this information into USAHerds.
- RFID tags – VAAFM maintains a supply of USDA-supplied RFID tags for cattle and dispenses them as described in other sections of this document. VAAFM maintains a separate supply of RFID tags for pigs and cervids that are available to producers upon request.

4.4.3 Required Interstate Movement Documents

Thirty-day ICVIs and import permits are required for entry of all livestock into VT, except for horses which are exempt from the import permit requirement. Import permits are generated in USAHerds once an ICVI has been issued in the state of origin. Ultimately, the ICVI and associated import permit are linked in USAHerds to each other and to the consignee premises. Vermont encourages the submission of electronic ICVIs in lieu of paper documents by supporting a fee for acquisition of the latter. For those documents that are submitted as paper copies, pertinent data fields are entered into USAHerds and then the paper copy is scanned and uploaded to the premises file in the database. The paper copy is then discarded. The goal continues to be to eliminate the submission of paper movement documents and implement a system whereby all data fields from electronic ICVIs can be automatically uploaded into USAHerds. To further this goal, the Agency has provided various forms of electronic CVIs (eCVI pdf, mCVI) over the years and encourages the use of on line companies such as Global VetLink. Over the past 3 years, more agencies are providing CVIs to states via email, versus mailing paper copies, increasing the speed of data exchange. Use of the Civet application with USAHerds has also increased data accuracy and speed of entry. Vermont has approved the eeCVI for equine interstate movement between the months of May and October. Those documents are automatically uploaded into USAHerds. The completion of the VET CVI enhancement by Acclaim should further increase use of eCVIs by veterinarians for all livestock species.

4.4.4 Data Sharing

The data maintained by VAAFM may be shared with other states and with USDA if that sharing is necessary for a SAHO or federal animal health official to complete an epi or other regulatory traceback or if it is required for regulatory disease program compliance. In all cases, this information will be shared in electronic report format and in a manner consistent with the needs of the requesting SAHO or federal official.

4.5 Information technology plan

A successful ADT program relies on adequate IT resources for Agency staff and external ADT stakeholders. Although USAHerds largely meets the needs of Vermont's ADT program, it must be continually updated to allow Vermont to remain current and compatible with emerging enhancements that benefit ADT. Additionally, Vermont must maintain an adequate IT staff and equipment to manage these current and emerging programs. Animal health team laptops are replaced on a four-year cycle and cell phones with hotspots are replaced more frequently to ensure continued connectivity when possible. The Agency must also continue to make available to its external ADT stakeholders tools that allow for effective storage, sharing and updating of official ID distribution records, CVI records and other ADT-pertinent data. This is especially important given the prioritization of RFID technology by USDA and the goal of transitioning to an electronic ADT system in Vermont. Ideally, all veterinarians will possess tools that allow them to electronically capture ID data and complete eCVIs, and licensed livestock dealers and progressive farmers will transition to RFID technology using electronic tags and readers purchased with cooperative agreement funding and supplied by VAAFM at no charge. This effort will "prime the pump" for RFID technology use in Vermont such that when federally mandated, these electronic systems will already be in place.

4.6 Resource requirements

VAAFM currently utilizes three FTE IT support staff, two of whom have developed considerable expertise in the USAHerds platform and are supportive of its continued use for ADT implementation/maintenance. The VAAFM IT support staff are employed by the Vermont Agency of Digital Services and are assigned to VAAFM so future employment status is not fully at the discretion of VAAFM. These IT professionals work closely with Acclaim, the USAHerds vendor, to ensure the platform is maintained within Vermont, and they have administrative rights to some portions of the database such that minor fixes and system maintenance can be completed in-house. VAAFM holds a maintenance agreement with Acclaim for more extensive troubleshooting, upgrading and enhancing of the system. Enhancement costs can often be shared with other USAHerds states through the consortium model. VAAFM appreciates USDA's recognition that comprehensive internal and external IT systems provide the foundation for a robust ADT program and its willingness to provide monetary support in these categories through cooperative agreement funding. VAAFM intends to apply for cooperative agreement funding support in FY2021, 2022 and 2023 to support IT-related efforts.

