Chautauqua County Soil & Water Conservation District

AEM Strategic Plan 2021-2025

Revised April 20, 2020

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

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1. Introduction

Agricultural Environmental Management (AEM) is a voluntary, incentive-based program that helps farmers make common sense, cost-effective, and science-based decisions to meet business objectives while protecting and conserving New York State's natural resources. Soil and Water Conservation Districts lead the local AEM effort.

AEM is designed to work with farmers to further protect those important natural resources. By participating in AEM, farmers can document their environmental stewardship and further advance their positive contributions to their communities, our food systems, the economy, and the environment.

AEM uses a five-tier voluntary approach to (1) gauge interest, (2) assess existing stewardship and environmental concerns, (3) develop farm-specific conservation plans, (4) implement the best management practices identified in the plan, and (5) update plans and conservation practices over time.

The Chautauqua County Soil & Water Conservation District has developed this strategy to guide the local AEM program in order to:

a. Assess local resource concerns
b. Address agricultural conservation issues
c. Set goals and objectives for a five-year AEM effort
d. Identify administrative, technical, and financial resources needed to carry out AEM

2. Strategic Plan Work Group

The organizations involved in the development of this strategy include:

- Farmers representing the following commodities:
  - Vegetables
  - Grapes
  - Beef
  - Grain
  - Dairy
- Chautauqua County Department of Environmental Health
- Chautauqua County Department of Planning & Economic Development
- Chautauqua County Soil & Water Conservation District
- Cornell Cooperative Extension of Chautauqua County
- New York State Department of Environmental Conservation
- USDA Farm Service Agency
- USDA Natural Resources Conservation Service
- Western New York Crop Management Association

3. Mission and Vision

Mission

The mission of the Chautauqua County AEM program is to provide a locally led, cooperative, science-based technical assistance effort to address the most critical agricultural and forestry resource concerns in the county.

Vision

Agriculture and forestry in Chautauqua County will be economically vibrant and practiced in harmony with the environment.

4. Chautauqua County-Wide Overview

a. Overview of Agriculture

Chautauqua County has a land area of 680,000 acres. More than 50 percent of Chautauqua County is forest land. The county ranks number three for the number of farms in New York State. Primary full-time agricultural enterprises in Chautauqua County are comprised of dairy production on the Allegheny Plateau, and grape production on the Lake Erie plain.

The Lake Erie grape production region is a unique agricultural feature of the county due to the moderate temperature, long frost-free period, and good soils. The majority of the grape acreage is for processing, however wine grape production is becoming a larger component. Chautauqua County is the leading grape-producing county in New York, with over 17,000 acres of vineyards.

Other major enterprises include beef cattle, grain crops, and vegetables. The following table is based upon a comparison of Census of Agriculture data from 2012 and 2017. A full County Profile is in Appendix 1.

Category	2012	2017	2012-2017 % Change	2017 State Rank
Farms (no.)	1,515	1,228	-19	3
Land in farms (ac.)	236,546	223,634	-5	6
Total cropland (ac.)	129,467	126,949	-2	9
Market value of ag products sold ($)	161,849,000	160,967,000	-1	13
Market value of dairy ($)	73,157,000	74,993,000	3	12
Market value of fruit ($)	37,472,000	42,556,000	14	2
Milk cows (farms)	223	182	-18	6
Milk cows (no.)	19,381	18,888	-3	12
Land in orchards/vineyards (farms)	484	334	-31	2
Land in orchards/vineyards (acres)	20,937	17,131	-18	2

b. Resource Concerns

The most productive soils in the county are located along portions of the Lake Erie plain and the valley bottoms on the Allegheny Plateau. These soils are gently sloping and moderately well drained or better. Less productive soils are less well drained, shallow, or steep; management of subsurface drainage and surface runoff are significant soil management concerns on these soils.

Soil erosion is a concern where row crops are grown on soils with slopes over three percent on the Allegheny Plateau. Susceptibility to erosion is due to slope, soil erodibility, rainfall quantity and intensity, and crop management practices. During a peak in corn and soybean prices in 2012, marginal cropland acreage was converted from long-term hay production, including steep slopes and inadequately drained soils, resulting in accelerated erosion and soil quality degradation (Refer to Table 1).

Table 1: Chautauqua County-Selected Crop Acreage
Source: Census of Agriculture

Crop	**2007**	**2012**	**2017**
Corn Grain	8,026	12,937	14,277
Corn Silage	12,836	13,876	16,113
Soybeans	755	4,619	4,639
Total	23,624	33,444	37,046

About 139,000 acres, or 20 percent of the soils in Chautauqua County meet prime farmland criteria. Another 270,000 acres or 40 percent, meet prime farmland criteria if drained.

Irrigation is used on 1,030 acres of farmland in the county, primarily supporting fruit and vegetable crops through limited critical dry periods during the growing season.

Agricultural producers use streams for irrigation and livestock water supply; potentially impacting fisheries by causing lower water levels and contributing nutrient runoff. Livestock access to streambanks and cropping to the top of bank accelerates streambank erosion.

Chautauqua County contains 10 medium and 2 large Concentrated Animal Feeding Operations (CAFO's), all dairy farms. In order to comply with CAFO permit requirements, these farms have progressively implemented plans to address their most critical resource concerns, most notably silage leachate treatment and manure storage facilitating manure utilization during periods of low leaching and runoff potential. These are positive steps toward reducing these farms' impact on nutrient runoff into adjacent waterways and aquifers. Additional outreach is needed to address these concerns on farms that are not participating in a CAFO permit.

Grape farms utilize herbicides, insecticides, and fungicides in order to produce an economically viable crop. Many of these farms have inadequate storage facilities for these agrichemicals, and they often load and mix these materials adjacent to ponds or streams, posing a potential threat to water quality. Numerous grape producers have implemented agrichemical handling facilities

to address these concerns, and additional implementation will be needed to address the remaining farms.

Chautauqua County woodlands have the capability of producing sustainable yields of high quality Allegheny hardwoods. Forest management practices may pose resource concerns including poorly planned skid trails, log landings, and access roads, leading to accelerated erosion and sedimentation of adjacent waterways. A lack of well-planned harvesting on some acreage, combined with locally heavy deer browse pressure leads to a lack of understory vegetation. Increasing rainfall intensities then result in more overland erosive surface water flow in these woodlots.

Several lakes are located in Chautauqua County, which are valuable recreational resources, including Bear Lake, the Cassadaga Lakes, Chautauqua Lake, Findley Lake, and Lake Erie. Nutrient runoff from developed and/or rural sources has resulted in varying levels of excessive aquatic plant growth and/or harmful algal blooms in each of these water bodies. Beach closures have occurred as a result of high bacteria levels in some cases.

Approximately three quarters of Chautauqua County residents are served by municipal water supplies. Of those, 57 percent are surface water supplies and 43 percent are subsurface well water supplies. Water for most of the rural residents and farms is obtained from drilled bedrock wells and dug wells in valley aquifers. Nitrate contamination has been identified in some valley aquifer supplies.

c. AEM Goals & Objectives

The AEM Strategic Plan will guide the Chautauqua County Soil & Water Conservation District as it provides leadership in addressing agricultural sources of non point source pollution and other resource concerns.

Partnering organizations will be employed whenever possible to advance assessment, planning, implementation, evaluation, and outreach efforts. Delivery of AEM to Chautauqua County farms will be systematic with a cyclical schedule that rotates from the highest priority planning unit to lower ones. The cyclical schedule will ensure the consistent delivery to Chautauqua County farms, help the District communicate anticipated timetables for delivery of AEM efforts to landowners, and assure landowners that they will be able to access the program.

