

ADVANCING ANIMAL DISEASE TRACEABILITY ROAD MAP FOR NEW YORK STATE

A Three-Year Plan

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I. EXECUTIVE SUMMARY

- The fundamental problems addressed by this plan

New York State's livestock industry is dominated by the dairy cattle sector which accounts for 90% of the value of annual production from livestock in the state. In order to protect and promote the dairy industry, the state in the 1960's, and 1970's established aggressive enforcement of laws and rules requiring identification of cattle and recordkeeping. All calves were vaccinated for brucellosis and at the same time permanently identified until 1973. Routine tuberculosis testing of all adult animals in cattle herds was done until 1987. This was to facilitate the eradication of brucellosis and tuberculosis in New York which was achieved during that time period.

That system was primarily paper based still exists virtually unchanged today. However, the decline of brucellosis vaccination and the elimination of area tuberculosis testing have greatly reduced the number of animals officially identified and recorded by veterinarians. Under law, the department has access to the records of livestock markets and dealers but it occasionally takes time to get the information needed. In addition, milk testing and artificial insemination organizations have official tag records but the state has had mixed results in attempting to trace cattle through these due to incompleteness of their records. In 2011, the change in policy by the APHIS deputy administrator for Veterinary Services to supply USDA ear tags to producers has opened up a new opportunity to identify cattle at the premises of origin. It will take some time before the industry, especially small beef producers, fully accepts this practice.

- The plan presented here has five major components.
 1. Maintenance of the existing traceback capability
 2. Transition from the use of NUES tags to the exclusive use of eID for animals requiring individual identification.
 3. Enhancing the ability to track animals from birth through slaughter through enhanced record keeping and retrieval systems in livestock marketing channels, breed registries, DHI's, and bull studs.
 4. Encourage the use of electronic CVIs by accredited veterinarians and capture this data in CoreOne.
 5. Increase the searchability of the paper-based system by recording tag numbers from significant events and putting into New York's CoreOne database.

- **Primary benefits**

The primary benefit of this plan is the gradual transition from a paper based system to a more efficient electronic system which will meet the Interstate Traceability Performance Standards.

- This plan builds upon previous efforts to advance animal disease traceability. New York has spent 14 years and invested heavily in identifying premises data and producing a robust electronic system for recording premises identification. Starting with deer inventories for

Chronic Wasting Disease, this system now has the capability to record individual animal identification associated with those premises which is flexible and can be searched easily. During the Winter and Spring of 2015 we began an intensified effort to update GPS coordinates for premises listed in our CoreOne database. This effort continues.

- The plan fits within USDA's framework for animal disease traceability by adopting and implementing the components of the USDA's framework for animal disease traceability in a manner which will be cost effective over the long term.
- Ultimately, this plan will support animal health information systems within New York by greatly speeding up the retrieval of data used in livestock tracing. It will also make that data available on the internet 365/24/7.
- This plan supports animal health information needs with other States/Tribes/Territories and USDA nationally by improving our rapid tracing abilities and improving our ability to receive and send electronic interstate livestock shipment data.
- The goal of this plan is to be able to provide to receiving states information on interstate shipments electronically. This will assist other states in meeting Performance Standard 3.
- Alternatives explored:
 - New York has already invested in an electronic record keeping system for animal traceability and cannot long support an infrastructure to maintain both a paper record system and an electronic system.
 - The primary alternative to this plan would be to maintain the current paper based record system. A switch to a primary electronic system will produce benefits in time and economy. Efficient data capture will improve data quality, timeliness of information retrieval and cost savings.
 - Alternatives such as IIAD's AgView, Global Vetlink and CVI Central are emerging. As other states, private companies and USDA develop animal disease traceability information systems, we intend to adopt the newer and more efficient systems.
- Projected costs for FY2019, FY2020, and FY2021, and benefits

The major benefit is that traceability data will be put into retrievable databases and time involved to do traces will be reduced from days and weeks to minutes.

Costs to the government for this plan will run approximately \$490,000 per year for the foreseeable future. As automated data capture becomes available, clerical costs, which represents half of that amount will begin to decline. It is improbable that significant cost savings can be achieved within the three year timetable but it is very likely that as software is developed, veterinarian and producer acceptance will increase. Much depends on the costs and ease of use but cost savings should start to be seen in five years.

II. CURRENT TRACEABILITY SITUATION

2.1 Who are we?

- Primary responsibility for the prevention of the introduction and spread of contagious disease of livestock in New York is shared jointly between the New York State Department of Agriculture and Markets, Division of Animal Industry (DAI) and the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (VS). In addition, these agencies work closely with the New York State Department of Environmental Conservation and USDA/APHIS/Wildlife Services (on diseases affecting wildlife) and the New York State Health Department (on zoonotic diseases).

