

Delaware County SWCD

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NYS Agricultural Environmental Management (AEM)

Delaware County AEM Strategic Plan
2018



BACKGROUND INFORMATION

The Delaware County AEM Strategy was authored by the Delaware County Soil and Water Conservation District with direction and guidance from the Delaware County AEM working group, representing the following agencies:

- Delaware County Soil and Water Conservation District (DCSWCD)
- Cornell Cooperative Extension of Delaware County (CCEDC)
- Upper Susquehanna Coalition (USC)
- United States Department of Agriculture (USDA)
 - Natural Resources Conservation Service (NRCS)
 - Farm Service Agency (FSA)
- Watershed Agricultural Council (WAC)
- Delaware County Department of Watershed Affairs
- Delaware County Planning Department

The strategy was approved by the DCSWCD Board of Directors before being submitted to the New York State Department of Agriculture and Markets.

Mission Statement

The mission of the Delaware County AEM Program is to protect water quality by bringing the voluntary AEM process of farm assessment, planning, implementation and evaluation to farms in Delaware County, while promoting the economic sustainability of farms and the agricultural community within the county.

INTRODUCTION

AEM is a voluntary, incentive-based agricultural program that assists farmers with making science-based decisions that protect and enhance New York State's soil and water resources while meeting the business objectives of the farm.

This program, developed by the New York State Department of Agriculture and Markets in cooperation with local Soil and Water Conservation Districts and Cornell Cooperative Extension, meets EPA requirements for addressing environmental issues on farms in the State of New York.

Delaware County has been very successful incorporating water quality goals and current technology to improve our soil and water resources. Over the past 25 years, Delaware County has enhanced its programs to avoid the necessity of strict environmental regulations imposed by federal, state and municipal (New York City) authorities. As a result, Delaware County is well prepared to meet current and future water quality goals.

This Delaware County AEM strategy encompasses the goals and missions of the Soil and Water Conservation District's AEM Program, the Delaware County Action Plan and the Delaware County

Agricultural and Farmland Protection Plan. The strategy is tailored specifically to help plan and implement agricultural programs that achieve substantial soil and water quality benefits.

HISTORICAL PERSPECTIVE

DELAWARE COUNTY ACTION PLAN (DCAP)

In 1999, the Delaware County Department of Watershed Affairs was founded, becoming one of only a few county departments across the nation whose sole purpose is environmental issues. The Department of Watershed Affairs and partnering local, state, and federal agencies worked together in 2015 to revise the Delaware County Action Plan (DCAP), a county-wide comprehensive strategy to integrate, coordinate and address environmental and water quality initiatives in the county.

The DCAP's mission is *"to assist the county's municipalities, residents, farmers, businesses, and communities in meeting water quality parameters and objectives without loss of opportunities for economic vitality."* It is stated within the DCAP revision that *"DCAP is demonstrating that a locally led watershed program is cost-effective and comprehensive in protecting water quality"*.

DCAP INCORPORATES WATER QUALITY COORDINATING COMMITTEE CONCEPT

Prior to 1999, the Water Quality Coordinating Committee was the lead for water quality efforts and goals within the county. Due to its comprehensive nature, these responsibilities have been incorporated into and enhanced by the DCAP Core Group which meets monthly and includes all County Agencies with environmental and economic responsibilities.

AGRICULTURAL AND FARMLAND PROTECTION PLAN

In December 2015, the Delaware County Agricultural and Farmland Protection Board published the revised Delaware County Agricultural and Farmland Protection Plan. It covers the rich history of agriculture in our county, stating that "Farming is the foundation upon which Delaware County is built." The plan also discusses the challenges facing our farmers and the increasing trend of farms going out of business. To that end, the Farmland Protection Plan emphasized the importance of "providing a business climate in Delaware County that works *with*, not against, farm businesses." The executive overview asserts that farmers need to be made aware of economic incentive programs that will help reduce the cost of farming to keep our farms in business, as agriculture is a "critical component of Delaware County's economic well-being."

