

Tompkins County

Agricultural Environmental Management (AEM)

Strategic Plan

2021-2025



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Tompkins County AEM Mission Statement

“To provide improved quality of life to all residents, visitors and ecosystems of Tompkins County by maintaining and improving environmental stewardship on farms.”

Tompkins County AEM Vision Statement

The Tompkins County AEM Program envisions a network of locally skilled agencies and individuals supporting the local farmer to protect and enhance the environment for future generations.

Background of AEM Program

The Agricultural Environmental Management (AEM) Program is governed by New York State Law and funded through the New York State Environmental Protection Fund (EPF). The Statewide AEM program is authorized and funded by the New York State Department of Agriculture and Markets' (NYS Ag & Markets) Soil and Water Conservation Committee (SWCC). The Tompkins County Soil and Water Conservation District (TCSWCD) serves as the lead agency for the program locally. As a statewide recognized planning and implementation tool, the AEM program makes it possible for farms to access various NYS cost-share grant programs to improve environmental practices. The AEM program also documents current best management strategies as they pertain to natural resources.

The base funding for the AEM program has been established as a means to provide a non-competitive funding source to all interested NYS SWCDs to develop and implement their locally led AEM programs. As guiding documents, five-year strategic plans are required by the SWCC. Local SWCDs interact with farms throughout their county based on the priorities in their respective five-year strategic plans to identify environmental resource concerns and suggest appropriate best management practices (BMPs) to address them. Implementation of plans may then be developed by SWCDs, certified planners, engineers and others in cooperation with farmers to address these environmental resource concerns.

Following a tiered planning and implementation approach, the goal of the AEM program is to address any past, present, or future environmental concerns occurring on farms. The first step is to obtain background information on the farm (Tier 1). Following this step, the planner and farmer explore the entire farm to identify resource concerns and document ongoing BMPs (tier 2). The next step is to design a plan (Tier 3) targeted at a resource concern and finally applying to an appropriate funding source to help install the necessary practice (Tier 4). The fifth step (Tier 5) is a review of the implemented BMP and may lead into progressive planning which restarts the cycle back at Tier 1, 2 or 3.

The AEM program is completely voluntary and meant to aid farmers in seeing the environmental and economic benefits of implementing BMPs on their farm operations. If identified resource

concerns are too expensive for the farm owners to remedy on their own, then the farmer may apply for governmental assistance programs.

Plan Development Process

The AEM strategic plan that the District has been using to date was created in 2015 and was designed for use until 2019. To keep pace with the changing number, size and types of agricultural operations in Tompkins County along with the changing environmental resource concerns and land uses, a new AEM strategic plan has been drafted. This document is intended to help guide the Districts AEM program forward for the next five years (2021-2025), building onto what was already been achieved by the previous strategic plan. Currently, the TCSWCD AEM program is implemented, coordinated and managed by one SWCD staff member. To fully implement this five-year plan, staffing will most likely have to increase within the TCSWCD.

The TCSWCD has developed priority watersheds to focus AEM efforts on in the upcoming 5 years. Historical BMP data, land use statistics and farmer willingness were all factors considered in developing these priority watersheds.

The TCSWCD AEM five-year strategic plan has been updated to take into account all available information from current TCSWCD cooperators files and is designed to work in conjunction with similar plans developed, or being developed by our sister agencies including, but not limited to:

- Tompkins County Agriculture and Farmland Protection Plan
- Tompkins County Conservation Plan
- Town Agriculture and Farmland Protection Plans
- Cayuga Lake Watershed Restoration and Protection Plan
- Owasco Lake Watershed Management and Waterfront Revitalization Plan
- Chesapeake Bay Watershed Implementation Plans
- NYSDEC Cayuga/Owasco Lakes HABs Action Plans
- Tompkins County Water Quality Strategy

Our hope is that we can maintain an effective and efficient working relationship between these conservation planning partners and the associated documents.

Landuse and Agriculture Statistics

Data was collected from the USDA Census of Agriculture and presented here. Data for this census is collected every five years, with portions updated periodically during this time. The last full

census was taken in 2017 and the next full census will be compiled in 2022. The most recent updates occurred in April of 2019.

| | 1978 | 1982 | 1987 | 1992 | 1997 | 2002 | 2007 | 2014 | 2019 |
|---------------------------------|---------|---------|---------|--------|---------|---------|---------|--------|--------|
| Number of Farms | 598 | 567 | 532 | 441 | 557 | 563 | 588 | 558 | 523 |
| Total Farm Acreage | 123,210 | 121,068 | 110,609 | 91,822 | 102,610 | 100,931 | 108,739 | 90,774 | 91,277 |
| <i>Average Acreage per Farm</i> | ~ | 214 | 208 | 208 | 184 | 179 | 185 | 163 | 175 |
| <i>Harvested Cropland</i> | 79,982 | 77,047 | 75,634 | 62,421 | 67,731 | 66,960 | 67,292 | 47,143 | 51,122 |
| <i>Woodland</i> | ~ | ~ | 20,329 | 16,921 | 19,245 | 19,245 | 21,838 | 19,183 | 14,419 |
| <i>Pasture Land</i> | ~ | ~ | ~ | ~ | ~ | ~ | 5,659 | 7,281 | 9,057 |
| <i>Other Land*</i> | ~ | ~ | 14,646 | 12,480 | 13,898 | 15,012 | 13,950 | 9,886 | 10,964 |
| % of County in Farmland | 39% | 39% | 35% | 29% | 33% | 32% | 35% | 30% | 30% |

**Other Land: land that is not permanent pasture, harvested crop or woodland, includes farm roads, hedgerows, etc.*

Table 1. Historic Farm Base Summary, Tompkins County, 1978-2019

Source: USDA Census of Agriculture

Tompkins County enjoys a wide variety of agricultural types as seen in Table 2. Each farm type has a unique set of environmental responsibilities and challenges that can be addressed through AEM.

| Enterprise Type | 2007 | 2014 | 2019 |
|----------------------------|-------------|-------------|-------------|
| Wineries | 4 | 9 | 9 |
| Vegetables | 42 | 66 | 59 |
| Greenhouse & Nursery Crops | 46 | 64 | 57 |
| Equine | 33 | 25 | 25 |
| Fruits, Tree Nuts, Berries | 29 | 29 | 54 |
| Beef Cattle | 115 | 77 | 93 |
| Dairy Cattle | 106 | 62 | 72 |
| Sheep, Goats, & Lambs | 32 | 40 | 51 |

Table 2. Farms by Type in Tompkins County, 2007, 2014 & 2019

Source USDA Census of Agriculture

Environmental Quality Information

Agriculture, which accounts for roughly 30% of the total land use in Tompkins County, is a key component in defining its economic, social and environmental well-being. As the streams, wetlands, forests and soils have contributed to the agricultural prosperity of Tompkins County, so too do the agricultural practices, both past and present, contribute to the relative health of those same natural features. This relationship has been further strained by climate change over recent years.

