

ADVANCING ANIMAL DISEASE TRACEABILITY ROAD MAP FOR MINNESOTA

A Three-Year Plan - Update

Submitted by:

BRIAN HOEFS, DVM

**EXECUTIVE DIRECTOR, STATE VETERINARIAN
MINNESOTA BOARD OF ANIMAL HEALTH
625 ROBERT ST NORTH, ST. PAUL, MN 55155
651-296-2942**

Submitted to:

**STEPHAN L. SCHAEFBAUER, DVM, MPH
AREA VETERINARIAN IN CHARGE - MINNESOTA
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE
VETERINARY SERVICES**

100 BRIDGEPOINT DR, SUITE 180, ST PAUL, MN, 55075

(651) 234-5680

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I. EXECUTIVE SUMMARY

The *Advancing Animal Disease Traceability Roadmap for Minnesota* addresses a three-year plan for enhancing the traceability system for livestock within the State of Minnesota. Originally written to incorporate the path forward for fiscal years 2012 – 2014, the document has been updated as required and the most recent version of the roadmap reflects plans for fiscal year (FY) 2024 forward.

Minnesota has an established system in place to trace swine, sheep, goats, cervids, cattle, and bison throughout the state. However, Minnesota continually works to improve breeding cattle identification, and producer and veterinarian participation in traceability efforts. In this plan, we review our current situation, identify strengths and weaknesses, and list tasks that need to be completed to accomplish this goal. The plan identifies resources needed and proposes a timeline to facilitate implementation.

- The fundamental problem this plan addresses is the need to improve the ability to trace livestock, particularly breeding cattle, in Minnesota. This will be achieved, in part, by continuing to develop and improve our animal health database and information storage [Official Identification (ID), Certificates of Veterinary Inspection (CVIs), test/vaccination charts, and miscellaneous other records] so information on animal events can be accurately stored and easily retrieved. We will focus on developing systems that increase data accuracy and decrease livestock tracking times.
- The primary benefit of an Animal Disease Traceability system in Minnesota is the ability to track livestock effectively and efficiently during disease investigations. Control measures can be rapidly implemented when infected or exposed animals are quickly located, which mitigates the disease threat. This protects the livestock industry by allowing normal business practices to resume quickly and minimizes the impact of the disease event on the agricultural economy.
- Our plan builds upon previous efforts to advance traceability. Incorporating successful existing methods and finding new ways to utilize those methods will advance Minnesota's traceability program.
- We are pleased that the United States Department of Agriculture's (USDA) framework for traceability allows us to gain support from our livestock producers and stakeholders. By doing so, we can develop a system that serves our needs for better traceability while minimizing disruption to the industry. The support of Minnesota's livestock producers and stakeholders is essential to the success of the program.
- The resources being requested from the USDA to implement this plan for FY2024 are \$138,088. Please refer to Appendix 1, 2, and 3 for details on these resources.

II. CURRENT TRACEABILITY SITUATION

2.1 Who are we?

The Minnesota Board of Animal Health (Board) is a small, state agency dedicated to protecting the health of the state's domestic animals. Since 1903, we have worked alongside livestock farmers to eliminate diseases such as pseudorabies, bovine brucellosis, and bovine tuberculosis. More than 120 years of experience has taught us the value of developing relationships with stakeholders and seeking input from farmers as we work to carry out our mission. Successful disease eradication is not possible without the cooperation of the people within the industry. We believe the same is true as we move forward to enhance animal disease traceability in Minnesota and the nation. The Board continues to lead the state

in this effort. Several partners, including other agencies and livestock association groups, help us get the job done.

- The primary constituents of our plan are Minnesota farmers who raise livestock and poultry, and their veterinarians.
- External constituents include farmers and veterinarians outside of Minnesota who export animals to our state. Animal health officials in other states are also in this group.
- In this Road Map, the term 'statewide' refers to all activities, premises, and livestock and poultry within the borders of the State of Minnesota, excluding tribal land.
- Data that we obtain through traceability efforts is used internally to track livestock sightings and movements for disease investigations and control programs. Traceability data is used externally only as requested by other states or the USDA in an official capacity to assist in tracking livestock movements into or out of Minnesota for disease control or law enforcement purposes.
- The Board values our longstanding relationship with farmers and stakeholders in Minnesota. It is this relationship that allows us to craft a successful, complete animal disease traceability system. Minnesota has a diverse and valuable agriculture industry, and we are committed to protecting it.

2.2 Where are we now?

- Animal disease traceability is currently defined as the ability to track livestock efficiently and effectively for disease purposes. Animal disease traceability is viewed as a cross-cutting component to animal health information systems, as opposed to a stand-alone initiative. Most of the work performed by the Board is relevant to traceability; therefore, all employees work together towards advancing this initiative.
 - Before FY 2012, our measure of traceability was simply reported as either successful or not; either the animal could be traced or not. Since then, we have implemented the parameters for traceability capability requested by the USDA in the FY2011 cooperative agreement report. A start and end time for various trace activities are documented and can be compared to established national baselines. These activities are called Trace Performance Measures (TPMs). These TPMs are used by the USDA as exercises to monitor a states' ability to perform one of the specific activities involving traceability and official identification. Below are the four TPM activities that are posed to a state as a question. The state is given an official identification number, and the state response is timed to the minute.
 - TPM Activity 1: In what State was an imported animal officially identified?
 - TPM Activity 2: Where in your State was the animal officially identified?
 - TPM Activity 3: From what State was an imported animal shipped?
 - TPM Activity 4: From what location in your State was an exported animal shipped?
- The Board continually strives to improve response times above baseline values for TPMs.
- The USDA prepares TPM State Rating Reports that document an individual state's performance. Minnesota's most recent report became available December 2023. The report evaluated the Board's ability to perform TPMs during the 2023-2024 federal cooperative agreement period. USDA did not identify any performance concerns and Minnesota successfully completed each TPM category.
- In systems for measuring traceability, it is important to note that there is a qualitative element to tracing, i.e. how sure are we that the animal we are tracing was moved to a given destination? For example, a producer or dealer might indicate that the animal in question went to slaughter. Is that a successful trace? It may take us only a few hours to get this information from the dealer, but what documentation assures us that the information is accurate? The case may be closed out as

successfully traced to slaughter, but the range of documentation could be highly variable. In some situations, a kill sheet from the slaughter plant will show the backtag number in question. In other situations, backtag numbers are not recorded by the plant or the backtag in question was no longer on the animal when it arrived at the plant. The question becomes: what constitutes a successful trace?

