ADVANCING ANIMAL DISEASE TRACEABILITY ROAD MAP FOR THE STATE OF TENNESSEE

A Three-Year Plan

Submitted by:

DOUG BALTHASER, DVM

STATE VETERINARIAN
TENNESSEE DEPARTMENT OF AGRICULTURE
436 HOGAN ROAD, PORTER BLDG., P.O. BOX 40627, NASHVILLE, TENNESSEE 37204
(615) 837-5120
[SIGNATURE] _____

Submitted to:

K. MARK KRAUSE MS, DVM
AREA VETERINARIAN IN CHARGE
FOR ALABAMA /TENNESSEE
VETERINARY SERVICES
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

USDA, APHIS, VS
430 HOGAN ROAD, JENNINGS BLDG., P.O BOX 110950, NASHVILLE, TN 37220
(615) 781-5982

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I.   EXECUTIVE SUMMARY

Tennessee is a major agricultural state and the cattle industry is one of the leading animal commodities in the state. An important element in the international and national, marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health using the latest technology allowing for quick response to a livestock disease event or incident of concern. The Tennessee Department of Agriculture (TDA) is coordinating efforts to implement the Animal Disease Traceability (ADT) Program through an industry driven approach. TDA provides incentives to livestock markets and accredited veterinarians through the Tennessee Cattle Identification Program (TCIP), TDA hopes to increase the number of animals identified and register more premises.

The central resource to accomplish the Tennessee Cattle Identification Program is the web-based data system that allows identification data to be entered directly into the TDA database from participating livestock marketing facilities and accredited livestock veterinarians. This direct electronic entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry, sharing of data with federal animal health officials or for documentation of disease free status.

Objectives of the Tennessee Animal Traceability Program

1. Seek to advance the animal disease tracing capability by increasing the amount of electronic traceability data collected by electronic interstate certificates of veterinary inspection and to increase the sharing of data with federal animal health officials in Core One and AINMS.
2. Advance the animal disease tracing capability of the Tennessee Cattle Identification Program by focusing on the point of commerce, primarily livestock markets utilizing accredited veterinarians by linking official identification to the market sales identifier and premises.
3. Establish objective assessment of animal disease traceability by providing baseline measures and projected advancements during the three year period of the Roadmap.
4. Conduct outreach activities to producers, accredited veterinarians, livestock marketing facilities, harvest facilities and other industry shareholders.
5. Advance current animal disease traceability infrastructure within Tennessee to enhance the ability track animals from the premise of origin through tracking data points like to livestock markets to eventually to slaughter.

2019   Promote the use of RFID identification as the main official identification for markets and in interstate cattle movement.

2019-2021 Increase the usage of interstate electronic CVIs by Tennessee Accredited Veterinarians.

Increase surveillance and compliance of interstate movements

2021 Trace 80- 90 % of market cattle using RFID official Identification through an electronic data base in order to make the transmission of data more efficient.

- What is the fundamental problem(s) this plan addresses?

  The beef cattle industry is one of the leading animal commodities in Tennessee. An important element in the marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health allowing for quick response to a livestock disease event or incident of concern.

- What are the key elements in summary form?

  Tennessee Department of Agriculture (TDA) is promoting ADT by encouraging livestock marketing facilities, veterinarians and cattle owners located in the state to participate in the Tennessee Cattle Identification Program. These programs require that participating herds have a premises identification number and use RFID 840 official identification. By providing incentives to livestock marketing facilities and accredited veterinarians through the Tennessee Cattle Identification Program, TDA hopes to increase the number of animals identified, register more premises and to enhance the ability to track animal from birth and through the market channels with eventually including slaughter plants.

  What are the primary benefits?

  The objective of Tennessee animal disease traceability program is to increase the electronic sharing of data and to have epidemiological information prior to any disease inquiry or response need, and by so doing support effective animal disease surveillance plan that documents disease free status.

- How does this plan build upon previous efforts to advance animal disease traceability?

  The TDA and the animal industry have made progress throughout the state in animal traceability. TDA is seeking to increase the use of electronic Certificates of Veterinary Inspection by accredited livestock veterinarians. Secondly, encourage use of 840 RFID identification by livestock producers to enhance the ability to track animals from the premise of origin. Thirdly, the intent is to continue improving the efficacy of the animal traceability program by encourage the participation of the livestock marketing facilities currently not participating in the volunteer 840 RFID tag program.

- How does this plan fit within USDA's new framework for animal disease traceability?

  The web-based data system allows identification data to be entered directly into the TDA database from participating livestock markets and accredited veterinarians. This direct entry of identification data facilitates efficient

documentation of animal identification for sharing of data electronically among federal and state animal health officials and conducting an animal disease inquiry or for documentation of disease freedom. All Tennessee's program information is entered into Core One.

- How does this plan support animal health information systems within the State/Tribe/Territory?

  The Tennessee program supports animal health information systems in the state by using official individual 840 RFID identification that originates from cattle premises or licensed livestock marketing facilities, with both having premises identification as the location identifier. The individual identification devices are 840 RFID tags to make recording of official identification more efficient to read.

- How does this plan support animal health information needs with other States/Tribes/Territories and USDA nationally?

  The Tennessee animal disease traceability information is compatible and interoperable with other States/Tribes/Territories and USDA and allows sharing animal disease traceability data. The individual identification used is official and originates from legitimate premises or licensed livestock marketing facilities, with both having premises identification as the location identifier to increase traceability in Core One, AINMS and EMRS2.

- What alternatives were explored?

  Other programs were considered, but the web based database was considered the most efficient and cost effective.

