Advancing Animal Disease Traceability (ADT) Road Map for Commonwealth of Virginia

A Three-Year Plan

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I.   EXECUTIVE SUMMARY

The capability to efficiently respond to livestock diseases of concern when they occur is not only important to the health of livestock populations in Virginia, but is also important in supporting rural economies, maintaining interstate and international trade, and increasing consumer confidence in food production systems. Unfortunately, due in large part to our success in eradicating or reducing the impact of some livestock diseases in the United States, relatively few animals that are not involved in active disease investigations are being tested in comparison to 15 to 20 years ago. As the incidence of some diseases (e.g., brucellosis) and "first-point" testing of livestock for diseases has declined, the emphasis on tagging animals with official, traceable identification has also declined in many sectors of the livestock industry. The re-emergence of diseases such as bovine tuberculosis in several states over the past ten years as well as intense concern over foreign animal diseases such as foot-and-mouth (FMD) and bovine spongiform encephalopathy (BSE) have brought the issue of disease traceability back to the forefront as a concern that needs to be addressed by the livestock industry and public animal health organizations.

Early in 2010, the U.S. Department of Agriculture (USDA) introduced a national program called Animal Disease Traceability (ADT). This program proposed to improve disease traceability in the U.S. by focusing on the identification of animals involved in interstate movements while leaving intrastate traceability concerns largely to state animal health officials working with local producer groups. The ADT program required large numbers of animals to be tagged with official identification and the distribution of tags to be carefully documented. In addition, there was increased emphasis on documenting interstate movement of animals (primarily cattle) through Certificates of Veterinary Inspection (CVI) or other documents associated with the transporting of animals in interstate commerce. This increased the burden on state animal health officials, local livestock market operators, cattle dealers, private veterinarians, and processing facilities to create, store and make available extensive information on identification and movement records.

To improve animal disease traceability capabilities at the national level, USDA has identified the following key elements:
1. Increase use of electronic ID (EID) tags for animals requiring individual identification to make the transmission of data more efficient.
2. Enhance the ability to track animals from birth to slaughter through a system that allows tracking data points to be connected.
3. Elevate the discussion with States and industry to work toward a system where animal health certificates are electronically transmitted from private veterinarians to State animal health officials.
4. Enhance electronic sharing of data among Federal and State animal health officials, veterinarians, and industry, including sharing basic ADT data with the Federal Animal Health Events Repository (AHER).

This document outlines the strategic direction and major goals of the Animal Disease Traceability program in the Commonwealth of Virginia from 2023 to 2026 as administered by the Virginia Department of Agriculture and Consumer Services (VDACS).

Status of ADT in Virginia

The Virginia Animal Disease Traceability program seeks to create cost-effective and practical solutions to achieve national objectives identified by USDA. Implementation milestones achieved over the past 10 years are briefly summarized below.

Increase use of electronic identification
- Since 2012, the Virginia ADT program has distributed over 500,000 official electronic ear tags to cattle producers, large animal veterinarians, Virginia Cooperative Extension programs and federally approved livestock markets at no cost to the livestock industry.
- In 2012, 40 percent of all official ID tags distributed were EID; in 2022 the proportion of EID tags distributed was 70 percent.

Enhance ability to track animals (objectives 2 & 3 from above combined)

Traceability data (location, event date and animal identification) for all livestock animals involved in regulatory activities are stored in a centralized database accessible to state and federal animal health officials in the event of an animal disease emergency.
- Over 20,000 livestock premises (9,382 cattle premises) were registered.
- Electronic data logger systems installed at 17 of the largest public livestock markets in Virginia have captured over 60,000 official identification records for cattle. This information is correlated to sale records maintained by livestock markets to enable traceability to buyers and sellers when required.
- Fixed antenna, electronic reader systems are under development at several livestock markets and cattle buying stations to support collection of traceability data for large volume cattle sales.
- Over 27,000 livestock import records from electronic Certificates of Veterinary Inspection (eCVI) and the Virginia animal entry permit system (required for imported cattle moving on a paper CVI) were stored in the Virginia animal health database.
- Over 500 out-of-state veterinarians are registered with the Virginia animal entry permit system that enables electronic capture of import cattle movement records from paper CVIs.
- In cooperation with a private vendor and other states, an online application was developed to capture Equine Infectious Anemia (EIA) test accession parameters from electronic CVIs to improve equine traceability.