- There are several statewide livestock groups which we will need to update on the development and implementation of New York's Animal Disease Traceability Road Map:
 - Empire State Meat Goat Producers Association
 - Empire Sheep Producers Association
 - New York Angus Association
 - New York Ayrshire Club
 - New York Beef Producer's Association
 - New York Brown Swiss Association
 - New York Deer and Elk Farmers Association
 - New York Holstein Association
 - New York Pork Producers
 - New York Simmental Association
 - New York State Dairy Goat Breeders Association
 - New York State Guernsey Breeders
 - New York State Horse Council
 - New York State Jersey Cattle Club

- There are also numerous support organizations in New York which have an interest in Animal Disease Traceability:
 - Cornell Cooperative Extension
 - Dairylea Cooperative
 - Dairy One Cooperative
 - Empire Livestock Marketing
 - New York State Veterinary Diagnostic Laboratory
 - New York State Veterinary Medical Association
 - Pro-Dairy
 - Quality Milk Production Services
 - Upstate Milk Producers
 - Agri-Mark

- This roadmap includes virtually all of the state of New York. Although there is some limited livestock agriculture in lands held by sovereign

Native American nations within New York's borders, these are fully integrated with the state's marketing infrastructure. Although they act as independent bodies, they have fully cooperated with USDA initiatives.

- How are traceability data used internally, externally?
 - During an infectious disease investigation, traceability data is used to determine the source of an imported disease and to ascertain any other flocks and herds that might have been exposed due to animal movement. The information is vital to New York State's chronic disease program. It is used in inventory maintenance and for the approval of movement permits.
 - Externally, this data is used to assist food safety agencies determine the source of residues found in food products. Most commonly this is to determine the herd of origin of cattle with drug residues at slaughter. The data is also used to determine ownership of strayed animals.
- What values guide the animal disease traceability system?
 - Although large amounts of data are collected, stored and used, small inaccuracies can reduce the system's usefulness. The primary goal is accurate data entry. Since animals in interstate commerce are the most likely introduction of a disease threat, priority will be given to those animals over livestock which spend their entire lives on one premises.
 - Furthermore, we have learned not to get too far ahead of the industries in this area. We need to allow the demands of commerce and the needs of producers to drive the evolution of ID methods and data capture technology.
- The animal disease traceability advisory group is currently inactive. In keeping with the value cited immediately above, re-establishing it is one of our goals for 2019-2020.

2.2 Where are we now?

- New York has traditionally had a robust system of animal identification requiring the permanent identification of all livestock moving through livestock dealers and auction markets including those in slaughter channels. USDA-VS in New York uses AINM to record small ruminant ID distributed to sheep and goat producers as part of the scrapie program, and RFID tags procured by New York through previous cooperative agreements and for scrapie eradication activities are also distributed to the producer level in AINM. Ear tags for use in cattle, deer, and swine are purchased in bulk from manufacturers and inventoried at the cooperator's central offices in Albany. Slaughter back tags for cattle, sheep and swine, and metal NUES eartags are ordered from the USDA warehouse. Written records are kept on all

shipments of official tags to veterinarians, livestock dealers, livestock markets, and livestock producers. Required recordkeeping by veterinarians, markets and dealers has led to the ability to reliably trace back animals to the last premises they were held.

- Under previous cooperative programs such as brucellosis, tuberculosis, pseudorabies, and scrapie, accuracy was determined to be much more important than timeliness of trace. Especially in tuberculosis and scrapie, New York typically was asked to trace animals months or years after they had left the state. Most records were held locally by livestock markets and dealers and it generally took a week to get information from those sources. A successful trace back was defined as the identification of all possible premises where an animal may have been infected or spread infection. A successful trace forward was defined as the identification of all possible premises exposed by an animal. While length of time taken to complete a trace is important, it was secondary to accuracy and completeness.
- Currently, virtually all clerical work including distribution of identification devices is done by the three members of the Animal Disease Control Unit. The unit is hierarchical with a principal clerk supervising the two other clerks.
- All tag ordering except for scrapie tags goes through the state office. All scrapie orders go through the federal office. Efforts are being made to coordinate electronic record keeping with other organizations which issue official tags such as Dairy One (a DHIA) and Genex (an AI stud). We have seen marked improvements in Dairy One's records in recent years.
- Record systems maintained by veterinarians, livestock markets and livestock dealers are held on paper or in local computer systems. New York puts into our TraceFirst database all tags issued through this department to veterinarians, dealers, livestock markets, and producers. At the present time, New York is also working with regional DHIA's operating in New York to make tags issued by those entities more easily traced electronically. Starting in 2019, we will encourage DHIA to become an AIN Manager if it wishes to continue distributing official ID. To further increase compliance and data accuracy, New York is actively encouraging the use of identification devices in livestock (horses, cattle, and cervids) which can be read electronically. In recent years, the cooperator has made full and half duplex RFID tags available to large cattle producers willing to tag their entire herd. During the 2014-2015 cooperative agreement period we acquired a large number of official plastic bangle tags in the NUES format. This is response to concerns

received from affected industries about the difficulty of reading metal NUES tags in the flow of commerce. The current plan to transition to 840 RFID in all cattle requiring official ID by 1/1/2023 renders this option moot. The plastic NUES tags were not a failed experiment. They actually did serve a useful purpose by providing an easier to read alternative to “brite” tags and proved to be quite useful in veal calves.

