

# Cayuga County Soil & Water Conservation District Agricultural Environmental Management

## *Strategic Plan*

**2021-2025**



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**Cayuga County Soil & Water Conservation District  
AEM Strategic Plan  
2021-2025**



**Background Information:**

**Mission Statement:**

It is the mission of the Cayuga County Agricultural Environmental Management Program to assist the County’s agricultural producers with improving environmental stewardship and the economic viability of their farm, through a voluntary method of assessment, planning, implementation, and evaluation, along with educational and outreach forums to address natural resource concerns involving the improvement of water quality, reduction of soil erosion, creation of wildlife habitat, and the long term sustainability of existing recreational activities while promoting a diverse economy of industry, commerce, tourism and agriculture.

**Vision Statement:**

To have 75-80% of all farms in the county participate in Agricultural Environmental Management Program and to reduce levels of agricultural nonpoint source pollutions or prevent pollution that affect water quality, air quality and other natural resources.

**Cayuga County Agriculture and AEM Priorities:**

To have a strong, progressive and sustainable farming sector in Cayuga County as a result of participating in the Agricultural Environmental Management Program.

*Progressive* - modern, innovative and adaptive to change.

*Sustainable* – economically, environmentally, and socially.

*Farm sector* – farming businesses, agri-business and rural communities.

**Groups Involved:**

Cayuga County SWCD	American Farmland Trust
Tompkins, Seneca & Onondaga SWCD	Finger Lakes Land Trust
USDA – NRCS & FSA	Water Quality Management Agency
Cornell Cooperative Extension	Cayuga Lake Intermunicipal Organization
Cornell PRO-Dairy/ CALS	Bay Betterment Association
Farm Bureau	Partners for Healthy Watershed
Cayuga County Departments/Agencies	Cayuga County Legislature
Municipal Highway Departments	Lake Como & Duck Lake Associations
Owasco Watershed Lake Association	Owasco Lake Watershed Mngt Council



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**General Information:**

The Agricultural Environmental Management (AEM) Program is a New York State Department of Agriculture and Markets and NYS Soil and Water Conservation Committee program that is administered by the Conservation District in Cayuga County. AEM is a cooperative interagency program that provides one-on-one assistance to farmers to identify environmental risks on their farms. In addition, the program offers solution planning and designs for recommended practices that can address existing and future resource concerns. AEM is voluntary and an incentive-based approach that focuses on the conservation of Cayuga County's natural resources and documents farmers continued environmental stewardship.

As the County's AEM program has progressed, it has expanded to include local governments, watershed organizations, cooperation with USDA staff/programs, and lake associations on a broader scale to address watershed management objectives. Through this continued cooperation, the County's watersheds and the preservation of natural resources will remain a top priority.

Cayuga County is located within the eastern Finger Lakes region of Central New York. Based on the 2017 Census of Agriculture 'County Profile,' there were a total of 842 farms operating approximately 225,204 acres of the 526,092 (43%) acres in Cayuga County.