- The projection costs are based on FY2019 USDA contributions which cover less than 50% of the actual salaries and benefits of the staff involved in animal traceability.

- FY2019 $ 153,200.00
- FY2020 $ 156,000.00
- FY2021 $159,000.00

II.   CURRENT TRACEABILITY SITUATION

2.1   Who are we?

- The primary constituents: Tennessee Department of Agriculture
- The external constituents:
  Licensed Tennessee Livestock Markets
  Private Veterinarians
  Tennessee Accredited Veterinarians
  Farm Service Agency
  Tennessee Agriculture Extension Service
  Tennessee Farm Bureau
  Tennessee Farmer's Cooperative
  Tennessee Livestock Network
  Livestock Producers
  University of Tennessee College of Veterinary Facility

- What does statewide, tribal-wide, territory-wide mean?

  Twenty-two (22) accredited livestock markets participate in the Tennessee Cattle Identification Program statewide. State and federal field personnel visit markets regularly on sale days for purposes of inspection and monitoring activities, including verification that all eligible cattle are identified according to the traceability rule, that identification tags are properly placed, and that required record keeping and electronic transmission of official identification data is being done in timely fashion and in accordance with instructions. Field personnel, consisting of eleven (11) animal health technicians and three (3) staff veterinarians, maintain liaison with the livestock markets and market veterinarians on all matters pertaining to the Federal traceability rule and the Tennessee cattle identification program. Also the TDA field personnel will visit with accredited veterinarians and livestock producers to address animal disease traceability (ADT) rules. Another staff veterinarian serves as the ADT Coordinator and provides oversight to the program.

- How is traceability data used internally, externally

  The TDA computer database is a password protected website system, whereby identification data is entered directly into the TDA database from participating livestock markets and accredited veterinarians. This website system has increased the amount and search ability of animal disease traceability data collected through the program. Having this electronic data increases the ease of sharing with federal and state animal health officials.

- Values that guide the Tennessee animal disease traceability system.

  An important element in the marketing of beef is the capability to trace an animal back to its origin with the goal to safeguard animal health and public health allowing for quick response to a livestock disease event or incident of concern.

2.2   Where are we now?

The State of Tennessee currently has 37 livestock markets with 22 markets participating in the Tennessee Cattle Identification Program. The primary goal of the program is officially identifying all eligible cattle in marketing channels; including slaughter cattle which are presently identified at markets with official USDA approved back tags. This work will advance animal disease traceability, not only in Tennessee, but will also interface with other jurisdictions throughout the country. This system provides an ongoing method for continual monitoring of the livestock population for disease or other situations that might be injurious to animal and human health. The traceability program was expanded eight years ago to include the capture of official identification data from Certificates of Veterinary Inspection.
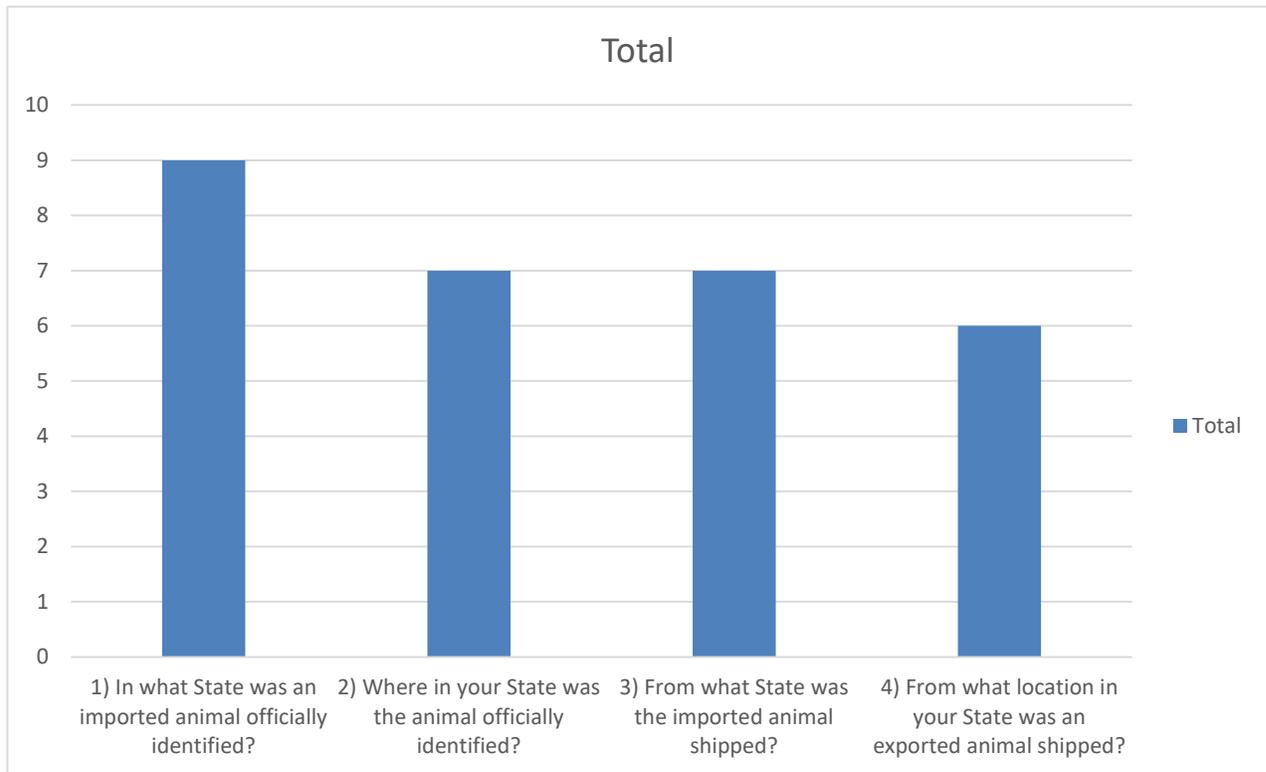
- What measures of traceability capability are currently being used? What are the specific values and associated interpretation?