Agriculture is a vital component of the rural economy in Chautauqua County. The District will implement a positive outreach effort to increase public awareness of the efforts that farms are making to address their resource concerns, as well as educating the non-agricultural community regarding efforts that they can initiate on their land in order to protect water quality in concert with farmers.

d. Outreach Efforts

Outreach will be accomplished through a combination of community-based meetings, direct mail, press releases, exhibits, workshops, and presentations. In order to promote the AEM strategy and share program progress the District will:

- Post the AEM Strategic Plan on the District web page (www.soilwater.org)
- Provide the strategy to partners such as:
    - Chautauqua County Legislature and County Executive
    - Chautauqua County Water Quality Task Force
    - Chautauqua Lake watershed stakeholder groups
    - Cornell Cooperative Extension of Chautauqua County
    - Farmland Protection Board
    - Lake Erie Watershed Protection Alliance
    - Western New York Crop Management Association

The District will increase outreach to the Amish communities by offering small group meetings to inform them of planning assistance available to them through the District. The District will also facilitate development of a brochure that explains simple conservation practices that they can implement on their own.

e. Evaluation Strategy

The AEM Strategic Plan provides over-arching guidance for developing and implementing the program within Chautauqua County for 2021-2025. The strategy is the primary tool for development of the Annual Action Plan for each AEM round.

District staff provides a summary of goals compared with accomplishments and presents this report to the District Board of Directors on a monthly basis. The AEM Report Card, along with required annual reporting will be completed at the conclusion of each AEM round, and will make mid-course corrections to program implementation based upon this evaluation.

f. Priority Planning Units

The Chautauqua County AEM Advisory Committee met in February 2020 to provide input into the development of the strategy. The committee used available data including the NYS-DEC Priority Waterbodies List, NYS-DEC Section 303(d) list, Source Water Assessment Program, the Conewango Creek Rapid Watershed Assessment, TMDL documents, and watershed plans to identify resource concerns and prioritize watershed based upon their need for treatment.

The Priority Planning Units for Chautauqua County are:

1. Chautauqua Lake
2. Lake Erie
3. French Creek/Brokenstraw Creek
4. Conewango Creek
5. Cassadaga Creek

These planning units are identified on the attached map.

g. Historical Perspective

The Chautauqua County Soil & Water Conservation District has participated in AEM since its inception. The District has completed the following Tier work on farms:

Tier 1:	492
Tier 2:	274
Tier 3A:	85
Tier 3B:	19
Tier 4:	22
Tier 5A:	61
Tier 5B:	61

The District has participated in the following grant programs to assist farms with implementation of plans developed using the AEM framework. The District works with USDA-NRCS and other organizations to provide grant resources in partnership to make programs more effective.

AEM Round 16 Implementation Projects-(3 farms)

Agricultural Nonpoint Source Abatement & Control Grant Program:

- Round 10-Conewango Creek Silage Leachate and Barnyard Treatment Systems (4 farms)
- Round 13-French Creek Silage Leachate Treatment Systems (3 farms)
- Round 15-Chautauqua Lake Water Quality Improvement Project (3 farms)
- Round 17-Conewango Creek Nutrient Management Project (3 farms)
- Round 18-French Creek Nutrient Management Project (4 farms)
- Round 18-Chautauqua Lake Water Quality Improvement Project (2 farms)
- Round 19-Bournes Creek Watershed Protection Project (3 farms)
- Round 20- Chautauqua Lake Water Quality Improvement Project (1 farm)
- Round 20-French Creek Water Quality Improvement Project (1 farm)
- Round 21-Cassadaga Creek Water Quality Improvement Project (1 farm)
- Round 22-French Creek Water Quality Improvement Project (1 farm)
- Round 23-Chautauqua Lake Agricultural Nutrient Management Project (3 farms)
- Round 23-Odell Farms Agricultural Nutrient Management Project (1 farm)
- Round 23-Findley Lake & French Creek Nutrient Management Project (3 farms)
- Round 24-Clymer Ground & Surface Water Protection Project (1 farm)
- Round 24-Conewango Creek Water Quality Improvement Project (2 farms)
- Round 25- Clymer Ground & Surface Water Protection Project (1 farm)
- Round 25-Conewango Creek Water Quality Improvement Project (2 farms)
- Round 25-Lake Erie Water Quality Improvement Project (3 farms)

CAFO Waste Storage & Transfer Program Round 1-(3 farms)

Chautauqua County Occupancy Tax Grants-(3 farms)

Climate Resilient Farming:

- Round 3-(1 farm)
- Round 4-(1 farm)

Implementation of AEM Plans on NYS Grown & Certified Farms:

- Round 1-(1 farm)

Southern Tier Agricultural Industry Enhancement Program:

- Round 1-(56 farms)

h. Team Capacity Assessment

The following table outlines the capacities of these organizations to provide components of delivering portions of the AEM program.

Expertise	SWCD	NRCS	Cooperative Extension	FSA	Farm Bureau	Agricultural Consultants	NYS-DEC	County Planning	Agribusiness	SUNY Fredonia/ JCC	Watershed Groups	County Health	Private Engineers	WQTF
AEM Plan Development	X	X				X								
Certified Conservation Planner	X	X				X								
Certified Crop Advisor	X		X			X								
Engineering/ Ecological Science Job Approval	X	X											X	
Water Quality Monitoring	X						X			X	X	X		
Outreach	X	X	X	X	X	X		X	X		X			
Education	X	X	X							X	X			
Program Evaluation	X	X	X		X		X			X	X	X		X
Program Administration	X	X		X										
Grant Writing	X	X						X			X			
Design, Installation, Checkout	X	X											X	

Training Needs: Training for agency staff and consultants involved in the AEM program is a continuous process in order to remain up-to-date on revisions to AEM worksheets, planning requirements, NRCS standards and specifications, etc.

