

Skaneateles Lake Watershed Program Annual Report 2022-2023
City of Syracuse Department of Water
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1. AGRICULTURAL PROGRAM ANNUAL REPORT

1.1 Overview

The City of Syracuse continued to contract with the Onondaga County Soil and Water Conservation District for the Skaneateles Lake Watershed Agricultural Program (SLWAP) in FY 2022-2023. This year forty-two (42) watershed farms meet the Agriculture and Markets' definition of a "farm." Thirty-seven (37) of these are enrolled in the program and five (5) farms do not wish to participate. Two (2) of the non-participating farms are self-implementing Best Management Practices from Whole Farm Plans developed by SLWAP. City watershed inspectors monitor one additional farm for compliance with Watershed Rules and Regulations and Environmental Conservation Law. The overall participation rate is eighty-six (88%).

The figures in this report represent the current number of Whole Farm Plans applied to active agricultural land in the watershed. Twenty-three (23) farms are no longer in active production or do not meet the definition of a farm and have been eliminated from the status reports, resulting in an annual decline in the number of enrolled farms. For the most part, the farmland has been absorbed by other active farms. Progress has continued with Whole Farm Plans completed for thirty-six (36) farms, equaling 76.82 farm equivalents (one farm equivalent being 400 acres), and implementation is complete on thirty (30) farms, equaling 67.38 farm equivalents. Approximately ninety-three percent (93%) of the farmland in the watershed is enrolled in the program.

Three barriers to pathogen movement, including exclusion from watercourses, are established on eighteen (18) of the twenty-two (22) active enrolled livestock farms in the watershed. Livestock farms in the 6-mile zone were planned and implemented by June 30, 2004, in accordance with the NYS DOH requirement. Soil erosion and nitrogen and phosphorous runoff have been reduced by considerable amounts watershed-wide, based on standard estimating techniques (See Appendix B).

SLWAP staff conducted comprehensive reviews of all implemented Whole Farm Plans from January to March 2023. Farm operators received a letter in advance detailing which data to have prepared for the review, streamlining the process. Farm survey data collected during each review is presented in the "Skaneateles Lake and Watershed 2022 Annual Report," City of Syracuse Department of Water – Water Quality Management, April 2023, submitted separately to the NYSDOH.

A rental program for soil conservation tools was instituted in 2009. The City provided SLWAP with funds to purchase a John Deere conservation planter, a Great Plains no-till drill, and an AerWay minimal tillage system. The first two of these tools can plant corn and beans and apply fertilizer, seed buffer strips and filtration areas, reseed pasture and improve wildlife habitat areas. The third, the AerWay, allows for injecting liquid manure directly into the soil up to eight inches deep, reducing volatilization and the likelihood of manure-laden storm runoff leaving a field after a manure treatment. The AerWay was sold in the fall of 2012 as a result of exceedingly limited rental. In the summer of 2017, SLWAP sold the 6-Row John Deere 1750 Conservation Planter and the 10' Great Plains 1006 No-Till Drill and purchased a new 12 foot Esch 5512 No-Till Drill. The drill can plant small grains, cover crops, small seeds, soybeans, and buffer strips. In 2022 the drill was utilized on a total of 383 acres of cropland between the watershed and Onondaga County. Since 2009, four (4) farms have purchased conservation implements. Two (2) farms have purchased the 30-foot AerWay manure incorporation tool, one (1) farm purchased a 30-foot Great Plains drill and one (1) farm purchased a 12-row planter that utilizes some of the conservation technology.

SLWAP is implementing Phase II of its program as outlined in the “Task Force Recommendations for the Continuation of the Skaneateles Lake Watershed Agricultural Program,” which was accepted by Mayor Matthew J. Driscoll in January 2005. This document outlines Phase II of the Skaneateles Lake Watershed Agricultural Program and gives recommendations for procedures such as Whole Farm Plan revisions, BMP repairs, farm expansions, planning emphasis, and continuation of financial incentives.