- Coordination between the Board and USDA counterparts is currently being achieved through efforts such as our Biannual Cooperative Trainings in the spring and fall. The Board also launched an internal livestock market working group in 2021 including state and federal members to advance coordination and consistency within markets on traceability related issues. It was temporarily discontinued due to a gap in staffing in 2022 but was reinstated in 2023 and occurs on a monthly basis.
- Coordination is being achieved statewide in multiple ways. Board employees speak at meetings and events to ensure that stakeholders can learn about the program. In addition, the Board distributes a monthly newsletter called *Animal Bytes* that contains timely information for producers, veterinarians, and other stakeholders. It frequently contains information related to animal disease traceability. Additional outreach is achieved via the Board's website and social media.
- The Board coordinates activities with other existing agencies/units through discussions, meetings, and conferences calls. The Board has a representative on the regularly scheduled animal disease traceability information sharing webinar/conference calls hosted by the USDA. In addition, the Board has provided, and continues to provide, a representative to various workings groups and committees at the national level that aim to advance animal disease traceability. Examples of groups that continue active operations that the Board has representation on:
 - United States Animal Health Association's joint Committee on Cattle Disease Traceability (formerly Cattle Identification).
 - National Assembly of State Animal Health Officials' Traceability and Technology Committee's electronic CVI (eCVI) Standards Subcommittee and eCVI XML Standards Working Group; established 2018
 - Regional State ADT Monthly Call initiated by Kansas Department of Agriculture in 2023
- The Board utilizes a database called CoreOne developed by Trace First. The Board St. Paul office has a fast Ethernet connection and can connect to web services provided by the USDA. St. Paul office personnel that are teleworking are required to acquire and maintain a virtual private network internet connection within their home offices sufficient to connect to all necessary web services to perform their work.
- During business hours (Monday through Friday between the hours of 8:00 a.m. – 4:30 p.m. CST), requests for information are directed to the Minnesota Board of Animal Health. Requests for information in an emergency or on state holidays, when the office is closed, can be directed 24 hours a day, seven days a week to the Minnesota Duty Officer at the following number: 800-422-0798.
- State funding makes up the majority of monies for the animal disease traceability program in Minnesota. Federal funding accounts for a minority of Minnesota's animal disease traceability funds. However, these federal dollars remain an important contribution to the program and result in Minnesota's efforts to enhance traceability being increased by stretching financial resources further than state funds alone allow.

2.3 Strengths and Weaknesses

Strengths

- Minnesota is well into establishing and maintaining an excellent traceability system. We have identified a large number of livestock premises in our state and store detailed locational and contact information in our database along with information about the livestock held at the site. Our previous experience with bovine tuberculosis required that we track animals in and out of a disease control zone. Because of this, much of the infrastructure necessary for a state-wide traceability system is already in place. We utilize a searchable database, CoreOne by Trace First, to store individual animal information including official ID numbers. Animal events are captured as a snapshot in time with an animal ID tied to a premises on a specific date. We are capturing events on imported and exported officially identified cattle. Each of the events are also associated with the CVI number and issuing veterinarian's name and contact information for that animal movement.
- Board staff capture individual animal information on animals that are tested and vaccinated for specific livestock diseases.
- The Board has been using CVI Central since 2019 to process and store CVIs. All CVIs with a Minnesota origin or destination are maintained in this one interface.* Transmission of CVIs with a non-Minnesota destination is automated. A copy of all processed CVIs is archived in CVI Central and documents can be easily re-reviewed as needed using a variety of recall methods.
 - *CVI Central connects to the USDA's Veterinary Services Process Streamlining (VSPS) database with an (Application Programming Interface) API via the USDA's Enterprise Messaging Service (EMS). The purpose of this connection is to receive all CVIs issued through VSPS with a Minnesota origin or destination into CVI Central. This API was established in February 2021.
- Minnesota participates in a CoreOne/CVI Central user group with Trace First and other user states to share ideas, discuss feature use, and consider new feature development.
- We implement a permit system for cattle. Import permits are required for all breeding cattle, exhibition cattle, and cattle that require specific testing before they can legally enter the state. Permits can be obtained by phone or online form. This information is also captured in our searchable database. This searchability is beneficial in the event any of these groups of cattle need to be traced, as all information captured as part of the import permitting process is available to the Board before the cattle arrive in Minnesota. It typically takes, at minimum, two weeks before the Board would receive the CVIs that would allow us to begin tracing. Our import permit feature within the CoreOne database allows for immediate access to valuable information such as the origin and destination of all imported breeding or exhibition cattle, or cattle requiring tuberculosis testing. In recognition of the benefits that eCVIs offer the Board regarding speed of information access, the Board waives the import permit requirement in most circumstances for imported cattle captured on eCVIs.
- The Board requires official ID for breeding cattle, rodeo cattle, and all cattle for exhibition upon movement from the herd to another location. Any person or entity is required to keep acquisition and disposition records on all their associated cattle for five years.
- The Board distributed free metal national uniform ear tagging system (NUES) ear tags to Minnesota livestock producers and accredited veterinarians from 2012 to 2019. This was phased out in line with the USDA's announcement in spring 2019 that all visual official identification would be phased out and should no longer be distributed by the end of calendar year 2019.
- The Board is a well-respected agency in the state and has earned the support of the livestock industry, farm organizations, the Minnesota Department of Agriculture, and other state agencies.
- The legislature and the governor are supportive of the Board's efforts and have worked to

adequately fund its operations.