  In addition to actual disease trace backs, four animal disease traceability test exercises are planned for each fiscal year to test the trace-back efficacy of the program. Each exercise involves the tracing of six animal identification from sources that include official test charts, certificates of veterinary inspection, market and official tag distribution records. These measures are applied to randomly selected tags from an USDA APHIS-Veterinary Services individual who pulls official identification from paper ICVIs, Electronic ICVIs from multiple databases, and official test charts. The time begins at the moment the Tennessee State Veterinarians Office receives an ADT e-mail from EMRS2 and then ends when the tag is located in the electronic data system. These test traces are then uploaded into EMRS2.
  Measures currently in place are the USDA traceability standards to measure animal traceability capability which are: 1) Time to trace a reference animal to the previous location of co-mingling. 2) Time to trace animals detected and traced for program diseases such as brucellosis and tuberculosis.

2018-2019 Tennessee TPMs through January 2019

Row Labels	Count of Outcome
1) In what State was an imported animal officially identified?	9
2) Where in your State was the animal officially identified?	7
3) From what State was the imported animal shipped?	7
4) From what location in your State was an exported animal shipped?	6
Grand Total	**29**

- How is coordination being currently achieved within the unit?

The USDA ADT Coordinator works closely with the TDA State Veterinarian and ADT Coordinator. The TDA field staff coordinates the Animal Traceability Program through the livestock marketing facilities and accredited Veterinarians.

- How is coordination being currently achieved state-wide?

The livestock market veterinarian and market personnel apply official 840 RFID tags and USDA approved back tags, to all back to farm cattle over 18 months of age, and all dairy females, bulls and steers. The livestock market electronically enters the 840 tag number, linked to the corresponding back tag, into the Tennessee animal health database. TDA can access the data for traceability efforts for cattle diseases or food safety. The computer database is a web based program so identification data can be input directly into the database from livestock marketing facilities where animal identification is done.

- How does the present unit coordinate activities with other existing agencies/units?

The Tennessee Department of Agriculture (TDA) provides incentives and field support for the livestock markets to facilitate the program. The livestock market veterinarian and market personnel apply official 840 RFID tags and approved USDA back tags to all back to the farm cattle over 18 months of age and all dairy replacement females, bulls and steers. Market cattle going directly to slaughter continue to have only USDA approved back tags applied. The livestock marketing facility submits electronically the official identification linked to the corresponding back tag to the TDA Anim-All website for storage in the TDA database.

- What standards for traceability are currently being used? Are they appropriate?

The Tennessee Program seeks to continue objective assessment of animal disease traceability by using the recommended Preliminary Traceability Performance Measures as listed below.

1. The State or Tribe that received a reference animal determines the State or Tribe in which the animal was officially identified and notifies that State or Tribe of the reference animal's official identification number.
2. The State or Tribe where a reference animal was officially identified confirms that it has documentation that the official identification number

was issued within its jurisdiction and that it has contact information for the person who received that identification number.

3. The State or Tribe that received a reference animal determines the State or Tribe from which the animal was moved interstate into its jurisdiction and notifies that State or Tribe of the reference animal's official identification number.

4. The State or Tribe that receives notification that a reference animal moved interstate from its jurisdiction determines the address or location from which the reference animal was shipped.

- What is the state of technology infrastructure?

The web-based data system lets identification data to be entered directly into the TDA database from participating livestock marketing facilities. The TDA IT department added a second option for the recording of cattle traceability information for the Tennessee Cattle Identification Program. This option lets the livestock markets and veterinarians e-mail an excel spreadsheet of official identification information to the TDA office and have the information automatically uploaded into the TDA data system. This direct entry of identification data allows for efficient documentation of animal identification for conducting an animal disease inquiry and for sharing with federal and state animal health officials.

- Are requests for information available 24/7, or only available M-F, 40 hours per week, if authorized personnel are present?

The information is available Monday through Friday 47.5 hours per week during business hours 7:00 AM until 4:30 PM, but a large percentage of the CVI information is entered into SCS Core One making the information accessible 24/7 in an emergency situation.

2.3   **Strengths and Weaknesses**

Four important assets of the Tennessee ADT program are the following:
- The web-site database is the center piece of the state system; identification data can be entered directly into the TDA database from participating livestock marketing facilities and accredited livestock veterinarians. This data enhances our ability to share information electronically among federal and state animal health officials.

- The strength of the program is the state and federal field personnel that visit the markets regularly on sale days to address issues regarding the animal traceability rules. These regular visits

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are for the purpose of inspection and monitoring activities, including verification that all eligible cattle are identified and that required record keeping and transmission of identification data is being carried out in accordance with instructions. Field personnel, consisting of animal health technicians and staff veterinarians, maintain close liaison with the livestock markets and market veterinarians on all matters pertaining to the federal traceability rules. Federal funding   plays an integral part of the plan since thirteen field personnel are estimated to be involved in over 400 events yearly to maintain and advance animal tracing capability of the Tennessee ADT Program.

- The capture of traceability data from cooperative disease programs.   Every official identification from Tuberculosis, Brucellosis and Pseudorabies testing and Brucellosis vaccinations is being entered into SCS Core One. TDA has a full time data entry person to transfer all identification from the cooperative disease programs into Core One and the AgView, GVL and TN PDF CVIs into StateVet.com.