- 142 traceability performance tests were completed since 2016 with a 100 percent success rate and an average time to completion of 21 minutes.

Enhance electronic sharing of data

- In 2011, the Office of Veterinary Services (OVS) within VDACS adopted a centralized animal health database (SCS-VA) to house all regulatory animal health records related to animal disease traceability (e.g., regulatory test and vaccination records, interstate movement records, sightings at approved livestock markets (cattle only), and distribution records for all official identification tags). This database application is hosted and managed by USDA-APHIS-VS and all traceability data are fully available to state and federal animal health officials using secure credentials.
- Electronic tags, tag readers and software applications to collect traceability data associated with regulatory activities have been made available to all large animal practitioners that have expressed interest in adopting these tools.
- The Office of Veterinary Services has revised state animal entry requirements to be consistent with the federal ADT Rule published in 2013 as well as federal-state animal disease programs.

Program Goals, 2023-2026

In general, animal disease traceability is on the right track in Virginia, and we do not envision major shifts in policies or program objectives over the next three years. The proposed transition from visual identification tags to electronic identification (EID) will be challenging without additional funding or federal mandates, but Virginia's successful distribution of over 500,000 EID tags and development of electronic data capture systems over the past decade has laid a good foundation to support broader adoption of EID in the cattle industry. Nevertheless, the program must remain responsive to changing industry needs, emerging animal health issues and availability of new information technologies. Therefore, the following represent broad strategic directions that we believe will enhance ADT in Virginia over the long term while allowing flexibility in how these objectives are achieved.

Increase use of electronic identification
The Virginia ADT program will continue to distribute 840-series electronic tags (EID) to livestock producers, veterinarians, livestock markets and others on demand.
Goal: 100,000 tags per year.

Enhance ability to track animals
Maintain automated data logger systems at livestock markets and as needed supplement these systems with updated EID readers and mobile data collection devices (i.e., smartphones or tablets).

Goal: Maintain or replace electronic data capture systems at 17 livestock markets.

Assist livestock markets and buying stations with the installation of fixed antenna, electronic tag reader systems to record traceability data for large volume cattle sales. All data generated will be stored in the state animal health database or accessible through market software systems.
Goal: Improve the quality and quantity of traceability data from 8 existing fixed antenna systems and install 1 new system per year.

Continue work with private veterinarians on adoption of e-commerce technologies (EID tags, EID readers and software applications) to capture traceability data.
Goal: Transition at least 5 large animal practitioners per year from paper forms to electronic data capture for regulatory test and vaccination events.

Enhance electronic sharing of data
All traceability data will continue to be stored in SCS-VA and will therefore be available to state and federal animal health officials on demand through the Animal Health Event Repository (AHER) or other federal applications.
Goal: 100% of traceability data collected in Virginia for cattle available electronically within 5 business days of receipt.

Estimated Financial Requirements, 2023-2026

Most of the infrastructure in terms of personnel, equipment and information technology required to effectively manage the ADT program in Virginia is in place. However, expenditures for salaries and fringe benefits for staff directly involved in the ADT program (currently 1.5 FTE) and technology services are expected to increase over the next three years. The following levels of federal funding through cooperative agreements with USDA-APHIS-VS will be required to maintain the ADT program in Virginia at current levels.