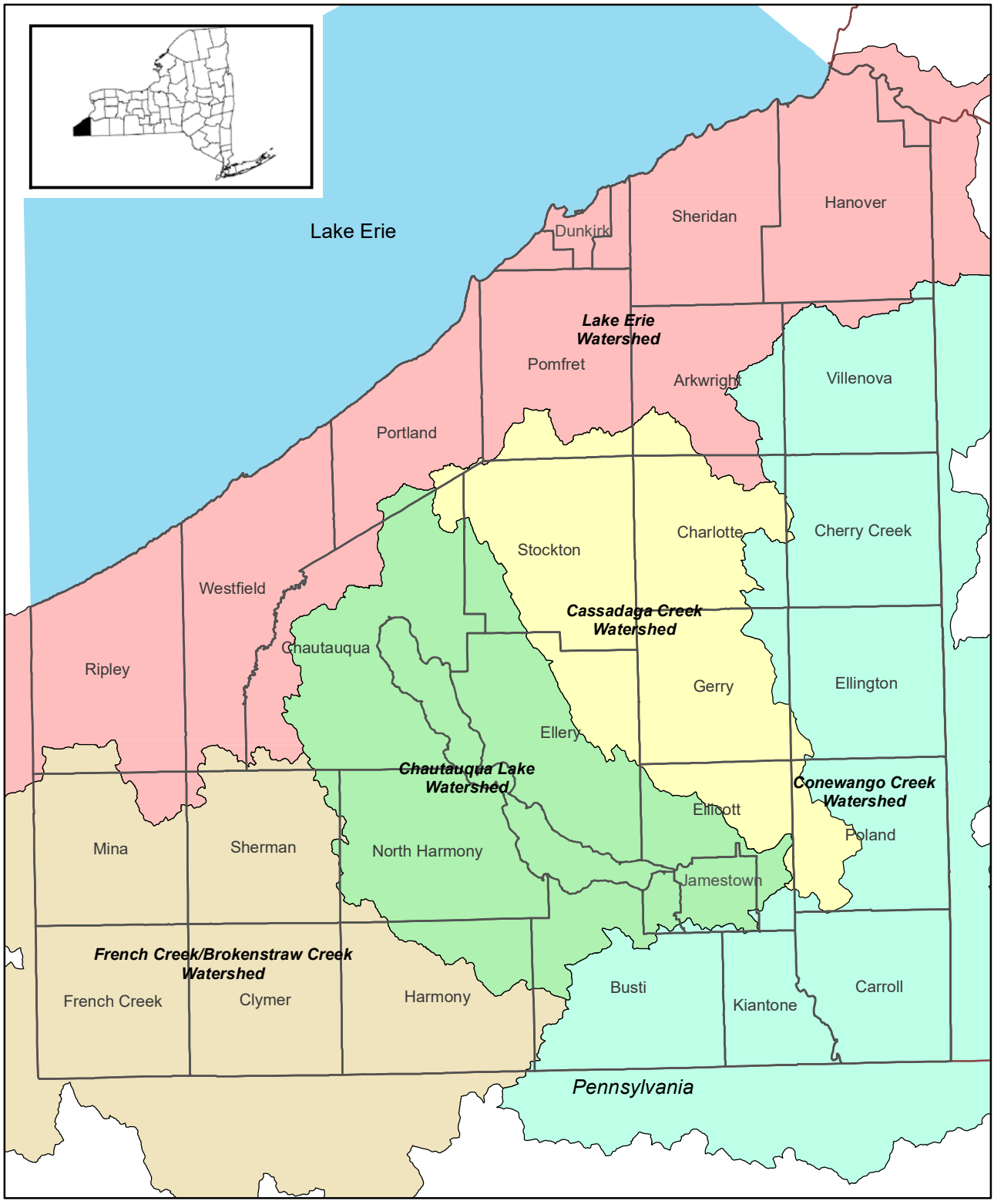
Additional Partnerships: Other organizations that may provide assistance to delivery of the Chautauqua County AEM program include:

- Bear Lake Association
- Brokenstraw Creek Watershed Association
- Cassadaga Lakes Association
- Chautauqua County Farmland Protection Board
- Chautauqua Lake & Watershed Alliance
- Chautauqua Watershed Conservancy
- Conewango Creek Watershed Association
- Findley Lake Association
- Lake Erie Watershed Protection Alliance
- New York Forest Owners Association
- NYS-DEC Private Lands Forester
- Roger Tory Peterson Institute
- Seneca Nation of Indians
- Seneca Trail Resource Conservation & Development Council
- The Nature Conservancy
- Western New York Land Conservancy

COVER CROP DEMONSTRATION, LAKE ERIE WATERSHED

Chautauqua County Soil & Water Conservation District

AEM Strategic Plan 2021-2025
Prioritized Planning Units



0 1.5 3 6 9 12 Miles

N
W E
S

- Cassadaga Creek
- Chautauqua Lake
- Conewango Creek
- French Creek/Brokenstraw Creek
- Lake Erie

5. Planning Unit Strategies

a. Chautauqua Lake

- **Primary Agricultural Enterprises Present in the Planning Unit:**
  - Dairy
  - Beef
  - Corn and soybeans
  - Horses
  - Forest Land

- **Hydrologic Unit Codes**

HUC-12 Name	HUC-12 Number
Dewittville Creek	050100020201
Big Inlet-Chautauqua Lake	050100020202
Wing Creek-Prendergast Creek	050100020203
Ball Creek-Chautauqua Lake	050100020204
Goose Creek	050100020205
Bemus Creek-Chautauqua Lake	050100020206
Chadakoin River-Chautauqua Lake	050100020207

- **Priority Waterbody Uses, Pollutant and Pollutant Source**

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
0202-0018	Chadakoin River	Recreation Aquatic Life	Impaired Impaired	S K	Unknown Toxicity Nutrients Metals-copper Priority Organics-PCB Pathogens	K S S S S	Urban/Storm Runoff Habitat Alteration Industrial Discharges Municipal Discharges	K K S S
0202-0032	Moon Creek & Tributaries	Public Bathing Recreation Aquatic Life	Stressed Stressed Impaired	S S U	Unknown Toxicity Unknown Pollutant-(biological impacts)	S S	Urban/Storm Runoff Industrial Discharges Municipal Discharges	K S S
0202-0020	Chautauqua Lake, South	Water Supply Public Bathing Recreation Aquatic Life	Impaired Impaired Impaired Stressed	K K K S	Algal/Plant Growth Nutrients-(phosphorus) Problem Species Nutrients- (nitrogen) Metals-arsenic	K K K K U	Agriculture Habitat/Hydrology Modifications Internal Loading Onsite Septic Systems Municipal Discharges	K K K S S
0202-0072	Chautauqua Lake, North	Water Supply Public Bathing Recreation Aquatic Life	Impaired Impaired Impaired Stressed	K K K S	Algal/Plant Growth Nutrients-(phosphorus) Metals-arsenic	K K U	Agriculture Habitat/Hydrology Modifications Internal Loading Onsite Septic Systems Municipal Discharges	K K K S K
0202-0033	Tributaries to Chautauqua Lake, Town of Busti	U	U	U	U	U	U	U
0202-0023	Goose Creek & Tributaries	Recreation Aquatic Life	Fully Supported Stressed	S K	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus)	S S	Unknown Source	U
0202-0034	Tributaries to Chautauqua Lake, North Harmony	U	U	U	U	U	U	U
0202-0024	Prendergast Creek & Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Threatened Fully Supported	S S U	Thermal Changes Silt/Sediment	S S	Habitat Alteration Hydrologic Alteration	S S
0202-0021	Minor Tributaries to Chautauqua Lake, Chautauqua	Recreation Aquatic Life Fish Consumption	Fully Supported Fully Supported Fully Supported	S S U	None	None	None	None
0202-0022	Dewittville Creek	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	S K U	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus)	S S	Agriculture	U

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
0202-0025	Minor Tributaries to Chautauqua Lake, N. Ellery	U	U	U	U	U	U	U
0202-0035	Bemus Creek & Tributaries	Recreation Aquatic Life	Stressed Impaired	S U	Unknown Toxicity Unknown Pollutants-(biological impacts)	S S	Urban/Storm Runoff Industrial Discharges Municipal Discharges	K S S
0202-0036	Minor Tributaries to Chautauqua Lake, S. Ellery	U	U	U	U	U	U	U
0202-0037	Dutch Hollow Creek & Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Threatened Fully Supported	S S U	Unknown Pollutants-(biological impacts)	S	Agriculture	U

Notes regarding the Priority Waterbodies List:

Below are the definitions of the labeling classifications that are used to describe the WI/PWL waterbodies in the following tables for each watershed. All WI/PWL data presented in this strategy was obtained from the NYS-DEC web site as of March 26, 2020. https://www.dec.ny.gov/chemical/36730.html

Severity of the Impact of the Uses:

P (Precluded): Frequent/Persistent conditions prevent all aspects of a use

I (Impaired): Occasional/periodic conditions prevent all aspects of a use or frequent/persistent conditions restrict/discourage use or full use requires extra measures

S (Stressed): Occasional/periodic conditions restrict/discourage use

T (Threatened): Current conditions do not limit or discourage use, but planned land changes may affect future use, data reveals declining water quality trend or water classification

Level of Documentation:

K (Known): Studies/data documenting problem are complete and in agreement

S (Suspected): Supported by strong evidence, best professional judgment, but studies/data are incomplete/inconclusive

P (Possible): Supported by surrounding land use/activity, complaints, anecdotes indicating there might be a problem, but currently no documentation

U (Unconfirmed)

- **2018 CWA Section 303(d) List**

Chautauqua Lake has been removed from the 303(d) list as a TMDL has been established.