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

Current animal disease traceability standards were designed to identify the last premises an animal was previously housed. At best these standards reliably looked back a few weeks or months. In the case of highly infectious diseases and chemical residues found in meat and milk, this was effective surveillance. However, transmissible spongiform encephalopathy and diseases caused by *Mycobacterium sp.* and lentiviruses have long asymptomatic latent periods. In these cases, an animal must be traced back months to years to find the source of infection.

- What is the state of technology infrastructure? Capability in terms of size? Compatibility within and outside the agency, unit, department, etc. for sharing data when needed?

The state of New York has been partnering with Trace First and its predecessor, Via Herd for the past 13 years to develop person and premises registration and animal tracking software. The result is a robust database system which is kept updated, backed up, and made available off site. Because the database is held offsite, there are no size restrictions. The database allows for the free exchange of data with the federal Standardized Premises Registration System (SPRS) and Generic Database (GDB). Automated links have been developed to both these systems. In the 2018-19 agreement period we intend to improve the efficiency with which data from both paper and electronic records are uploaded to CoreOne. We intend to acquire TraceFirst’s CVI Central software which is designed to facilitate data upload.

- Because the system is web-based, information can be retrieved 24/7/365 by any authorized user who has access to the internet.

- Funding

While New York State has invested much to develop this system, it still requires funding to maintain. Although not a large amount, funding must be found year to year. Roughly a quarter to a third of the cost of our traceability activities are covered by our cooperative agreement.

2.3 Strengths and Weaknesses

- New York developed a comprehensive and robust system of traceability in order to make rapid progress in the tuberculosis and brucellosis eradication programs in the 1950's, 1960's, and 1970's. This program required permanent identification on all cattle handled by dealers and livestock markets even those going direct to slaughter. In addition, complete records are required on almost all cattle handled. While the system is cumbersome, it does permit rapid tracing in most circumstances.
- Although New York requires that calves less than 200 lbs. be officially identified in commerce, documenting such animals back to their birth farm is still difficult sometimes. Because of changes in marketing, these young calves which once were destined to be slaughtered for veal are now being raised for dairy replacement or beef production. In addition, many of these calves are being moved between premises and livestock markets and dealers several times before they finally enter the dairy string or go to slaughter, amplifying the opportunities for disease propagation and transmission.
- Although an increasing number of dairy herds are utilizing RFID tags for management, infrastructure at most livestock handling facilities is inadequate to capture that information. Presently, the visually reading of the small RFID tags is a challenge and the recording of 12 or 15 digits correctly is problematic.
- Also, because of tag failure, New York has not previously discouraged the use of multiple official identification devices on individual animals. In fact, in the case of brucellosis vaccinates, and captive cervids NY has actually required the use of multiple official identification devices on animals. We anticipate that "breaking" the habit of applying more than one official ID tag will continue to require effort throughout the period covered by this Road Map.
- The major difficulty in data capture is the inability of an electronic ICVI system to compete financially with the paper-based system for accredited veterinarians. New York has no provision to charge for forms or processing so the least cost option is the use of state provided forms. The VSPS interstate is cumbersome to use, and the cost of available commercial applications cannot be justified for livestock. Global Vet Link appears to be getting some traction and we have been in touch with the Institute for Infectious Animal Disease about its AgView product, which should place the labor involved with data entry in the hands of veterinarians and producers.

AgView and Global Vetlink appear to have great promise and we anticipate doing more outreach to encourage use.

- One problem with each state developing its own system is that there is a large amount of redundancy in data entry. For example, animals being tested for export will have identification entered from test charts and also the same information from the ICVI's. Animals entered as exports in New York will then be entered as imports by the receiving state and vice versa. The adoption of a USAHA .xml data standard by USDA should help this problem.

2.4 Opportunities and Threats

- Does this plan enable or avoid consequences of potential threats?

Before routine sampling of all of the dairy herds in New York for Brucellosis ceased, the department could maintain lists of all herds producing milk in New York. Although recording distribution of official identification and interstate movements cannot replace that information, it will give the state a better idea where the more active farms are.

- Does this plan provide for better use of available resources than current approaches?

By emphasizing inputting identification data prior to a trace back, this plan is much more personnel intensive but vastly quicker than poring through paper records after an outbreak. In addition, this plan may produce trace outs from unrelated premises which could never be found through the paper based system.

- Does this plan enhance networking opportunities?

As standardized ways to store and transmit data develop, the time it takes to retrieve and transmit vital information will be reduced from days to minutes.

- If this plan is not implemented, what are the threats?

Failure to implement this plan will greatly reduce New York's ability to trace animals. The reduction of funding for tuberculosis and brucellosis programs has reduced staff available to keep current the CoreOne database.

- If this plan is not implemented, will others be tasked with doing so?

The animal identification and traceability program helps support other functions such as food safety, producer payment security, and the identification of strayed and stolen animals. In the absence of the Division of Animal Industry coordinating this effort, there is no other entity that can do so.