CA YEAR 2023-24: $208,000
CA YEAR 2024-25: $218,400
CA YEAR 2025-26: $229,320

II. CURRENT TRACEABILITY SITUATION
2.1 Who are we?

The Virginia State Veterinarian and Office of Veterinary Services (OVS) are responsible for administration of the ADT program, within regulatory guidelines established by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA-APHIS-VS) and subject to applicable federal and state laws. Funding is provided through annual cooperative agreements with USDA-APHIS-VS and appropriations from the Virginia General Assembly.

The primary contacts in Virginia for the program are:
Dr. Richard Odom, Animal Health Information Systems Manager and ADT Coordinator
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ADT activities are fully integrated within the Office of Veterinary Services; positions and roles for staff supporting the program are summarized below:
Program administration and coordination:

Dr. Carolynn Bissett, OVS Program Manager - program oversight
Dr. Richard Odom, Animal Health Information Systems Manager and ADT Coordinator - overall program coordination, cooperative agreement and financial management, information technology support, industry outreach
Dr. Abby Sage, Staff Veterinarian - equine and swine health programs
Britanny Street, Animal Import Coordinator - CVI management and compliance

Regional field operations (distribution of official ID tags, oversight of livestock markets, regulatory data processing, industry outreach):
Harrisonburg Regional Office
Dr. Dan Hadacek, Regional Veterinary Supervisor
Dr. Tabitha Moore, Regional Veterinarian
Kimberly Coffman, Senior Livestock Inspector
Lisa Miller, Administrative and Program Specialist
Livestock inspectors (4)
Wytheville Regional Office
Dr. Tom Lavelle, Regional Veterinary Supervisor
James Umberger, Senior Livestock Inspector
Leigh Ann Altizer, Administrative Specialist
Livestock inspectors (4)

2.2   Where are we now?

Please refer to sections 2.1, 2.5, and 4.7.5

2.3   Strengths and Weaknesses

Strengths
- Experience and consistency in program management and coordination.
- Highly capable support from field and administrative staff.
- Long standing relationships with key technology vendors.
- Stable, low-cost technology platform (SCS-VA, StateVet.com), hosted externally with 24x7 availability, excellent redundancy and security.
- Relatively stable federal funding, although base ADT CA not keeping up with increasing costs.

Weaknesses
- Lack of funding for practical IT solutions (e.g., "eCharts" proposal to develop a web-based application to process regulatory test and vaccination data not supported by USDA).
- Dependency on VS ADTIS strategy and application development process.
- Little incentive for small producers, private practitioners, and livestock markets to adopt EID and e-commerce tools.

2.4   Opportunities and Threats

Opportunities
- Partnering with livestock markets, buying stations and producers interested in leveraging EID technology to enhance marketing of cattle.
- Potential for interacting more strategically with industry to leverage ADT investments to improve marketing of Virginia cattle (e.g., source verification, value-added programs).

Threats
- Staff turnover, loss of experience and skillsets.
- Staff workload resulting in shifting priorities.
- Insufficient funding from state and federal sources as operational costs increases over time.

2.5 Inventory of existing infrastructure and suitability assessment

1.5 FTE supported by federal funds:
- Program coordinator (full time)
- Data entry technician (half time)

Other staff supported by state funds:
- OVS program manager (1)
- Staff veterinarians (4)
- Livestock inspectors (8)
- Administrative staff (3)

Space availability is adequate for program needs.
Staff are geographically distributed between 3 office locations with adequate facilities to support all ADT-related activities:
- VDACS main office – Richmond, VA
- Harrisonburg regional office
- Wytheville regional office

Connectivity resources in all offices and in the field are adequate.

Access to USDA ADT and animal health information resources is adequate.

Organization of all existing paper record systems used to access ADT or animal health information.
The following paper documents are stored by date and state of origin in the Richmond, VA office:
- Import ICVIs for non-bovine species that are not submitted electronically
- Export ICVIs for all species that are not submitted electronically

Computerized data management capability
- All animal records related to state-federal animal health programs are stored in SCS-VA, a database application hosted and maintained by USDA. In addition, a web-based data processing service (StateVet.com) is used to acquire and review traceability data from multiple sources (e.g., commercial eCVI applications, Virginia animal entry permit system, data capture platforms located at livestock markets).