- The Tennessee legislators have provided incentives for livestock markets to facilitate the ADT program since 2005-2006. The TDA has received major legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program.   Over 40 million dollars has been appropriated to provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment.   The allocation of State money designated for agriculture includes projects that would facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd evaluations, plus incentives for markets and veterinarians to purchase scanners, software and computers related to the collection of animal identification data. Also for the past two years the legislature has provided funds to purchase 80,000 RFID 840 tags per year for use by the livestock producers and markets. Plans are to continue to require premises registration as a key element of the current program.

What are the weaknesses in terms of "lack of" technology, human resources, personnel capabilities, etc.?

The State of Tennessee currently has a sound traceability program. Twenty-two (22) of the largest licensed livestock markets in the

State and 33 livestock veterinarians are currently participating in the voluntary TCIP. This leaves fifteen markets that have chosen not to participate.

The department is working on ways to increase the use of electronic CVIs by accredited veterinarians. TDA charges for paper TN CVI books. Two electronic CVI program remain free of charge to encourage Tennessee accredited veterinarians to increase usage of electronic CVIs. Our goal is to have 90% of the accredited livestock veterinarians using electronic CVIs in the next 3 years.

2.4 Opportunities and Threats

- The Tennessee web-based data program is stored on the state computer system and is backed up daily. The web based program traces back all market cattle to the livestock marketing facilities. This traceability system still relies on the market keeping good records of all business transactions of the seller and buyer. Also several of the smaller livestock markets do not participate in the voluntary program so TDA can only trace cattle from these markets with USDA approved backtags and market records.
- TDA expanded the animal identification program for accredited livestock veterinarians in July of 2011. This program has the veterinarians entering official animal identification plus premise identification of the farm of origin.
- Retiring Tennessee official identification at slaughter establishments.
- Identifying the half million feeder cattle that are shipped interstate.

2.5 Inventory of existing infrastructure and suitability assessment

At the present, participation of livestock marketing facilities in the TDA sponsored cattle identification program is voluntary. State and federal personnel visit markets regularly on sale days for the purpose of addressing issues about the traceability rules, inspection and monitoring activities, including verification that all eligible cattle are identified and that required record keeping and transmission of data is being done in timely fashion and in accordance with instructions. Field personnel maintain liaison with livestock markets and market veterinarians on matters pertaining to the traceability rule and the market cattle traceability program. The field staff works closely with the State ADT Coordinator and the USDA ADT Coordinator.

The central repository for the data for the TN Cattle Identification Program is the web-based data system that allows identification data to be entered directly into the TDA database. In the TDA data base the Premise Identification information is linked to the official identification of the animal.

In addition to the field staff, a staff veterinarian, supervisor and two clerical data personnel work with the Tennessee animal identification web-based system in Nashville. Another clerical data person provides data entry of identification data originating from Interstate Certificates of Veterinary Inspection. The web-based animal identification computer program is overseen by the Tennessee Strategic Technology Solution staff.

Animal Traceability Computer Storage information

Storage (method): The data is stored using a SQL server.

Storage (size): The SQL server storage for this application area is a table consisting of 91217 rows, by 21 columns; which is consuming approximately 25560Kb (~25Mb) of storage space.

Security/location: The SQL server is housed at OIR's secure server facility outside of Nashville TN. Direct (SQL) access to the data is limited to a few select workstations, on the state's private LAN.

User access to data is accomplished by Web browser applications employing an internal menu system of login for data access for authentication and authorization.

Speed: This varies depending on network load and is generally bound by current network traffic. Speed is generally "good". The route data takes is approximately: user request through web browser client (e.g. Internet Explorer) to the web server, which makes the data request. The data is then returned as part of the web page back to the requesting user.

III. VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1 Vision Statement

The Tennessee Department of Agriculture works to ensure a healthy, growing animal industry. TDA partners with private veterinarians and livestock industries to provide programs aimed at preventing, controlling and eradicating certain infectious or communicable diseases of livestock.

The Tennessee Animal Disease Traceability Program strives to have an effective disease surveillance program by continuing to improve every aspect of animal identification.

3.2 Mission Statement

The Tennessee Department of Agriculture partners with state and federal officials, private veterinarians and livestock industries to provide programs aimed at preventing, controlling and eradicating certain infectious or communicable diseases of livestock and other domestic animals. Activities include administering eradication programs for brucellosis, tuberculosis, Scrapie and Pseudorabies, along with the control program for equine

infectious anemia. TDA also enforces the laws and rules regulating interstate and intrastate movement of animals.

The intent of the TDA program is to have the Tennessee Animal Disease Traceability Program to continue improving efficacy in every aspect of animal identification.   The overall objective of advancing animal disease traceability in Tennessee is to have searchable epidemiological information prior to responding to any disease inquiry or response need. This data is essential for supporting interstate animal activity, an effective animal disease surveillance plan and for planning continuity of operations.

IV.   TRACEABILITY REQUIREMENTS

4.1   Strategic goal(s)

There are 37 livestock markets with 22 markets participating in the volunteer cattle identification program.   Several years ago the TraceFirst program StateVet.com along with CoreOne was added to include the electronic capture of official identification data from certificates of veterinary inspection and from program test and vaccination records. This expansion moves the program toward the goal of identifying all eligible cattle in interstate movement and marketing channels, including slaughter cattle which are presently identified at markets with official USDA approved back tags. The results of this work will advance animal disease traceability, not only in Tennessee, but also through the interface with other jurisdictions throughout the country.   In so doing, it will provide an ongoing system for continual monitoring of the livestock population for disease or other situations that might be injurious to animal and human health.