- Complications for previous efforts to coordinate with other entities within New York's boundaries, and outside the state:

The lack of consistent national standards for identification devices and databases has greatly hindered the interoperability of the various systems of animal identification. The uncertainty over devices should be solved by the adoption of electronic ID in the proposed animal disease traceability rule, leading to the simplification of record keeping. While we believe that the methods of ID should be industry-driven, there is a real need for someone to establish a standard so that our livestock markets, dealers, and producers know which RFID reader technology they should invest in.

Several independent data bases exist which hold official tag numbers, and which are not integrated into the CoreOne system such as those used by DHI and livestock marketing cooperatives. The state has started working with the smaller DHIA's to receive reports of tag usage and plans to review DairyOne's (the largest DHIA in New York) record-keeping. We will encourage DHIA to become an AIN Manager.

2.5 Inventory of existing infrastructure and suitability assessment

- Human resources

Currently, the Division of Animal Industry employs 10 veterinarians and 15 licensed veterinary technicians in the field throughout New York State. In the central office, there are 6 veterinarians and 4 clerical positions.

- Space availability

As our department has economized in both staffing and real estate, we no longer have excess space available.

- Connectivity resources, both in office and in the field

Because the current traceability database is housed by a commercial concern and available through the internet, there are no connectivity problems except in the limited areas where high speed internet is unavailable.

- Access to USDA animal disease traceability and animal health information resources

- Organization of all existing paper record systems used to access animal disease traceability or animal health information

As the state transitions to electronic record systems, the traditional file system is being reduced. The 75 five drawer file cabinets formerly used to file ICVI's and test reports by premises for cattle, bison, goats, deer, camelids, swine, and sheep have largely been replaced by document uploads to CoreOne. Original brucellosis vaccination charts are filed by the computer input number because of their longer retention schedule.

- Computerized data management capability, including present storage size, speed, security, etc.

Because all information is maintained on a commercial contract server, there are no constraints in data management capability, storage size, speed or security. CoreOne is accessible to all authorized personnel with a laptop, PC, or smart phone.

- Automated data capture capability

Due to the nature of carbonless forms, ICVI's and original test and vaccination charts are almost exclusively hand written and cannot be adequately captured in an automated system. Our New York State Veterinary Diagnostic Laboratory is actively working on an electronic Equine Infectious Anemia report and we hope to capitalize on that soon.

III. VISION AND MISSION CONTEXT FOR ADVANCING TRACEABILITY

3.1 Vision Statement

The Division of Animal Industry intends to maintain its achievements in animal disease traceability, improve traceability wherever practical, and accomplish these intentions at minimal cost to our livestock industries.

3.2 Mission Statement

The mission of the New York State Department of Agriculture & Markets is to foster a competitive food and agriculture industry to benefit producers and consumers.

IV. TRACEABILITY REQUIREMENTS

4.1 Strategic goal

To continue developing and implementing a State-wide infrastructure for advancing animal disease traceability compatible with New York State and USDA standards.

4.2 Programmatic goals (objectives)

Objective 1: Development of electronic capture of data from underutilized data sources

- Enhance IT infrastructure
- Take advantage of compatible standards for sharing data with States/Tribes/Territories and USDA as they become available.
- Establish and/or update tag distribution record system:

With the introduction of the traceability rule, a set of standards has been established for official identification. Once the rule is in place, it will be easier to exchange information with other governmental agencies. Data standards for data exchange should be established on a national/international basis. It is anticipated that as electronic ICVI's become more popular, systems to monitor the data quality will be instituted into the software. New York's current CoreOne software requires that official identification follow the federal standards.

As transitions are made to automatic data capture and electronic documents, this database will need to keep up with the varying data sources. It will be a priority that as the USDA tag allocation system is updated or replaced, automated data transfer between it and CoreOne is established. Several independent data bases exist which hold official tag numbers and which are not integrated into the CoreOne system such as those used by DHI and livestock marketing cooperatives. Data transfer protocols and privacy concerns must be addressed prior to the capture of this information. Electronic ICVI's will push that burden of accurate data entry onto the veterinary office which completes the form so suitable incentives must be developed to encourage the use of electronic ICVI's.

Objective 2: Stakeholder outreach

- Target, develop, and implement outreach messaging regarding data quality and processing for animal health information forms.

One of the most effective outreach methods is to keep local food animal practitioners informed of the importance of traceability. The department keeps in contact with this essential group through e-mail, mailings, attendance at veterinary meetings, and conferences and one-on-one with veterinary practices.

New York is including information sheets explaining the timeline for phasing out NUES devices and transitioning to eID in all supply orders shipped to accredited veterinarians, producers, livestock markets and dealers.

New York has a large dairy cattle industry which accounts for most of the livestock in the state. New York does not have any state-wide livestock commodity groups that can influence a majority of their respective industries. The most influential group representing livestock in New York is the New York Farm Bureau which through its county grassroots organization represents more livestock producers than any other organization. New York will continue to work with the Farm Bureau and specialty livestock groups to stress the importance of traceability to stakeholders. In addition, outreach can be made to producers at venues such as the New York Farm Show and Empire Farm Days and through Cornell Cooperative Extension.