As in other areas of New York State, every year a portion of watershed farmland is converted to residential lots to finance family needs or is sold outright for development. In 2022, of the 21 new housing starts in the watershed, none were on active farmland, however, one agricultural parcel was subdivided allowing for the construction of a campground. Nine (9) permits were issued for major additions and renovations on the lake and another eight (8) were issued for non-lake front properties. Demand for farmland continues to be high, as some farms expand to remain profitable or increase their land base to spread manure at state-approved rates. In this watershed, many smaller farms are purchased by larger and/or new operations at the retirement of lifelong farmers. To demonstrate this point, sixty-two (62) operations met the Agriculture & Markets definition of a farm in FY 1995-96. This year only forty-two (42) operations meet that definition. Consolidation or change of operations by new owners necessitates revisions to (or sometimes brand-new) Whole Farm Plans. SLWAP is addressing these changes as they arise. Priority is given to changes that have a high probability of impact to water quality near the City’s water intakes.

The Water Department’s Watershed Quality Coordinator is the current City representative on the Skaneateles Lake Watershed Agricultural Program Review Committee (WAPRC). The Watershed Quality Coordinator also coordinates efforts between SLWAP and the monitoring of conservation easements on SLWAP participating farms. SLWAP Policy #18 has allowed for permanent integration of easement restrictions on agricultural practices and buffers into the SLWAP Whole Farm Plans. The integration is complete.

1.2 Conservation Reserve Enhancement Program

The USDA Syracuse, New York Conservation Reserve Enhancement Program (CREP, a joint City/SLWAP/USDA project) has resulted in a program total of 148.4 acres planned and 146.5 acres of sensitive areas implemented and protected around Skaneateles Lake. No additional acres were implemented in 2022. SLWAP coordinates the program in the Skaneateles Lake Watershed and the federal government makes short-term rental payments as an incentive to keep the sensitive lands out of production for ten to fifteen years. The City uses its contract with SLWAP to promote interest for CREP and provide technical services and the local cost share. In return, USDA provides additional funds to increase the standard per-acre rental rate for removing lands from agriculture. NRCS District Conservationists plan and implement projects, and USDA Farm Service Agency employees handle the paperwork and rental payments.

This program supplements the City’s permanent land conservation efforts in the watershed. The federal contract with the City calls for a combined federal and City obligation of approximately \$900,000 over 15 years, with \$650,000 coming from USDA and approximately \$250,000 from the City of Syracuse. With the reauthorization of the Farm Bill in 2008, the City contract was extended by Ordinance #146-2008 for an indefinite period. Future funding will be contained in the 5-year federal Farm Bills.

A proposed budget for SLWAP for FY 2023-24 has been received and contract renewal is expected on July 1, 2023. For additional program details, see the SLWAP Annual Progress Report—April 2022 - March 2023, in Appendix C. See progress maps for SLWAP and CREP at the end of this section.

2. LAND PROTECTION PROGRAM FINAL DOCUMENTATION

The Land Protection Program requirements that appear in Section 5-1.30(c)(7)(j) of the Filtration Avoidance Conditions expired on June 30, 2008. The final of nine easements closed on 4/27/2009, and the NYSDEC Water Supply Permit for the program (DEC ID# 7-9907-00037/00001) expired on July 8, 2009. The final data on acquisitions and other conditions of item (j), above, appear in the “Skaneateles Lake Watershed Land Protection Program and the Skaneateles Lake Watershed Agricultural Program Annual Report for Fiscal Year 2009-10, April, 2010.” During 2012, a portion of the Withey conservation easement property was sold to another SLWAP program farmer, making eleven (11) owners of City of Syracuse conservation easement properties in the Skaneateles Lake Watershed.

3. PUBLIC EDUCATION PROGRAM ANNUAL REPORT

3.1 Public Education

The City continues to fund public education through contractual relationships with the Cornell Cooperative Extension of Onondaga County (CCE of Onondaga County) and the Onondaga County Soil and Water Conservation District, supplemented by the in-kind services of City staff to assist other agencies or groups in research or presentations. Below are activities or publications included in the contracts with CCE of Onondaga County and the OCSWCD for 2022 and 2023 that are within this report period. Previous years’ reports describe many other public education efforts. (See the SLWAP annual report, Appendix B and the CCE of Onondaga County annual report, Appendix C for details of those programs’ educational activities for FY22-23).

The CCE of Onondaga County continued to promote water quality education in the Skaneateles Lake Watershed under contract to the City. The City has renewed its contract with the CCE of Onondaga County for the calendar year 2023.