Water Resources

Tompkins County has a plentiful supply of surface water, which is routed by roughly fifteen watersheds, which affect and are affected by agricultural practices (see Figure 1). Nearly every farm in these watersheds has a watercourse, whether perennial or intermittent, flowing across their lands. These are generally given a wide berth in the form of buffers and areas that are in some way excluded from machinery and livestock, but areas do exist within the watersheds for improvement.

The hydrology of Tompkins County is such that nearly every landowner and farmer have access, at some time of the year, to surface water, streams, ponds or wetlands. For the most part, these features are treated with respect by the farmers working the land and given a buffer area. However, this is not, and has not, always been the case and mismanaged water resources in the past have resulted in environmentally adverse effects on individual water bodies, like Cayuga Lake, Owasco Lake and the Susquehanna River. In some cases, the result of poor resource management can leave the entire watershed impaired.

Increasing intensity and frequency of rainstorm events have led to new challenges for farms to deal with excess runoff that normally would be sufficiently handled by former drainage practices. Stormwater management is an increasing concern for many of our Tompkins County farmers. Various new pathways for BMP implementation and funding have arisen in recent years including the NYS Climate Resilient Farming grant program to address these stormwater concerns.

Harmful Algae Blooms are also a growing concern for Tompkins County residents as numerous blooms have been spotted in recent years in Cayuga and Owasco Lakes. The NYSDEC HABs Action Plans for these lakes have referenced the NYS AEM program as a significant driver of nutrient reduction on farms.

According to the latest New York State Department of Environmental Conservation's Priority Waterbodies List, the individual pollutants of concern (e.g. nutrients, silt, sedimentation, etc.) in each watershed may come from various sources such as stream bank erosion, wastewater treatment systems or agriculture. In some watersheds the primary identified source of nutrient pollutants arises from agricultural practices. Pollutants to a water course impact the water resources in many ways impairing either aquatic life, recreation, and/or drinking water supplies.

Although not directly addressed in this plan, the Community Science Institute has led a voluntary water sampling effort across the county and region for over a decade. This long-term dataset is useful in showing general trends in water quality under stormflow and baseflow conditions. The data has aided the Tompkins SWCD in prioritization of watersheds that need to be addressed for water quality concerns. Further information and access to the Community Science Institutes database can be accessed at <http://database.communityscience.org/>

There are two broad methods of addressing water resource runoff from farmland. The first method is by identifying a farm's direct (point source) inputs; namely, collection and treatment procedures for runoff originating from silage leachate, manure storage areas, milk house waste discharge, as well as accidental spills of milk, fuel, fertilizers and/or pesticides. The second method employed by the AEM program to address water quality concerns is to help make landowners aware of runoff coming from not just the farmstead (i.e. the main area of buildings necessary for farm operations to be performed) but from their fields (non-point source runoff) as well. This aspect of the program requires the landowner to look past their property boundaries to see how their actions affect areas further downstream and how upstream neighbors may impact their operations.

Soil Resources

Historical trends show that farming practices in Tompkins County have become increasingly concentrated on areas with the best soil profiles, which tend to be mostly in the north east and north west corners of the county and located at the tops and bottoms of valleys, though some farming does occur on the steeply sloping sides of the glacial valleys in Tompkins County. Additionally, the Farm Service Agency (FSA) has recorded 17,604 acres of soil that, in addition to being identified as important soils for agriculture, are also categorized as Highly Erodible Land (HEL), and as such are highly susceptible to erosive pressures from development and inadequate farming practices. These soils represent a finite resource of Tompkins County and should be protected.

Soil health is being recognized globally as a primary environmental resource concern and receives a great deal of attention concerning ways to preserve its unique physical, chemical and biological

properties that make it such a vital resource for both natural terrestrial ecosystems and agriculture as a whole. Practices are being developed that encourage the establishment of communities of microorganisms within the soil spaces, reducing compaction, which improves the ability of soil to absorb and hold water, as well as ways of encouraging nitrogen fixation and maintaining the nutrient balance, moisture content and pH of soils to keep soils naturally productive without having to apply chemicals.

In addition to addressing water runoff from agricultural practices that will physically remove prime soils and nutrients from a site, the AEM program is also used to identify and determine the impact of practices that negatively impact soil. These practices, such as cover crops, no-till cropping, pasture rotation, and other practices, are designed to help maintain and, where necessary, rebuild the physical, biological and chemical properties of the soils, ensuring not only the productivity of the farms but also the soils' ability to hold and retain water, retain and cycle nutrients, sequester carbon, and detoxify harmful chemicals.

Soil health has also been increasingly threatened by development pressure over the years, which threatens not only to remove valuable farmland from productivity, but also to counter the other beneficial abilities of these prime soils. A portion of the acres lost from agricultural production were lost to housing and other development projects.

AEM Work Plan Focus Areas

The AEM Five Year Strategic Plan will focus largely on identifying farms in priority watersheds with significant runoff concerns (nutrient, pathogen and silt/sediment). These farms will then be prioritized based on the degree of impact that implementing BMPs will have both on the site and on any nearby water bodies. This will help ensure that all time, money and District resources are utilized to address the most significant resource concerns in the most disturbed county watersheds.

Priority Watersheds:

- 1) Fall Creek
- 2) Salmon Creek (including direct drainage minor tributaries to Cayuga Lake)
- 3) Owasco Inlet
- 4) Cayuga Inlet, encompassing the Inlet, Enfield Creek and Six Mile Creek
- 5) Taughannock Creek
- 6) All Other Watersheds

Objectives & Tasks

Outreach and Education

GOAL 1-Work with partner agencies to increase public awareness of AEM and environmentally responsible farming practices by presenting at outreach events, distributing information packets on the various state and federal grant programs, release information on successfully implemented conservation projects that utilized the AEM process to identify farms via the District Facebook page, County Legislator updates or, where appropriate, local media.

TASK 1- Media/newsletter releases will occur upon the successful completion of all Tier 4 implementation projects.

TASK 2- Outreach events will explain the significance AEM and the District play in preserving/improving soil and water health to local schools, civic organizations, municipalities, legislators and the general public.