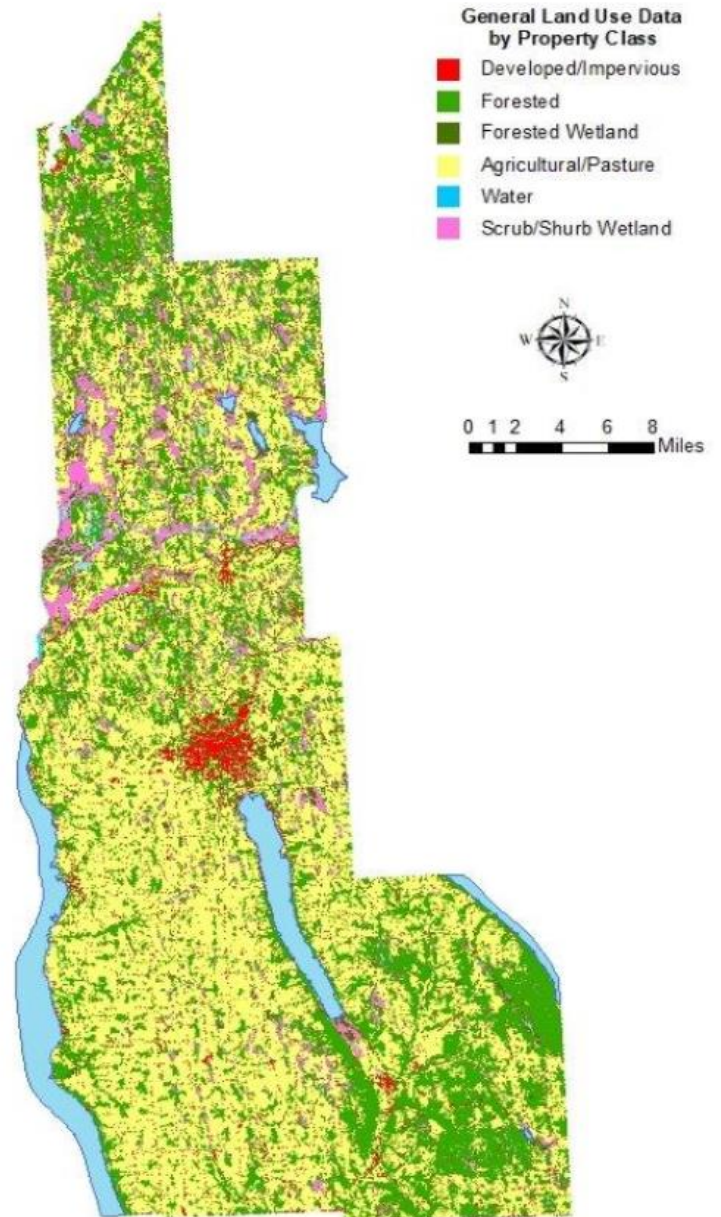


Figure 1: Map of Cayuga County displaying color-coded land use data. All data from NOAA Landcover dataset: <https://coast.noaa.gov/dataviewer/#/>

**Status of Agriculture in Cayuga County:**

**Acres of Farmland:**

Of the total 225,204 acres that are farmed in Cayuga County: 177,911 acres (79%) are harvested cropland, 9,008 acres (4%) are utilized as pasture, 27,024 acres (12%) are woodlands, and 11,260 acres (5%) of other that include farmsteads, homes, buildings livestock facilities, ponds, roads, fallow land and other croplands. The average size of a farm is 267 acres.



**Agricultural Trend (2012-2017):**

The total farmland acreage decreased from 238,444 in 2012 to 225,204 acres in 2017; 13,240 acres or approximately 6% decrease.

**Agricultural Landuse 2012-2017**

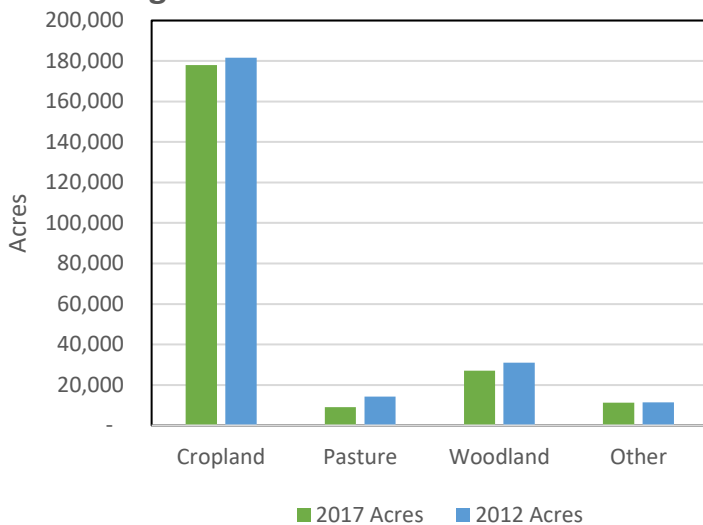


Figure 2 (above left): 2012-2017 agricultural land use comparison graph. Breakdown of land use type and number of corresponding acres from 2012 to 2017. Based on 2017 census data.

**2017 Agricultural Landuse (%)**

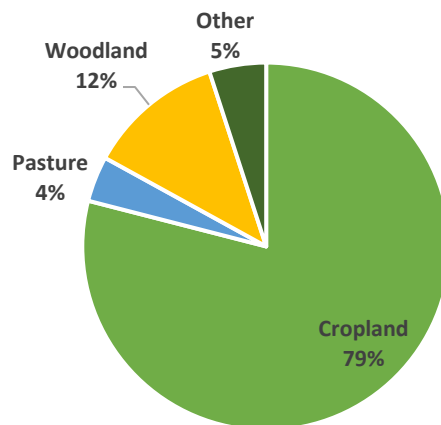


Figure 3 (above right): Types of farmland by percentage. Based on the 2017 census data for Cayuga County.