The mission of the Delaware County Agricultural and Farmland Protection Plan is *"to protect Delaware County farmland and natural resources, preserve its viable farmland, and enhance the stability and profitability of agriculture in this county so that current and future farm businesses and agribusinesses are able to thrive."*

AEM is consistent with this mission by allowing farmers to voluntarily participate in environmental programs that will help them maintain clean water while maintaining economic viability.

AEM WORKING GROUP

Our AEM working group includes staff and members of the previously mentioned agencies and organizations. The table below lists in more detail what role(s) each group will play in implementing the strategy.

AEM Working Group

Group/ Organization/ Agency	Responsibilities
DCSWCD	<ul style="list-style-type: none"> • Administer the AEM program through direct interaction with farmers • Secure funding to continue work in the Susquehanna, Delaware River Tailwaters and NYC Watersheds • Survey, design, and construction oversight of projects • Outreach and education support
CCEDC	<ul style="list-style-type: none"> • Lead agency for outreach and education • Secure funding to continue work in the Susquehanna, Upper Delaware River Tailwaters and NYC Watersheds • Farm business expertise • Lead the Precision Feed Management and Soil Health Programs
WAC	<ul style="list-style-type: none"> • Administer the AEM program through direct interaction with farmers in the New York City Watershed. • Outreach and education
USDA NRCS / FSA	<ul style="list-style-type: none"> • Assist the SWCD with implementing the AEM Strategy • Cost-sharing programs for implementation of projects on farms in the Susquehanna, NYC and Upper Delaware River Tailwaters Watersheds • Outreach and education • Provide technical and administrative services for Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP)
USC	<ul style="list-style-type: none"> • Help secure and administer grants and other funding for projects in the Susquehanna Watershed • Support the county with AEM data base development, including Best Management Practices (BMPs) documentation and tracking to ensure full credit for the implementation of projects that meet Chesapeake Bay Program Cap Allocations and Total Maximum Daily Loads (TMDLs) within the Susquehanna Watershed planning unit • Outreach and education
Department of Watershed Affairs	<ul style="list-style-type: none"> • Help secure, administer and coordinate grants and other funding for projects that meet the goals of this strategy • Keep the County Board of Supervisors up-to-date and aware of issues in each of the planning units, as needed • Integrate AEM efforts into DCAP
Delaware County Planning Department	<ul style="list-style-type: none"> • Administrative support to the County Ag and Farmland Protective Board • Performs NYS Certified Ag District Review • Coordinates Ag interests in Planning related reviews and actions.

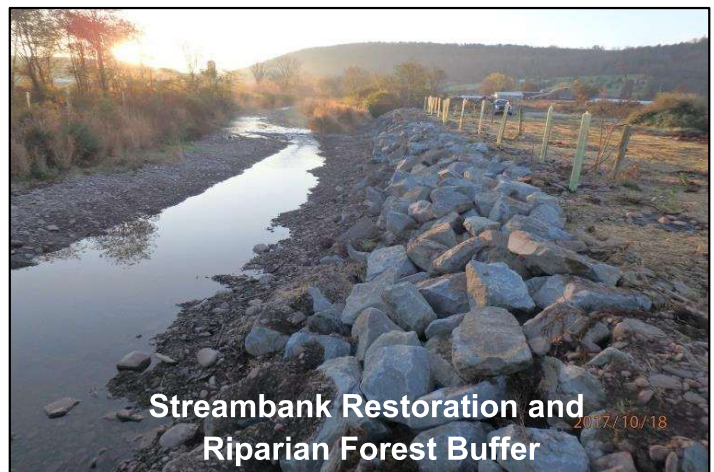
UTILIZING THE AEM TIERED APPROACH

AEM consists of a five-tier process: 1 - Inventory, 2 - Assessment, 3 - Planning, 4 - Implementation and 5 - Evaluation. This locally-led, watershed-based approach is the cornerstone of helping Delaware County farms assess and meet environmental objectives while maintaining agriculture as a vital part of Delaware County's economy.