GOAL 2 - Work with partner agencies such as the County Ag and Farmland Protection Board, Watershed Protection agencies NRCS, FSA, County Planning Department, municipalities, Tompkins County Farm Bureau, and other Soil and Water Conservation Districts, where applicable, to ensure complimentary implementation of conservation practices to address resource concerns and conservation.

TASK 1-Success for this goal will be measured by noted inter-agency, inter-departmental, and inter-district cooperation on development of AEM Tier 3A plans, Tier 5B BMP evaluations, and AEM Tier 4 implementation of new BMPs.

Technical:

GOAL 1 - Continue to review and update AEM files for farms currently enrolled in the program.

TASK 1- Document any changes in business practices and/or installed BMPs since time of last visit (Tier 5A and 5B respectively).

GOAL 2 - Create AEM files for new or undocumented farms (tier 1 and 2).

TASK 1 - enroll new farms in AEM at the Tier I level at least.

GOAL 3 - Create a GIS Database for documenting all AEM Tier IV projects since 2005.

GOAL 4 - Continue upkeep on AEM GIS database.

2021-2025

Fall Creek Watershed

This is the largest sub watershed in Tompkins County and has 3 of the 5 Dairy CAFO's. Fall Creek is listed on the latest (2007) NYSDEC PWL (ID # 0705-0036) below Freeville as having no use impairments. Reaches above Freeville, where most of the agriculture occurs, is unassessed by NYSDEC. Fall Creek is a principle source of drinking water for Cornell University, which makes it a high priority for surface water protection. In addition, nearly one third of the farms enrolled in the AEM program for Tompkins County are located in the Fall Creek Watershed.

GOAL 1- Update AEM information (Tier 1, 2 and 5A and 5B) for all farms located in the Fall Creek Watershed.

GOAL 2- Design Tier 3A plans for farms within this watershed as identified in Tier 1 and Tier 2 assessments.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of silt/sediment and nutrient runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in the AEM, AGNP, NRCS, and/or other grant programs.

GOAL 3- Implement AEM Tier 4 BMP projects utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness for available grants. Projects addressing nutrient and silt/sediment runoff from pastures and crop fields will be given highest priority in this watershed.

TASK 1- Once proper grant programs have been identified; facilitate farmer application and enrollment as necessary in suitable grant program(s). BMP implementation will then commence through either the AGNP program, FLOWPA, Part B, Part C funding programs or through other available grant monies as appropriate for the site and resource concern being addressed. Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

TASK 2- Coordinate all planning, grant application, and BMP implementation activities with any sister agencies, County or Town departments, including highways, or Cayuga and/or Cortland Counties as portions of the Fall Creek Watershed fall within their County boundaries. Note any such cooperation in grant files and in AEM Tier 4 database.

TASK 3- Upon completion of BMP implementation (AEM Tier 4), prepare any suitable releases for the District News Letter or local Media should the farmers agree to the projects being publicized. Note any inter-agency, inter-departmental, and/or inter-district cooperation that took place during these projects.

Salmon Creek Watershed (including direct drainage minor tributaries to Cayuga Lake)

This watershed has 2 Dairy CAFOs within its boundaries. Salmon Creek discharges directly into Cayuga Lake, contributing significant concentrations of nutrients, pathogens and silt/sedimentation to Cayuga Lake. Salmon Creek (Lower, and tribs) is listed on the latest (2007) DEC PWL (ID #0705-0097) as having known pollutants of concern of nutrients(phosphorus), and silt/sediment. Agriculture is listed as a known source of these pollutants.

GOAL 1- Continual updates on AEM information for farms located in the Salmon Creek Watershed.

TASK 1- With 2 of the 5 CAFOs in this watershed it is important that District staff pay particular attention to evaluating existing AEM plans and previously implemented BMPs (AEM Tier 5B) that address nutrient and sediment runoff to ensure they have been properly maintained and are functioning as intended. Tier 5B evaluations will be a priority for this watershed.

GOAL 2- Design or update AEM Tier 3A plans for farms in this watershed. With the 2 CAFOs present in this watershed, the CAFOs will have Tier 3B and/or 3C farm plans designed and updated yearly by their own private NYS certified farm planner for all acres utilized by the operation.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of silt/sediment, and nutrient runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in NYS cost share and/or other grant programs.

GOAL 3- Implement AEM Tier 4 BMP projects utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness for available grants. Projects addressing nutrient, and silt/sediment runoff from barnyards, heavy use areas, silage leachate, or manure storage structures will be given highest priority in this watershed.

TASK 1- Once proper cost share grant programs have been identified and received; Tompkins County District personnel, in cooperation with appropriate Cayuga County District personnel, will facilitate farmer application and enrollment as necessary in suitable grant program(s). Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

TASK 2- Upon completion of BMP implementation (AEM Tier 4), prepare any suitable releases for the District News Letter or local Media should the farmers agree to the projects being publicized. Note any inter-agency, inter-departmental, and/or inter-district cooperation that took place during these projects.

Owasco Inlet Watershed

Runoff from this watershed drains into Owasco Lake, which is the drinking water source for the City of Auburn. The Tompkins County portion of the Owasco Watershed contains the upper portion of the Owasco Inlet and a small section of Hemlock creek to the west. Both portions will be treated as one in this plan. The latest (2007) update to the NYSDEC PWL for the Owasco Inlet (upper and tribs, ID # 0706-0014) lists impacted uses to aquatic life and recreation from nutrient (phosphorus) pollution from known sources of the Groton wastewater treatment plant, and suspected sources of agriculture. Since the latest 2007 update of the PWL, the Village of Groton wastewater treatment plant has upgraded their system and many BMPs have been implemented on agricultural lands. A nine element plan has been adopted for Owasco Lake to address nutrient pollution. Also, updated watershed rules and regulations are being evaluated by NYS for adoption.

GOAL 1 - Update AEM information (Tier 1, 2 and 5A and 5B) for farms located in the Owasco Inlet Watershed.

GOAL 2 - Design Tier 3A plans for farms within this watershed to address nutrient runoff.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of nutrient and pathogen runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in NYS cost share and/or other grant programs. It is anticipated that there will be some close association the Cayuga County SWCD during planning and implementation stages of this portion of the AEM strategic plan.

GOAL 3- Implement AEM Tier 4 BMP projects utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness for available grants. Projects addressing nutrient, and pathogen runoff from barnyards, heavy use areas, silage leachate, manure storage structures, pastures and crop fields will be given highest priority in this watershed. As previously mentioned with the AEM Tier 3A updating and planning goal, it is anticipated that there will be some close association with the Cayuga County SWCD during planning and implementation stages of BMPs since a greater portion of the Owasco Inlet watershed lies in Cayuga County. Any proposed designs that affect any portion of an identified CAFO operation in this watershed will require incorporating their certified farm planner at all stages of application, design, oversight, and evaluation processes.