*Note- All data and figures are based on the 2012 & 2017 Census of Agriculture for Cayuga County, USDA & SWCD data.*



**Farm & Farm Type Inventory:**

Of the total 842 farms in Cayuga County: 384 (46%) are crop (grains, vegetables, fruits, orchards and vineyards) farms, 118 (14%) are dairy farms, 189 (22%) are beef operations, 91 (11%) are poultry/egg farms, 34 (4%) are hog or pig operations and 26 (3%) are sheep or goat farms. There are 23 CAFOs in Cayuga County.

**Best Management Practices:**

20% of the 842 farms are utilizing a form of reduced tillage management on their farm. Additionally, approximately 22% are utilizing reduce tillage management practices and 21 % of farms are installing cover crops.

**Agricultural Trend (2012-2017):**

From 2012 to 2017 the total number of farms decreased from 891 to 842; 49 farms or approximately a 5% decrease. Dairy had the highest loss of 29 farms; however, beef increased by 33. Poultry saw the second greatest loss of 22 farms.

*Note- All data and figures are based on the 2012 & 2017 Census of Agriculture for Cayuga County, USDA & SWCD data.*

**Farm Types & Estimated Numbers  
2012-2017**

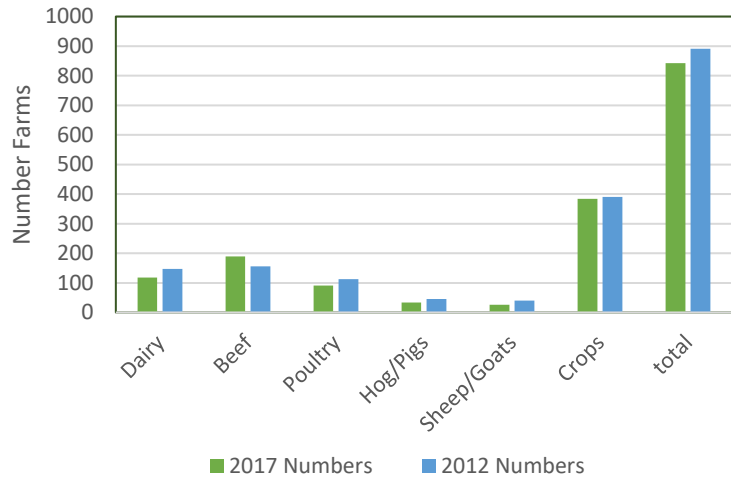


Figure 4: 2012-2017 number of farms per farm type and total farms. Based on 2017 census data.

**2017 Agricultural Farm Types (%)**

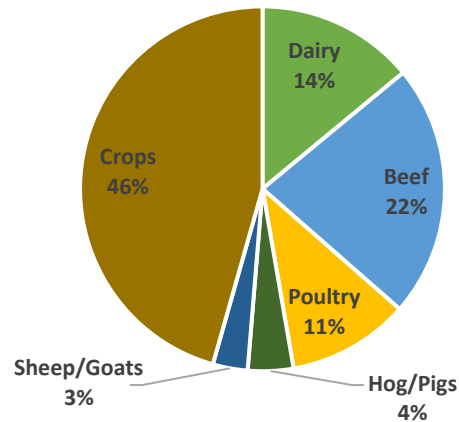


Figure 5: 2012-2017 number of farms per farm type and total farms. Based on 2017 census data.



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**Agricultural Products & Market Values:**

The total market value of agricultural products sold was \$287,853,000, averaging \$341,868 per farm. Net income after farm expenses averaged \$87,868 per farm. Leading products sold include: milk (64%), grains, oilseed & beans (13%) and cattle and calves (11%).

**Agricultural Trends (2012 – 2017):**

When comparing 2012 to 2017 the market value for products sold decreased from \$293,474,000 to \$287,853,000; \$5,621,000 or approximately a 2% decrease.

From 2012 to 2017 the market value of products sold per farm increased 4%; the net farm income increased 8%. The overall farm-related income increased 47% across the county; however, the farm production expenses increased 4% as well.