4.2   Programmatic goals (objectives)

The overall objective of the Tennessee animal disease traceability program is to have searchable epidemiological information prior to responding to any disease inquiry or response need. This Animal Identification program supports an effective animal disease surveillance plan that documents disease free status which is essential for supporting interstate animal activity and for planning continuity of operations.

Objective 1: Seek to advance the animal disease tracing capability by increasing the amount of electronic traceability data collected by interstate certificates of veterinary inspection and to increase the sharing of data in Core One and AINMS.

    a. Tennessee accredited veterinarians have four options for electronic CVIs, the TN PDF CVI ,the AgView CVI , the TDA web based CVI and the Global Vetlink. TDA's web-based Certificate of Veterinary Inspection (eCVI) is an electronic database created by TDA Information Systems division.   The eCVI database allows the accredited veterinarian to enter a CVI directly in the database so the information is immediately available to TDA. There is no cost to the

accredited veterinarian for use of the TDA web based eCVI system and the TN PDF CVI.

Objective 2: Conduct outreach activities to producers, accredited veterinarians, livestock markets, harvest facilities and other industry shareholders. In addition to the weekly visits to sales at livestock markets, field staff participates in various opportunities for ADT traceability outreach in their contacts with food animal veterinary practitioners, feed stores, livestock associations, etc. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials. At the statewide and regional levels, staff personal conducts outreach activities through participation in statewide and regional industry and veterinary organizations.

It is estimated that the eleven (11) animal health technicians and three (3) field staff veterinarians will participate in a total of 130-140 outreach events with a total of approximately 160 plus hours during each year of the three year plan.

Compliance is a major priority of the Tennessee traceability plan. Compliance for proper and complete information on ICVIs, Official Test Records, and other movement documents are monitored as they are received by the Tennessee State Veterinarian's office. When discrepancies in any of the previous mentioned documentation are noticed, they are documented and the individual preparing the document is contacted of the discrepancy. Contact is either made by a phone call from the Tennessee Staff Veterinarians and/ or a visit from the Tennessee field veterinarians for education of the Animal Traceability Rules.

Also, the Tennessee Ag Crime Unit is a separate department within the Tennessee Department of Agriculture, but they have assisted the State Veterinarian with monitoring livestock movement along the Tennessee Interstate System. The Ag Crime Officers are licensed law enforcement officers and can conducted inspections of interstate cattle movements.

Objective 3: Maintain and advance the animal disease tracing capability of the Tennessee Animal Disease Traceability Program by increasing the amount of traceability data collected by APHIS/VS State-federal cooperative program activity, interstate certificates of veterinary inspection, and the Tennessee Cattle Identification Program.

Our goal is to increase the amount of traceability data collected by APHIS/VS State-federal cooperative program activity; the current administrative personnel will continue data capture efforts and the monitoring of interstate veterinary certificates of inspection.

To accomplish this objective, a full-time staff veterinarian/ ADT coordinator will provide oversight of the traceability program. TDA's administrative personnel will continue to collect data from hand-written

CVI's and monitor eCVIs in the TDA's database, SCS Core One, GlobalVetLink and USDA VSPS systems.

Objective 4:   Establish objective assessment of animal disease traceability by providing baseline measures and projected advancements during the period of the roadmap using the four standard measures listed below in 4.3.

Objective 5: Maintain Current Animal Disease Traceability Infrastructure with the Tennessee Cattle Identification Program. This program compiles official identification information that tracts cattle movement in Tennessee livestock marketing facilities and allows sharing of animal disease traceability data with other States/Tribes/Territories and USDA. This program along with the State's program to distribute 840 RFID tags to producers enhances the ability to track animals from the premise of origin through tracking data points like the livestock markets and possibly someday to slaughter plants.   The individual identification used is official and originates from cattle premises or licensed livestock markets, with both having premises identification as the location identifier.   The TDA has received major legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program. For the past ten years these appropriations provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment. Plans are to continue to require premises registration as a key element of the current program. These allocated funds are paid directly the participating livestock producers, livestock markets and veterinarians. The TDA provides field support for livestock markets to facilitate the program. The livestock market veterinarian and market personnel apply official 840 RFID tags and USDA approved back-tags, to all back to farm cattle over 18 months of age, and all dairy cattle. Livestock markets in Tennessee utilize the USDA approved backtag as their market sale tag, thus tying animal identification directly to the market records of the seller. The livestock market electronically transmits the 840 RFID tag number, linked to the corresponding back-tag, to the TDA animal health data system via the Anim-All traceability website.

The goal of the Tennessee Animal Traceability Program is to identify cattle through an electronic data base (the Anim-All cattle traceability website). The department's goal is to be able to identify electronically approximately 5,000 head of cattle monthly.

In another component of the traceability program, accredited livestock veterinarians have been encouraged to participate in the Animal Identification Program. Participating veterinarians are utilizing official identification (840 RFID) tags, to identify cattle for their clients.   The

accredited veterinarian receives an incentive for promoting and performing animal identification in his/her practice area. This program requires that participating herds have a premises identification number. Identification data is entered directly into the Tennessee animal health database from the veterinarian's office via the Anim-All website.