Both CCEDC and the DCSWCD will partner with Cornell University, the Watershed Agricultural Council, USDA/NRCS, USDA/FSA and NYS Department of Agriculture and Markets in bringing both technical and financial assistance for the implementation of conservation practices on Delaware County farms. The DCSWCD utilizes the AEM Tiered approach to farm planning and to educate farmers on the importance of livestock exclusion and maintaining healthy riparian areas. The DCSWCD's ability to coordinate the USDA Conservation Reserve Programs (CRP and CREP), along with the NYS Agricultural Nonpoint Source Pollution Abatement and Control Program (ANPSPACP), has accelerated the implementation of riparian buffers throughout the Susquehanna and Upper Delaware River Tailwaters Watersheds.

The DCSWCD policy of controlled, limited livestock access through animal behavior modification, exclusionary fencing or riparian buffers has shaped the direction of the County's AEM Program. Examples of successfully funded AEM projects include riparian forest buffers on farms, comprehensive nutrient management plans and precision feed management on dairy farms.

Photo Highlights from Delaware County AEM Program Projects





Stream Crossing, Prescribed Grazing System and Riparian Forest Buffer

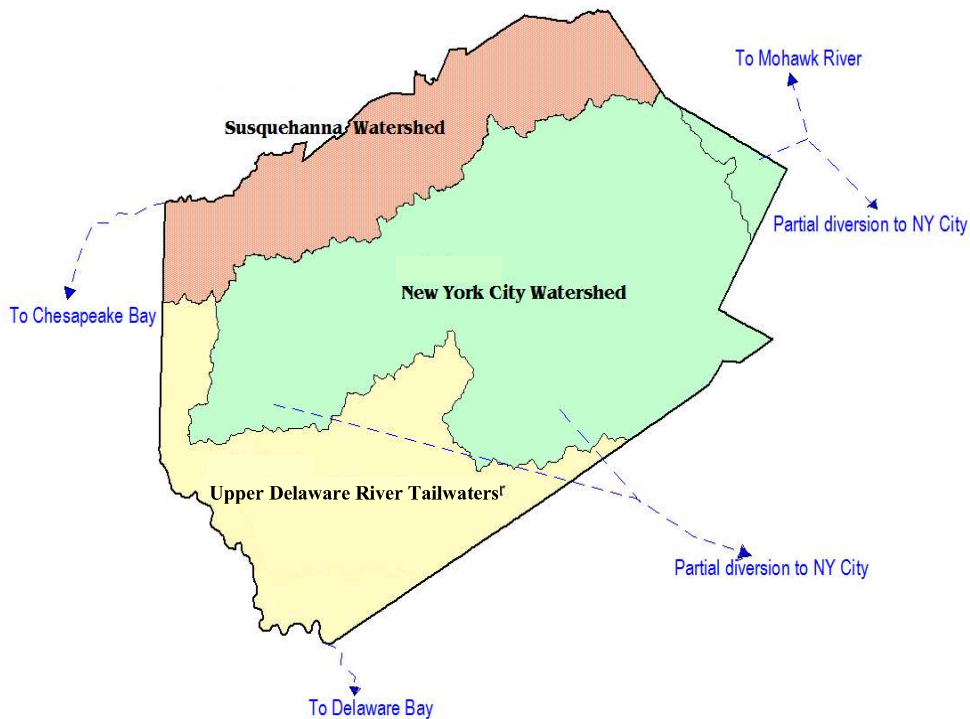


Alternative Water Supply

PRIORITY WATERSHED PLANNING UNITS

Delaware County's AEM Strategy identifies and prioritizes three major watersheds as the planning units in the County.

- Priority 1 – Susquehanna and New York City Watersheds**
- Priority 2 – Upper Delaware River Tailwaters**



AGRICULTURAL STATISTICS

<i>Watershed</i>	<i>Estimated Number of Active Farms</i>
<i>Susquehanna</i>	200
<i>New York City (Large and Small Farms)</i>	350
<i>Delaware River (Tailwaters)</i>	38

It is expected that this table will change and vary as more information becomes available while implementing this strategy. A farm is an area of land that is devoted primarily to agricultural purposes with the primary objective of producing food, fiber or fuel. Farms that raise/board horses are also defined as farms in New York State.

PRIORITY 1 WATERSHEDS

SUSQUEHANNA WATERSHED

In 1999, the Chesapeake Bay was placed on the USEPA's list of impaired water bodies under authority of the federal Clean Water Act. To improve water quality and protect the declining fisheries, President Obama signed an Executive Order in 2009 that recognized the Bay as a national treasure and empowered the EPA to oversee its cleanup in the watersheds of seven states, including New York.