Part 3b-Waterbodies for which TMDL development may be deferred (requiring verification of cause/pollutant/source)					
Water Index Number	Waterbody Name (WI/PWL ID)	Type	Class	Cause/Pollutant	Source
Pa-63-13-4	Chadakoin River and Tributaries (0202-0018)	River	C	Unknown (biological impacts)	Unknown

- **Total Maximum Daily Load (TMDL)**

The Total Maximum Daily Load (TMDL) for Phosphorus in Chautauqua Lake was established in November 2012.

- **Watershed Plans**

Chautauqua Lake has the following watershed plans in place:

  - Chautauqua Lake Watershed Management Plan (September 2010)
  - Harmful Algal Bloom Action Plan published (2018)
  - Macrophyte Management Strategy (April 2016)

- **Source Water Assessment Program (SWAP)**
    - Chautauqua Lake is a surface water supply for several communities within the watershed.
    - Other non-municipal business water supplies are in place within the watershed.
    - Their characteristics, assessment of quality, and potential pollutant threats are outlined in the SWAP report developed by the Chautauqua County Department of Environmental Health.

- **Agricultural Environmental Management (AEM)**

The District performed a complete inventory of all farms in the watershed in 2015. The AEM program has identified that the highest priority agriculturally-related resource concerns in this watershed include:

- silage leachate runoff
- manure spreading on frozen, snow-covered, and/or saturated soils
- barnyard runoff management
- milkhouse waste runoff
- cropland erosion, degraded soil health and resulting sediment delivery
- streambank erosion
- degradation of riparian area vegetation due to grazing in stream corridors and/or cropping to the top of bank
- pasture overgrazing
- improper mortality disposal practices
- conversion of farmland to non-agricultural uses
- forest land erosion on skid trails, log landings and access roads; increased runoff from forest land with low-quality understory vegetation

ALGAL BLOOM, CHAUTAUQUA LAKE 2017

- **Chautauqua Lake: Management Practice Systems to be Promoted:**

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing	Farmland Conversion	Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Access Control System			x		x	x	x		x		
Agrichemical Handling & Storage System											
Composting System-Animal											x
Erosion Control Systems-Structural				x			x		x		
Feed Management		x					x				
Integrated Pest Management System				x			x		x		
Irrigation Water Management											
Livestock Heavy Use Area Runoff Management System			x				x				
Manure & Agricultural Waste Treatment Systems		x									
Nutrient Management-Cultural		x		x			x				
Pathogen Management		x									x
Petroleum & Oil Products Storage System											
Prescribed Rotational Grazing System				x	x	x	x				
Process Wash Water Management System										x	
Riparian Buffer System					x	x					
Silage Leachate Control & Treatment System	x										
Soil Conservation System-Cultural				x							
Stream Corridor & Shoreline Management System					x	x					
Waste Storage & Transfer System	x	x	x							x	x
Farmland Protection Programs								x			

b. Lake Erie

- **Primary Agricultural Enterprises Present in the Planning Unit:**
  - Grapes
  - Fresh market fruits and vegetables
  - Beef
  - Corn and soybeans
  - Horses
  - Forest Land

- **Hydrologic Unit Codes**

HUC-12 Name	HUC-12 Number
Big Indian Creek-Cattaraugus Creek	041201020210
Silver Creek	041201010101
Walnut Creek-Frontal Lake Erie	041201010102
Beaver Creek-Frontal Lake Erie	041201010201
Scott Creek-Frontal Lake Erie	041201010202
Canadaway Creek	041201010203
Little Canadaway Creek-Frontal Lake Erie	041201010204
Slippery Rock Creek-Frontal Lake Erie	041201010301
Bournes Creek-Frontal Lake Erie	041201010302
Chautauqua Creek	041201010303
Freelings Creek-Frontal Lake Erie	041201010401
Twentymile Creek	041201010402
Sixteenmile Creek-Frontal Lake Erie	041201010403
Twelvemile Creek-Frontal Lake Erie	041201010404

AGRICHEMICAL HANDLING FACILITY, LAKE ERIE WATERSHED

- **Priority Waterbody Uses, Pollutant and Pollutant Source**

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
Erie/Walnut Creek Watershed								
0104-0072	Halfway Brook & Tributaries	Aquatic Life Recreation	Stressed Stressed	K S	Nutrients-(phosphorus) Dissolved Oxygen/Oxygen Demand	K S	Agriculture	S
0105-0007	Silver Creek, Lower, and minor tributaries	Recreation Aquatic Life Habitat/Hydrology	Stressed Stressed Stressed	K S S	Aesthetics-(turbidity/colors) Dissolved Oxygen/Oxygen Demand Silt/Sediment Nutrients	K S S S	Municipal-(Silver Creek WWTP) Streambank Erosion Silviculture	K S S
0105-0012	Silver Creek, Upper, and Tributaries	None	None	None	None	None	None	None
0105-0006	Walnut Creek, Lower, and Tributaries	Aquatic Life Recreation Habitat/Hydrology	Stressed Stressed Stressed	K S S	Nutrients-(phosphorus) Dissolved Oxygen/Oxygen Demand Silt/Sediment Thermal Changes	K S S P	Agriculture Streambank Erosion Silviculture	S S S
0105-0014	Silver Creek Reservoir	None	None	None	None	None	None	None
Erie/Canadaway Creek Watershed								
0105-0033	Lake Erie (Main Lake, South)	Public Bathing Fish Consumption Recreation	Impaired Impaired Impaired	K K K	Priority Organics-(PCB's) Pathogens	K K	Toxic/Contaminated Sediment Urban/Storm Runoff Onsite Septic Systems	S S P
0105-0009	Lake Erie (Dunkirk Harbor)	Public Bathing Fish Consumption Recreation Aesthetics	Impaired Impaired Impaired Stressed	K K K S	Priority Organics-(PCB's) Pathogens Aesthetics	K K S	Other Sanitary Discharges Toxic/Contaminated Sediment Unknown Source Urban/Storm Runoff Onsite Septic Systems	S S S S P
0105-0016	Beaver Creek and Tributaries	None	None	None	None	None	None	None
0105-0017	Scott Creek and Tributaries	Aquatic Life	Impaired	K	Unknown Toxicity Dissolved Oxygen/Oxygen Demand Nutrients	S S S	Unknown Source Municipal Urban/Storm Runoff Industrial	S S S P
0105-0019	Crooked Brook and Tributaries	Aquatic Life	Impaired	K	Unknown Toxicity Dissolved Oxygen/Oxygen Demand Nutrients	S S S	Unknown Source Municipal Urban/Storm Runoff Industrial	S S S P
0105-0008	Canadaway Creek and Tributaries	Habitat/Hydrology	Stressed	S	Silt/Sediment Thermal Changes	S P	Streambank Erosion	S
0105-0020	Canadaway Creek, Upper and Tributaries	None	None	None	None	None	None	None
0105-0021	Fredonia Reservoir	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
0105-0022	Tributaries to Fredonia Reservoir	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
0105-0023	Little Canadaway Creek and Tributaries	None	None	None	None	None	None	None
Erie/Chautauqua Creek Watershed								
0105-0024	Minor Tributaries to Lake Erie	Aquatic Life	Stressed	P	Nutrients	P	Agriculture Urban/Storm Runoff	P P
0105-0010	Slippery Rock Creek and Tributaries	None	None	None	None	None	None	None
0105-0025	Brocton Reservoir	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
0105-0026	Tributaries to Brocton Reservoir	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
0105-0001	Chautauqua Creek, Lower, and Minor Tributaries	None	None	None	None	None	None	None
0105-0027	Chautauqua Creek, Upper, and Tributaries	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
0105-0029	Minton Reservoir	Water Supply	Threatened	S	Pathogens	P	Agriculture	P
Erie/Sixmile Creek Watershed								
0105-0011	Lake Erie (Barcelona Harbor)	Fish Consumption	Impaired	K	Priority Organics (PCB'S)	K	Toxic/Contaminated Sediment	S
0105-0030	Minor Tributaries to Lake Erie	Aquatic Life	Stressed	P	Nutrients	P	Agriculture	P
0105-0003	Twentymile Creek and Minor Tributaries	None	None	None	None	None	None	None