4.3   Animal disease traceability performance measures

The Tennessee Program seeks to continue objective assessment of animal disease traceability by providing baseline measures during the funding period by using the recommended Preliminary Traceability Performance Measures. These measures are applied to randomly selected tags from an USDA, APHIS, Veterinary Services individual who pulls official identification from paper ICVIs, Electronic ICVIs from multiple databases, and official test charts. The time begins at the moment the Tennessee State Veterinarians Office receives an e-mail from the local USDA, APHIS, VS office and then ends when the tag is located within the state of Tennessee or another State Animal Health Official is notified of an Official Identification that was exported from or imported to. Listed below are the standard performance measures that Tennessee utilizes to measure its Traceability Program.

1. The State or Tribe that received a reference animal determines the State or Tribe in which the animal was officially identified and notifies that State or Tribe of the reference animal's official identification number.
   A. Time to report to the State/Tribe from which an animal was moved interstate. Initial: 95% within 2 business days. Goal: 97% within 2 business days.

   B. Tennessee will notify states by telephone, e-mail, and/or fax of reference animal(s) and provide where the animal(s) were officially identified and the animal's identification number.

2. The State or Tribe where a reference animal was officially identified confirms that it has documentation that the official identification number was issued within its jurisdiction and that it has contact information for the person who received that identification number.
   A. Time for the State/Tribe of first officially tagging/identifying an animal in question that has moved interstate to provide a record of the official tag distribution
   Initial: 90% within 2 business days. Goal: 95% within 2 business days.
   B. Tennessee will utilize the state animal database, AIMS, and electronic CVI's database to confirm the official identification of reference animal(s) within our jurisdiction and confirm who received the official ID number.

3. The State or Tribe that received a reference animal determines the State or Tribe from which the animal was moved interstate into its jurisdiction and notifies that State or Tribe of the reference animal's official identification number.

   A. Time to report to the State/Tribe of official identification of an animal in question that has moved interstate.

   Initial: 90% within 2 business days. Goal: 95% within 2 business days.

B. Tennessee will notify states via telephone, e-mail, and/or fax when it is determined the state from which an animal(s) was shipped into Tennessee and notify that office of the reference animal's official identification.

4. The State or Tribe that receives notification that a reference animal moved interstate from its jurisdiction determines the address or location from which the reference animal was shipped.

A. Time for the State/Tribe from which an animal in question has moved interstate to provide the location and contact information from which the animal has moved interstate.

Initial: 90% within 2 business days. Goal: 97% within 2 business days.

B. Tennessee will notify receiving states of official identification via telephone, e-mail, and/or fax when address or location of reference animal(s) that was shipped interstate is determined.

Following are specific measures used to measure animal disease traceability in Tennessee cattle.

a.) Time to Trace Reference Animals to Their Herds of Origin, Previous Location of Commingling, or Birth Location. The Tracing of Exposed and High Risk Cattle to Their Locations, Including Tracing Animals Forward and Back from the Index Herd: It is difficult to affix a time parameter to this objective because of the wide variety of epidemiologic circumstances in this situation such as, there being a large number of animals involved and the scattering effect of cattle in market channels. The policy however, is to treat each case with urgency, and with all available personnel resources.

b.) Eligible Cattle in Livestock Markets: Currently it is estimated that approximately 80% of eligible cattle are being identified in Tennessee livestock markets electronically because of the voluntary participation of 22 markets in the voluntary TN Ag Enhancement cattle traceability program. It is estimated that gaining participation in the program by the 15 non-participating markets would increase the number of cattle identified electronically by approximately 15-20%. Gaining this participation has been targeted as a priority.

4.4 Data requirements

Administration of Official Identification Devices

The Tennessee Department of Agriculture (TDA) implemented a system to assist livestock producers to officially identify cattle on their premises. Tennessee producers are able to obtain official 840 RFID tags at no cost from the TDA Animal Health office. Livestock producers with a premise identification number can contact the state animal health office. Official USDA identification (840 RFID tags) are mailed directly to the livestock producer for use in livestock on their premise. The Tennessee state legislature provides funds on a yearly basis for the department to purchase approximately 80,000 RFID 840 tags to provide livestock producers, livestock markets and veterinarians to identify cattle and

swine. This program promotes the identification of cattle with official identification and links the official ID with a premises identification number. The Tennessee Agricultural Enhancement Program (TAEP) provides cost share dollars to livestock producers, veterinarians and markets for the purpose of purchasing EID readers and equipment for scanning RFID tags. He Tennessee Department of Agriculture (TDA) staff maintains electronic records of official USDA identification devices distributed to livestock producers in the TDA database along with official identification distributed to livestock marketing facilities, tagging sites and accredited veterinarians. Official identification distribution records are also entered in the USDA Animal Identification Number Management System (AINMS) and SCS Core One.   The Tennessee Department of Agriculture (TDA) has a web-based data system that allows official identification data of cattle to be entered directly into the TDA database from participating livestock marketing facilities and veterinary offices.   Markets and veterinarians may also e-mail official identification data on an excel spreadsheet to the TDA data uploader Aginspections@tn.gov and have the information uploaded directly into the TDA data system.

Tennessee Cattle Traceability Program

The Tennessee animal disease traceability information is compatible and interoperable with other States/Tribes/Territories, and USDA, for sharing animal disease traceability data. The individual identification devices are 15-digit 840 RFID ear tags. Validation of data is verified with field trace-back exercises using actual identification data from program records and movement documents. The availability of traceability information to other jurisdictions is usually during normal business hours. However, it can be up to, and including, 24/7 if the level of emergency warrants such coverage. All methods of transmission are generally available and would be used appropriately, with response times being variable and dependent on the complexity of the trace-back.

The Tennessee Department of Agriculture (TDA) pays an incentive to licensed livestock markets for applying the official ID and entering the identification data directly into the State animal disease database via website. The records of tag distribution are entered and maintained in a Tennessee state animal disease database and the animal identification management system (AIMS) plus information is entered into SCS Core One.