TASK 1- Once proper grant programs have been identified; Tompkins County District personnel, in cooperation with appropriate Cayuga County District personnel (if needed), will facilitate farmer application and enrollment as necessary in suitable grant program(s). Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

Cayuga Inlet (including Sixmile and Enfield Creek)

This watershed encompassing the Cayuga Inlet, Enfield Creek and Six-Mile Creek watersheds and constitutes the largest watershed in Tompkins county, covering 34% of the County with 20% of the AEM enrolled farms. This watershed discharges directly into Cayuga Lake which is the source of drinking water for Bolton Point. The City of Ithaca uses Sixmile Creek for its drinking water source. The latest (2007) NYSDEC PWL (ID #0705-0059) for the Cayuga Inlet (upper section and tributaries) lists this watershed as having aquatic life impacts due to nutrients (phosphorus) and silt/sediment from suspected sources of urban stormwater runoff, agriculture, habitat modification and streambank erosion. The latest (2007) NYSDEC PWL (ID #0705-0065) for Enfield Creek (lower section and tributaries) lists this watershed as having public bathing and recreation impacts due to pathogens from unknown sources. This watershed contains Treman State Park which has a public swimming area. The upper portion of Enfield Creek is unassessed. There is also public access to water at Buttermilk Falls State Park within the Cayuga Inlet watershed. The latest (2007) NYSDEC PWL (ID #0705-0043) for Sixmile Creek (upper section and tributaries) lists this watershed as having habitat and hydrology impacts from pollutants of silt/sediment suspected sources of hydro modification by the City of Ithaca's water reservoirs and streambank erosion. Agriculture and urban stormwater runoff are listed as possible sources of these sediments.

GOAL 1- Update all the AEM information (Tier 1, 2 and 5A and 5B) for farms located in the Cayuga Inlet Watershed.

GOAL 2- Design Tier 3A plans for farms within this watershed. The number of farms in this watershed are dwindling with each update to the AEM strategic plan.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of silt/sediment runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in NYS cost share and/or other grant programs.

GOAL 3- Implement AEM Tier 4 BMP projects utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness for available grants. Projects addressing silt/sediment runoff from pastures and fields will be given highest priority in this watershed.

TASK 1- Once proper grant programs have been identified; facilitate farmer application and enrollment as necessary in suitable grant program(s). Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

TASK 2- Coordinate all planning, grant application, and BMP implementation activities with any sister agencies, County or Town departments, including highways. Note any such cooperation in grant files and in AEM Tier 4 database.

TASK 3- Upon completion of BMP implementation (AEM Tier 4), prepare any suitable releases for the District News Letter or local Media should the farmers agree to the projects being publicized. Note any inter-agency, inter-departmental, and/or inter-district cooperation that took place during the course of these projects.

Taughanock Creek Watershed

The Taughanock Creek watershed (lower section and tributaries) is listed on the latest (2007) NYS DEC PWL as impacted for aquatic life from nutrients (phosphorus) from suspected sources of agriculture. The upper portion of Taughanock Creek is unassessed in the PWL. Taughanock Creek discharges directly into Cayuga Lake while flowing through Taughanock Falls State Park where public have access to the watercourse. There are relatively few farms enrolled in the AEM program from this sub-watershed, though the ones recorded there are mostly grain operations. In addition, dairy operations from surrounding counties have obtained land holdings in the Tompkins County portion of this sub-watershed, as well as increased row crop production.

GOAL 1- Update all the AEM information (Tier 1, 2 and 5A and 5B) for farms located in the Taughanock Creek Watershed.

TASK 1- enroll most (if not all) of the farms in the AEM program in this watershed at least to a Tier 1 level.

GOAL 2- Design Tier 3A plans for farms within this watershed.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of silt/sediment, nutrient and pathogen runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in NYS cost share programs, and/or other grant programs. It is expected that most Tier 3A plans in this watershed will be for farms new to the AEM program. It is anticipated that there will be some close association the Schuyler and Seneca County SWCD during planning and implementation stages of this portion of the AEM strategic plan.

GOAL 3- Implement AEM Tier 4 BMP projects utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness for available grants. Projects addressing nutrient runoff from barnyards, heavy use areas, silage leachate, or manure storage structures will be given highest priority in this watershed. As previously mentioned with the AEM Tier 3A updating and design goal, it is anticipated that there will be some close association with the Schuyler and Seneca County SWCD during planning and implementation stages of this portion of the AEM strategic plan.

TASK 1- Once proper grant programs have been identified; Tompkins County District personnel, in cooperation with appropriate Schuyler/Seneca County District personnel, will facilitate farmer application and enrollment as necessary in suitable grant program(s). Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

TASK 2- Coordinate all planning, grant application, and BMP implementation activities with any sister agencies, County or Town departments, including highways, or Schuyler County as portions of the Taughannock Creek Watershed fall within their County boundaries. Note any such cooperation in grant files and in AEM Tier 4 database.

TASK 3- Upon completion of BMP implementation (AEM Tier 4), prepare any suitable releases for the District News Letter or local Media should the farmers agree to the projects being publicized. Note any inter-agency, inter-departmental, and/or inter-district cooperation that took place during the course of these projects.

All Other Watersheds

These watersheds will be addressed as needed throughout the AEM Plan years. These include the watersheds that are part of the Upper Susquehanna River Watershed, and several small “direct drainage” sub-watersheds that feed into Cayuga Lake, but are not regularly monitored by the DEC or other organizations and which, in general, have a small agricultural presence.

GOAL 1- Update all the AEM information (Tier 1, 2 and 5A and 5B) for farms located in these watersheds over the five years covered by this strategic plan.

GOAL 2- Design Tier 3A plans for farms within these watersheds over the five years covered by this strategic plan.

TASK 1- Tier 3A plans will be developed either for farms already enrolled in AEM but needing to have their information updated, or for farms newly enrolled in AEM. Plan development and prioritization will depend heavily on severity of silt/sediment, pathogen and nutrient runoff concerns identified on the farm through either the AEM Tier 2 or Tier 5A surveys, proximity to surface water bodies, and ability/willingness of the farmer to participate in NYS cost share programs, and/or other grant programs.

GOAL 3- Implement AEM Tier 4 BMP projects over the five years covered by this strategic plan utilizing AEM Tier 3A plans to prioritize projects and determine appropriateness, if any, for available grants. Projects addressing nutrient, pathogen and silt/sediment runoff from pastures and fields will be given highest priority in this watershed.