- The Board has historically been well staffed with an experienced, dedicated, and talented workforce, both in the field and office. Employees from both the federal and state side work diligently together to control and eradicate animal disease and advance traceability efforts in Minnesota.
- The Board's animal health database is Trace First's MySQL database, CoreOne. The Board works closely with the database developers to add and subtract functionality as needed to cater to specific programs and the changing needs for animal disease traceability. Many features have been added and continue to be developed within CoreOne, which will result in a robust animal health database to fulfill the Board's needs and assist in protecting Minnesota's livestock industries.
- The Board's Continuity of Operation Plan (COOP) allows Board staff to access our data anywhere with a computer and internet access.
- The Board is continually working with veterinarians, livestock markets, and diagnostic testing laboratories to relay traceability information accurately and, whenever possible, in an electronic format. When electronic information is received, manual data entry can be avoided. This saves time and money and reduces data entry errors. Electronic data can be uploaded into our animal health database quickly and accurately.
- The Board offers accredited veterinarians in Minnesota the use of a free electronic Certificate of Veterinary Inspection (MN eCVI) for use on desktop and laptop computers using no-cost Adobe Reader software. The MN eCVI allows for a legible document that can be electronically submitted. This saves staff time for both the Board and the veterinary clinics taking advantage of the MN eCVI. The Board updated the MN eCVI in January 2024 to accommodate Adobe updates and better meet the needs of our accredited veterinarians. Changes to the Adobe program in 2023 have highlighted the need to provide veterinarians with additional eCVI vendor education.
- eCVI usage has increased over time. Swine movements are especially represented in utilizing electronic records for improved traceability. This reflects the amount of work individual producers and/or swine systems have devoted to record keeping associated with the movement of swine, in addition to the utilization of premises identification.
- Cervid producers (excluding white-tailed deer, which are under jurisdiction of the MN Department of Natural Resources as of July 1, 2023) who wish to move animals interstate must have all animals identified with two forms of identification. One must be an official ear tag and the other may be one chosen by the producer, such as another ear tag, a tattoo, or a freeze brand. A uniform and official protocol for farmed cervid ear tags has been in effect since January 1, 2018.
- Mandatory sheep and goat identification has been in place in Minnesota since 2006. Compliance and traceability are consistent for breeding sheep and goats. We are continually working on improving ID compliance and record keeping with sheep and goat dealers and within slaughter channels.
- The Board maintains a working relationship with the University of Minnesota Extension and 4-H, which has resulted in the development of an official '840' AIN ear tag that was used for 4-H participants starting in the 2014 exhibition season and has continued since.
- The Board has participated in working groups involving state and federal animal health officials and industry members to work towards advancing various aspects of animal disease traceability in Minnesota and across the nation.
- The Board maintains an accessible, updated website to provide practical and relevant educational and program requirement information to producers, veterinarians, auctioneers, and other stakeholders.

- The Board maintains accessible online forms for producers, veterinarians, and other stakeholders to submit payments, complete registrations, acquire permits and request tags or supplies.
- The Board has updated and coordinated all notice of violation documents to make them more accessible to staff handling compliance concerns with producers, dealers, concentration points, and veterinarians. Along with this, the Board has identified a subset of personnel to oversee and enforce compliance consistently.
- FY2022 Supplemental cooperative agreement funding from USDA was awarded to develop software that captures and transmits animal ID data directly from livestock markets to our database. The feature is in development with a vendor and will be assessed for implementation in the coming FY.
- The Board was awarded supplemental cooperative agreement funds in FY2023. It was utilized to purchase HDX RFID AIN ear tags and 32 lightweight and durable RFID wands to be distributed to veterinarians and livestock concentration points. The initial distribution prioritized livestock markets. In spring and summer of 2023, the remaining 3,890 tags, 16 tag applicators, and 22 tag readers were distributed to producers of beef cattle to encourage the use of RFID technology and electronic data capture methods. The Board continues to facilitate distribution of RFID tags for replacement heifers through USDA, though tags are presently on hold due to a manufacturing backorder.
- The Board was awarded supplemental cooperative agreement funds in FY2024 that allowed for the purchase of six RFID reader wands for use in veterinary clinics that serve livestock. Board staff were able to purchase this equipment and will distribute over the calendar year. Board staff will work with the recipients of the equipment to leverage its use.

Weaknesses

- Much of the focus for developing interstate movement tracking relies on the CVI. This document was originally intended as a health and not a movement document but is a useful tool in traceability when they are completed correctly. When there are errors in these documents, it affects the ability of the Board to accurately trace the location of animals. Gaps in staffing due to the hiring freeze left CVIs in queues for an extended time and veterinarians were not being notified of the errors or not in a timely manner.
- eCVIs are more accurate and easier to process than paper documents. Minnesota veterinarians utilize eCVIs at a much lower rate than neighboring states. A transition plan is in process to incentivize eCVI usage with the goal of being entirely electronic by January 2025
- Minnesota has a large slaughter plant for cull cows and bulls. Because of this, the state has several slaughter buyers that buy for this plant. Current regulations allow slaughter cattle to be moved into Minnesota to slaughter without official ear tags if the plant is federally inspected. Additionally, intrastate movement to slaughter without official ear tags is acceptable if the plant is state or federally inspected. However, many of these 'slaughter' cows may not go immediately to slaughter as required and are instead brought to adult cow feedlots for a period. Because backtags are temporary, traceability may be lost on these animals.
- Collection and recording of official identification numbers at slaughter plants would benefit traceability but is not required and typically not performed. Therefore, the Board does not have a bookend to retire official identification numbers from our database. In addition, there is no good system to quickly and easily access slaughter plant records to verify animal slaughter. Rather, the Board must rely on slaughter plant personnel to get the information to us on their schedule.
- Another weakness is one present throughout our country. Many producers, veterinarians, and

owners/managers of livestock concentration points are reluctant to implement modern technology within their operations and continue to rely on non-electronic identification devices and methods of reporting movements, test, and vaccination data. Manual recording of device numbers results in increased data errors. These errors are transferred to Board's office staff where manual data entry allows one more opportunity for the input of erroneous data.

- The Board put significant effort into educating Minnesota's livestock industry, veterinarians, and other stakeholders about the USDA's plan announced in spring 2019 to phase out visual only official identification for cattle. The USDA plan to phase out visual only official identification for electronic identification was put on hold in 2019 for public comment and revision. While the plan has moved forward in the rulemaking process, the uncertainty of the timeline and final rulings has resulted in difficulty with maintaining trust and support from the industry for the initiative.
- The intra and interstate movement of unidentified feeder cattle and other non-breeding cattle is more challenging to trace due to less stringent ID and absence of import permits.
- As documented as a strength above, the Board has historically been well staffed. However, ramifications of the COVID-19 pandemic resulted in a hiring freeze at the state from 2020 to 2024. Positions vacated due to retirement/attrition were not able to be externally filled which resulted in significant gaps in staffing and significantly impacted the Board's ability to perform traceability related data capture, perform data quality evaluations, and follow up with veterinarians on CVIs with documented compliance concerns. Due to 2023 hiring efforts, the Board is nearly fully staffed, and we are working diligently to prioritize work that was previously paused due to lack of staff.

2.4 Opportunities and Threats

This plan will greatly enhance Minnesota's ability to respond to catastrophic events such as a foreign animal disease or other emergency situations. The component of this plan that will identify and record premises with livestock operations will allow us to readily contact livestock producers with susceptible species to inform them of a disease outbreak or other emergency and outline the next steps they need to take to protect their animals. Without this information, valuable field staff time would be spent finding these premises and producers before response measures could be implemented. Components of this plan that enhance animal identification will reduce the time required to trace animal movement in a disease emergency, greatly improving our ability to identify animals spreading disease and stopping their movement. We can enhance our networking opportunities for emergency preparedness and response as these components are implemented, and education is provided to veterinarians, producers, exporters, and exhibitors. Integrating emergency preparedness and traceability messages will increase our efficiency in targeting our audience as we work toward the overarching goal of animal health.