4.7 Organizational needs

Expansion of the VAAFM IT staff is currently not needed to support Vermont's ADT program, which is convenient because the VAAFM budget will not support the hiring of additional staff. VAAFM could benefit greatly from hiring a dedicated ADT coordinator, but the current budget limitations also makes this impossible. Given the current amount of data entry required to maintain Vermont's ADT records electronically, additional administrative staff are needed. The animal health team utilizes the services of a temporary employee for several hours per week, but more capacity is needed.

4.7.1 Executive support

The ADT initiative is supported in concept by internal agency administration but there is not support or funding to expand VAAFM's ADT capabilities. The ongoing responsibility for successful implementation of the Vermont's ADT program is statutorily delegated to the state veterinarian, and by extension, all VAAFM animal health team members are involved in this effort. State veterinarians brief internal administration on implementation progress during weekly management meetings that engage all upper management personnel in the Agency. Pertinent ADT information is also communicated to the Secretary of Agriculture and to the Governor's office in a weekly report compiled by the state veterinarian/director and the assistant state veterinarian with input from all animal health employees. ADT program implementation and improvement was prioritized in the animal health team's five-year strategic plan that was completed in July 2020 and approved by the Vermont Secretary of Agriculture.

4.7.2 Coordination and oversight procedures

The implementation and maintenance of Vermont's ADT program is the responsibility of the state veterinarian and animal health staff. Responsibilities regarding implementation of this plan are generally included as part of personnel job descriptions or assigned during planning meetings. VAAFM animal health personnel work closely with the USDA APHIS VMO, AHT, AVIC and Assistant Director to ensure that compatibility across the New England states is maintained. In addition to movement throughout New England, a large number of livestock, including bob calves and swine, also move between NY, PA, and VT. Therefore, collaboration with those State Veterinarians and their AVICs is also critical. As an example, in 2015, a multi-state agreement between NY, PA and VT was written that allows for the interstate movement of bob calves on owner-shipper statements and without the

requisite CVIs to avoid animal welfare consequences. At the state level, depending on the need, the ADT Advisory Panel members may be asked for feedback on specific ADT topics and serve as conduits for ADT information flow between VAAFM and stakeholders in members' respective sectors. Outreach to and education of these stakeholders takes place on a consistent and ongoing basis as different program needs arise.

4.7.3 Policy

During the previous three-year cycle, VAAFM worked with the Vermont Legislature and governor's office to enact Acts 30 and 64. These statutes require official identification to be applied to all livestock before leaving the farm of origin/birth, even when moving intrastate, and obligate commercial slaughter establishments to maintain ADT records of slaughtered animals. In 2019, VAAFM collaborated with policy makers to enact statutory language that aligns the Vermont definition of official identification with that established by 9 CFR Part 86 and authorizes the Vermont Secretary of Agriculture to exempt some classes of livestock from a future RFID interstate movement requirement that USDA may put into place. The Vermont Agency of Agriculture's rule #98074 (effective 12/8/98), *Rules Governing the Importation of Domestic Animals, Including Livestock and Poultry*, provides the requirements for importation of livestock into Vermont. Since the implementation of ADT in Vermont, the terms in this rule need to be updated to better clarify livestock movement requirements that are consistent with ADT principles. It would be ideal to initiate this after the federal TB and Brucellosis rules are amended, but VAAFM will move forward with a state rule update in the next three-year cycle regardless of the TB and Brucellosis rule status. The process could take up to a year and will cost approximately \$3,000.

4.7.4 Staffing

Staff who implement ADT in Vermont are located primarily in the office of the state veterinarian and include veterinarians, administrative support staff and animal health field personnel. The IT expertise within the Agency is "borrowed" from the Vermont Agency of Digital Services and housed outside of the animal health office. There is insufficient staffing in all categories to maintain a designated ADT-only personnel roster. As a result, the ADT-related responsibilities of the animal health staff are carried out in conjunction with other animal health regulatory responsibilities. All members of this team are paid out of the state general fund and agency special funds, except when performing ADT duties as outlined in the ADT cooperative agreement workplan and to the extent that the cooperative agreement budget will allow. When performing those duties in the office and in the field, a portion of employee time is paid out of the cooperative agreement up to the cap amount. In consultation with the AVIC, VMOs and AHTs stationed in Vermont are regularly mobilized to carry out outreach, technical assistance, and enforcement activities related to ADT.