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
0105-0031	Upper Belson Creek and Tributaries	Water Supply	Threatened	S	Pathogens	P	Agriculture	P

- **2018 CWA Section 303(d) List**

Part 1- Individual waterbody segments with impairment requiring TMDL development					
Water Index Number	**Waterbody Name (WI/PWL ID)**	**Type**	**Class**	**Cause/Pollutant**	**Source**
Ont 158-E (portion 7)	Lake Erie (Main Lake, South) (0105-0033)	Great Lakes	A-Special	Pathogens	Urban/Storm Runoff
Ont 158-E (portion 7a)	Lake Erie, Dunkirk Harbor (0105-0009)	Great Lakes	B	Pathogens	Urban/Storm Runoff
Part 2b- Multiple segment/categorical waterbody segments impaired due to fish consumption advisories					
Ont 158-E (portion 7)	Lake Erie (Main Lake, South) (0105-0033)	Great Lakes	A-Special	PCB's	Contaminated Sediments
Ont 158-E (portion 7a)	Lake Erie, Dunkirk Harbor (0105-0009)	Great Lakes	B	PCB's	Contaminated Sediments
Part 3b-Waterbodies for which TMDL development may be deferred (requiring verification of cause/pollutant/source)					
Ont 158-E-32	Scott Creek and Tributaries (0105-0017)	River	C	Unknown (biological impacts)	Unknown
Ont 158-E-36	Crooked Brook and Tributaries (0105-0019)	River	C	Unknown (biological impacts)	Unknown

- **Total Maximum Daily Load (TMDL)**

No TMDL documents have been prepared for the portion of this watershed, which lies in Chautauqua County.

- **Watershed Plans**

Lake Erie has the following watershed plans in place:

  - Regional Niagara River Lake Erie Watershed Management Plan (June 2019)

- **Source Water Assessment Program (SWAP)**
  - Lake Erie is a surface water supply for several communities within the watershed.
  - Other non-municipal business water supplies are in place within the watershed.
  - Their characteristics, assessment of quality, and potential pollutant threats are outlined in the SWAP report developed by the Chautauqua County Department of Environmental Health.

- **Agricultural Environmental Management (AEM)**

The AEM program has identified that the highest priority agriculturally-related resource concerns in this watershed include:

  - agrichemical storage, loading, and mixing practices that may impact surface and ground water
  - integrated pest management for grapes to minimize agrichemical impacts to surface and ground water
  - cropland erosion, degraded soil health and resulting sediment delivery
  - irrigation water management supporting grape, other fruit, and vegetable production

- streambank erosion
- degradation of riparian area vegetation due to cropping to the top of bank
- conversion of farmland to non-agricultural uses
- forest land erosion on skid trails, log landings and access roads; increased runoff from forest land with low-quality understory vegetation

NO-TILL AND COVER CROPS, LAKE ERIE WATERSHED

- **Lake Erie: Management Practice Systems to be Promoted:**

Management Practice System	Resource Concern								
	Agrichemical Storage, Mixing & Loading	Integrated Pest Management	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Farmland Conversion	Forest Land Erosion & Runoff	Irrigation Water Management	
Access Control System				x	x		x		
Agrichemical Handling & Storage System	x								
Composting System-Animal									
Erosion Control Systems-Structural			x				x		
Feed Management									
Integrated Pest Management System		x	x				x		
Irrigation Water Management								x	
Livestock Heavy Use Area Runoff Management System									
Manure & Agricultural Waste Treatment Systems									
Nutrient Management-Cultural		x	x						
Pathogen Management									
Petroleum & Oil Products Storage System									
Prescribed Rotational Grazing System									
Process Wash Water Management System									
Riparian Buffer System				x	x				
Silage Leachate Control & Treatment System									
Soil Conservation System-Cultural			x						
Stream Corridor & Shoreline Management System				x	x				
Waste Storage & Transfer System									
Farmland Protection Programs						x			

c. French Creek/Brokenstraw Creek

- **Primary Agricultural Enterprises Present in the Planning Unit:**
  - Dairy
  - Beef
  - Corn and soybeans
  - Horses
  - Forest Land

- **Hydrologic Unit Codes**

HUC-12 Name	HUC-12 Number
Beaver Marsh-French Creek	050100040101
Findley Lake-West Branch French Creek	050100040102
Alder Bottom Creek-French Creek	050100040103
Darrow Brook-West Branch French Creek	050100040104
Beaver Meadow Brook-French Creek	050100040106
East Branch Little Brokenstraw Creek	050100011001
Upper Little Brokenstraw Creek	050100011002
Middle Little Brokenstraw Creek	050100011003
Coffee Creek	050100011101
Brownell Branch-Brokenstraw Creek	050100011102
Hare Creek	050100011103

- **Priority Waterbody Uses, Pollutant and Pollutant Source**

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
Little Brokenstraw Creek and Brokenstraw Creek Watersheds								
0202-0057	Little Brokenstraw Creek and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Threatened Fully Supported	S S U	Unknown Pollutant-(Biological Impacts)	S	Agriculture	U
0202-0058	East Branch Little Brokenstraw Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0059	Goshen Creek, Upper, and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0005	Brokenstraw Creek and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Stressed Stressed Unassessed	S K U	Silt/Sediment	K	Agriculture	K
0202-0060	Gallop/Town Stream and Tributaries	Recreation Aquatic Life Fish Consumption	Unassessed Stressed Fully Supported	U K U	Nutrients-(phosphorus) Pesticides	K U	Agriculture	K
0202-0079	Hulburt/Clymer Pond	Recreation Aquatic Life Fish Consumption	Impaired Unassessed Unassessed	K U U	Algal/Plant Growth Nutrients-(phosphorus) Low Dissolved Oxygen/Oxygen Demand	K K S	Agriculture	K
0202-0061	Brownell Branch and Tributaries	Recreation Aquatic Life Fish Consumption	Unassessed Stressed Fully Supported	U K U	Nutrients-(phosphorus) Pesticides	K U	Agricultural	K
0202-0062	Minor Tributaries to Pennsylvania	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
West Branch French Creek Watershed								
0202-0015	French Creek, Lower and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Stressed Stressed Unassessed	S K U	Nutrients-(phosphorus) Pesticides	K S	Agriculture	K

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
0202-0063	French Creek, Middle and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Stressed Stressed Unassessed	S K U	Nutrients-(phosphorus) Pesticides	K S	Agriculture	K
0202-0064	French Creek, Upper and Minor Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0065	Beaver Meadow Brook and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0066	Black Brook and Tributaries	Public Bathing Recreation Aquatic Life Fish Consumption	Unassessed Unassessed Impaired Unassessed	U U S U	Chlorine	S	Private/Community/ Institutional Discharge (Ski Resort)	U
0202-0067	South Parks/Parks Brooks and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0068	Alder Bottom Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0069	Mansion Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0070	Minor Tributaries to Pennsylvania	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0071	West Branch French Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0004	Findley Lake	Public Bathing Recreation Aquatic Life Fish Consumption	Stressed Impaired Fully Supported Unassessed	S K S U	Algal/Plant Growth (native) Harmful Algal Blooms Nutrients-(phosphorus) Dissolved Oxygen/ Oxygen Demand Aquatic Invasive Species	K K K S	Agriculture Onsite Septic Systems Habitat Alteration	K K S

- **2018 CWA Section 303(d) List**

Part 1- Individual waterbody segments with impairment requiring TMDL development					
Water Index Number	**Waterbody Name (WI/PWL ID)**	**Type**	**Class**	**Cause/Pollutant**	**Source**
Pa-77-1-P150	Hulbert/Clymer Pond (0202-0079)	Lake	C	Phosphorus	Agriculture

- **Total Maximum Daily Load (TMDL)**

The Total Maximum Daily Load (TMDL) for Phosphorus in Findley Lake was established in September 2008.