Implementation of this Road Map provides numerous opportunities for networking and sharing resources. These include coordinating data entry and disease information with the Minnesota Veterinary Diagnostic Laboratory (MVDL) and the Minnesota Dairy Herd Improvement Association (MN DHIA) as well as working with producers, livestock dealers and markets to promote animal health and improve record keeping. In addition, it will provide the opportunity for both producers and veterinarians to adopt twenty-first century technology to facilitate business operations.

2.5 Inventory of existing infrastructure and suitability assessment

- The Board has permanent office space on the first floor of the Orville-Freeman Building in St. Paul, Minnesota. This space is large enough to house all St. Paul staff. Prior to March 2020, all Board office staff worked out of the Orville-Freeman Building. Since the COVID-19 pandemic staff can request

telework agreements as allowed by their position description to utilize a hybrid-style work environment.

- Various personnel within permanent postings out of the St. Paul Board office have access to USDA animal health information systems such as:
 - USDA Veterinary Services Process Streamlining
 - Animal Identification Number Management System
 - Emergency Management Response System 2
 - Data Management Center
 - Veterinary Services Laboratory Submissions
 - Surveillance Collaboration Services
 - Data Integration Services
- The Board's minimum paper record systems used to access animal disease traceability or animal health information is organized within the St. Paul office to expedite retrieval times. Historical regulatory testing and vaccination paperwork is filed within the Board office as follows. There is a folder for each month of the year and tuberculosis (TB) test charts. Historical Brucellosis vaccination paperwork is filed by the accreditation code of the vaccinating veterinarian. Currently, all received regulatory testing and vaccination paperwork for cattle/bison is attached as a PDF at the time of data capture within CoreOne to the individual accession or vaccination record. This ensures all test and vaccination records are filed at minimum electronically. Hard copies of results are still available for USDA staff to retrieve as the Board receives the paper and carbon copies.
- The Board began transitioning paper CVIs into electronic storage in 2012. The transition started with cattle and bison CVIs. These CVIs were scanned into the computer and saved in PDF format. The CVIs were separated by import and export and saved in files specific to each state of origin (for import CVIs) and state of destination (for export CVIs) by year. In addition, the CVI number of each document is captured and electronically searchable for easy retrieval by a user. All animals captured on CVIs with official ID are entered in our searchable animal health database and associated with the CVI number. Each time a trace is performed using a cattle or bison's official ID, the CVI number can be searched to electronically receive the document in minutes. This is a significant improvement from the time it has taken in the past when Board staff was dependent solely on paper records and searching through files and boxes.
- All CVIs with a Minnesota origin or destination are processed and maintained in CVI Central. CVIs are sent to CVI Central via email or an API. Copies of CVIs received via an API are received near real-time upon issuance. Copies of CVIs received electronically via email are sent to CVI Central within 24 hours of receipt. CVIs received via the United States Postal Service are scanned into CVI Central when mail is processed in the St. Paul office on Tuesdays and Thursdays. A copy of each CVI with a non-Minnesota destination is automatically sent to the state of destination via email within 24 hours of the CVI entering CVI Central, with the exception of those eCVIs which are sent directly to the state of destination by the eCVI provider. Each CVI is reviewed by the Board. At minimum, states of origin and destination, species, CVI number and issue date are captured for each CVI. Cattle and bison CVIs which include official identification numbers for individual animals additionally have all known individual animal information captured. Each livestock CVI processed in CVI Central creates a record in CoreOne. These records allow the Board to track summary data on imports and exports of equine, porcine, caprine, ovine, and non-officially identified cattle and bison. CVIs with officially identified cattle, bison, and cervids have complete movement records created in CoreOne and the processed CVI is automatically attached to each movement. Paper CVIs that have been scanned into CVI Central require manual data entry. Electronic CVIs that enter CVI Central allow for automated data capture.

- The Board’s animal health database is Trace First’s MySQL database, CoreOne. The Board’s St. Paul office has a fast Ethernet connection capable of connecting to web services provided by the USDA. Personnel located in the field have portable internet connections usable within each of their home offices as well as anywhere in the field with cellular service available through the state’s provider. Cellular communication is standard for each field employee with a smartphone featuring 24/7 web-based access. St. Paul office personnel that are teleworking are required to acquire and maintain a virtual private network internet connection within their home offices sufficient to connect to all necessary web services to perform their work.
- Minnesota currently has a reliable system for tracing swine. All CVIs for hogs are housed at the Board. For feeding swine (nursery or finishing) imported into Minnesota, acceptable identification includes a USDA NUES ear tag, an AIN ear tag beginning with a country code, or a tattoo with the herd identifier or premises number. Common practice for feeders is to have a tattoo; groups of feeders will generally stay together as a group through marketing. Breeding swine are allowed a USDA NUES ear tag, an AIN ear tag beginning with a country code, or a breed registry associated ear notching, with registration papers. Slaughter animals are allowed to enter Minnesota without official identification if they are going directly to a federally approved buying station or slaughter plant. PIN tags may also be used in imported cull sows and boars. The Board currently allows 19 Minnesota based hog production systems to move hogs within their systems and between states with a swine production health plan, pursuant to 9 CFR 71. Each production system forwards the required information to the Board on a weekly basis.

III. VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1 and 3.2 Vision and mission statement

The mission of the Minnesota Board of Animal Health is to protect the health of the state’s domestic animals through education and cooperation with veterinarians, producers, owners, and communities. The Board also has a slogan: **Healthy animals** for healthy people and communities.

IV. TRACEABILITY REQUIREMENTS

4.1 Strategic goal

Minnesota’s strategic goal is to continue development and implementation of a statewide infrastructure for advancing animal disease traceability compatible with State and USDA standards.

4.2 Programmatic goals (objectives)

Refer to Appendix 1.

Short-Term Goals

- Meet traceability performance standards by documenting and recording traces and traceability exercises as described in 4.3 below.
- Continue to assist with producer compliance in tagging all breeding cattle prior to these cattle leaving the farm and before comingling with other livestock.
- Continue use of Trace First’s CoreOne database as a compatible system with USDA APHIS and as the Board’s animal health database.
- Continued implementation of an outreach plan to educate and assist livestock dealers, agents,

producers, veterinarians, individuals associated with concentration points, and other stakeholders on animal disease traceability.