4.7.5 Budget requirements

There is insufficient federal funding available to cover the cost of successful implementation and maintenance of a robust Vermont ADT program. The federal funding that is expected to be available through the next three years of cooperative agreements offsets a small portion of the total ADT cost, and the remainder of the cost is covered by the state general fund. The state makes in-kind contributions to the federal ADT program by providing state animal health employees to carry out ADT-related responsibilities and paying those salaries and benefits out of the state budget.

During CA yr. 2021, the following ADT-related cost estimates can be anticipated:

- a. \$71,573 for data entry and CVI review (based on 30 hrs/wk. at hourly rate of \$30.31 and fringe rate of \$15.57)
- b. \$186,890 for outreach and education of ADT stakeholders and related tasks (based on 60 hrs/wk. at hourly rate of \$39.34 and fringe rate of \$20.56)
- c. \$6,395 for equipment and supplies
- d. \$5,000 for travel, including trainings and workshops
- e. \$33,000 for annual USAHERDS maintenance agreement
- f. \$10,000 for unknown costs for necessary IT enhancements to provide referenced tools for stakeholders

Total cost for CA cycle 2021 = \$241,285

During CA yr. 2022, the following ADT-related cost estimates can be anticipated:

- a. \$73,720 for data entry and CVI review (based on a 3% increase in salary and fringe from 2021 projection)
- b. \$192,500 for outreach and education of ADT stakeholders and related tasks (based on a 3% increase in salary and fringe from 2021 projection)
- c. \$10,000 for equipment and supplies (based on the expectation that VAAFM may need to purchase RFID tags for producers)
- d. \$6,500 for travel, including trainings and workshops
- e. \$33,000 for annual USAHERDS maintenance agreement
- f. \$10,000 for unknown costs for necessary IT enhancements to provide referenced tools for stakeholders

Total cost for CA cycle 2019 = \$325,720

During CA yr. 2023, the following ADT-related cost estimates can be anticipated:

- a. \$75,932 for data entry and CVI review (based on a 3% increase in salary and fringe from 2022 projection)
- b. \$198,275 for outreach and education of ADT stakeholders and related tasks (based on a 3% increase in salary and fringe from 2022 projection)
- c. \$8,000 for travel, including trainings and workshops
- d. \$13,000 for equipment and supplies, including new computers
- e. \$35,000 for annual USAHERDS maintenance agreement
- f. \$10,000 for unknown costs for necessary IT enhancements to provide referenced tools for stakeholders

Total cost for CA cycle 2020 = \$340,207

In recent years, VAAFM has received approximately \$74,000 annually to implement ADT

Please note: these figures do not include the cost associated with time contributed to this project by agency veterinarian(s) and IT staff and do not include the VAAFM indirect cost rate of 31+% applied to salaries and fringe.

4.7.6 Outreach

Outreach to all ADT stakeholder groups focuses on the Agency's expectation that Vermont professionals, businesses, licensees and producers adhere to livestock identification requirements and maintain all ADT data in an easily searchable format in a manner and for a period of time that is consistent with state and federal ADT requirements. VAAFM outreach includes education, technical assistance and compliance and enforcement activities.