- **Watershed Plans**

French Creek has the following watershed plan in place:

  - French Creek Watershed Conservation Plan (January 2002)

Brokenstraw Creek has the following watershed plan in place:

  - Brokenstraw Creek Watershed Conservation Plan (December 2011)

- **Source Water Assessment Program (SWAP)**
  - Municipal and non-municipal business water supplies are in place within the Brokenstraw Creek and French Creek watersheds.
  - Their characteristics, assessment of quality, and potential pollutant threats are outlined in the SWAP report developed by the Chautauqua County Department of Environmental Health.

- **Agricultural Environmental Management (AEM)**

The AEM program has identified that the highest priority agriculturally-related resource concerns in this watershed include:

  - silage leachate runoff
  - manure spreading on frozen, snow-covered, and/or saturated soils
  - barnyard runoff management
  - milkhouse waste runoff
  - cropland erosion, degraded soil health and resulting sediment delivery
  - streambank erosion
  - degradation of riparian area vegetation due to grazing in stream corridors and/or cropping to the top of bank
  - pasture overgrazing
  - improper mortality disposal practices
  - forest land erosion on skid trails, log landings and access roads; increased runoff from forest land with low-quality understory vegetation

- **French Creek and Brokenstraw Creek: Management Practice Systems to be Promoted:**

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Access Control System			x		x	x	x		x		
Agrichemical Handling & Storage System											
Composting System-Animal											x
Erosion Control Systems-Structural				x			x		x		
Feed Management		x					x				
Integrated Pest Management System				x			x		x		
Irrigation Water Management											
Livestock Heavy Use Area Runoff Management System			x				x				
Manure & Agricultural Waste Treatment Systems		x									
Nutrient Management-Cultural		x		x			x				
Pathogen Management		x									x
Petroleum & Oil Products Storage System											
Prescribed Rotational Grazing System				x	x	x	x				

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Process Wash Water Management System										x	
Riparian Buffer System					x	x					
Silage Leachate Control & Treatment System	x										
Soil Conservation System-Cultural				x							
Stream Corridor & Shoreline Management System					x	x					
Waste Storage & Transfer System	x	x	x							x	x
Farmland Protection Programs											

WATER AND SEDIMENT CONTROL BASIN, CONTOUR STRIP CROPPING, CONEWANGO CREEK WATERSHED

d. Conewango Creek

- **Primary Agricultural Enterprises Present in the Planning Unit:**
  - Dairy
  - Beef
  - Corn and soybeans
  - Horses
  - Forest Land

- **Hydrologic Unit Codes**

HUC-12 Name	HUC-12 Number
Sawmill Run-Allegheny River	050100011204
Slab City Creek	050100020102
West Branch Conewango Creek	050100020104
Blaisdell Creek-Conewango Creek	050100020105
Cherry Creek-Conewango Creek	050100020402
Clear Creek	050100020403
Indian Brook-Conewango Creek	050100020406
Cass Run-Conewango Creek	050100020407
Upper Stillwater Creek	050100020501
Lower Stillwater Creek	050100020502
Frews Run-Conewango Creek	050100020503
Kiantone Creek	050100020504
Storehouse Run-Conewango Creek	050100020505

- **Priority Waterbody Uses, Pollutant and Pollutant Source**

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
Lower Conewango Creek Watershed								
0202-0014	Conewango Creek, Lower and Minor Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0075	Kiantone Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0027	Frews Run and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	Suspected Suspected Unconfirmed	Unknown Pollutants-(biological impacts)	S	Unknown Source	U
0202-0007	Stillwater Creek, Lower and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	Suspected Known Unconfirmed	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus) Silt/Sediment Thermal Changes	S S S S	Agriculture Habitat Alteration Unknown Source Onsite Septic Systems	S S U U
0202-0028	Stillwater Creek, Middle and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	Suspected Known Unconfirmed	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus) Silt/Sediment Thermal Changes	S S S S	Agriculture Habitat Alteration Unknown Source Onsite Septic Systems	S S U U
0202-0029	Stillwater Creek, Upper and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	Suspected Known Unconfirmed	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus) Silt/Sediment Thermal Changes	S S S S	Agriculture Habitat Alteration Unknown Source Onsite Septic Systems	S S U U
Middle Conewango Creek Watershed								
0202-0006	Conewango Creek, Middle,	Recreation Aquatic Life Fish Consumption	Stressed Impaired Unassessed	S U U	Unknown Pollutants-(biological impacts)	S	Habitat Alteration Agriculture	U U

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
	and Minor Tributaries							
0202-0017	Conewango Creek, Middle, and Minor Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0076	Cass Run and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0041	Mud/Clark Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0047	Clear Creek and Tributaries	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
Upper Conewango Creek Watershed								
0202-0074	Conewango Creek, Upper, and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Fully Supported Fully Supported	S K U	Unknown	Unknown	Unknown	Unknown
0202-0050	West Branch Conewango Creek and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	U K U	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus)	S S	Agriculture Unknown Source	S U
0202-0051	North Branch Conewango Creek and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	U U U	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus)	S S	Agriculture Unknown Source	S U
0202-0053	Black Pond	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed	Unassessed
0202-0054	West Mud Lake	Recreation Aquatic Life Fish Consumption	Impaired Stressed Unassessed	S S U	Algal/Plant Growth-(natives) Nutrients-(phosphorus) Dissolved Oxygen/ Oxygen Demand Harmful Algal Blooms	K K K S	Other Source-(Internal Loading) Agriculture Onsite Septic Systems	S U U

- **2018 CWA Section 303(d) List**

No waterbodies in this watershed appear on the 303(d) list.

- **Total Maximum Daily Load (TMDL)**

No waterbodies in this watershed have a TMDL.

- **Watershed Plans**

No waterbodies in this watershed have a watershed plan. USDA-NRCS completed a Rapid Watershed Assessment in April 2009.

- **Source Water Assessment Program (SWAP)**
    - Municipal and non-municipal business water supplies are in place within the Conewango Creek watershed.
    - Their characteristics, assessment of quality, and potential pollutant threats are outlined in the SWAP report developed by the Chautauqua County Department of Environmental Health.