4.5 Information technology plan

The central repository for the data for the Tennessee Cattle Identification Program is the web-based data system that allows identification data to be entered directly into the TDA database. The state browser is backed up daily. On a quarterly basis, Premise identification information is downloaded into the system from the State Premise Registration System. In the TDA data base the Premise Identification

information is linked to the official identification of the animal. This direct entry of identification data facilitates efficient documentation of animal identification for conducting an animal disease inquiry or for documentation of disease free status.

4.6 Resource requirements

- Is specific expertise needed that is not currently available?
  Presently there is a need for a more efficient system to record data from hand written certificates of veterinary inspection, disease program and vaccination records. Presently this information is being manually entered into SCS Core One.
- Is a continuity of operation plan (COOP) in place and how frequently is it tested? The Tennessee Department does have a continuity of operation plan (COOP) in place and is tested every 12-24 months.
- Are automated data capture resources used? Yes, StateVet.com is used to capture information from electronic TN PDF CVIs, AgView and GVL CVIs for livestock and horses.

4.7 Organizational needs

4.7.1   Executive support

- The State Veterinarian is very involved in the Animal Identification Program. The State Veterinarian meets regularly with the Commissioner of Agriculture to obtain feedback on the implementation of programs including Animal Traceability and other matter dealing with the department.
- Since state funds are used in the support of animal traceability the Tennessee Department of Agriculture is subject to state audits.

4.7.2   Coordination and oversight procedures

- The animal disease traceability advisory committee is made up of the following groups: Tennessee Department of Agriculture, Farm Service Agency, Tennessee Agriculture Extension Service, Tennessee Farm Bureau, Tennessee Farmer's Cooperative, University of Tennessee College of Veterinary Medicine faculty, private veterinarians and the Tennessee Livestock Network. Representatives of these groups meet in a face to face meeting on a yearly basis.
  The staff veterinarian who serves as the state ADT Coordinator also serves as the state coordinator of the county Disaster Animal Response Teams. Along with his other emergency management duties with Animal Health, he is the TDA Emergency Support Coordinator to the Tennessee Emergency Management Agency and regularly participates in TEMA exercises.

The State Veterinarian in consultation with the Assistant State Veterinarian and the ADT Coordinator arbitrates any disputes.

4.7.3   Policy

- The Tennessee Department of Agriculture's Animal Health division supports an effective animal disease surveillance plan in all departmental programs.   The overall objective of the Tennessee animal disease traceability program is to have searchable electronic epidemiological data prior to responding to any disease inquiry or response need. This is essential for sharing data with federal animal health officials and supporting interstate animal activity.

4.7.4   Staffing

- The state animal health technicians and staff veterinarians are responsible for maintaining direct contact with livestock marketing facilities, accredited veterinarians, feed stores, livestock associations, etc. in their specific sections of the state. These personnel participate in state wide and regional industry and veterinary organizations. The State administrative veterinary staff consists of two data clerk entry personnel, one supervisor overseen by the State ADT Coordinator and the Assistant State Veterinarian. Animal Traceability Program is a vital individually coordinated unit of the Tennessee Department of Agriculture Animal Health.

4.7.5 Budget requirements

Since 2005-2006, animal health has received legislative appropriations to support the animal industries of the State with a particular focus on the animal identification program. Over 40 million dollars has been appropriated during the past thirteen (13) years to provide co-funding for a variety of initiatives with all funding contingent upon premises identification being a requirement for program enrollment. The allocation of state money designated for agriculture includes projects that would facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd evaluations, plus incentives for markets and veterinarians to purchase RFID scanners, software and computers related to the collection of animal identification data. Plans are to continue to require premises registration as a key element of the current program. The Tennessee Animal Identification program has been allocated $300,000.00 for the Tennessee Cattle Identification Program for this fiscal year. To continue the

Animal Traceability program the next three years TDA will have to maintain this amount to fund the Animal Identification Program.

Projected costs for FY2019-2020	TOTAL BUDGET	PROPOSED VETERINARY SERVICES PORTION
PERSONNEL	**$663,490.00**	$81,262.00
FRINGE BENEFITS	**$212,540.00**	$32,505.00
TRAVEL	**$4,245.00**	$4,245.00
EQUIPMENT		
SUPPLIES RFID840 Tags	**$8,700.00**	$8,700.00
SUPPLIES - Readers	**$2,980.00**	$2,980.00
SUPPLIES- Taggers	**$1,700.00**	$1,700.00
CONTRACTURAL		
OTHER	**$6,000.00**	$6,000.00
TOTAL DIRECT CHARGES	**$889,655.00**	$137,742.00
INDIRECT CHARGES (11.30%)	**$101,661.00**	$15,451.00
TOTAL	**$991,316.00**	$153,193.00

4.7.6. Outreach activities

One of the main objectives of the Tennessee Animal Traceability Program is to conduct outreach activities to producers, accredited veterinarians, livestock marketing facilities, harvest facilities and other industry shareholders.

In addition to the weekly visits to sales at livestock markets, field staff participates in various opportunities for program outreach in their contacts with food animal veterinary practitioners, feed stores, and livestock/poultry associations. At the statewide and regional levels, staff personal conducts outreach activities through participation in statewide and regional industry and veterinary organizations.

4.7.6.1 Accredited veterinarians

In addition to the outreach mentioned above, accredited livestock veterinarians have been asked to participate in the Tennessee Cattle Identification Program on a voluntary basis. Participating veterinarians are being encouraged to utilize permanent type ear-tags like the 840 RFID tags, to identify cattle for their clients. The accredited veterinarian receives an incentive for promoting and performing animal identification in his/her practice area.