TASK 1- Once proper grant programs have been identified; facilitate farmer application and enrollment as necessary in suitable grant program(s). Oversight of BMP installation will be performed as needed by the appropriate agency and District representatives.

TASK 2- Coordinate all planning, grant application, and BMP implementation activities with any sister agencies, County or Town departments, including highways. Note any such cooperation in grant files and in AEM Tier 4 database.

TASK 3- Upon completion of BMP implementation (AEM Tier 4), prepare any suitable releases for the District News Letter or local Media should the farmers agree to the projects being publicized. Note any inter-agency, inter-departmental, and/or inter-district cooperation that took place during the course of these projects.

List of Figures

Figure 1. Tompkins County HUC10 Watersheds

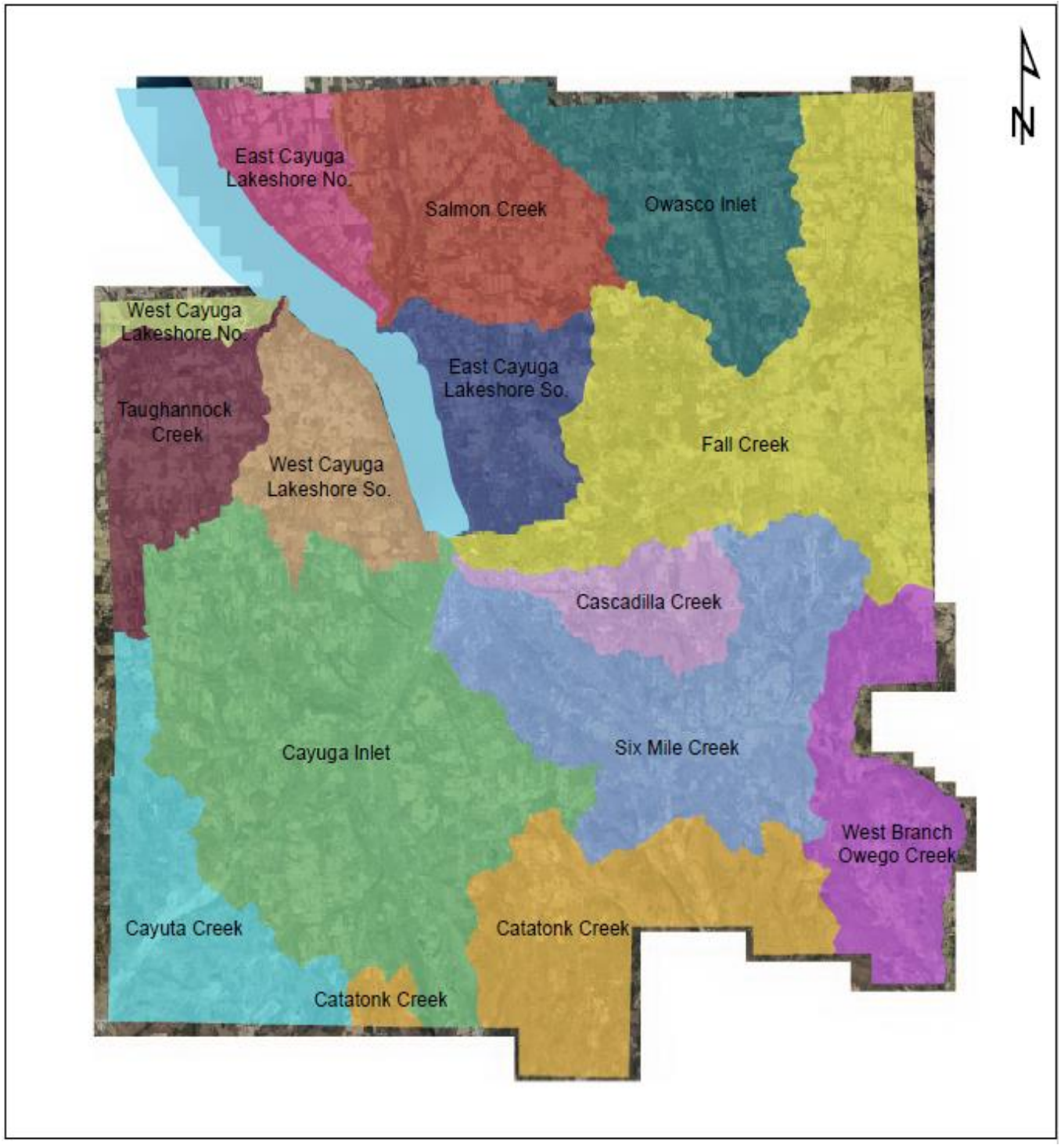


Figure 2. Tompkins County 100ft Contour Map
Elevation 380ft to 2090ft

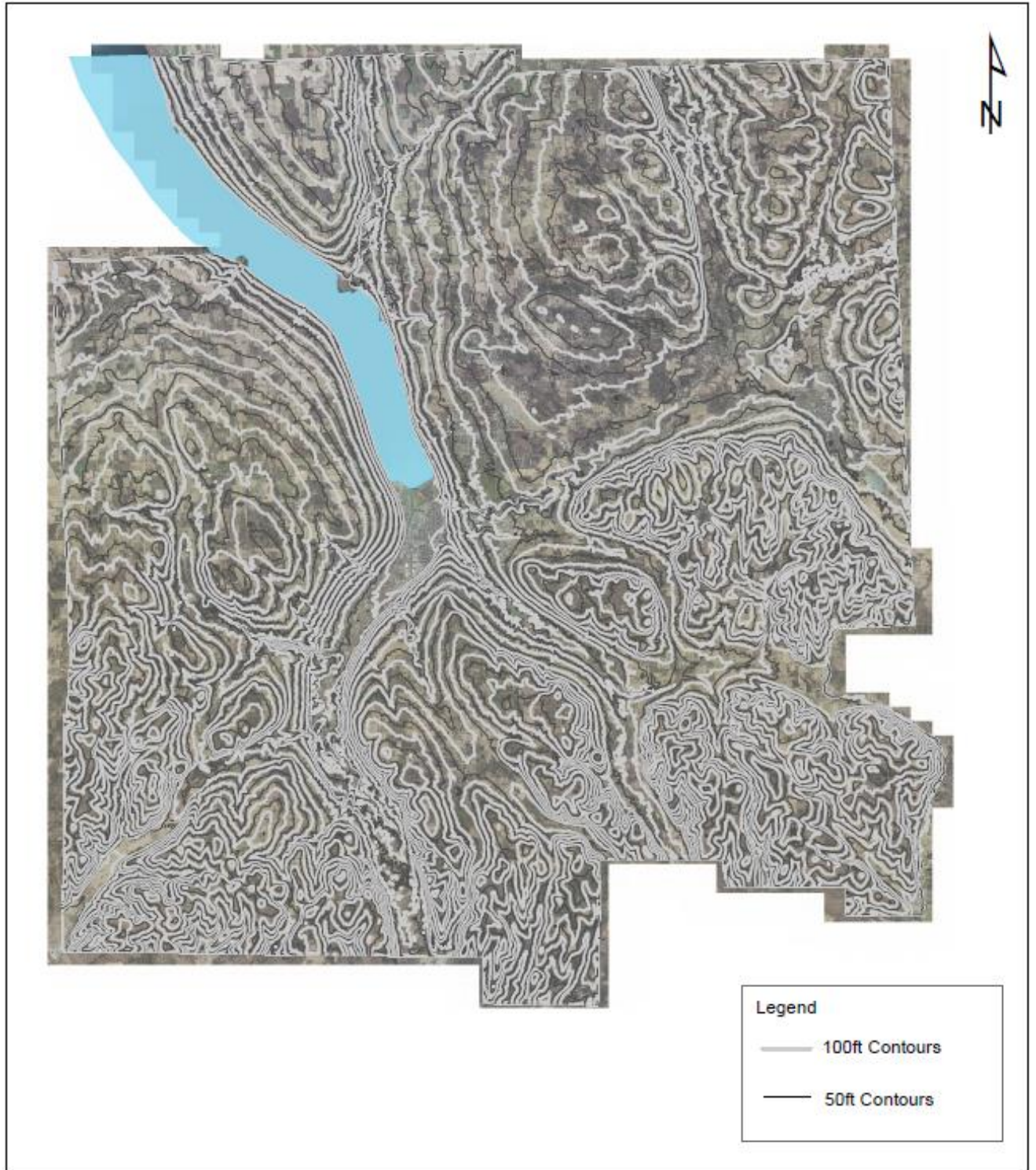


Figure 3. Tompkins County Land Use Land Cover Map

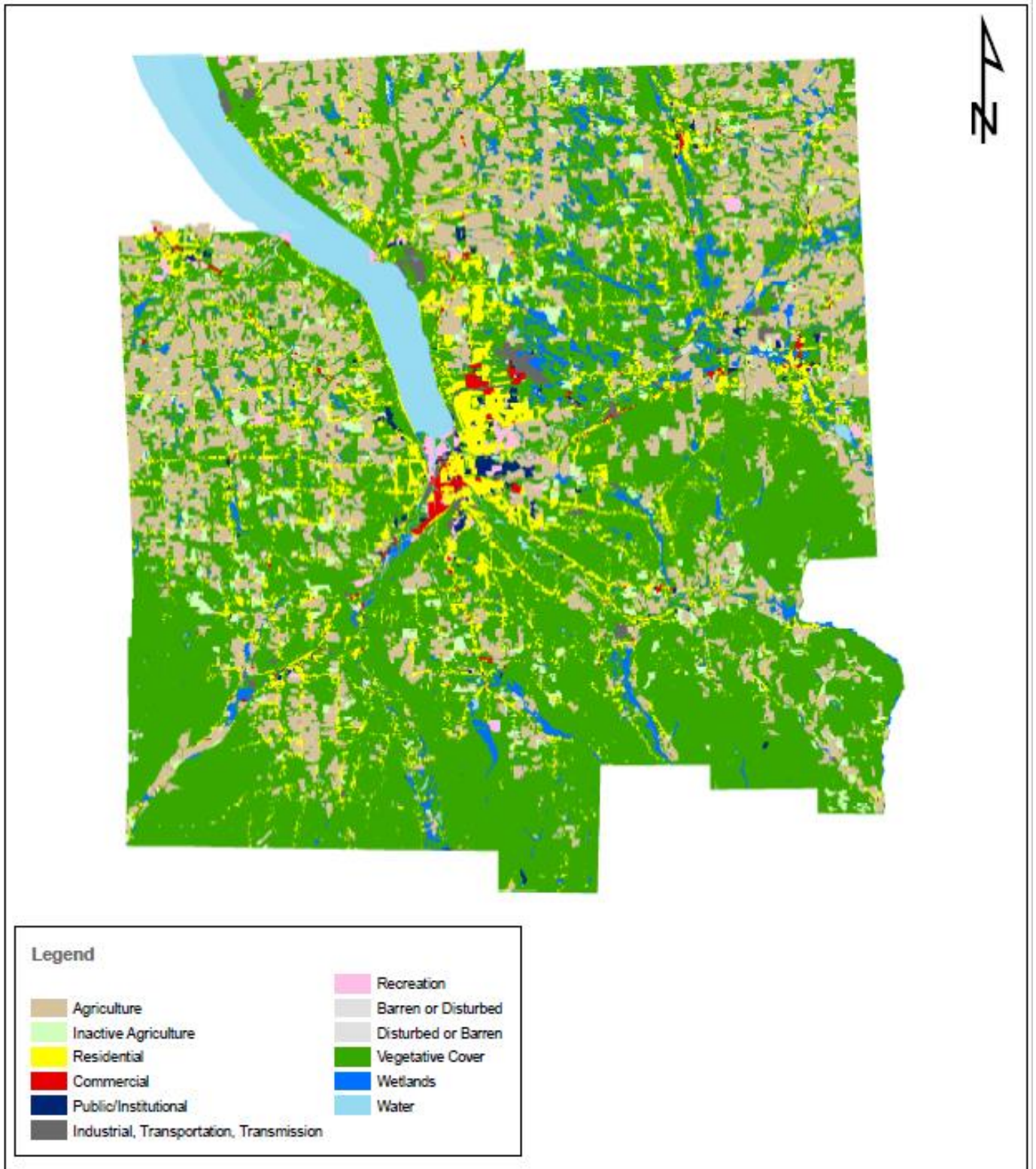