**% Agricultural Products Sold (2017)**

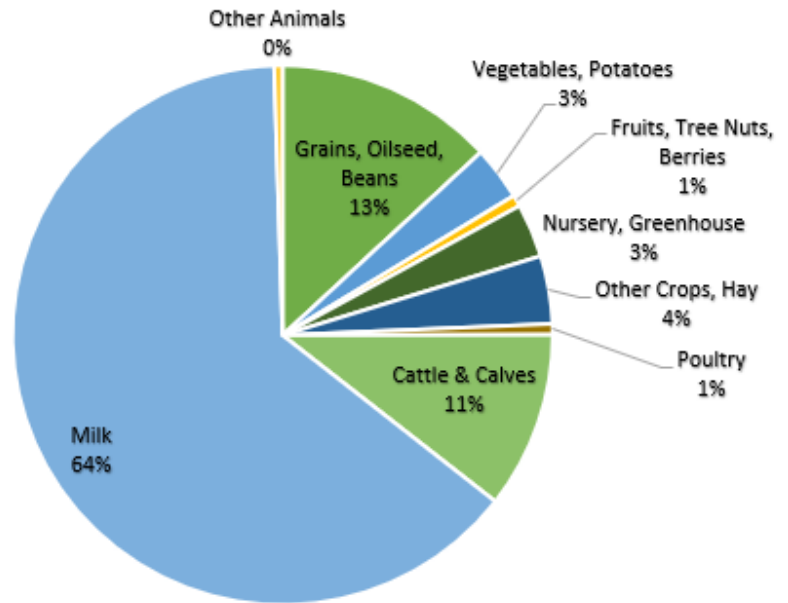


Figure 6: Market values (%) of ag products sold based on 2017 census data.



*Note- All data and figures are based on the 2012 & 2017 Census of Agriculture for Cayuga County, USDA & SWCD data.*



## Cayuga County Soil & Water Conservation District AEM Strategic Plan 2021-2025



### General Resource Information:

- Cayuga County has more waterfront land than any other county within New York State that is not immediately adjacent to the Atlantic Ocean.
- There are approximately 146,363 (28%) acres of highly erodible cropland (HEL).
- Urban sprawl and continued development pressure resulted in a Cayuga County Agriculture and Farmland Protection Plan being adopted by the County Legislature on August 26, 2014.
- The City of Auburn and Town of Owasco approved the final draft of the Owasco Watershed Rules and Regulations on October 29, 2020. The final draft has been sent to the State Department of Health and NYS Department of Agriculture & Markets for approval before adoption.
- Continued development of a 9 Element Plan for the Owasco Lake Watershed.
- Continued development of a TMDL/9 Element plan for select watersheds of Cayuga Lake.
- Growing interest in cultural best management practices.
- Increased participation in federal, State, and local programs.
- Increase in farm participation in Cornell & SWCD trainings.
- Increase in Plain Sect farm populations in several watersheds.
- Increased collaboration between all partners to work together to preserve resource concerns.



### Natural Resource Concerns:



- Loss of farmland to urban development
- Water quality contamination: surface and groundwater
- Erosion/Runoff from croplands and farmsteads
- High nutrient loads from legacy nutrient levels in sediment
- Loss of natural buffers and wildlife corridors
- Karst topography



## Agricultural Environmental Management (AEM):

### Outreach & Education:

The foundation of the District's AEM Program revolves around providing education and outreach to not only farmers but our partner agencies, watershed groups, and the public. By educating our partners and the public we can effectively and efficiently work together to ensure we are providing a consistent message to our stakeholders.

The District utilizes fact sheets, brochures, social media and in person meetings (farm visits, presentations, and workshops) to facilitate program outreach. Staff are trained and regularly meet to promote consistency and prevent duplicate efforts. The District's website also hosts program information including the general AEM process and contact information. Staff conduct presentations both in person and virtually across the County.

### Facilitation:

District staff utilize every opportunity to communicate with stakeholders; through these conversations, general data is gathered and/or updated and stored in a database specifically designed for the program. The participation in the AEM process is just the tip of the iceberg; these critical steps can lead to solution-based planning and in some cases participation in grant funding programs. The District relies on these experiences and conversations to adopt to an ever-changing environment. Since 2015, AEM participation from 2015-2020 has increased by 163% (see appendix 1 & 2).

As new communities develop and farms transition to younger generations across the County's watersheds, alternative AEM strategies may be required which may result in adjustments to the typical AEM framework. The District is determined to adaptively manage the program to ensure all farm types and famers are provided with an equal opportunity to participate in the AEM Program.

### Evaluation:

The local AEM Advisory Committee consists of representatives from the SWCD, NRCS, CCE, planners and agricultural producers. The committee has been re-energized to ensure the team's mission statement, vision statement, and priorities are being met or are actively discussed and adjusted as necessary to ensure success.