- **Agricultural Environmental Management (AEM)**

The AEM program has identified that the highest priority agriculturally-related resource concerns in this watershed include:

- silage leachate runoff
- manure spreading on frozen, snow-covered, and/or saturated soils
- barnyard runoff management
- milkhouse waste runoff
- cropland erosion, degraded soil health and resulting sediment delivery

- streambank erosion
- degradation of riparian area vegetation due to grazing in stream corridors and/or cropping to the top of bank
- pasture overgrazing
- improper mortality disposal practices
- forest land erosion on skid trails, log landings and access roads; increased runoff from forest land with low-quality understory vegetation

- **Conewango Creek: Management Practice Systems to be Promoted:**

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Access Control System			x		x	x	x		x		
Agrichemical Handling & Storage System											
Composting System-Animal											x
Erosion Control Systems-Structural				x			x		x		
Feed Management		x					x				
Integrated Pest Management System				x			x		x		
Irrigation Water Management											
Livestock Heavy Use Area Runoff Management System			x				x				
Manure & Agricultural Waste Treatment Systems		x									
Nutrient Management-Cultural		x		x			x				
Pathogen Management		x									x
Petroleum & Oil Products Storage System											
Prescribed Rotational Grazing System				x	x	x	x				
Process Wash Water Management System										x	
Riparian Buffer System					x	x					
Silage Leachate Control & Treatment System	x										
Soil Conservation System-Cultural				x							
Stream Corridor & Shoreline Management System					x	x					

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Waste Storage & Transfer System	x	x	x							x	x
Farmland Protection Programs											

e. Cassadaga Creek

- **Primary Agricultural Enterprises Present in the Planning Unit:**
  - Dairy
  - Beef
  - Corn and soybeans
  - Horses
  - Forest Land

- **Hydrologic Unit Codes**

HUC-12 Name	HUC-12 Number
Outlet Bear Lake	050100020301
Mill Creek	050100020302
Upper Cassadaga Creek	050100020303
Middle Cassadaga Creek	050100020304
Lower Cassadaga Creek	050100020305

- **Priority Waterbody Uses, Pollutant and Pollutant Source**

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
Cassadaga Creek Watershed								
0202-0012	Cassadaga Creek, Lower and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Stressed Stressed Fully Supported	S K U	Unknown Pollutants-(biological impacts) Nutrients-(phosphorus)	S U	Unknown Source Municipal Discharges Onsite Septic Systems	S U U
0202-0030	Cassadaga Creek, Middle and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Stressed Stressed Fully Supported	S K U	Nutrients-(phosphorus) Silt/Sediment	S S	Agriculture	S
0202-0031	Cassadaga Creek, Upper and Minor Tributaries	Recreation Aquatic Life Fish Consumption	Unassessed Stressed Fully Supported	U U U	Nutrients Silt/Sediment	S U	Agriculture	S
0202-0019	Mill Creek, Lower, and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Fully Supported Fully Supported	S K U	Unknown	Unknown	Unknown	Unknown
0202-0038	Mill Creek, Upper, and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Fully Supported Fully Supported	S K U	Unknown	Unknown	Unknown	Unknown
0202-0039	Bear Lake Outlet and Tributaries	Recreation Aquatic Life Fish Consumption	Fully Supported Stressed Fully Supported	U U U	Unknown	Unknown	Unknown	Unknown
0202-0008	Bear Lake	Water Supply Public Bathing Recreation Aquatic Life Fish Consumption	Threatened Stressed Impaired Stressed Unassessed	S K K S U	Nutrients-(phosphorus) Algal/Plant Growth-(native)	K K K	Other Source (Internal Recycling) Agriculture Onsite Septic Systems Urban/Storm Runoff	K S U U

Priority Waterbody		DESIGNATED USE(S) NOT SUPPORTED BY THE WATERBODY			POLLUTANT(S) OF CONCERN		SOURCE OF POLLUTION	
		Designated Use Not Supported	Severity of the Impact	Documentation	Pollutant	Documentation	Source of Pollution	Documentation
					Aquatic Invasive Species Low Dissolved Oxygen/ Oxygen Demand Harmful Algal Blooms	S U		
0202-0003	Lower Cassadaga Lake	Public Bathing Recreation Aquatic Life Fish Consumption	Stressed Impaired Stressed Fully Supported	S S U U	Aquatic Invasive Species Algal/Plant Growth Nutrients- (phosphorus) Low Dissolved Oxygen/ Oxygen Demand	K K S S	Habitat Alteration Agriculture Other Source (In-Lake Recycling) Onsite Septic Systems	K S S U
0202-0040	Tributaries to Cassadaga Lakes	Recreation Aquatic Life Fish Consumption	Fully Supported Threatened Fully Supported	S S U	Unknown Pollutants	S	Habitat Alteration	K
0202-0002	Middle Cassadaga Lake	Recreation Aquatic Life Fish Consumption	Impaired Stressed Fully Supported	S U U	Aquatic Invasive Species Low Dissolved Oxygen/ Oxygen Demand Nutrients- (phosphorus) Algal/Plant Growth	K K S S	Habitat Alteration Agriculture Other Source (In-Lake Recycling) Onsite Septic Systems	K S S U
0202-0001	Upper Cassadaga Lake	Public Bathing Recreation Aquatic Life Fish Consumption	Stressed Stressed Stressed Fully Supported	S S U U	Aquatic Invasive Species Low Dissolved Oxygen/ Oxygen Demand	K S	Habitat Alteration Agriculture Onsite Septic Systems	K S U

- **2018 CWA Section 303(d) List**

Part 1- Individual waterbody segments with impairment requiring TMDL development					
Water Index Number	**Waterbody Name (WI/PWL ID)**	**Type**	**Class**	**Cause/Pollutant**	**Source**
Pa-63-13-P133-3-P134	Middle Cassadaga Lake (0202-0002)	Lake	C	Phosphorus	Agriculture

- **Total Maximum Daily Load (TMDL)**

The Total Maximum Daily Load (TMDL) for Phosphorus in Bear Lake was established in February 2015.

- **Watershed Plans**

No waterbodies in this watershed have a watershed plan.

- **Source Water Assessment Program (SWAP)**
    - Municipal and non-municipal business water supplies are in place within the Cassadaga Creek watershed.
    - Their characteristics, assessment of quality, and potential pollutant threats are outlined in the SWAP report developed by the Chautauqua County Department of Environmental Health.

- **Agricultural Environmental Management (AEM)**

The AEM program has identified that the highest priority agriculturally-related resource concerns in this watershed include:

- silage leachate runoff
- manure spreading on frozen, snow-covered, and/or saturated soils
- barnyard runoff management
- milkhouse waste runoff
- cropland erosion, degraded soil health and resulting sediment delivery

- streambank erosion
- degradation of riparian area vegetation due to grazing in stream corridors and/or cropping to the top of bank
- pasture overgrazing
- improper mortality disposal practices
- forest land erosion on skid trails, log landings and access roads; increased runoff from forest land with low-quality understory vegetation

- **Cassadaga Creek: Management Practice Systems to be Promoted:**

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Access Control System			x		x	x	x		x		
Agrichemical Handling & Storage System											
Composting System-Animal											x
Erosion Control Systems-Structural				x			x		x		
Feed Management		x					x				
Integrated Pest Management System				x			x		x		
Irrigation Water Management											
Livestock Heavy Use Area Runoff Management System			x				x				
Manure & Agricultural Waste Treatment Systems		x									
Nutrient Management-Cultural		x		x			x				
Pathogen Management		x									x
Petroleum & Oil Products Storage System											
Prescribed Rotational Grazing System				x	x	x	x				
Process Wash Water Management System										x	
Riparian Buffer System					x	x					
Silage Leachate Control & Treatment System	x										
Soil Conservation System-Cultural				x							
Stream Corridor & Shoreline Management System					x	x					

Management Practice System	Resource Concern										
	Silage Leachate	Manure Spreading	Barnyard Runoff	Cropland Erosion and Soil Health	Streambank Erosion	Riparian Vegetation	Pasture Overgrazing		Forest Land Erosion & Runoff	Milkhouse Waste Runoff	Mortality Disposal
Waste Storage & Transfer System	x	x	x							x	x
Farmland Protection Programs											

6. Projected Accomplishments

Specific AEM Tier goals are established during the process of developing the AEM Action Plan for each program round. In addition, the District will implement the following outreach strategies. The timing of these strategies may be adjusted in response to unique circumstances, program opportunities, and farm community needs that arise as the plan is being implemented.