The EPA has set specific pollution reduction milestones, or a Total Maximum Daily Load (TMDL), for each state that must be met by 2025. To keep states on track, the EPA required each state to meet 60% of its 2025 mandate by 2017 or face new regulatory consequences prior to 2025. These new regulations could include enhanced stormwater regulations, sewage treatment plant upgrades, and various agricultural restrictions.

To help insure that these milestones are met, the Upper Susquehanna Coalition and the NYS DEC have developed a Watershed Implementation Plan which outlines New York State's strategies to meet identified goals. As a result of this regulatory threat, the Delaware County AEM Working Group has prioritized the Susquehanna River Watershed, comprising 19.5% of the County, as one of the Priority 1 watersheds for AEM Program delivery in Delaware County. It is anticipated that the acceleration of conservation practices on farms in this watershed will likely assist Delaware County in meeting nutrient and sediment loading milestones set forth by EPA, thereby preventing the need for future regulations which could trigger undesirable economic burdens. In fact, the USEPA has determined that the New York State 2017 Goals were substantially met and additional regulations will not be forthcoming at this time.

NEW YORK CITY WATERSHED

The New York City Watershed comprises 54% of Delaware County and provides roughly 50% of the drinking water for nine million people in New York City. As a result of the Safe Drinking Water Act, New York City was ordered to either filter this surface water source or enact programs and regulations to maintain drinking water quality. The latter path was chosen and, as a result, DCSWCD and CCEDC petitioned the State of New York to broker an agreement between the City of New York and watershed counties. This resulted in New York City paying

100% of the cost of all agricultural conservation practices that enhance and protect water quality that are not required by state or federal regulations. From this agreement, the Watershed Agricultural Council (WAC) was formed to represent farmers in the Watershed. The WAC now administers the Watershed Agricultural Program (WAP) and contracts with both the DCSWCD and CCEDC to provide conservation planning and implementation assistance to farms in the Watershed. As a result of this significant technical and funding assistance becoming available to these farms, the New York City Watershed is also Priority 1 for Delaware County's AEM program.

It should be noted that although the vast majority of the New York City watershed in Delaware County is part of the Upper Delaware River system, roughly 2% of the county drains to the Schoharie reservoir in Schoharie County, which is also within the New York City watershed, and then northward into the Mohawk River. After several years of initial watershed analyses and evaluations, in which the DCSWCD played an active role, a Mohawk River Watershed Management Plan was adopted by the State in 2015.

PRIORITY 2 WATERSHED: UPPER DELAWARE RIVER TAILWATERS

UPPER DELAWARE RIVER TAILWATERS

The AEM Working Group has prioritized the watershed below the Cannonsville and Pepacton Reservoirs (26.5% of the County) as AEM Priority 2. Although farming is still prevalent in this watershed, there are fewer farms in operation than in either the Susquehanna or New York City Watersheds. At present there is no enhanced regulatory threat. However, the Tailwaters maintains a world-class, self-sustaining Brown and Rainbow Trout fishery and is home to a scenic and recreational river corridor, thereby earning the Priority 2 watershed ranking.

NATURAL RESOURCE CONCERNS

WATER QUALITY

Water quality is generally good to excellent within Delaware County; thus water quality efforts generally focus on maintaining high quality waters. Delaware County's drinking water supplies, high quality trout fisheries, and the headwaters of the Chesapeake Bay drive our water quality programs. Although farming has decreased in recent years, it still has a significant influence on the amount of nutrients, sediment and pathogens entering the water. As a result, it is in the farming community's best interest to address water quality issues to a high degree or face the potential of regulations.

Some of the primary threats to water quality in Delaware County include nutrients, sediments and pathogens leaving farm fields and entering streams and rivers during runoff events. Nutrient transport can lead to algae production in waterbodies and sediment delivery, as a result of erosion, has deleterious effects on trout and the microinvertebrates they depend on. Pathogen transport can lead to Giardia and Cryptosporidium entering unfiltered drinking water supplies, resulting in intestinal disorders in humans.