Objective 3: Manual data capture and preservation of currently available data into a retrievable database.

- Monitor ICVI data quality
- Input data into appropriate systems
- Improve retrieval of available traceability information
- Integrate surveillance and traceability data

Each paper ICVI is already reviewed for completeness and compliance with applicable regulations. All identification on animals moving in interstate

commerce and other associated information should be entered into a database for instant retrieval in case of a disease outbreak. The challenge is the manual entering of all of this information. As technology develops, electronic ICVI's may become more popular. For the foreseeable future, the majority of ICVI's will be in the conventional multi-part forms which are filled out by hand. The poor quality of the copies and the handwriting precludes any optical data recognition so clerical help will still be used to enter identification information. One benefit of this personnel intensive operation is that forms do not have to be standardized. All available data is captured. New York makes no differentiation between surveillance and traceability data.

As noted elsewhere, New York has an established traceability database, CoreOne, provided by TraceFirst, an international leader in the industry. All identification information is entered into New York's CoreOne database. The CoreOne system is a system that facilitates retrieval of any animal identification and movement information. Until usable electronic ICVI technology is developed and implemented, there is no alternative to the costs of manual data capture.

The goal is to capture identification and premises information from all test and vaccination charts, and all incoming and outgoing ICVI's for cattle and cervids.

Estimated costs are as follows:

2019 3 FTE Clerks @ \$48,214= \$144,643 + fringe @ 60.96% = **\$232,818**

CoreOne system maintenance and hosting - **\$100,940**

CVI Central Subscription - \$35,000

2020- 3 FTE Clerks @ \$49,179= \$147,536 + fringe @ 60.96% = **\$237,474**

CoreOne system maintenance and hosting - **\$100,940**

CVI Central Subscription - \$35,000

2021- 3 FTE Clerks @ \$50,162= \$150,487 + fringe @ 60.96% = **\$242,224**

CoreOne system maintenance and hosting - **\$100,940**

CVI Central Subscription - \$35,000

Objective 4: Transparency

- Establish authority
- Develop policy

The commissioner has authority to prevent the introduction and spread of infectious diseases in the state. New York will enforce the federal traceability rule and expand it to include some movements within the state such as moving animals to public exhibition.

2019- Professional time preparing regulations and policy materials, and at meetings- Veterinarian @ \$59.00 per hour for 180 hours- \$10,620 + 60.96% fringe = **\$17,094**

Travel costs for outreach- **\$1,000**

2020- Professional time preparing regulations and policy materials, and at meetings- Veterinarian @ \$60.18 per hour for 180 hours- \$10,832 + 60.96% fringe = **\$17,436**

Travel costs for outreach- **\$1,000**

2020- Professional time preparing regulations and policy materials, and at meetings- Veterinarian @ \$60.38 per hour for 180 hours- \$11,049 + 60.96% fringe = **\$17,785**

Travel costs for outreach- **\$1,000**

4.3 Animal disease traceability performance measures

- Measurement to date:

The traditional method of measuring traceability has been “successful traces”, that is the ability to trace a disease animal back to the premises where the animal was exposed to the disease. Because New York has used tamper-proof tags in all cattle, even slaughter cattle, and required the recording of this information by markets and dealers, virtually all traces are successful traces. The only failed traces occur when animals cannot be identified in other states by the identification used when the animal left New York. This has occurred when identification is misplaced at slaughter or when a receiving state re-identifies (at brucellosis vaccination for example) the animal without recording its previous identification.

- Current Baseline

- The current baseline is trace back to the herd of origin of any animal based on the identification devices it bore when it left New York.
- At the current time, New York can determine the following in real time through AINMS data, written logbooks and paper files:
 - **Performance standard 1:** In what state was an imported animal officially identified.
 - **Performance standard 2:** Where in NY was an animal officially identified.
 - **Performance standard 3** From what state was an animal shipped. PM 3 is more difficult to meet under short time constraints. The ability to trace 95% of the animals moved into New York in 3 business days necessitates pre-loading of the identification numbers of all imports. As noted elsewhere, automated data transfer is impossible with the current system and the alternative, hand entry of individual identification numbers, is costly.
 - **Performance standard 4:** From what location in your state was an exported animal shipped.

4.4 Data requirements

- Standards to be used for location identification

Location is based on front gate longitude and latitude. In addition, premises 911 addresses are recorded if they are not the same as the premises mailing address.

- Standards to be used for official animal identification, including arrangements with other States, Tribes, Territories, as well as

official identification methods/devices used within the cooperator's jurisdiction

New York is transitioning to the identification standards contained in the April 2019 Advancing Animal Disease Traceability Factsheet. New York already requires standard NUES tags for animals moving through livestock dealers and livestock markets, but we are notifying our dealers and markets that beginning January 1, 2021 USDA will no longer provide metal NUES tags and that beginning January 1, 2023, cattle moving interstate must have RFID tags. As 840 electronic identification becomes more common, the markets and dealers will utilize those as the official identification number in lieu of the NUES tag.