The Electronic Certificate of Veterinary Inspection Program was added to electronic database created by TDA Information Systems division in 2011. The eCVI database allows the accredited veterinarian to enter a CVI directly in the database and the information is immediately available to TDA. There is no cost to the accredited veterinarian for use of the eCVI system created by TDA. Tennessee accredited veterinarians also have two additional electronic CVIs. A window based PDF version and a mobile CVI (Ag View CVI) that is available on i-Pads, i-Phones, Android tablets and phones. TDA administrative staff currently monitors all certificates through the TDA Data System, SCS Core One, USDA VSPS and GlobalVetLink.

To advance animal disease traceability and compliance, the Tennessee Department of Agriculture office staff monitors all Certificates of Veterinary Inspection sent in by accredited veterinarians. The Tennessee ADT staff review all CVIs. ICVIs are monitored for proper completion. Accredited Veterinarians are notified by letter of all non-compliance issues. These non-compliance issues are recorded electronically in the TDA data base by individual veterinarian. All veterinarians with multiple non-compliance issues are visited by a TDA or USDA staff veterinarian. Livestock markets are visited regularly for ADT compliance.
Also, Tennessee Ag Crime officers check livestock carriers transporting livestock interstate through Tennessee for proper interstate Certificates of Veterinary Inspection.

4.7.6.2 Livestock markets

The field staff makes weekly visits to sales at livestock markets; the staff participates in various opportunities for program outreach in their contacts with the livestock markets. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials. Additionally, during the year direct personal contacts are made with the owners/operators of the livestock marketing facilities that do not participate in the Tennessee Cattle Traceability Program to try and recruit them into the program.

4.7.6.3. Industry as a whole

The field staff participates in various opportunities for program outreach to industry in general; their contacts include food animal veterinary practitioners, feed stores, livestock and poultry associations, etc. Outreach activities consist of personal contact, verbal communications, and distributing printed educational materials.

The allocation of State money designated for agriculture includes projects that facilitate producers, livestock markets, and other livestock assembly sites to procure premises identification by linking state co-payments for purchases of animal handling facilities equipment, herd bulls, herd health programs, herd evaluations, plus incentives for markets and veterinarians to purchase RFID scanners, software and computers related to the collection of animal identification

data. Plans are to continue to require premises registration as a key element of the current program.

The animal disease traceability advisory committee is made up of the following groups: Tennessee Department of Agriculture, Farm Service Agency, Tennessee Agriculture Extension Service, Tennessee Farm Bureau, Tennessee Farmer's Cooperative, private veterinarians, University of Tennessee College of Veterinary of Medicine faculty and the Tennessee Livestock Network. Representatives of these groups meet in a face to face meeting on a yearly basis. This committee is informed of any plans to advance animal traceability that will impact the animal industry.

4.8. Monitoring and reporting interstate movement activity

- How will the number of animals and the number of shipments be monitored that move interstate?

- Presently the Tennessee Department of Agriculture monitors cattle exported to other states by Electronic Certificates of Veterinary Inspections (eCVIs) which are stored in the state browser; hand-written for cattle are entered into the state browser by staff personnel. TDA has a subscription to StateVet.com to upload interstate PDF CVIs and official identification into Core One.

- Also a monthly report of exported and imported cattle is generated for the Tennessee ADT Coordinator. Staff personnel maintain a spreadsheet of the number of imports and exports of cattle, bison, equine, goats, sheep, swine, alpacas, lamas and exotic animals. The data is taken from electronic and hand-written CVIs, Global Vet Link, AgView and USDA VSPS. A yearly report is sent to USDA National Agricultural Statistics Service (NASS).

5 TRACEABILITY IMPLEMENTATION

5.1 Ranking of priorities for advancement

A. Increase the use of Electronic Certificates of Veterinary Inspection and official identification (840 RFID tags) in the interstate movement of cattle.
B. Tennessee Cattle Identification Program- focus on the point of commerce and high risk cattle classes (over 18 months and dairy females, bulls and steers) at livestock marketing facilities. Promoting entry into the TDA web based data system by the livestock markets.
C. Tennessee Cattle Identification program-through the accredited large animal veterinarians focus on high risk cattle classes (over 18 months and dairy females, bulls and steers) at clients' farms. Promoting RFID tag use and electronic entry of data and enhancing the state's ability to track animals from birth to slaughter.

Continued funding at the same or increased levels is needed to continue to improve the present Animal Traceability initiative in the state of Tennessee. The various components are somewhat dependent on the amount of success the Market Cattle Identification Program incurs. TDA will continue this program as long as state funds are available, federal funds are used primarily for salaries and benefits to partially fund work in all aspects of animal traceability.

5.2 Implementation of objectives

A. 2019-2021 Tennessee Cattle Identification Program- continue to focus on using electronic official 840 RFID tags in high risk cattle classes at livestock markets. Increase our outreach to the livestock markets that are not participating in the voluntary Cattle Identification Program. Increase the number of market cattle officially identified in the electronic data base the next 3 year period.

B. 2019-2021 Tennessee Cattle Identification program- focuses on high risk cattle classes on the farm. Promoting 840 RFID tag usage, web based interface self-entry by veterinary offices. Increase number of veterinarians using eCVI and participating in the cattle identification program by personal visits from the TDA field staff. Increase the amount of electronic data (ICVI and animal identification) uploaded into StateVet.com

C. 2019-2021 Continue to promote the tracing of interstate movement of cattle by the use of electronic CVIs and low frequency and UHF RFID tags.