Automated data capture capability
- Data from approved eCVI applications are transmitted to the StateVet.com application, reviewed and submitted to SCS-VA for storage.

- Data associated with import cattle movements documented on paper CVIs are entered manually to the Virginia animal entry permit module on StateVet.com by out of state veterinarians.
- Data associated with regulatory test and vaccination events for all livestock species are manually entered to the SCS-VA database (95%) or processed via the USDA MIM Manager application (5% submitted on spreadsheet templates used by a few private veterinarians).
- Traceability data from adult cattle sales at public livestock markets are captured via electronic data loggers or mobile platforms equipped with EID tag readers and uploaded to the StateVet.com application.
- We plan to implement fixed antenna, stationary EID readers at several markets or buying stations that handle large volumes of cattle over the next three years. Traceability data will be captured by market software systems or through a cloud-based commercial service, exact details to be determined.

III.   VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1   Vision Statement
3.2   Mission Statement

Established in 1877, the Virginia Department of Agriculture and Consumer Services (VDACS) promotes the economic growth and development of Virginia agriculture, provides consumer protection, and encourages environmental stewardship. Animals play many valuable roles in our lives. VDACS is responsible for the Commonwealth's animal control, care, and welfare mandates, as well as animal disease control, prevention, and diagnostics. VDACS provides inspection and grading services to ensure the production of a safe, unadulterated, wholesome, and accurately labeled food supply. The agency protects the health of Virginia's animal populations through animal identification, admissions, and traceability programs.

The Office of Veterinary Services is responsible for the state's animal disease control and prevention efforts, which include investigating outbreaks, providing laboratory diagnostics, and containing the spread of animal diseases. The office manages import requirements and Certificates of Veterinary Inspection, provides oversight to Livestock Services facilities, and implements the Animal Disease Traceability Program.

IV.   TRACEABILITY REQUIREMENTS

The following categories must be described in the Road Map:

4.1   Strategic goal(s)

Please refer to sections I, II, and V.

4.2   Programmatic goals (objectives)

Increase use of electronic identification.
The Virginia ADT program will continue to distribute 840-series electronic tags (EID) to livestock producers, veterinarians, livestock markets and others on demand.
Goal: 100,000 tags per year
Dependencies:
- USDA continues to provide 840-EID tags to states at no cost and in adequate quantity to meet demand.
- A revised federal ADT Rule announcing the phase-out of visual-only official identification tags for cattle (e.g., metal NUES ear tags) is approved and implemented in the next year or two.

Enhance ability to track animals
Maintain automated data logger systems at livestock markets and as needed supplement these systems with updated EID readers and mobile data collection devices (i.e., smartphones or tablets).
Goal: Maintain or replace electronic data capture systems at 17 livestock markets
Dependencies:
- Availability of adequate funding for system maintenance and upgrades.

Assist livestock markets and buying stations with the installation of fixed antenna, electronic tag reader systems to record traceability data for large volume cattle sales. All data generated will be stored in the state animal health database or accessible through market software systems.
Goal: Improve the quality and quantity of traceability data from 8 existing fixed antenna systems and install 1 new system per year.
Dependencies:
- Availability of technical assistance from commercial vendor.
- Commitment from markets and buying station owners to make required changes to facilities and proceed with projects in a timely manner.
- Development of internal expertise to install and support fixed antenna systems.
- Availability of adequate funding for automated data capture service.

Continue work with private veterinarians on adoption of e-commerce technologies (EID tags, EID readers and software applications) to capture traceability data.
Goal: Transition at least 5 large animal practitioners per year from paper forms to electronic data capture for regulatory test and vaccination events.
Dependencies:
- Availability of easy to use, Internet-based software applications or other tools to process regulatory test and vaccination data and minimize manual data entry.