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**Team Evaluation: Capacities & Capabilities**

**Adaptive Management:**

By adaptively managing the AEM Program, the District is able to continuously align the program based on current watershed, farmer and societal needs. Through past experiences, annual audits and tailored actions plans, district staff can adapt to meet the needs of an ever-evolving industry.

**AEM Team (Local) Capacity Assessment**

Expertise	SWCD	NRCS	Private Sector	FSA	CCE	Farm Bureau	Watershed Groups	County Health	County Planning	NYSDEC
CCA	X		X		X					
Certified Planner	X		X							
Engineering Job Approval	X*		X							
Water Monitoring	X	X		X	X		X*			X
Outreach	X	X		X	X	X	X	X	X	X
Education	X	X		X	X	X		X	X	X
Program Evaluation	X	X		X	X					
Program Administration	X	X		X	X					
Grant Writing	X	X		X	X				X	
Local Funding	X						X			

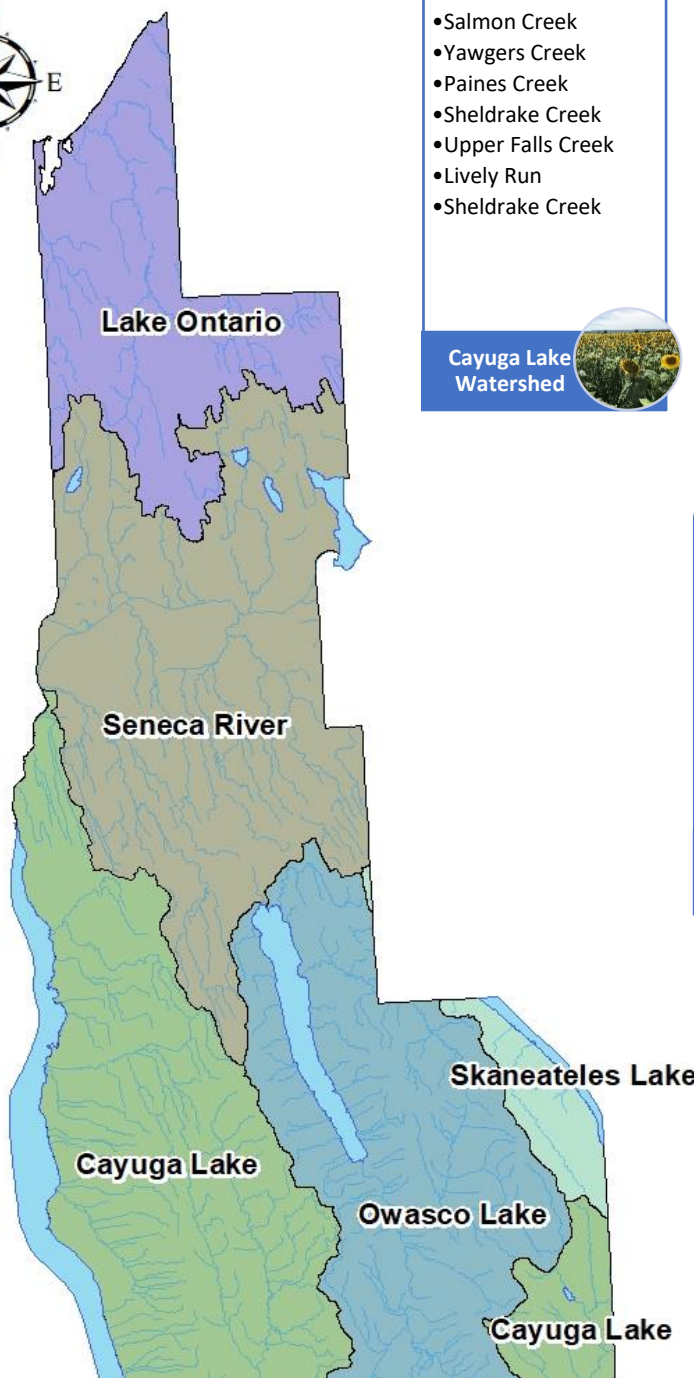
*\*Limited Capacity*

**Training Needs:**

The District currently has three Certified Crop Advisors (CCA) and one Comprehensive Nutrient Management (CNMP) Planner; staff continue to work towards (re)certifications. District staff continuously utilize trainings in courses in BMPs, engineering designs, agricultural practices, surveying, stormwater, and program and data management.