- Continue to develop positive relationships with Minnesota cattle dealers and agents, thereby encouraging cooperation and improvement of animal disease traceability. Continue to work with these dealers/agents by maintaining available contact information in the Board's animal health database.
- Continue to educate producers about the importance of good record keeping as it relates to traceability in the event of a disease outbreak and to increase compliance with Minnesota's Rules around application or removal of official ID and the associated animal records.
- Continue to educate the public about the Board's Rules which contain needed enforcement and procedures for livestock traceability and fulfilling Board missions.
- Permit slaughter-only handling facilities as needed and monitor compliance with livestock identification and record keeping requirements at these facilities. Currently, there are three permitted slaughter-only handling facilities in the state.
- Enforce the Board's rule that all breeding cattle must be officially identified before they leave the farm and are comingled with other livestock. Enforce the Board's rule that all individuals that buy breeding cattle must keep records of the cattle's official identification numbers as well as when/where the cattle were acquired from and when/where they were disposed (sold, transferred, traded, etc.)
- Monitor and enforce official identification and record keeping requirements at livestock concentrations points.
- Continue to implement compliance policies to address movement and identification violations.
- Increase the availability of electronic records for cattle and bison to assist with animal disease traceability efforts and continue to monitor identification and interstate movement activities.
- Continue to look for opportunities to increase the efficiency of data collection for sightings of cattle within the state (e.g. test charts, Brucellosis vaccination records) and imports (e.g. CVIs) within the Board's animal health database prioritizing electronic data capture methods.
- Continue to work with TraceFirst to further develop CVI Central as a tool for complete and thorough CVI processing, storage, data transmittal, CVI compliance documentation, and data auto-capture.
- Encourage the use of electronic CVI options for accredited veterinarians.

Mid-Term Goals

- Continue to increase sources from which cattle official identification numbers can be captured, especially in electronic formats.
- Consider avenues to educate veterinarians and stakeholders about the advantage of using RFID technology for Minnesota cattle for official identification. This goal will move forward more readily once a decision is shared from the USDA regarding its April 2019 plan to phase out visual only official identification for cattle/bison which has been on hold due to public comment periods since October 2019.
- Encourage veterinarians and market personnel to become proficient users of available technologies associated with RFID ear tags used by clients/producers within their practices and facilities. Encourage the use of this technology to electronically capture data in large herds for interstate movement, international export, other regulatory work, and at points of livestock concentration.
- Continue education of Minnesota licensed auction markets to keep them aware of Minnesota rules related to identification and record keeping of livestock and how that impacts their clients selling livestock in Minnesota.

4.3 Animal disease traceability performance measures (TPMs)

The animal disease traceability performance measures currently used include:

- TPM 1- Response time to answer the question: In what State was an imported animal officially identified?
- TPM 2 - Response time to answer the question: Where in your State was the animal officially identified?
- TPM 3 - Response time to answer the question: From what State was an animal shipped?
- TPM 4 - Response time to answer the question: From what location in your State was an exported animal shipped?

For each cooperative agreement period, Minnesota will report at least the minimum TPM quota set by the USDA. For the FY2024 period (04/01/2023 – 03/31/2024), the quota is two TPMs for each question. The USDA administers eight TPMs on October 25, 2023. Each TPM received was reported to the USDA using the Emergency Management Response System 2 (EMRS2). These test traces, along with any actual traces performed during each cooperative agreement period, will assist in determining Minnesota's ability to efficiently and effectively trace officially identified livestock.

We will also use the following objective measures in Minnesota to determine the success of our traceability program:

- Number of cattle sightings captured in our traceability database.
- Number of official identification ear tags distributed to producers and accredited veterinarians.

4.4 Data requirements

- Capture of location information for livestock premises within the state of Minnesota is accomplished in several ways. Since 1990, the Board has worked to build a computer database of Minnesota livestock premises. Premises have been identified by location and species of livestock present. Extensive location verification occurs to produce precise latitude and longitude for each premises. Information has also been collected regarding farm names and contact personnel. Each livestock premises in the Minnesota database has been assigned an official premises identification number that meets the USDA's requirements of a State-Issued Location Identifier (LID). The LID formula uses "MN" plus a six-digit unique number. In addition, some producers will volunteer livestock information to the Board. The Board also verifies, creates, and eliminates livestock premises and verifies and updates locational information associated with these premises using information gained through communications with producers and veterinarians that result from follow-up related to CVIs, test charts, and vaccination records. The Board has also been issuing PINs since 2004, in the national animal identification system format of a seven-character alphanumeric code with the right-most character being a check digit based upon the ISO 7064 Mod 36/37 check digit algorithm. These numbers are issued at the request of the producer. In 2018, the administration of national premises registration was moved to the area USDA VS office. The Board is able to access PIN information from USDA through CoreOne to share with premises when requested through an online form.
- The Board will accept all official identification options approved by the USDA for each species of covered livestock. This includes all USDA metal and plastic NUES ear tags (not approved for use in sheep or goats) and AIN ear tags beginning with the USA prefix code of '840' or other official territory/country codes. If the following ear tags were applied prior to March 11, 2015, the Board will also accept these tags in livestock other than sheep and goats: AIN tags beginning with 'USA' or

manufacturer coded tags beginning with '900'-'998', as well as the American ID ear tags beginning with 'USA' followed by 8-9 digits. The Board also currently accepts breed registry tattoos/tags in cattle when that tattoo is accompanied with documentation including the breed registry number; no pending registry information is accepted as official. Breed registry tattoos/tags and registration numbers are only acceptable for interstate movement from states that Minnesota has an agreement with to accept this alternate identification method. Currently, Minnesota has such an agreement with three states: Iowa, South Dakota, and Missouri.