Enhance electronic sharing of data.
All traceability data will continue to be stored in SCS-VA and will therefore be available to state and federal animal health officials on demand through AHER or other federal applications.
Goal: 100% of traceability data collected in Virginia from all sources available electronically within 5 business days of receipt.
Dependencies:
- Availability of adequate staff to support data processing requirements.
- Availability of software applications to efficiently process and store traceability data.

4.3   ADT Trace Performance Measures (TPMs)

All ADT Trace Performance Measures assigned by USDA-APHIS-VS will be completed by the Virginia ADT Coordinator with assistance from field staff as needed. TPMs will be documented in the federal Emergency Management Response System (EMRS) as required by USDA-APHIS-VS.

4.4   Data requirements

As discussed in section 2.5 above, all traceability data generated through regulatory programs are stored in a centralized database, SCS-VA.

Electronic 840-series and visual NUES tags are provided to livestock producers, accredited veterinarians, and livestock markets as needed and tag distribution records are stored in SCS-VA.

There are very few commuter herd agreements in place in Virginia. Producers that regularly move animals across state lines under a commuter herd agreement are required to tag animals with official ID and maintain movement records for five years.

The only significant use of group/lot official ID in Virginia is in the commercial swine sector. Import movement records for commercial swine

are provided to VDACS in spreadsheet form. These records are currently not stored in SCS-VA.

4.5   Information technology plan

As discussed above in sections I and 2.5, the information technology platform currently in place is adequate to support animal disease traceability for species and classes of livestock currently emphasized in the federal ADT program. Within the limitations of our current regulatory authority, most traceability data generated in Virginia are being captured electronically, albeit using some processes that are less efficient and accurate than desired.

One area that needs improvement is the submission and processing of regulatory test and vaccination charts. Information from these events is largely submitted on paper forms by private practitioners and manually entered to SCS-VA – a process that is both time consuming and error prone. A proposal supported by several states was submitted to USDA-APHIS-VS in August 2022 to develop a web-based application ("eCharts") that would allow veterinarians to submit test and vaccination data online, including EID records collected in the field. These data would then be available for state animal health officials to review and store in their respective animal health databases. The proposal was not approved and there are no state funds available for software development, so we will continue to rely on manual data entry to support ADT as well as state-federal disease surveillance programs.

4.6   Resource requirements

Assuming that adequate funding is provided through state general funds and federal cooperative agreements for 2023 through 2026, the ADT program should have the resources needed to meet federal and state traceability goals.

4.7   Organizational needs

4.7.1   Executive support

Executive support for the ADT program is adequate and no organizational change within the VDACS Office of Veterinary Services is required to continue implementation of the ADT program over the next three years.

4.7.2 Coordination and oversight procedures

Implementation of the ADT program in Virginia is a team approach. The ADT Coordinator has primary responsibility for administering all aspects of the ADT program in Virginia. However, regular interaction with senior management and field staff provides input on a broad range of issues from regulatory policy considerations to specific data collection challenges. There is no formal industry advisory group and no comprehensive implementation plan. Neither is needed at this stage because the ADT program in Virginia has been in place for many years, involves staff with intimate knowledge of the livestock industry and has a clear understanding of what is needed to advance traceability.

Feedback on ADT-related issues is received from the livestock industry through daily informal interaction and occasional presentations to industry groups (e.g., updates provided on animal health issues to Virginia Farm Bureau, Virginia Cattlemen's Association, State Dairymen's Association).

4.7.3 Policy

The Office of Veterinary Services has revised state animal entry regulations to be consistent with the federal ADT Rule as well as state-federal animal disease programs.

4.7.4 Staffing

Assuming no major changes to current staffing levels or job responsibilities, personnel and expertise within the Office of Veterinary Services is adequate to meet state and federal ADT goals.