**Cayuga County: Inventory & Prioritization**

**Watershed Breakdown:**




- Big Salmon Creek
- Demont Creek
- Red Creek
- Salmon Creek
- Yawgers Creek
- Paines Creek
- Sheldrake Creek
- Upper Falls Creek
- Lively Run
- Sheldrake Creek

**Cayuga Lake Watershed**



- Owasco Lake
- Dutch Hollow Brook
- Hemlock Creek
- Mill Creek
- Headwaters Owasco Inlet
- Veness Brook
- Sucker Brook

**Owasco Lake Watershed**



- Skaneateles Creek
- Grout Brook
- Outlet Skaneateles Lake

**Skaneateles Lake Watershed**



- Muskrat Creek
- Cross Lake
- Howland Island
- Stark Pond
- Outlet Owasco Lake
- Cold Springs Brook
- Putnam Brook
- Kipp Island
- Crane Brook

**Seneca River Watersheds**



- Headwaters Sterling Creek
- Sterling Valley Creek
- Red Creek
- Amherst Island
- Sterling Creek
- Ninemile Creek
- Eightmile Creek
- Ox Creek
- Blind Sodus Creek

**Lake Ontario Watershed**

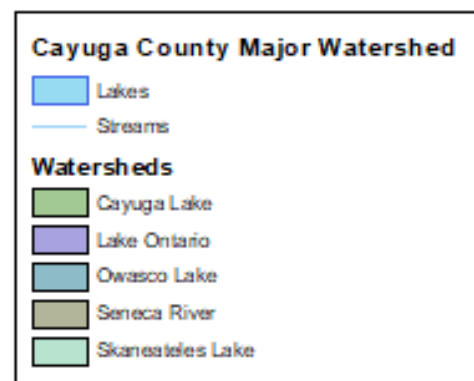



Figure 7: Map of Cayuga County's major watersheds.

**Watershed Prioritization:**



Figure 8: Map of Cayuga County's priority AEM watersheds.

**1. Finger Lake Watersheds:**

Cayuga Lake, Owasco Lake and Skaneateles Lake make up Cayuga's Finger Lake Watersheds. All three waterbodies are utilized for drinking water either as a primary or secondary source collectively serving over 100,000 Central New York residents. Agricultural and stormwater erosion and runoff are known sources of pollution in addition to residential septic systems and municipal sources. Known pollutants include nutrients and silt/sediment.

**2. Northern Watersheds:**

Lake Ontario and the Seneca River watersheds make up Cayuga's northern watersheds. Agriculture is a suspected source of nutrients in addition to silt/sediment loading in surface waters and residential septic systems contributing to pathogen and nutrient loading. Lake Ontario is subject to severe shoreline erosion and increased nutrient and sediment loading concerns.

**3. Groundwater:**

Thousands of County residents rely solely on groundwater wells as a water supply. Protection of these resources is a high priority.



**Finger Lake Watersheds: Cayuga, Owasco & Skaneateles Lake**

The Finger Lake Watersheds encompass approximately 49% of the County. These watersheds host the majority of the CAFO farms in the County. Agriculture is the primary land use; most of the land is operated by livestock/dairy farms followed by crop farms. All three waterbodies are utilized as a drinking water source for residents making the protection of these resources a top priority. All three waterbodies have active Harmful Algal Bloom (HAB) Plans and several of the waterbodies are referenced in the 2016 NYSDEC 303(d) List of Impaired/TMDL Waters and/or included in the NYSDEC Priority Waterbodies List (PWL).

**Pollutant(s) and Source(s):**

Known and suspected type of pollutant(s) include algal plant growth, nutrients, invasive species, pathogens and sediment and turbidity. Known source(s) of pollutant(s) include agriculture while suspected source(s) are municipal discharges, urban/storm runoff, onsite septic systems, soil, and streambank erosion.

**Future Condition(s):**

- Promote agriculture as a preferred use of land while meeting the needs for community development needs, and
- Promote educational awareness to stakeholders, partners, and the public.

**Objective 1: AEM Program**

- A. Process and program improvement (ex. data management)
- B. Target new volunteer farms (Tier 1 & 2)
- C. Provide education and outreach & promote stewardship
- D. Prioritize farms based on resource concerns identified

**Timeline**

- Continuous
- Continuous
- Continuous
- Continuous

**Objective 2: Planning, Implementation & Longevity**

- A. Develop plans (Tier 3A, B & C)
- B. Design and prioritize projects
- C. Address resource concerns through available grants
- D. Follow-up on past projects and participants (Tier 5A,B)

- As Necessary
- As Necessary
- As Eligible
- Continuous



**Northern Watersheds: Lake Ontario and Seneca River**

The Northern Watersheds encompass approximately 51% of the County. These watersheds host a variety of farm types including several small dairy operations and crop farms. Agriculture is the primary land use; most of the land is operated by livestock/dairy farms followed by crop farms. The waterbodies located in the northern watersheds are utilized for public bathing, recreational use, and aesthetics. Several tributaries are important for aquatic wildlife spawning and habitat. Little Sodus Bay is listed as an impaired waterbody per NYSDEC 2016 list. Several additional waterbodies are referenced as having impaired segments in the NYSDEC Priority Waterbodies List (PWL).