In 2022, the CCE of Onondaga County concentrated its education efforts on the following activities:

- Skaneateles Lake Watershed Website
- Non-point source pollution
- Landscaping for water quality
- Stormwater management
- Invasive species management
- Riparian buffers
- Land stewardship
- Flood resiliency
- Road salt impacts

Four hundred and ten (410) people attended virtual workshops and speaking events sponsored or supported by CCE of Onondaga County over the year.

Press Articles

Educators worked with various local media to promote the Skaneateles Lake Watershed Water Quality Education Program. CCE of Onondaga County contributed to four articles and videos that appeared in local publications in 2022.

Annual Watershed Resident Newsletter

In 2022 CCE of Onondaga published Summer and Winter editions of the Skaneateles Wave Review. The newsletters included information about the programs sponsored by the City in the watershed. Featured articles included the *Skaneateles Lake Watershed Nine Element Plan - An Introduction by Central New York Regional Planning and Development Board*, *Drone Cover Crop Seeding in Skaneateles by the Skaneateles Lake Watershed Agricultural Program* and *Esker Repair in the Skaneateles Lake Watershed by Central New York Land Trust*. (A copy is included at the end of the report before the Appendices.)

Electronic Communications

An electronic listserv was set up for the program in 2011. The e-mail list was generated from prior participants in CCE of Onondaga County educational activities and from government agency and non-profit e-mail contacts provided by the City of Syracuse Water Department. The Skaneateles Lake e-mail list includes over 700 residents, municipal officials, partners, and businesses.

Miscellaneous Brochures

The following brochures are still distributed at CCE of Onondaga County events: “How to Build a Rain Barrel: A step-by-step guide for building and installing a homemade rain barrel,” “Water Deflectors: Managing Surface Water and Reducing Erosion on Unpaved Roads,” “Catch the Rain—A Citizen’s Guide to Aquatic Plant Management,” “What Homeowners Need to Know About Emerald Ash Borer,” “Wasp Watcher: How to find the wasp that hunts Emerald Ash Borer.”

Skaneateles Lake Watershed Website

Through a collaborative effort of CCE of Onondaga, local municipalities, SLWAP and the City, the Skaneateles Lake Watershed Website www.skanlakeinfo.org was completed and launched on July 1, 2020. The website features water quality data, information on harmful algal blooms, and links to agencies involved in the watershed. The website was viewed by a total of 10,550 visitors in 2022.

SLWAP Newsletter

The “Watershed Journal,” a publication of the Skaneateles Lake Watershed Agricultural Program, published approximately four times per year, is e-mailed and/or mailed to the agricultural community of the watershed, allied agencies, and farm businesses. A digital version is available to interested agencies and to those requesting it.

SLWAP Annual Meeting

The December meeting featured guest speakers Dr. Frank Rossi of Cornell University and Rick Jordan of CNY Drone Services. Dr. Rossi’s two-part presentation included an update on Agricultural Sciences at the University. His second presentation focused on turf grass management - comparing golf course BMPs for water quality to practices employed by farmers. Mr. Jordan presented the results of a drone cover crop seeding project completed in the Shotwell Brook watershed. Fifteen farms representing 67% of the agricultural land base in the watershed were in attendance. Five of those farms brought “the next generation” so that they can learn more about the City of Syracuse’s Filtration Avoidance Program and why it is so important to keep the programming going into the future.

3.2 Water Department Staff Participation and Training

Activities for the Water Quality Management Division staff are as follows:

Participation

The Watershed Quality Coordinator is a member of the Watershed Agricultural Program Review Committee, representing the Syracuse Department of Water

3.2.1 Training & Conferences

NYS Conservation District Employees' Association, Inc. 2022 Water Quality Symposium – March 18 & 24, 2022

The Symposium was attended by the City's Watershed Quality Coordinator. Certificates of Completion were awarded for the successful completion of the *Hydroseeding Forum* and *Afforestation in New York State*.

Sediment Control & stormwater Advancements via Proactive Solutions – May 3, 2022

This webcast focused on innovative new technologies related to stormwater management. Products and systems featured during the presentations included products that improve stormwater quality by filtering out sediment. The webcast was attended by the Watershed Quality Coordinator.