Figure 3. Number of Farms by Farm Type, 2019

| Primary Farm Type | Number of Farms | Acres - Owned | Percentage of Total Acreage (Owned) | Acres - Rented | Percentage of Total Acreage (Rented) |
|---------------------------|-----------------|-----------------|-------------------------------------|-----------------|--------------------------------------|
| Beef | 23 | 4697.54 | 9.08% | 846.91 | 2.31% |
| Crops | 10 | 2348.80 | 4.54% | 4850.48 | 13.22% |
| Crops - Field | 33 | 8226.44 | 15.90% | 9640.12 | 26.27% |
| Crops - Hay | 19 | 3369.53 | 6.51% | 3544.65 | 9.66% |
| Crops - Vegetable | 2 | 559.28 | 1.08% | 658.11 | 1.79% |
| Equine | 31 | 2974.24 | 5.75% | 141.99 | 0.39% |
| Dairy | 49 | 22541.76 | 43.57% | 15357.37 | 41.86% |
| Market Grower - Fruit/Veg | 18 | 1262.22 | 2.44% | 296.71 | 0.81% |
| Nursery/Horticulture | 4 | 122.45 | 0.24% | 0 | 0.00% |
| Orchard | 3 | 403.89 | 0.78% | 0 | 0.00% |
| Other Livestock | 28 | 2671.27 | 5.16% | 833.62 | 2.27% |
| Tree | 12 | 1239.51 | 2.40% | 51.75 | 0.14% |
| Vineyard | 2 | 94.61 | 0.18% | 0 | 0.00% |
| All Others | 6 | 1230.27 | 2.38% | 468.26 | 1.28% |
| TOTAL | 240 | 51741.81 | | 36689.97 | |