4.7.5 Budget requirements

The ADT program in Virginia is supported by general funds allocated by the Virginia General Assembly and federal funds allocated through annual cooperative agreements with USDA-APHIS-VS. In general, state funds are used to support personnel that contribute to the ADT program, but also have other job responsibilities such as administering state-federal animal health programs. Federal funds are used to support personnel that devote at least half their time to ADT and to cover operational

expenses (supplies, equipment, IT services, etc. directly related to ADT).
Funding required from federal sources over the next 3 years is estimated below.

2023-24: $208,000
2024-25: $218,400
2025-26: $229,320

4.7.6 Outreach (required to be addressed within the Road Map)

Information on ADT is primarily exchanged with the livestock industry through frequent (daily or weekly) informal interaction. The program coordinator, regional veterinarians and administrative staff receive inquiries daily regarding issues such as animal entry requirements, official ID requirements, premises registration and availability of official ID tags. In addition to informal interaction, OVS staff provide information on ADT-related matters through veterinary accreditation sessions, presentations to industry groups and hosting of student interns from the Virginia-Maryland College of Veterinary Medicine. Veterinary staff and livestock inspectors are present at public livestock markets on a weekly basis and regularly provide information on ADT to market staff and their customers. Periodically, the State Veterinarian and OVS Program Manager provide formal presentations to industry groups on the status of animal health programs in Virginia, including updates on animal disease traceability activities.

We also publish an annual newsletter that is sent to over 100 large animal practitioners, maintain updated content on the agency web site (www.vdacs.virginia.gov) and typically provide speakers for the annual Virginia Veterinary Conference and other events.

4.8 Monitoring and reporting interstate movement activity

Interstate CVIs are reviewed by the Animal Import Coordinator and regional veterinary staff. Movement data are compiled and reported on quarterly ADT accomplishment reports provided to USDA-APHIS-VS.

V. ADVANCING TRACEABILITY

5.1 Ranking of priorities for advancement

5.2 Implementation of objectives

Increase use of electronic identification
The VDACS Office of Veterinary Services will distribute EID tags in a
timely fashion to veterinarians, livestock markets and producers on
demand.
Goal: 100,000 tags per year.
To encourage the transition from visual to EID, we will continue to
communicate with the livestock industry through regular informal contact,
attendance at industry events, distribution of an annual newsletter to
practitioners and maintenance of accurate information on the VDACS web
site.

Enhance ability to track animals
Maintain automated data logger systems at livestock markets and
supplement these systems with updated EID readers and mobile data
collection devices (smartphones or tablets) as needed.
Goal: Maintain or replace electronic data capture systems at 17 livestock
markets.

**Assist livestock markets and buying stations with the installation of
fixed antenna, electronic tag reader systems to record traceability
data for large volume cattle sales.**
All data generated will be stored in the state animal health database or
accessible through market business systems.
Goal: Improve the quality and quantity of traceability data from 8 existing
fixed antenna systems and install 1 new system per year. The success of
high-volume reader systems will require improvements in sale barn
software and changes to long standing practices such as the use of back
tags to track buyers and sellers. Currently, there is not a practical solution
to scan and correlate back tags to EID tags at the speed of commerce,
which presents a significant hurdle to effective traceability. We do not
plan to use public funds to upgrade sale barn software.

**Continue work with private veterinarians on adoption of e-commerce
technologies (EID tags, EID readers and software applications) to
capture traceability data.**
Easy to use software applications and data quality continue to be major
impediments to advancing traceability. While substantial progress has
been made with the use of electronic CVI applications, acquiring EID
records and associated information from test and vaccination events
largely depends on manual data entry.
Goal: Transition at least 5 large animal practitioners per year from paper
forms to electronic data capture for regulatory test and vaccination events.

Enhance electronic sharing of data.
All traceability data will continue to be stored in SCS-VA and will therefore be available to state and federal animal health officials on demand through AHER or other federal applications.