- Will the State/Tribe/Territory be using official metal ear tags beyond the current system involving accredited veterinarians only applying the tags at the time of performing regulatory animal disease work?

New York has always provided to livestock dealers and markets tamper-proof tags at state expense. In February, 2008, these tags were brought into compliance with NUES. All tags were coded starting with "21M". Applicators for these tags are provided to dealers and markets at state cost. New York has begun to notify dealers and markets that NUES tags will be phased out.

In December 2011, New York began to send out NUES tags to producers. The tags are the standard USDA eartags, provided in bulk to the central state office. From there, the tags are sent directly to producers who are responsible for providing their own tag applicators. These tags all start with "21P". In 2015, New York began to send 840 RFID tags directly to producers. New York has also begun to notify producers that NUES tags will be phased out.

In 2014, New York began issuing official plastic NUES eartags starting with 21C and 21H. These are issued directly to producer and livestock dealers and records maintained that reveal to whom each group of tags is issued. We have exhausted the supply of 21C tags, and we do not plan to acquire more. We will continue to acquire and encourage the use of RFID tags.

- What tag distribution record keeping systems will be used? (required to be addressed within the Road Map)

New York currently keeps written logs which are then entered into a TraceFirst database which is kept offsite at a commercial server farm. Trace outs can be easily done either from the logbooks or through the database.

- What data requirements exist for commuter herd agreements?

New York has no commuter herds so no special provisions need to be made to accommodate them.

- Forms approved for interstate movement in addition to ICVIs

In addition to state issued ICVI's, New York accepts both the USDA VSPS eCVI and Global Vet Link eCVI's. Beginning in 2015 we began accepting New Planet Technology's data. We also accept AgView. Regulations have been proposed to allow horses to move into the state using an Equine Event Permit. Owner-Shipper Statements (aka "waybills") are permitted for livestock moving to slaughter and for calves less than 200# or less than 14 days old, if we have an agreement with the origin state's veterinary authority.

- Data sharing with other states and USDA

New York has no opposition to sharing traceability data with other governments with a valid need which can maintain the security and the privacy of the data. New York needs to be informed whenever its data is being used, however.

- Group/lot official numbers
 - Group/lot identification has never been used in New York. If required to do so by federal rule, the system can be easily configured to accept group/lot numbers.

4.5 Information technology plan

The state plans to continue to utilize and upgrade its TraceFirst database, CoreOne. In 2018, we began to integrate TraceFirst's application, CVI Central to reduce clerical labor. In addition, during the term of this roadmap, further progress will be made to integrate laboratory and automated tag distribution information into the system. As USDA develops the Animal Health Surveillance and Monitoring System, it is anticipated that further integration may be done to facilitate electronic data transfer between state and federal systems. As the technology behind electronic ICVI's matures and data is standardized, real time capture of this important data will be made possible.

4.6 Resource requirements

- New York has access to the expertise required to meet these goals and objectives.
- Our current working relationship with TraceFirst will be adequate to maintain and expand New York's traceability program.
- A continuity of operation plan (COOP) is in place and our system has inherent continuity due to the servers where CoreOne resides being located off-site.

All original (paper) records are stored at the department's offices in Colonie, NY. These are considered backup to the electronic records which are maintained by a commercial company in Texas. Because of the thoroughness of this redundancy, the continuity of operation plan has not been tested.

- Are automated data capture resources needed?

Yes, but this is an individual decision for each livestock market and livestock dealer. New York intends to make handheld electronic

ID capture devices available to markets and large volume dealers who are willing to work with us to enhance record keeping and timely data sharing.

4.7 Organizational needs

- Organizational changes in the division have already been implemented due to elimination of all brucellosis surveillance, down-sizing, and reorganization. The present staff is cross trained in all of the important surveillance and tracking systems.

4.7.1 Executive support

- Is additional support from executive management needed?
 - Priorities in department over the past several years have been to economize operations i.e. do more with less. It has been a number of years since the last significant disease outbreak and there have been a number of administrative turnovers. The importance of the traceability system needs to be emphasized from the bottom up but also through national forums.
 - Current executive leadership at the departmental level understands the primacy of disease traceability and is supportive of our efforts.
- How is accountability provided?
 - There are two staff veterinarians responsible for overseeing day to day operations to ensure traceability standards are being met.
 - The state veterinarian is consulted when decisions are required, resources needed, or other significant matters come up. The commissioner's suite is kept fully briefed on matters influencing policy and public relations.

4.7.2 Coordination and oversight procedures

- Emergency preparedness resources:

The Department of Agriculture and Markets and the Division of Animal Industry are integral components of the New York State Comprehensive Emergency Management Plan. In the case of disaster or large scale emergency, resource allocation is coordinated through the NYS Division of Homeland Security and Emergency Services. There is an Emergency Coordinator at the department-wide level and also within the Division of Animal Industry,
- Monitoring compatibility with other States, Tribes, Territories, and USDA.