**Pollutant(s) and Source(s):**

Known and suspected type of pollutant(s) include algal plant growth, nutrients, invasive species, pathogens and sediment and turbidity. Known source(s) of pollutant(s) include agriculture while suspected source(s) are municipal discharges, urban/storm runoff, onsite septic systems, soil, and streambank erosion.

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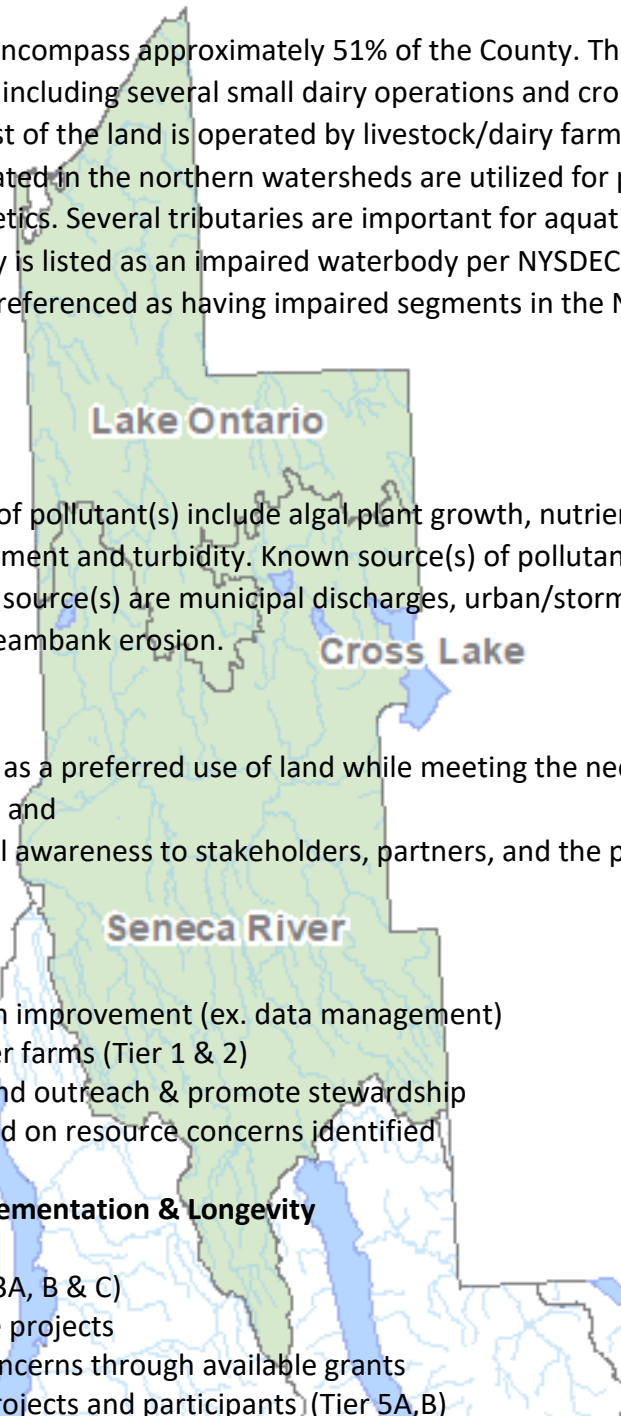
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- Continuous
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## Cayuga County Soil & Water Conservation District AEM Strategic Plan 2021-2025



### Opportunities

#### Funding Sources:

Several cost-share opportunities are currently available to eligible producers. Funding is not guaranteed; however, the District has been successful at securing funding sources for several projects over the years (see appendices 1 & 3). Producers are encouraged to communicate and work directly with the District to ensure a thorough application is submitted in the appropriate timeline.