Figure 4. NYS DEC Protected Streams in Tompkins County
Map

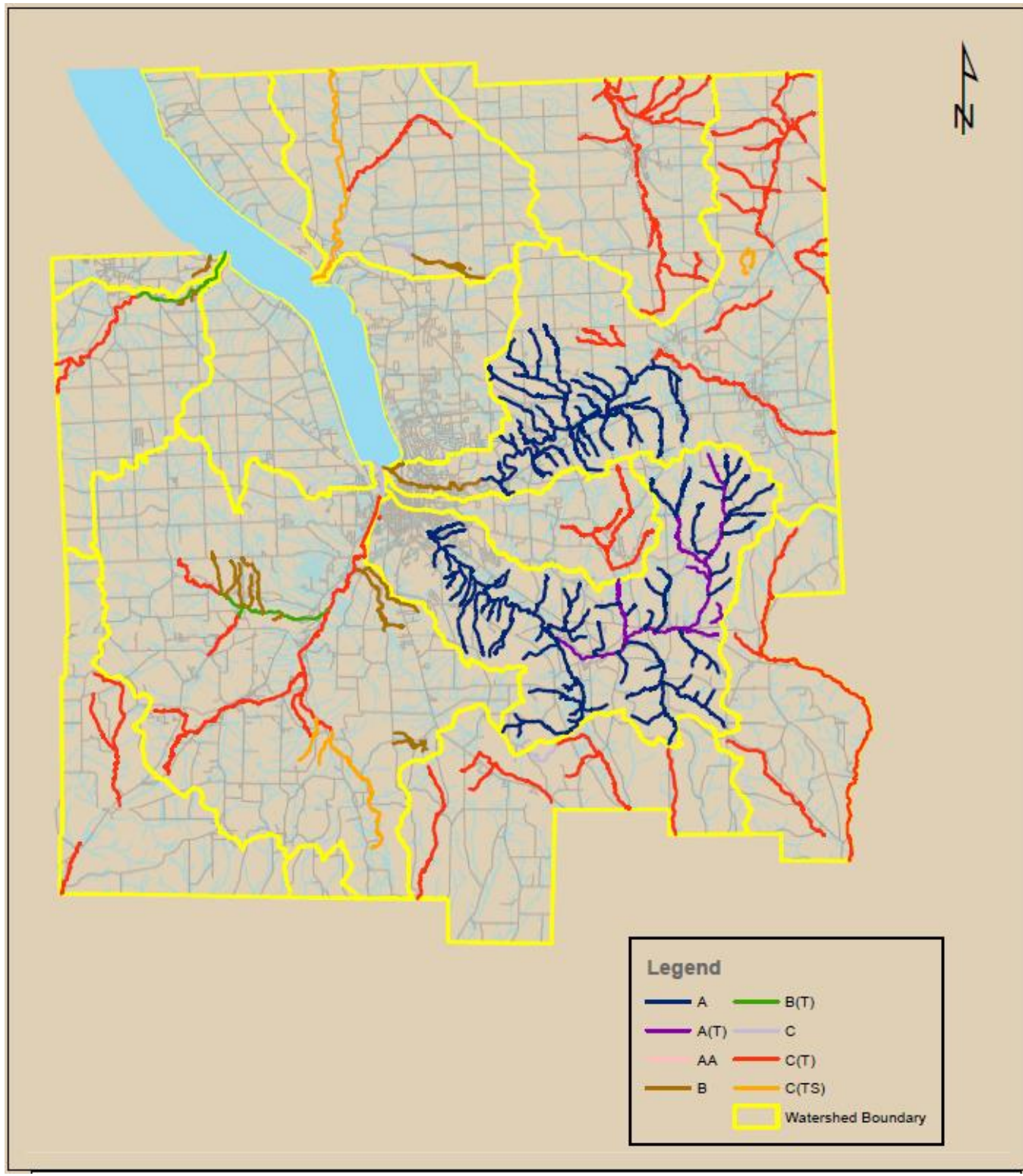


Figure 5. Federal, State & County Wetlands in Tompkins County Map