- In 2012, Minnesota began distributing USDA metal NUES ear tags from the Board office to accredited veterinarians (both silver identification and orange Brucellosis vaccination tags) as well as to producers (silver NUES tags only). Distribution of silver NUES tags was discontinued in December 2019 when the supply was exhausted. Veterinarians and livestock producers can order their preferred official ear tags from a variety of manufacturers/distributors and options are outlined by species on the Board's website, which assists in compliance with the Board's Rules.
- The Board uses CoreOne by TraceFirst for a tag distribution record keeping system. This system allows a single tag or series of tags to be tied to a Minnesota premises with a date. Each record reflects where the tags originated from and what premises the tags were last assigned to. If tags are reported to have been moved from one premises to another premises, the tags are easily reallocated within the database and all that information is tracked. A system query can show the entire history of any given tag that is entered beginning with the original entry which would typically be the day the tag series was assigned to the ear tag manufacturing company for printing.
- A process has been approved that allows the use of a spreadsheet file to be sent with some import CVIs to better capture individually identified livestock. This process is outlined in the *CVI Addendum Policy*. This addendum policy specifies how a CVI can be issued for veterinarians wanting to use attachments or separate papers that include official identification numbers and other individual animal information. A traditional CVI is issued by the veterinarian from the state of origin and then if an attachment/addendum is used, the addendum must follow the *CVI Addendum Policy* which describes how the attachment/addendum is correlated with the issued CVI. The policy also requires all individual animal information be sent to the Board in an electronic format, a template to submit this information is available on the Board's website. Often the CVIs we receive that follow this policy are issued for several hundreds of cattle. This policy is beneficial as it ensures that the attachment or addendum information can always be correlated with the issued CVI, even if they become separated, and it allows the Board to electronically upload the individual animal information directly into our database quickly and without the data entry errors that would accompany manual data entry.
- In January 2021, the Board began messaging animal sighting information into the USDA's Animal Health Event Repository (AHER) via the USDA's Enterprise Messaging Service (EMS) as required by the USDA under the animal disease traceability cooperative agreement. The following data points are messaged to AHER via EMS for each record sent from CoreOne: tag number, date, event type, State, Premises ID, and system holding data.
- Animal disease traceability information requested by other States/Tribes/Territories and the USDA would need to be requested during regular business hours using the Board's general business number. In case of emergency, the Minnesota Duty Officer can be contacted 24 hours a day, seven days a week and emergency requests would then be routed to the appropriate animal health official. Minnesota Statute §13.643 subdivision 6 prohibits the disclosure of animal premises data except when it is necessary to aid in the law enforcement process or the protection of public or animal health or safety.

4.5 Information technology plan

The Board currently contracts with Minnesota Information Technology (MNIT) Services to offer necessary information technology support for the Board through a Service Level Agreement (SLA). The Board also contracts with TraceFirst through MNIT to use their animal health application, CoreOne. In March 2018, the Board transitioned from MNIT hosting CoreOne on state servers to Trace First hosting CoreOne on Amazon Web Services (AWS). MNIT continues to host the Board's report server application on a MySQL platform. This platform and AWS are scalable to meet traceability data needs. The Board has a database manager who is assisted by information technology staff with updates and releases of the CoreOne application. This individual works with Board and MNIT staff and is actively engaged in testing the CoreOne application and requesting additional functionality to meet the traceability and other program needs of the Board. MNIT continues to facilitate all contracts with TraceFirst as well as reporting and mapping needs relating to CoreOne via the SLA.

4.6 Resource requirements

The following additional resources are needed to implement the animal disease traceability road map for Minnesota:

- Various personnel will be needed to implement Minnesota's traceability plans over the next three years. Though most Board staff is involved with traceability initiatives to some extent, some dedicated personnel are required to carry out program components. A mixture of office staff and field staff time will be vital to each objective within the Board's plan. Please refer to Appendices 1, 2 and 3 for details on personnel and associated travel resource and expense requirements.
- Improved options are needed that would allow private veterinarians to electronically issue documents, including test charts, vaccination records, and CVIs. These tools must be intuitive and user friendly for the veterinarians as well as offer expedient methods for data to be captured by the Board. The USDA has mentioned work on an interface that may be available in the future to accredited veterinarians and state/federal animal health officials for electronically capturing data for disease programs such as tuberculosis and brucellosis as well as CVI data.
- Available funds (federal, state, or industry) or cost sharing options to support RFID technology is needed. This may include RFID tags for livestock producers and veterinarians as well as RFID handheld and/or stationary readers for livestock concentration points.

4.7 Organizational needs

The following identifies organizational transformations that might be needed to implement the animal disease traceability road map.

- The Board has an Animal Disease Traceability (ADT) division within the St. Paul Board office that allows specific staff to be dedicated to this important aspect of animal disease traceability. Previously, duties associated with animal import and export activities were divided among office staff that worked within various divisions and disease programs. The consolidation of these duties has increased efficiency and allowed for more seamless oversight of interstate animal movements and this area of traceability. The division continues to evolve to meet the needs of the agency. CVI Central has allowed the Board to further streamline CVI processing and storage and is in the early phases of being utilized to track and report CVI Compliance.

4.7.1 Executive support

Current administrative authorities within the State of Minnesota view the importance of a sound animal disease traceability system for the well-being of the livestock and poultry industries as critical.

- Additional support from executive management within the state does not appear to be needed. The importance of animal disease traceability is clear in the minds of all and remains a critical program as Minnesota is determined to remain bovine tuberculosis free as well as free of other detrimental animal diseases.
- Officials are regularly briefed on progress of the animal disease traceability plans for Minnesota.

4.7.2 Coordination and oversight procedures

- Responsibilities are assigned for implementing the plan according to the various divisions within the Board. Different program directors oversee various diseases and animal species. In addition to this, the Board has a separate division for oversight of ADT. Since all species move into and out of the state, there is overlap between each animal division within the Board and the ADT division. Most ADT activities have been consolidated to this one division and this allows the staff of the separate animal divisions to be able to better concentrate duties on the disease programs within their specified species divisions. There is a Senior Veterinarian that acts to oversee all ADT activities, traceability initiatives, and work involving livestock concentration points. Due to the cross-cutting nature of animal disease traceability across disciplines, the other Senior Veterinarians, two Assistant Directors, and the Executive Director all assist to varying degrees with implementation of the animal traceability plans for Minnesota along with critical office support and field staff.
- A new State Veterinarian / Executive Director of the Board was appointed in 2023. The State Veterinarian / Executive Director of the Board meets with the Commissioner regularly to inform him about the Board and various important programs and initiatives. We have experienced a seamless transition with this important cooperating state agency.

4.7.3 Policy

- Minnesota Statute §13.643 subdivision 6 prohibits the disclosure of animal premises data except when it is necessary to aid in the law enforcement process or the protection of public or animal health or safety.

4.7.4 Staffing

- Personnel needed to implement the plan include most employees of the Board. All seven district veterinarians, four agricultural advisors, and one agricultural consultant field employees, and a majority of the 33 St. Paul Board office staff assist in the animal disease traceability program in some capacity. Employees of the Board's Minnesota Poultry Testing Laboratory are also integral players for the poultry industry. In addition, several employees with the USDA area office, field veterinary medical officers (VMOs) and animal health technicians (AHTs) with the USDA make up some of the personnel that are not employed directly by the Board but are also important members of the animal disease traceability team throughout the state.
- The gathering of animal disease traceability information is a distinct function within the Board that overlaps with many other Board responsibilities and disease programs. As an example, the TB program requires the accurate completion of TB test charts. However, the information represented on TB test charts is not used solely with the TB program, it is also utilized for animal disease traceability purposes.