One of the priorities of New York's traceability program is to send staff people working on the traceability program to the USAHA and NIAA meetings to interact with personnel from other states and USDA on traceability. The State Veterinarian is active in the National

Assembly of State Animal Health Officials and the US Animal Health Association.

- Responsible staff:

Since traceability is the backbone of the effort to protect New York's livestock from introduced diseases, it has a top priority in the central office. One Veterinarian 2 positions, reporting directly to the state veterinarian, is responsible for the planning and reporting of the program. The same staff veterinarian 2 in the central office is responsible for direct implementation of the program including attendance at national meetings, preparation of outreach materials, and coordinating field activities. Field veterinarians are responsible for outreach to local veterinarian and farm groups in their assigned territories.

- Disputes arbitration:

The state veterinarian is ultimately responsible for the success of the traceability program and would, with the advice and consensus of the Area Veterinarian in Charge, have authority to arbitrate any disputes that might occur.

- With responsibilities spread over several levels from the state veterinarian down to the field veterinarian, there is ample opportunity to receive feedback from those directly and indirectly affected by the program. In addition, feedback will be obtained at outreach events, meetings and direct outreach to stakeholders. The state veterinarian frequently solicits direct input for affected farms and businesses.
- We manage transitions through the team effort involved with the traceability program and we are confident this insures continuity in case administrators leave or are assigned to other tasks.

4.7.3 Policy

- The Department of Agriculture and Markets has sufficient legal mandate to require identification and tracking of animals for disease control purposes.
- The largest obstacles to achieving that mandate are lack of adequate funding and inability to ensure privacy of the regulated parties. The latter issue was largely addressed by 7 USC 8791, which exempted data voluntarily submitted by producers to participate in a USDA funded program.

4.7.4 Staffing

- Justification of full-time, paid support staff

Although reduced by attrition over the past several years, existing support staff is viewed as essential to the division's disease control efforts. Reductions due to attrition or reassignment have occurred in recent years, but we anticipate being able to maintain our current staffing level for the duration of this Road Map. Much

of the justification for the fulltime support staff comes from the need to fulfill work supported by cooperative agreements.

- Existing staff have been hired and promoted through the state’s merit based civil service system.
- Current Division personnel are adequate to maintain this plan, but we hope to add personnel to “take it to the next level”. We are looking at the possibility of a 2 year term employee and a summer intern.
- The 2-year term employee may be acquired through NY’s Excelsior Fellow program and during a 2 year appointment, will:
 - explore ways to facilitate the handling of eCVIs
 - explore existing capabilities within CoreOne which we currently aren’t utilizing,
 - help manage the cooperative agreement, and
 - help re-activate our stakeholders’ group.
- The current group of administrative veterinarians is highly trained, most with advance education in epidemiology and disease control and some with advanced degrees and specialty certifications.
- Each person working in traceability has a civil service job description which can be found at <http://www.cs.ny.gov/cc/tsplan.cfm>.
- With the success of the cooperative disease eradication program, disease specific program responsibilities have declined greatly. The New York Division of Animal Industry now employs 4 clerks who primarily support traceability efforts. These are surveillance, premises identification, and animal tracking programs.

While the number of clerical people required to work in large cooperative agreement programs such as Brucellosis and Tuberculosis have declined, many new responsibilities such as emergency preparedness, animal health assurance programs, animal welfare, captive wildlife, live bird markets, and on farm food safety have emerged. Commensurate with this increasing diversity, the state now employs six veterinarians in the central office, many with advanced training in epidemiology. In addition, the state has 10 field veterinarians and fifteen licensed veterinary technicians working throughout the state.

4.7.5 Budget requirements

- Funding for traceability comes from the cooperative agreement and the state budget. Money used from the state budget is allocated to the Department of Agriculture and Markets and discretionarily allocated to the Division of Animal Industry. The annual budget for this plan is estimated to be \$479,700. Included in the annual budget

is \$343,230 of current discretionary spending and \$134,509 from the current traceability agreement.

- Funding requirements projected by year for FY2019, FY2020, and FY2021 for implementing this plan:

Approximate estimate of the annual cost for this plan is \$479,700. This estimate does not include indirect expenses.

- In general, personnel expenses and some computer maintenance expenses are paid by the state and non-personnel expenses such as outreach, travel, meetings, and development of computer program to interface with USDA and private systems are expenses paid for with outside i.e. cooperative agreement monies.
- Most of this plan is scalable; reductions may delay but not preclude the eventual accomplishment of the objectives and goals. That is, data entry and outreach can be reduced and the system will still be operable but at a reduced capacity.
- There is no other available funding at the present time other than use of the discretionary money from the Department of Agriculture and Markets or through a cooperative agreement with USDA-APHIS.

4.7.6 Outreach

4.7.6.1. Accredited veterinarians

- What is the plan for informing accredited veterinarians of the new framework and the specific three-year plan for implementation?
- What continuing education is being planned for improving data quality relative to animal health information systems being used? Submitting official forms in a timely manner?
- What is the plan for enhancing the use of eICVIs?