4.7.6.1 Accredited veterinarians

Compliance by accredited veterinarians is critical to the success of the ADT program in Vermont. Educational meetings between VAAFM animal health personnel and accredited livestock veterinarians and information disseminated to those professionals focus on proper management of ADT records, issuance of CVIs and use of electronic document platforms, and official ID application. Written reminders of ADT standards are sent to practices as needed (e.g., when a noncompliant CVI is submitted), and spot checks of records in clinics are made to answer program questions that veterinarians and administrative support staff may have. Publications such as the Agency of Agriculture's quarterly veterinary newsletter and the Vermont Veterinary Medical Association newsletter are used to disseminate information, and email correspondence is disseminated through the Agency-maintained veterinary distribution list. Veterinarians periodically put ADT information in practice newsletters or post the same on their websites to educate their clientele about the ADT requirements. Veterinarians use electronic software platforms and hard-bound ledgers for ADT record keeping. Often, the veterinarians will populate these records by filling out tag report forms on farms and submitting them to clerical staff to enter into the database(s) or book(s). VAAFM will continue to work diligently to make available to veterinarians at no or very little cost resources for use of eCVIs and iCVIs that comport with the USAHA data standards. The use of these systems ensures that electronic records utilized in the field can be automatically uploaded into multiple databases and shared with state and federal animal health partners. Multiple Vermont veterinary practices already utilize electronic animal movement records and increasing the use of these electronic tools will continue to be a focus of the Agency. In 2020, VAAFM began making RFID tags available to veterinarians for use in clients' livestock. In late 2020, VAAFM issued its first violation notice to an accredited veterinarian responsible for moving livestock interstate without first issuing a CVI; the vet paid the \$1,000 penalty without dispute.

4.7.6.2 Livestock markets

Vermont currently has one livestock market auction, and an animal health employee performs a site visit on a weekly basis to review records, which are generally easily accessible during operational hours. Questions about ADT can be answered during those visits, and the Agency has spent considerable time providing formal outreach to this facility. Additionally, Vermont has several "commingling" facilities that accept in state and out of state calves and cull animals for shipment to slaughter, although animals are not bought and sold at these facilities. VAAFM makes periodic visits to these businesses to inspect them or provide ADT supplies. In all interactions, the importance of accurate and reliable records management pertaining to ADT data is stressed. Vermont's livestock auction market has not expressed interest in transitioning to RFID use, although VAAFM has offered multiple times to support them in this effort. Two livestock commingling businesses have adopted use of RFID technology, and VAAFM has supplied those businesses with RFID tags and readers and has provided tutorials on integrated electronic systems.

4.7.6.3 Slaughter facilities

Constant outreach is necessary to ensure Vermont slaughter establishments maintain ADT records in compliance with Act 64. During 2020, VAAFM staff visited slaughter establishments to review ADT records, and all slaughter establishments were sent written correspondence in October 2019 and May 2020 informing them of their obligations under this statute. In early 2021, a disease trace involving slaughter swine revealed that one state-inspected slaughter establishment was not maintaining the required ADT records. The establishment owner was sent a letter of warning in early 2021, putting him on notice that future violations would result in a notice of violation and proposed monetary penalty. The letter of warning issued in this case will serve as a template for use in future compliance cases with other slaughter establishments. VAAFM is engaging in one final round of “education/outreach” meetings with all Vermont commercial slaughter facilities during the first quarter of 2021 to remind owners and affiliated FSIS staff of the Act 64 requirements. Following those meetings, VAAFM will transition to an Act 64 compliance and enforcement effort, which may result in the issuance of additional notices of warning and violation.

4.7.6.4 Industry as a whole

VAAFM outreach to industry sectors occurs through speaking engagements at producer group meetings, at fairs, at the Vermont Farm Show and other agricultural events. These events have not occurred during the COVID pandemic but are expected to resume in late 2021 or thereafter. VAAFM maintains a website containing ADT educational materials available to all industry members, including a recently-developed video that highlights the practical uses of RFID technology. VAAFM has disseminated information through multiple channels re. the availability of RFID tags to producers, dealers and others at no charge, thanks to USDA APHIS. The requests for these resources have been numerous and ongoing; orders are being filled at this time. VAAFM has established an annual cap on the number of RFID tags that individual farms may acquire. Small farm operations as defined by the VAAFM Required Agricultural Practices may obtain up to 100 tags annually, medium farms up to 200 tags annually, and large farms up to 400 tags annually. These caps may be lifted after each interested farm obtains an initial supply of RFID tags. VAAFM has provided some licensed dealers with RFID readers purchased with cooperative agreement funding. It has been noted during Act 64 outreach to slaughter establishments that many producers ship livestock to slaughter without official ID, a violation of Act 30’s requirement for all livestock to be officially identified prior to leaving the farm of birth/origin. Those producers are issued letters of information in response to initial violations. Letters of warning and violation will be issued for repeat offenses as VAAFM transitions into a compliance/enforcement phase of Act 30 implementation. All ADT compliance activities are reported to the New England AVIC’s office on a quarterly basis. Some grass roots organizations are generally strongly opposed to programs like ADT, and the Agency strives to address their concerns and the associated compliance challenges with honesty and transparency.