4.7.5 Budget requirements

- The Board attempts to insulate against budget cuts and shortfalls by actively working to create and maintain positive relationships throughout Minnesota's livestock industry and stakeholder groups, as well as with state legislators.
- No other funding sources can be leveraged to support this plan without additional state costs. There are some Board programs whose activities result in information that may be able to be utilized for animal disease traceability; however, to leverage the information in an alternative manner, additional financial resources would be needed.
- Appendices 1, 2, and 3 contain the actual federal resources requested for the FY2024 Traceability Cooperative Agreement. The federal resources requested are not a reflection of the total cost of the program.

4.7.6 Outreach

4.7.6.1 Accredited veterinarians

- The Board will communicate our plan for enhancing traceability with accredited veterinarians in several ways. We exhibit at multiple events annually, including the Minnesota Veterinary Medical Association annual meeting in February and plan to continue attendance. At this event, we can have conversations with many veterinarians and veterinary technicians about their role in traceability.
- The Board also has accredited veterinarians on staff to present information to veterinary students as part of their core accreditation training. The presented information includes details on how they can help achieve better traceability by completing forms (CVIs, test charts, vaccination records) legibly and accurately as well as keeping appropriate records on official identification.
- Our monthly electronic newsletter, *Animal Bytes*, is distributed to all veterinary clinics in Minnesota as well as individual veterinarians, stakeholder groups, and livestock/poultry producers. This is our primary method of communication with veterinarians, although we also utilize electronically delivered *Veterinary Alerts* to communicate directly with clinics and veterinarians when appropriate. We have used this publication to educate veterinarians about the importance of completely and accurately filling out official forms and test charts. We regularly include information on Minnesota's and other states' importation requirements. In addition, the Board has a Facebook and LinkedIn page. Social media allows us to communicate to all the groups previously mentioned and to potentially reach a broader audience.
- The Board employs district veterinarians who have home offices across the state. When a private practitioner has difficulties with any aspect of work relating to accreditation, the district veterinarian visits the individual to help find a solution to the problem. We use our district veterinarians in the same way to personally educate private practitioners on how they can help achieve better traceability in Minnesota.
- The Board continues to inform veterinarians of the existence of options for the issuance of e-forms including eCVIs. This includes the MN eCVI which was originally developed by Kansas and Colorado and is now referred to as the States' eCVI. All eCVI options are presented on the Board's website as well so accredited veterinarians can easily access and review options and information. The Board will stay apprised of developing options that may meet the needs of the State, Minnesota's accredited veterinarians, and their clients.

4.7.6.2 Livestock facilities

- The Board has been developing relationships with auction market staff for many years. Typically, Board staff visit at least a quarter of sale days of livestock. Regular visits ensure time to discuss programs and address concerns with market staff. We regularly have dialogue with market managers, market veterinarians, and staff about Minnesota's steps in enhancing traceability. These personal visits will continue to be the main form of outreach with markets.
- Through past disease investigations, we have had opportunities to use market records to trace animal movements. Our field staff work face-to-face with market personnel to obtain needed information.
- The Board continues to require livestock markets within Minnesota maintain records of individual official animal identification numbers for all breeding cattle that move through the facilities. This information is then made available to Board staff as needed for traceability purposes. Board staff continue to work closely with the markets to implement procedures to capture this information electronically whenever possible.
- Detailed inspection guidance and educational documents are currently under development that will offer clarity regarding all market rules and ensure consistency in market inspections.
- The Minnesota Department of Agriculture (MDA) holds authority over slaughter plant operations within the state, with the Board working closely with MDA to address dual-jurisdiction matters, ensuring information exchange and adherence to regulations.
- Livestock removal from slaughter establishments necessitates Board permission, with permits granted in exceptional circumstances. Collaborating with USDA APHIS and FSIS, the Board oversees processes such as animal transfers to other plants and maintains open communication channels with major slaughter plants in Minnesota.
- Field staff engage with MDA and USDA-FSIS inspected facilities for trace investigations, while Live Bird Markets are regulated and inspected regularly by the Board. Offering technical assistance and outreach on regulatory changes, such as RFID requirements for bovines, the Board also conducts inspections at slaughter facilities, fostering relationships with relevant agencies and facilitating discussions on animal movement and identification.
- Blood Tissue Collection (BTC) inspections, conducted by USDA APHIS, at slaughter facilities serve as crucial touchpoints for outreach and discussion on animal movement and identification. The Board collaborates with USDA APHIS during these inspections, facilitating dialogue and review processes to ensure regulatory compliance and the traceability implementation.

4.7.6.3 Industry as a whole

- The Board maintains an open dialogue with the livestock and poultry industries. We exhibit at association group meetings and conventions and engage with farmers and other stakeholders. Our communications division works closely with the leadership of producer groups to develop consistent outreach. They also stay abreast of industry issues by meeting regularly in groups like the Poultry Communicators, Healthy Swine Communicators, Minnesota Ag Communicators, Minnesota Association of Government Communicators, and Communication Officers of State Departments of Agriculture. Board staff frequently speak at events and meetings on topics ranging from rabies to animal disease traceability. We stay connected with industry issues through direct relationships and media monitoring. These tools, combined with our newsletter, news releases and direct-to-farm mailings, help us continue to provide updates and seek input

from industry.

- There are other resources the Board utilizes to broaden the scale of outreach. The University of Minnesota Extension Service, Minnesota Department of Agriculture, Minnesota Department of Health, and 4-H leaders each have a unique skill set and audience that further enhance our communication efforts.
- The livestock industry in Minnesota includes livestock producers, markets, handling facilities, livestock dealers and livestock organizations. Some of the groups with the largest memberships include: Minnesota Milk Producers, Minnesota Dairy Herd Improvement Association, Minnesota State Cattlemen's Association, Minnesota Livestock Breeders Association, Minnesota Lamb and Wool Producers, Minnesota Turkey Grower's Association, Chicken and Egg Association of Minnesota, Minnesota Pork Producers Association, Minnesota Elk Breeders, Minnesota Deer Farmers, Minnesota Beef Council, Minnesota Buffalo Association, Minnesota Farm Bureau, and Minnesota Farmers Union.