We intend to reach out to practicing veterinarians throughout the state by email and also through continuing education events to advise them of eCVI options and to encourage eCVI use.

- The accredited veterinarians in New York also have roles in traceability:

New York currently has approximately 780 category I and 1680 category II accredited veterinarians. Within the National Veterinary Accreditation Program, current e-mails were obtained for virtually all of them. Current email addresses are maintained for accredited vets and timely messages are sent on an as needed basis. Additionally, when accredited veterinarians place an order for supplies, they are provided with an information handout on electronic ICVIs and an explanation of the transition from NUES tags to using 840 RFID tags exclusively.

4.7.6.2. Livestock markets

Livestock markets are an integral link in traceability. Each of New York's approximately 30 livestock markets has several federal and state employees assigned to it. Direct contact with market managers and personnel is made on a weekly basis. Our inspectors and veterinarians have the authority to review and copy dealer and market records and all transactions must be recorded.

4.7.6.3. Industry as a whole

New York's commercial livestock industry is dominated by the large number of dairy cattle in the state. New York is currently the third leading producer of milk in the US. Farm consolidation has greatly reduced the number but increased the size of the average dairy farm in New York. At the same time, the abandonment of smaller and marginal dairy farms has led to increased interest by small and part time operators to produce specialty crops which can be marketed locally. This includes goat and sheep dairies, meat goat and sheep production, and "free range" hog and poultry production. This activity has acted to stabilize alternate livestock numbers in the state but also has brought in many new producers who do not have a traditional farm background or training.

Because of this, many of the small producers are suspicious of governmental activities which seem to be intrusive. Government programs are sometimes viewed as primarily benefiting large farms and government regulations as unfairly restricting small producers. Since many are part time farmers with full time obligations elsewhere, they generally do not affiliate with state and regional groups and rarely attend meetings or training sessions offered by Cooperative Extension. Since there is an understandable mistrust of government, it may be the best way to provide outreach is through proxies, that is, through private veterinarians, livestock markets, and cooperative extension.

4.8. Monitoring and reporting interstate movement activity

- The number of animals and the number of shipments moving interstate are monitored by summary data from all import and export shipments are put into CoreOne. Original paperwork is scanned and uploaded to the destination premises file in CoreOne so it can be retrieved easily.
- The goal is to eventually more fully automate this system to avoid entering identification numbers in one system and summary information in another.
- Data are verified or validated by our clerical staff and also CoreOne data entry fields only permit ID numbers to be entered in the correct format

for the type of ID selected, so the system is somewhat self-validating for the format of the tag numbers.

V. TRACEABILITY IMPLEMENTATION

5.1 Ranking of priorities for advancement

1. The traceability system framework in New York is already in place. The one overarching need remains to be recording data in a timelier and less expensive manner. This will require developing automated data capture and transfer systems while maintaining the current system. CVI Central, implemented in 2018, has already greatly reduced the staff time required for data entry.
2. In addition, some work will remain to be done in producer outreach to meet the requirements of the proposed traceability rule. Cattle producers will need to start routinely utilizing electronic official identification. We've seen evidence of this in our increased orders received from producers for RFID tags. Most of the dairy sector is currently identified with official ear tags. The challenge will be to identify animals on the premises of birth. The beef industry in New York consists of many small producers, most of which do not commonly sell animals in interstate commerce. As the purebred producers move to the use of official identification on all animals, other producers will follow, similar to the pattern seen in the sheep industry.
3. The CoreOne database is fully functional for New York's traceability needs. It will not be fully utilized until populated with complete and accurate data. This will take at least three years.
4. The major obstacle to a fully implemented plan is the lack of ways for stakeholders to submit data electronically. While New York could solve this problem, a national solution is ultimately required, even if it is just to specify standardized data to be transmitted. Once standards are formed, private companies and states can begin to offer electronic forms to replace multi-part paper forms. Reducing barriers to private veterinarian use of CVIs in VSPS would be an outstanding achievement.

5.2 Implementation of objectives

1. Maintenance of the current system.

New York has spent 15 years developing a database system to track premises with livestock. With the addition of individual animal identification, it is essential that the premises data be constantly updated.

2. Development of automated data exchange between New York's CoreOne and outside databases.

Manual entry of tag numbers is expensive, slow, and prone to transcription errors. This system will not be fully viable until data is entered automatically or by the first user. Incentives must be created to encourage electronic submittal of documents. The recent development of .xml data standards for CVIs by the US Animal Health Association should facilitate getting eCVIs that are ready to upload to CoreOne.

3. Promotion of the traceability program

Stakeholders must accept and see benefits to the program in order to get buy-in. Outreach can be directly to producers and indirectly through trusted sources of information such as veterinarians and cooperative extension.

4. Use of automated readers.

Now that increased numbers of animals bearing 840 RFID tags are entering into livestock marketing channels in New York, our markets and dealers are starting to see the need to have a quick, safe, and efficient way to capture electronic ID numbers. New York intends to support these stakeholders by assisting them in acquiring and operating this equipment, which in turn will enhance their record keeping and data transfer capabilities.