- 2021
  - Development of a rapid farm assessment of resource concerns for community meetings for use 2021-2025
  - Development of a brochure on conservation practices for use in the Amish community 2021-2025
  - Chautauqua Lake watershed farm community meeting
  - Chautauqua Lake watershed Amish producer outreach meeting
  - Chautauqua Lake watershed Tier 1 & 2 completion
  - Participate in a Woods Walk in the Chautauqua Lake watershed to highlight water quality resource concerns and solutions
  - Initiate a farmland protection project in the Chautauqua Lake watershed
  - Facilitate a Soil Health Field Day; location TBA
- 2022
  - Chautauqua Lake watershed Tier 3 completion
  - Lake Erie watershed farm community meeting
  - Lake Erie watershed Tier 1 & 2 completion
- 2023
  - Pursue implementation grants for the Chautauqua Lake watershed
  - Lake Erie watershed Tier 3 completion
  - French Creek/Brokenstraw Creek watershed Farm community meeting
  - French Creek/Brokenstraw Creek watershed Amish producer outreach meeting
  - French Creek/Brokenstraw Creek watershed Tier 1 & 2 completion

- 2024
    - Pursue implementation grants for the Lake Erie watershed
    - French Creek/Brokenstraw Creek watershed Tier 3 completion
    - Conewango Creek watershed farm community meeting
    - Conewango Creek watershed Amish producer outreach meeting
    - Conewango Creek watershed Tier 1 & 2 completion
    - Chautauqua Lake watershed Implementation
- 2025
    - Pursue implementation grants for the French Creek/Brokenstraw Creek watershed
    - Conewango Creek watershed Tier 3 completion
    - Cassadaga Creek watershed farm community meeting
    - Cassadaga Creek watershed Tier 1 & 2 completion
    - Lake Erie watershed Implementation
    - Chautauqua Lake Tier 5B assessments

7. Acknowledgements

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- Susan & John Abers, fruit & vegetable producers
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- Ted Card, beef producer
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- Lisa Kempisty, Cornell Cooperative Extension of Chautauqua County
- John Lesch, grain producer
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- Dan Steward, Western New York Crop Management Association
- Lisa Vanstrom, Chautauqua County Soil & Water Conservation District Board of Directors
- David White, dairy producer

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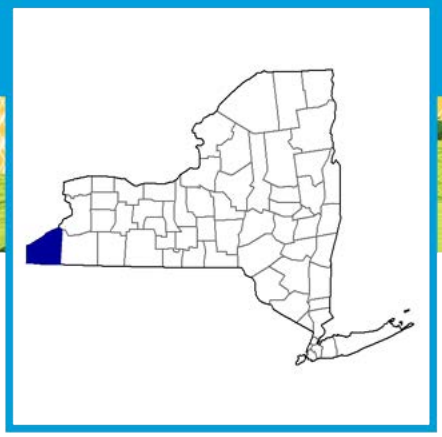
8. Appendices

Appendix 1: 2017 Census of Agriculture-Chautauqua County Profile

2017 CENSUS OF AGRICULTURE *County Profile*



Chautauqua County
New York

Total and Per Farm Overview, 2017 and change since 2012

	2017	% change since 2012
Number of farms	1,228	-19
Land in farms (acres)	223,634	-5
Average size of farm (acres)	182	+17
Total	($)	
Market value of products sold	160,967,000	-1
Government payments	1,621,000	-35
Farm-related income	13,485,000	+34
Total farm production expenses	111,378,000	-14
Net cash farm income	64,695,000	+42
Per farm average	($)	
Market value of products sold	131,081	+23
Government payments (average per farm receiving)	11,183	+34
Farm-related income	24,253	+64
Total farm production expenses	90,699	+7
Net cash farm income	52,683	+76

3 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	46
Livestock, poultry, and products	54

Land in Farms by Use (%) [a]

Cropland	57
Pastureland	9
Woodland	25
Other	9

Acres irrigated: 1,030
(Z)% of land in farms

Land Use Practices (% of farms)

No till	7
Reduced till	7
Intensive till	20
Cover crop	11

Farms by Value of Sales

	Number	Percent of Total [a]
Less than $2,500	326	27
$2,500 to $4,999	98	8
$5,000 to $9,999	129	11
$10,000 to $24,999	187	15
$25,000 to $49,999	124	10
$50,000 to $99,999	120	10
$100,000 or more	244	20

Farms by Size

	Number	Percent of Total [a]
1 to 9 acres	92	7
10 to 49 acres	333	27
50 to 179 acres	504	41
180 to 499 acres	227	18
500 to 999 acres	43	4
1,000 + acres	29	2

USDA
United States Department of Agriculture
National Agricultural Statistics Service
www.nass.usda.gov/AgCensus

2017 CENSUS OF AGRICULTURE *County Profile*

Market Value of Agricultural Products Sold

	Sales ($1,000)	Rank in State [b]	Counties Producing Item	Rank in U.S. [b]	Counties Producing Item
Total	**160,967**	**13**	**61**	**700**	**3,077**
Crops	**73,257**	**6**	**61**	**798**	**3,073**
Grains, oilseeds, dry beans, dry peas	12,088	17	55	1,337	2,916
Tobacco	-	-	-	-	323
Cotton and cottonseed	-	-	-	-	647
Vegetables, melons, potatoes, sweet potatoes	5,760	18	60	308	2,821
Fruits, tree nuts, berries	42,556	2	60	68	2,748
Nursery, greenhouse, floriculture, sod	2,932	20	60	513	2,601
Cultivated Christmas trees, short rotation woody crops	26	44	53	457	1,384
Other crops and hay	9,896	11	55	252	3,040
Livestock, poultry, and products	**87,710**	**13**	**58**	**592**	**3,073**
Poultry and eggs	(D)	32	57	(D)	3,007
Cattle and calves	11,443	14	55	1,154	3,055
Milk from cows	74,993	12	51	113	1,892
Hogs and pigs	149	16	55	810	2,856
Sheep, goats, wool, mohair, milk	434	12	54	391	2,984
Horses, ponies, mules, burros, donkeys	349	22	55	615	2,970
Aquaculture	(D)	25	34	(D)	1,251
Other animals and animal products	193	25	58	541	2,878

Total Producers [c] 2,133

Sex	
Male	1,328
Female	805
Age	
<35	228
35 – 64	1,307
65 and older	598
Race	
American Indian/Alaska Native	1
Asian	6
Black or African American	1
Native Hawaiian/Pacific Islander	1
White	2,119
More than one race	5
Other characteristics	
Hispanic, Latino, Spanish origin	8
With military service	217
New and beginning farmers	517

Percent of farms that:

Have internet access	**78**
Farm organically	**3**
Sell directly to consumers	**14**
Hire farm labor	**31**
Are family farms	**96**

Top Crops in Acres [d]

Forage (hay/haylage), all	46,042
Grapes	16,953
Corn for silage or greenchop	16,113
Corn for grain	14,277
Soybeans for beans	4,639

Livestock Inventory (Dec 31, 2017)

Broilers and other meat-type chickens	2,725
Cattle and calves	43,922
Goats	1,219
Hogs and pigs	526
Horses and ponies	1,947
Layers	5,887
Pullets	499
Sheep and lambs	1,347
Turkeys	665

See 2017 Census of Agriculture, U.S. Summary and State Data, for complete footnotes, explanations, definitions, commodity descriptions, and methodology.
[a] May not add to 100% due to rounding. [b] Among counties whose rank can be displayed. [c] Data collected for a maximum of four producers per farm.
[d] Crop commodity names may be shortened; see full names at www.nass.usda.gov/go/cropnames.pdf. [e] Position below the line does not indicate rank.
(D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.