The following cost-share programs (not inclusive) were available in the last 5 years:

- Agricultural Non-point Source Abatement and Control Program (AgNPS),
- Climate Resilient Farming (CRF),
- Conservation Innovation Grants (CIG),
- Environmental Quality Incentives Program (EQIP)\*,
- Conservation Stewardship Program (CSP)\*,
- Conservation Reserve Program (CRP)\*,
- Eastern Finger Lakes Cover Crops (EFLCC)\*\*,
- Great Lakes Basin Program for Soil Erosion and Sediment\*,
- Great Lakes River Basin Initiative\*\*,
- Agricultural Environmental Management Program (Tier 4 Implementation), and
- CAFO Waste Storage and Transfer System Program (CAFO WSTSP)

The District relies heavily on the following funding sources to administer the AEM Program:

- AEM Technical Assistance Funding,
- AEM Implementation Funding, and
- Local funding

The District continuously explores new funding opportunity for producers and for the District. Currently, the District is operating under capacity. To maximize AEM participation, meet planning needs, and increase BMP implementation, the District would need to hire additional qualified staff.



\* Federal Programs.

\*\* Program available to producers within select watersheds.



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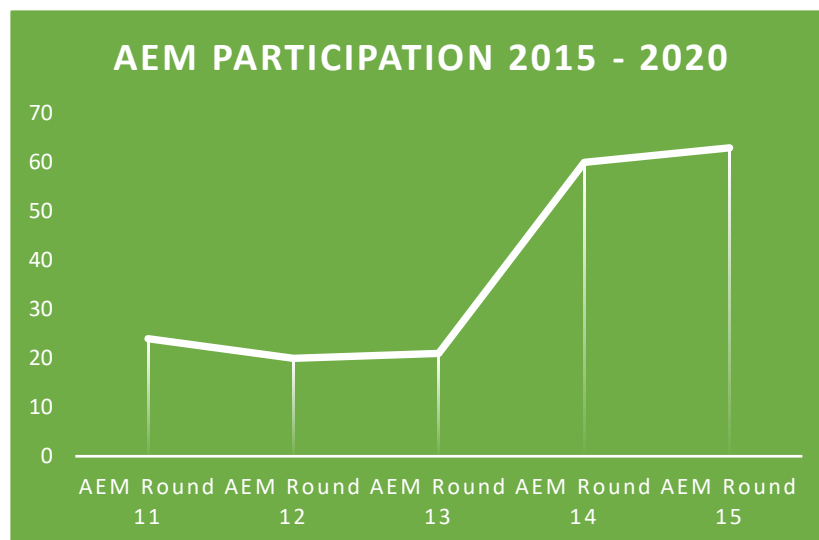


**Appendix**

Appendix 1: AEM Program and project list 2015 to 2020. Breakdown of number of farms and best management practices implemented per grant or program round. AEM Rounds 11-15 are technical assistance and planning only, no BMP were implemented through the program.

AEM Program List 2015-2020			
Program/Grant	Priority Watershed(s)	# Farms Involved	# BMPs
AEM Round 11	Finger Lake Watersheds & Northern Watersheds	24	-
AEM Round 12	Finger Lake Watersheds & Northern Watersheds	20	-
AEM Round 13	Finger Lake Watersheds & Northern Watersheds	21	-
AEM Round 14	Finger Lake Watersheds & Northern Watersheds	60	-
AEM Round 15	Finger Lake Watersheds & Northern Watersheds	63	-
AEM Round 16	<b>Current Round</b>		
AgNPS Round 21	Finger Lake Watersheds	9	47
AgNPS Round 22	Finger Lake Watersheds	11	20
AgNPS Round 23	Finger Lake Watersheds	19	61
AgNPS Round 24	Finger Lake Watersheds	2	14
AgNPS Round 25	Finger Lake Watersheds & Northern Watersheds	10	32
AgNPS Round 26	<b>Current Round</b>		
CRF Round 3	Finger Lake Watersheds & Northern Watersheds	9	22
CRF Round 4	Finger Lake Watersheds & Northern Watersheds	7	18
CRF Round 5	<b>Current Round</b>		
CAFO WSTSP Round 1	Finger Lake Watersheds & Northern Watersheds	3	11
CAFO WSTSP Round 2	Finger Lake Watersheds & Northern Watersheds	2	6
CAFO WSTSP Round 3	Finger Lake Watersheds	1	6
EFLCC	Finger Lake Watersheds	12	12
<b>Total</b>		<b>273</b>	<b>249</b>

Appendix 2: AEM Program has seen a significant increase, 163%, in AEM Participation from 2015-2020.





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Appendix 3: Participation in available programs, number of farms and number of best management practices summarized.