4.8 Monitoring and reporting interstate movement activity

Electronic reports including the number of animals and shipments moving interstate can be generated from USAHerds in an excel spreadsheet format. The data can be partially verified by cross referencing the import permit (containing possible imports) with the CVIs (containing theoretical actual imports). Having full confidence that the animals listed on a CVI came into the state as intended will not be possible as there is not enough staff capacity to contact each of the consignees by phone or in person

for confirmation. All CVIs are entered into the USAHerds database and the majority are reviewed for non-compliance. USAHerds has the capability to generate reports capturing the following data that must be reported to USDA on a quarterly basis to meet cooperative agreement requirements:

- Number of ICVIs and other interstate movement documents created within Vermont on a year-to-date basis for move-out animals.
- Number of ICVIs and other interstate movement documents received for move-in animals.
- Number of animals by species and class for move-in events associated with ICVIs and other interstate movement documents, indicating the number of animals officially identified and the number not officially identified.
- Number of animals by species and class for move-out events associated with ICVIs and other interstate movement documents, indicating the number of animals officially identified and the number not officially identified.
- Volume of distribution for each official identification device issued by Vermont state officials to external stakeholders.

V. TRACEABILITY IMPLEMENTATION

To efficiently implement a comprehensive ADT program in VT and to carry out enforcement activities, the section 4.2 objectives are paired with action items and prioritized over a three-year period. Some of the action items listed will be ongoing and others can be completed in shorter time spans. Specific timelines for action items and the methods by which they will be conducted or approached are included where appropriate.

- Target, develop, and implement outreach communication regarding data quality and processing for animal health information forms and ADT standards
 - Keep VAAFMM website updated for use by all regulated constituents – ongoing throughout three-year period
- Internally utilize relevant IT systems that facilitate the electronic recording and sharing of livestock disease surveillance and animal movement data
 - Ensure staff maintain ability to operate in “disconnect” mode – ongoing throughout three-year period
 - Ensure staff adequately trained in electronic data maintenance and sharing platforms, including those which support RFID technology – begin in year one and continue through three-year period
- Ensure stakeholder compliance with state and federal ADT requirements
 - Shift from education/technical assistance phase to compliance/enforcement of Acts 30 and 64 – complete by end of Q1 of CY21 and then ongoing throughout three-year period
 - Adhere to the VAAFMM tiered enforcement model when initiating ADT compliance actions – ongoing throughout three-year period
- Provide tools to external stakeholders and regulated constituents that will improve their ADT animal ID and record keeping compliance
 - Provide producers, dealers and veterinarians with free or low-cost RFID tags and IT infrastructure – begin in year one and continue through three-year period
 - Provide veterinarians with eCVI tools and cost-effective platforms – begin in year one with VET CVI enhancement and continue through three-year period

Ensure stakeholder compliance with state and federal ADT requirements

- Ensure that all VAAFM animal health staff can efficiently collect and share ADT data pertaining to multiple species in field and office settings.
 - Ensure staff IT equipment is updated on a reliable cycle – ongoing throughout three-year period
- Update Vermont import rules to comport with ADT standards
 - Complete by end of year 2
 - Incorporate the federal brucellosis and tuberculosis rules as needed
- Consider enhancing electronic tag distribution record system(s) to allow for external stakeholders to enter information regarding distribution of tags to the end user
 - Offer external stakeholders secure access to USAHerds to enter their own ADT information while protecting the integrity and confidentiality of unrelated data
 - USAHerds enhancements and IT security concerns must be overcome for this to become a reality
 - This could be explored late in year 3 after other necessary USAHerds enhancements are completed