Stream Training with Dave Derrick – August 15, 2022

The Watershed Quality Coordinator attended the workshop sponsored by the Onondaga County Soil and Water Conservation District. Classroom instruction focused on river and stream stabilization concepts promoting environmentally responsible and economically cost-effective methods of stream bank restoration.

Estimating Nutrient Loads Due to Streambank Erosion with Michael Coryat, Delaware County SWCD – September 21, 2022

The Watershed Quality Coordinator attended the webinar sponsored by the Upper Susquehanna Coalition. The presenter discussed methods and results from the publication titled: *Estimating Nutrient Loads from Two Streambank Erosion Sites on the West Branch Delaware River*. The "Soil and Water Assessment Tool" (SWAT) computer model was discussed as an effective tool to estimate sediment and nutrient flux from the landscape.

Stormwater Construction Permit GP-0-20-001 Review and Construction Site Inspection – September 28, 2022

The Watershed Quality Coordinator and Sanitarian attended the presentation sponsored by the NYS Conservation District Employee's Association, USDA Natural Resource Conservation Service and the NYS Soil and Water Conservation Committee. Instruction focused on review of the Permit including permit coverage, SWPPP plans and inspection and maintenance requirements.

4. OTHER MECHANISMS OF WATER QUALITY PROTECTION

4.1 Cooperative Agreements

The City entered in to no new cooperative agreements for watershed protection in the past year.

4.2 Data Gathering and Management Program

The GIS position has been filled continuously since January 10, 2002. Creation and development of Geographic Information System (GIS) data sets continued to support watershed and Water Department programs, and facilitated watershed program analysis.

Work Completed:

Coverages/Databases updated or expanded:

- Farms with Whole Farm Plans or BMP revisions implemented in FY 2022-23
- Monitoring reports created for the nine watershed conservation easements
- Water distribution features (fire hydrants, valves, etc.) within the City of Syracuse updated with GPS points
- Documented major water infrastructure improvements, including water main replacement projects on several major streets

Coordination/Cooperation with others:

- Provided digital data and/or maps to Water Department staff and contractors to support construction and maintenance of the water distribution system, the Skaneateles Lake Watershed Protection Program and SLWAP
- Provided over 100 maps to other utilities to ensure that their work doesn't interfere with underground City water infrastructure
- Provided maps and data packages of City water infrastructure to support the planned replacement of Interstate-81

In 2022, GIS was used throughout the Water Department to support all aspects of planning and operations. For 2023, all water service connections will be included in GIS. Public-accessible maps will be created, showing where water service lines are located, which is a requirement for the EPA Service Line Inventory.

4.3 Watershed Rules and Regulations

The City conducts inspections to determine compliance with Watershed Rules and Regulations. Refer to the "Skaneateles Lake and Watershed 2022 Annual Report, Volume XLVIII," for detailed information on inspection and enforcement. The City of Syracuse met its filtration avoidance condition to revise its Watershed Rules and Regulations on the date of their promulgation by the State of New York, September 1, 2004. Subsequently, minor amendments were promulgated on July 6, 2005. The NY State Register Quarterly Index, January – December 2005 lists that this

Administrative Rule was finalized on July 6, 2005 (reference # HLT – 48 04-00012). The DEC SEQR project number was #P7002107-00012; NYS DEC Region 7.

To view a list of significant dates and requirements for the promulgation process, refer to the Skaneateles Lake Watershed Land Protection Program and the Skaneateles Lake Watershed Agricultural Program Annual Report for Fiscal Year 2006-07, or 2007-08. The Watershed Rules and Regulations (Title 10, Public Health, Chapter III, Subchapter A, Part 131.1, and City of Syracuse) are available on the online New York State Code of Rules and Regulations at <http://www.dos.state.ny.us/info/nycrr.html> and on the City of Syracuse web page under “Departments” and “Water Department,” at <http://www.syracuse.ny.us>.

5. COORDINATION WITH GOVERNMENT AGENCIES, NONPROFITS, AND MUNICIPALITIES

Multiple Agency Coordination

A group that includes representatives from NYSDOH, OCHD, NYSDEC, the City of Syracuse Department of Water, the SLWAP and others continues to share information on pressing watershed events, complaints and their resolutions through e-mail. The group uses this method to expedite reporting of spill incidents.