Another threat to water quality is the accumulation of nutrients on the farm from imported, purchased feeds. Delaware County's Precision Feed Management (PFM) Program assists farmers in balancing animal diets and improving the quality and quantity of homegrown forages and grains. This results in precise diet balancing which prevents overfeeding of nutrients while decreasing nutrients from imported, purchased feeds.

These threats to water quality were instrumental in the DCSWCD's decision to develop its Livestock Exclusion Policy to identify Riparian Forest Buffers as a priority Best Management Practice.

SOIL RESOURCES

Only about 7% of the soils in the county are considered "prime farmland." Much of our ag land is on steep slopes, has shallow depth to bedrock and is very stony. Fragipan subsoils are very common, which reduces the effective rooting depth of crops and limits subsurface drainage, which subtracts from an already short growing season. As a result, crop yields are typically lower than in other areas of New York State and challenge our farmers' economic competitiveness.

As in most of New York State, soil health and soil loss in Delaware County are prime natural resource concerns. Steep slopes, fragipans and shorter growing seasons are a challenge for Delaware County farmers, making it more difficult to raise crops and implement crop rotation, cover crops and nutrient management plans that meet soil and water conservation standards. Accelerated stream bank erosion also contributes to soil loss, creates surface water turbidity, contributes to eutrophication and degrades fisheries habitat.

According to current concepts, a healthy soil can be used productively without adversely affecting its future productivity, the ecosystem or the environment. While most Delaware County farmers are well aware of the inherent soil properties (such as soil texture) as presented in soil surveys, the role and importance of dynamic soil properties (such as compaction or biological functioning) are just beginning to be understood. Considering the soil resource restrictions detailed above, it is important that soil health management becomes a routine strategy on Delaware County farms; CCEDC and the DCSWCD will continue to lead the soil health effort.

PLANNING UNIT STRATEGIES

As mentioned previously, there are three major watersheds in the county: the Susquehanna River, the New York City Watershed and the Upper Delaware River Tailwaters.

Within all three watersheds, the strategic goal is to enhance water quality, soil health, stream corridor management and farm viability. Performing stream walks and assessing streams and streambanks during the AEM planning process, the DCSWCD is able to coordinate available cost share programs to implement controlled limited livestock access to surface waters through animal behavior management, exclusionary fencing, and establishment of riparian buffers. Significant work has already been done with this strategy using CRP/CREP, USC, and ANPSACP grants to install riparian forest buffers, rotational grazing and streambank stabilization when needed to facilitate CREP.

PRIORITY 1 WATERSHEDS

SUSQUEHANNA WATERSHED

In the Susquehanna Watershed, the continuation of the AEM process will include completing Tier 1 and Tier 2 assessments on new farms and Tier 5a updates on farms with assessments over three years old.

Using the information gathered from the Tiers 1, 2 and 5a as well as Tiers 3 and 3a already completed, farms will be prioritized. Focus will be on priority conservation practices such as riparian buffers, rotational grazing and Precision Feed Management. Farms that have been

identified in Tier 2 as having special nutrient resource concerns will be prioritized for CNMP development. As funding opportunities become available through EQIP, CRP/CREP, USC and ANPSACP, Tier 4 implementation will be completed.

An additional goal in this watershed is to develop a method to track our progress with planning and conservation practice implementation. The DCSWCD is building a database that will track BMP implementation and planning and their funding sources.

NEW YORK CITY WATERSHED

In the New York City Watershed, the Watershed Agricultural Program (WAP) is funded by the NYC Department of Environmental Protection (DEP) and administered by the Watershed Agricultural Council (WAC). The WAP utilizes the AEM process on smaller farms grossing under \$10,000 in annual income. Large Farms are planned utilizing the Whole Farm Planning Process. The WAP is working with the DCSWCD to integrate the AEM process on Large Farms participating in AEM related programs. Through the leadership of CCEDC and the WAP, the Precision Feed Management program will continue to be implemented on dairy farms.

The WAC has developed a database that will track farm planning and implementation.