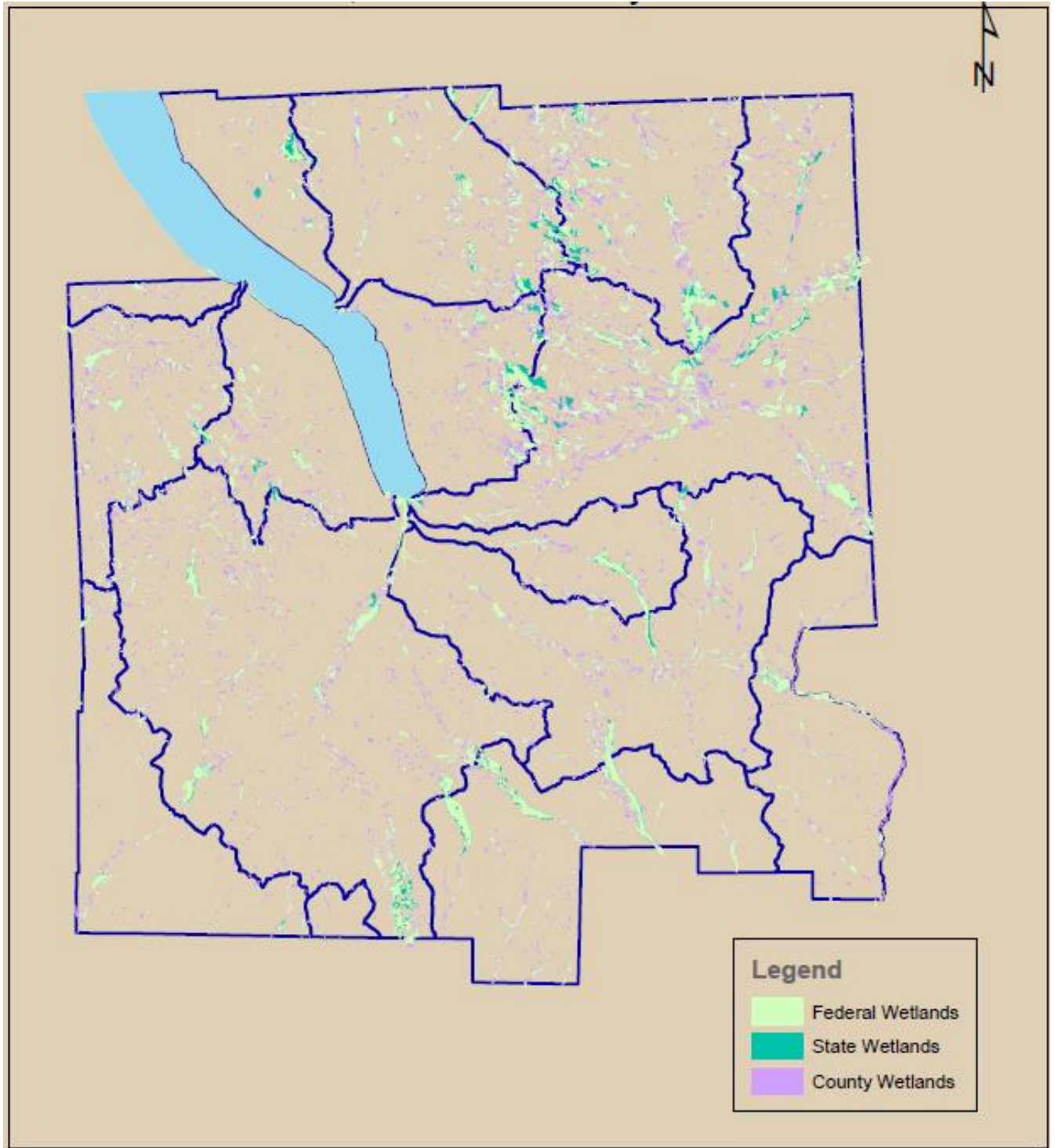


Figure 6. County Ag Conservation Easements & Ag Focus Areas

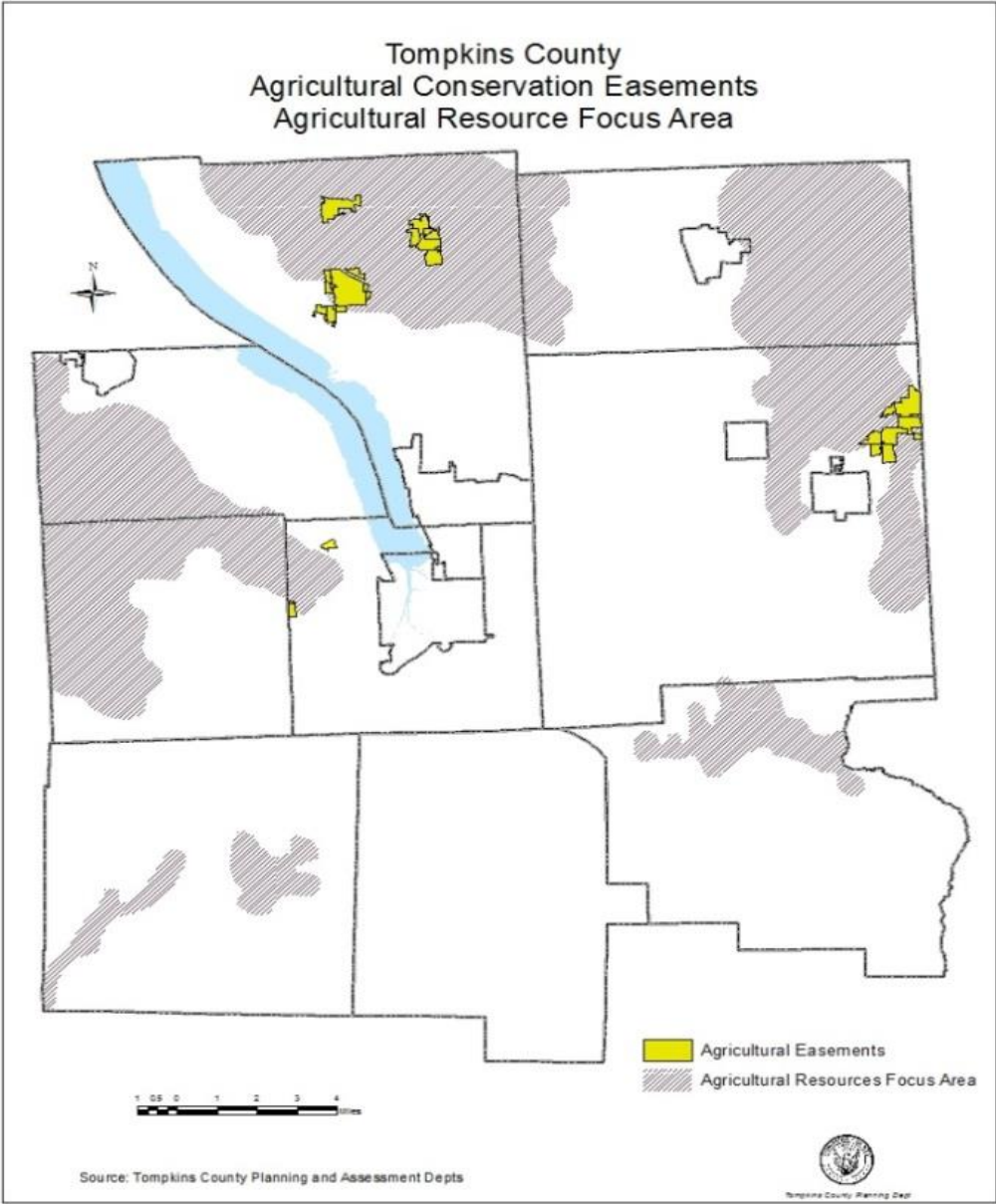


Figure 7. County Ag Soils