New York State Department of Environmental Conservation (NYSDEC)

The NYSDEC General SPDES Permit for Confined Animal Feeding Operations (CAFOs) has enhanced the City’s voluntary agricultural program by adding an extra incentive for operations to follow their Whole Farm Plans. Eight (8) of the approximately forty-two (42) farms eligible for SLWAP are considered CAFOs under the current standards. Of those, only one (1) has its farm headquarters within the watershed. All operations that meet the definition already have Whole Farm Plans and meet the requirements of the “Agricultural Waste Management Plans” called for in the state permit. SLWAP employees are no longer the lead nutrient planners for any CAFOs in the watershed. They continue, however, to attend CAFO reviews of watershed farms to provide input and support to the CAFO review.

Town of Skaneateles Lake Monitoring Committee

Based on the findings of the Town of Skaneateles Lake Monitoring Committee’s Lake Monitoring Plan, the Town approved funding for sampling, which was carried out by Upstate Freshwater Institute (UFI) from April through October 2007 and 2008. The two consecutive years of data established a baseline for the following parameters: phosphorous, water clarity, chlorophyll a, and dissolved oxygen profiles. UFI prepared a 2008 report on the results. Since the data from the first two years was very consistent, the committee proposed a 3-year cycle for repeat monitoring. Recent monitoring reports available at the Skaneateles Town Hall include *Water Quality and Limnological Monitoring of Skaneateles Lake-2019* and *Winter-Spring Monitoring of Skaneateles Lake Tributaries-2020*.

Land Trusts

The Finger Lakes Land Trust (FLLT) and Central New York Land Trust’s (CNYLT) continue to emphasize the Skaneateles Lake Watershed as a priority focus area for land conservation and water quality protection. In 2022 FLLT purchased two tax parcels in the watershed totaling 21.2 acres.

The first acquisition was a 15-acre parcel located on a steep forested hillside with multiple watercourses on Glen Haven Road in the town of Niles in Cayuga County. The parcel is adjacent to an existing property acquired by the land trust in 2020 from Cayuga County

FLLT also acquired 6.2 forested acres in the town of Scott, Cortland County. The property shares a boundary with the organization's High Vista Nature Preserve and will be added to the conservation area, expanding it to 153 acres of publicly accessible lands.

One conservation easement agreement was completed in 2022 by the FLLT permanently protecting 234 acres of farmland. The property consists of several land covers and habitats including successional forests, shrublands, agricultural fields, and a hemlock-hardwood swamp. The property also features nearly 6,000 feet of frontage on Hooker Brook.

CNYLT did not acquire property in the Watershed in 2022. Water quality improvements in the Watershed included a large-scale project involving stabilization of multiple exposed eskers and steep banks on a 93-acre parcel purchased in the town of Spafford in 2020. The work also included repair and stabilization of extensive damage from installation of logging roads and removal of hemlock trees that occurred prior to the land acquisition. Phase two of the repair will commence in the spring of 2023 with re-establishment of native plants and shrubs to help further mitigate erosion and create stability. This is the largest landscape restoration project ever undertaken by CNYLT.

Watershed Management Approach to Controlling Hemlock Woolly Adelgid (HWA)

HWA was identified in the Skaneateles Lake Watershed in 2014. Once infested with HWA, mature hemlock trees die within four to 20 years. The hemlock loss and replacement with hardwood species has the potential to impact water quality by altering nutrient cycling in the watershed and changing water temperature and water quantity going into the lake over the course of the year. Hemlocks' deep shade and often streamside habitat helps keep streams cool, and their evergreen shade keeps snow on the ground into the spring, providing cold runoff into groundwater farther into the growing season. Because hemlocks draw the most water during spring and fall, and relatively little in the summer, they also help stabilize stream flows.

HWA has been found along the lakeshore from the south end of the lake to the area of Fire Lane 22A on the western shore, and to Ten Mile Point on the eastern shore. It is also in the ravines that drain to the lake in the infested area. This winter it was also found northeast of the lake, at several locations between Skaneateles and Marcellus. (For the most up to date information, please visit the NY iMapInvasives map at nyimainvasives.org/data-and-maps).