4.8 Monitoring and reporting interstate movement activity

- Within Minnesota's animal health database, there is the ability to capture information on the number of CVIs received at the Board to and from each state as well as how many animals are represented on each CVI.
- Information received by accredited veterinarians on CVIs will be considered valid and verification of that information will not occur unless a concern arises related to a specific CVI or accredited veterinarian.
- Various animal disease traceability statistics are available and reported through animal disease traceability cooperative agreements as specified in each annual work plan. Examples of the information reported may include:
 - Number of cattle and bison CVIs for import and export.
 - Number of officially identified cattle and bison records captured.
 - Volume of distribution of official numbering devices.

V. TRACEABILITY IMPLEMENTATION

5.1 Ranking of priorities for advancement

- Specific steps needed to advance traceability in Minnesota are outlined as tasks in Appendix 1. Projected time periods for completion dates are included when appropriate.

5.2 Implementation of objectives

Refer to Appendix 1

Appendix 1: Program Objectives

Fiscal Year 2024-2027 (4/1/2024 – 3/31/2027)

Meet traceability performance standards by documenting and recording Trace Performance Measures

Tasks:

- Qualifying actual traces will be recorded as a TPM in EMRS2 during each reporting period.
 - Begin Date: 08/20/12
 - Projected completion date: On going
 - Lead: Katie Cornille
 - Resources: No federal resources requested.
- Trace exercises will be recorded as a TPM in EMRS2 during each reporting period.
 - Begin Date: 08/20/12
 - Projected completion date: On going
 - Lead: Katie Cornille
 - Resources: No federal resources requested.

Continue use of CoreOne as a compatible System

Tasks:

- The Board will continue to utilize CoreOne by Trace First as the primary animal health database
 - Begin Date: 10/01/13
 - Projected completion date: On going
 - Lead: Carissa Allen
 - Resources: No federal resources requested.

Continue outreach plan to educate/assist livestock dealers, agents producers, veterinarians and other stakeholders on ADT

Tasks:

- Office staff will capture basic info on dealers/agents in CoreOne. Field staff will be assigned to periodically visit livestock concentration points and increase education regarding all aspects of traceability.
 - Begin Date: 02/01/18
 - Projected completion date: On going
 - Lead: Katie Cornille
 - Resources: Dependent on federal resources available
- Office and field staff will monitor for and enforce ID compliance at livestock concentration points, including auction markets, sales, and exhibitions
 - Begin Date: 04/01/14
 - Projected completion date: On going
 - Lead: Katie Cornille, Avrey Bergum
 - Resources: Dependent on federal resources available

Appendix 1 (Continued): Program Objectives

Increase the availability of electronic records for cattle and bison to assist with animal disease traceability efforts

Tasks:

- Official ID numbers for cattle from auction markets will be extracted and automatically be captured in the Board's database
 - Begin Date: 07/08/22
 - Projected completion date: 01/01/26
 - Lead: Katie Cornille
 - Resources: Dependent on federal resources available
- All CVIs with a MN origin/destination will be archived in CVI Central. Individual animal information including official ID numbers will be captured for all officially identified cattle
 - Begin Date: 01/01/19
 - Projected completion date: Ongoing
 - Lead: Katie Cornille
 - Resources: Dependent on federal resources available
- Official ID numbers of cattle tested for TB, BR or other program diseases will be captured in CoreOne
 - Begin Date: 10/01/11
 - Projected completion date: Ongoing
 - Lead: Katie Cornille
 - Resources: Dependent on federal resources available
- The Board will work to increase the use of electronic forms by accredited veterinarians
 - Begin Date: 01/01/17
 - Projected completion date: 01/01/26
 - Lead: Katie Cornille
 - Resources: Dependent on federal resources available

Appendix 2: ADT Detailed Financial Plan

Time Period: April 1, 2024 to March 31, 2025

Refer to **Appendix 3** for financial analysis of cost items

Personnel Costs

Personnel Subtotal: \$89,689

ADT Data Entry FTE

- Rate: \$49,783
- Recipient Share: 0
- APHIS Share: \$49,783
- Total item budget: \$49,783

ADT (General) FTE

- Rate: \$39,907
- Recipient Share: 0
- APHIS Share: \$39,907
- Total item budget: \$39,907

Fringe Costs

Fringe Subtotal: \$35,594

ADT Data Entry FTE

- Rate: \$19,913
- Recipient Share: 0
- APHIS Share: \$19,913
- Total item budget: \$19,913

ADT (General) FTE

- Rate: \$15,681
- Recipient Share: 0
- APHIS Share: \$15,681
- Total item budget: \$15,681

Total Costs

Direct Costs: \$125,283

Indirect Costs: \$6,065

- Fixed rate applied to all non-contractual direct costs: 4.84%

Project Costs: \$131,348

APHIS cost Share: \$131,348

Appendix 3: MN 2024 Traceability Financial Plan Analysis

Total Costs: \$131,348

- Direct Costs: \$125,283
- Indirect costs: \$6,065 at 4.840%

Education/Outreach Costs by Position

- Assistant Director: \$1,269.09
 - 20.8 hours or 1% of \$129,909 salary without fringe
- Agricultural Advisors: \$8,971.27
 - 11% of \$81,557 salary without fringe
- Agricultural Consultant: \$3,760.08
 - 83.2 hours or 4% of \$94,002 salary without fringe
- District Veterinarians: \$6,964.51
 - 145.6 hours or 7% of \$73,351 salary without fringe
- State Program Administrator Intermediate: \$8,802.12
 - 249.6 hours or 12% of \$73,351 salary without fringe
- Veterinarian Senior: \$11,408.80
 - 208 hours or 10% of \$114,088 salary without fringe

Total Salary Costs: \$39,906.78

Fringe 40%: \$15,680.71

Total Direct Costs: \$55,587.49

Indirect Costs (4.84%): \$2,691.43

TOTAL COSTS: \$58,278.93

Electronic ID Capture Costs by Position

- Office & Administrative Specialist: \$20,003.20
 - 832 hours or 40% of \$50,008 salary without fringe
- Office & Administrative Specialist Intermediate: \$17,880.72
 - 686.4 or 33% of \$54,184 salary without fringe
- State Program Administrator Intermediate: \$7,334.10
 - 208 hours or 10% of \$73,351 salary without fringe
- Veterinarian Senior: \$4,563.52
 - 83.2 hours or 4% of \$114,088 salary without fringe

Total Salary Costs: \$49,782.54

Fringe 40%: \$19,913.02

Total Direct Costs: \$69,695.56

Indirect Costs (4.84%): \$3,373.26

TOTAL COSTS: \$73,069