PRIORITY 2 WATERSHED

UPPER DELAWARE RIVER TAILWATERS

The goals in this planning unit are to increase the awareness and participation of the AEM program. Farms that have been identified in Tier II as having special nutrient resource concerns will be prioritized for CNMP development. As more farmers successfully complete Tier 4 implementation, awareness will increase. Using the Tier 1 and 2 assessments, farmers interested and willing to participate will receive Tier 3 plans and begin Tier 4 implementation as funding opportunities become available through EQIP, CRP/CREP, and ANPSPACP.

COMMUNICATIONS STRATEGY

One of the most crucial components for success in achieving the goals of this strategy is effective communication with the farmers. To that end, there are several efforts already underway to reach and educate farmers and landowners about AEM. The DCSWCD has developed a website and publishes an annual newsletter covering program developments and progress being made throughout the county.

A second goal is to continue outreach and education on the importance of healthy stream and floodplain systems; riparian buffers; rotational grazing; nutrient, precision feed and forage management; and soil health. The benefits of these programs can directly affect economic sustainability, while nutrient and sediment reductions contribute to improved water quality.

PRIORITY 1 WATERSHEDS

SUSQUEHANNA WATERSHED

Monthly meetings of the Susquehanna AEM Working Group serve to review all progress, problems and opportunities in an inter-agency setting. Targeted mailings, articles, and educational meetings inform farmers of the watershed's status and any regulatory changes from

EPA concerning the Chesapeake Bay TMDL issue. A review of the Delaware County AEM strategy, the AEM Tier process, and presentations from partnering agencies concerning available funding opportunities typically are covered. AEM farmer awards presented to participants who have committed to and implemented projects through the AEM process always encourage new interest and involvement in the program.

NEW YORK CITY WATERSHED

The WAC Communications Director coordinates the efforts of the program to educate and reach farmers in this watershed through a website, brochures, as well as a newsletter. In addition, farm tours demonstrate new technologies and techniques of farming, cropping, herd health, etc. that may increase profitability and protect water quality.

PRIORITY 2 WATERSHED

UPPER DELAWARE RIVER TAILWATERS

The communication strategy will continue to develop as funding opportunities become available.

The DCSWCD is also a technical advisor to the Upper Delaware River Tailwaters Coalition (UDRTC). This coalition of eight Towns, two Villages, Broome County and five Not-for-Profit Groups including the Friends of the Upper Delaware River is dedicated to improving the local cold water fishery, recreational opportunities, flood mitigation and resource protection utilizing science-based initiatives.

The UDRTC has recently completed a Watershed Management Plan which will guide implementation of projects on agricultural and non-agricultural lands.

EVALUATION STRATEGY

This AEM Strategy will be evaluated every three years by the AEM Working Group. The individual goals and programs available within each planning unit will be reviewed.

AEM BASE FUNDING STRATEGY

Delaware County's Annual AEM Funding Strategy determines how the DCSWCD uses its funding appropriation to plan, implement, and evaluate farm progress and to conduct AEM education and outreach programs for farmers and the local community. The DCSWCD continues to keep two AEM Certified Planners on staff. AEM Funding has been and will continue to be used to leverage funding from numerous state, local, federal and private funding sources.

STRATEGY APPROVALS

- This strategy was reviewed and revised by the AEM Working Group before being submitted to the SWCD Board of Directors
- The SWCD Board of Directors approved the Strategy on July 18, 2018.

LIST OF ACRONYMS AND ABBREVIATIONS

AEM	Agricultural Environmental Management
ANPSPACP	Agricultural Nonpoint Source Pollution Abatement and Control Program
BMP	(Conservation) Best Management Practice
CCEDC	Cornell Cooperative Extension of Delaware County
CNMP	Comprehensive Nutrient Management Plan
CRP/CREP	Conservation Reserve Program/Conservation Reserve Enhanced Program
DCAP	Delaware County Action Plan
DCSWCD	Delaware County Soil and Water Conservation District
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FSA	Farm Service Agency
NRCS	Natural Resources Conservation Service
NYC DEP	New York City Department of Environmental Protection
NYS DEC	New York State Department of Environmental Conservation
TMDL	Total Maximum Daily Load
USC	Upper Susquehanna Coalition
USDA	United States Department of Agriculture
WAC	Watershed Agricultural Council
WAP	Watershed Agricultural Program