In May 2015, 100 Eastern Hemlock trees were planted within this region of the watershed to grow populations of biological controls to resist the spread of HWA. Three insects that feed on HWA (biocontrols) have been released in the Skaneateles Watershed in 2014, 2015 and 2016. These are a beetle referred to as 'Little Larry', *Laricobius nigrinus*, and two species of silver fly, *Leucopis piniperda* and *L. argenticollis*. All three species are imported from their native range in the Northwestern US where they are natural predators of HWA. Establishment has not been verified in the Skaneateles watershed for any of the three species, but establishment can take many years to be detected.

To minimize the spread of HWA, the City has collaborated with the Onondaga County Soil and Water District, Cornell University, CCE of Onondaga County and several volunteers residing within the watershed. In 2021, Onondaga County SWCD received \$50,000 from the Great Lakes Restoration Initiative for targeted treatment of high-priority hemlocks in the Skaneateles and Otisco Lake watersheds. Onondaga County Soil and Water Conservation District staff treated 405 trees in 2021 and 868 trees in 2022. Treatments have occurred at Bahar, High Vista, High Hickory, and Bacher/Albanese Nature Preserves as well as Hemlock Hollow and Basin Brook lake-front subdivisions.

While no HWA educational programs were held in 2022, there is programming currently scheduled in 2023.

6. STAFFING AND FUNDING

6.1 Current Staffing Levels

City of Syracuse

Geographic Information System Specialist	0.17
Watershed Quality Coordinator	1.00
Sanitarian	1.00
Assistant Corporation Counsel	0.02
Total FTE	2.19

SLWAP Staff -- Liverpool, New York

Program Leader	0.25
Resource Conservation Specialists	1.00
Conservation District Technician	1.00
Conservation District Technician	0.50
Total FTE	2.75

Onondaga Soil and Water Conservation District – Liverpool, New York

Executive Director	0.25
Accountant I	0.50
Secretary	0.50
Salary/Benefits Coordinator (Part-Time)	0.20
Watershed Inspector (6-Month Position)	0.50
Total FTE	1.95

CCE of Onondaga Water Quality/Agriculture Education Program Staff

Team Coordinator (Water Quality)	0.24
Resource Educator (Water Quality/Forestry)	0.00
Subject Educator (Water Quality)	0.92
Social Media Platform & IT	0.06
Administrative Assistant (Water Quality)	0.11
Total FTE	1.33

6.2 Watershed Program Funding

Expenditures	Actual FY 21-22	Estimated 22-23	Proposed 23-24
<u>Onondaga Co, SWCD Contract Services:</u>	\$622,000	\$635,000	\$635,000
<u>Watershed Education Program:</u>			
CCE of Onondaga Co, Contract Services	\$89,361	\$89,500	\$89,500
GIS Expenses	\$11,000	\$11,000	\$12,000
Miscellaneous Expenses	-----	-----	-----
Subtotal Contractual Expenses	\$722,361	\$735,500	\$736,500
<u>City of Syracuse Staff (Direct Salary Expenses):</u>			
Water Department Staff	\$114,352	\$135,992	\$139,255
Legal Staff	\$1,055	\$1,000	\$1,000
Surveying Staff	\$1,323	\$2,000	\$2,000
Subtotal City Staff Expenses	\$116,730	\$138,992	\$142,255
<u>Other Expenditures:</u>			
Onon. SWCD Grant Program Activities- Fund Secured	\$81,052	\$73,282	\$130,000
CCE of Onondaga County Grant Supported Activities	-----	-----	-----
Subtotal Other Expenditures	\$81,052	\$73,282	\$130,000
Total Program Expenditures	\$920,143	\$947,774	\$1,008,755
<u>Funding Sources:</u>			
City of Syracuse			
Operating Budget	\$920,143	\$947,774	\$1,008,755
Subtotal City Funding	\$920,143	\$947,774	\$1,008,755
Other Funding	-----	-----	-----
Total Funds Available	\$920,143	\$947,774	\$1,008,755

7. LIST OF ACRONYMS

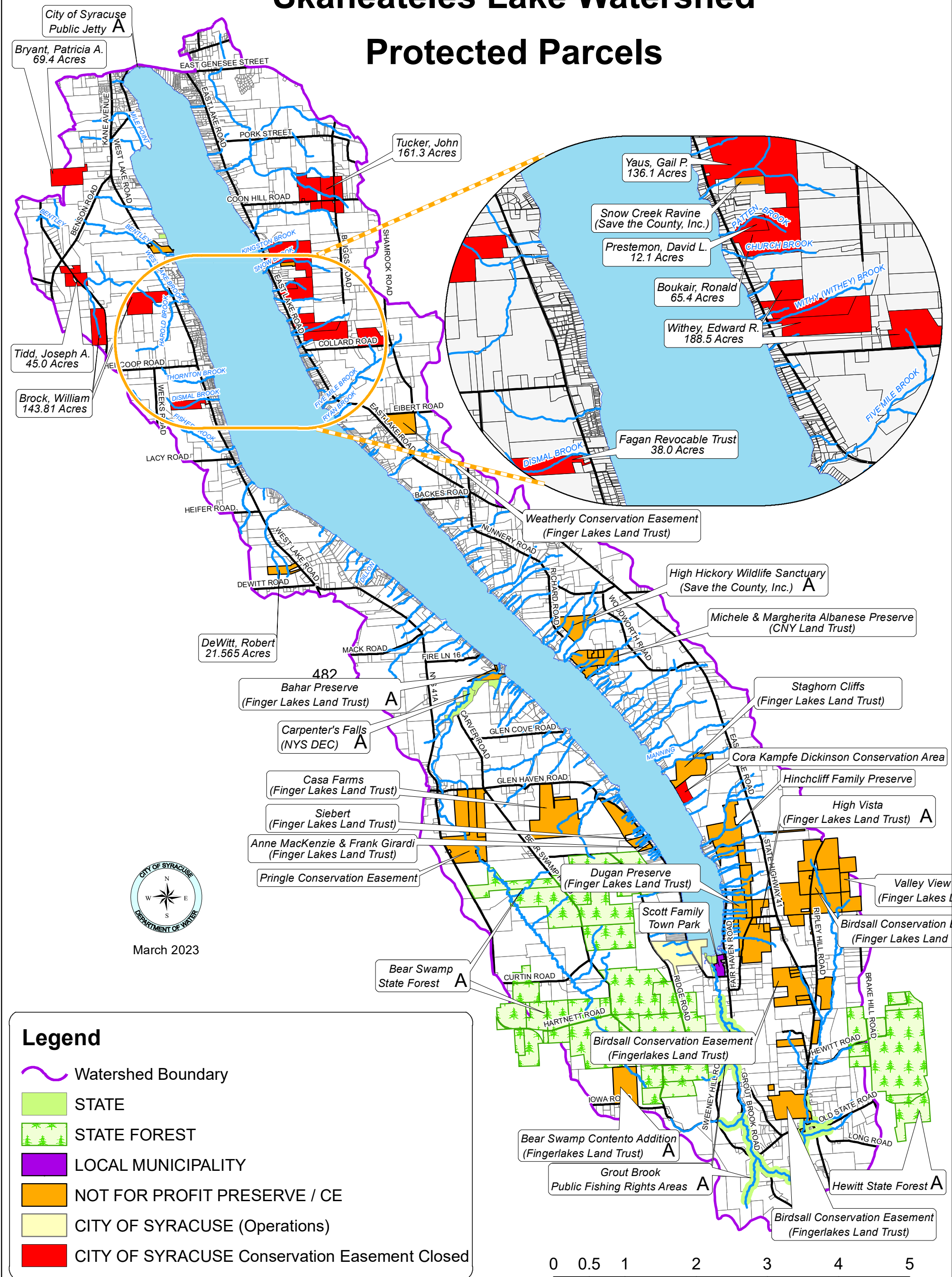
BMP	Best Management Practice
CAFO	Confined Animal Feeding Operation
CCE	Cornell Cooperative Extension
CEH	Council on Environmental Health (Onondaga County)
CNY	Central New York
CNYLT	Central New York Land Trust
CNY RPDB	Central New York Regional Planning & Development Board
CREP	Conservation Reserve Enhancement Program
CSLAP	Citizens Statewide Lake Assessment Program
EQIP	Environmental Quality Incentives Program
FE	Farm Equivalent
FLI	Finger Lakes Institute
FLLT	Finger Lakes Land Trust
FLOWPA	Finger Lakes-Lake Ontario Watershed Protection Alliance
FPIG	Farmland Protection Implementation Grant
FTE	Full Time Equivalent
GIS	Geographic Information System
GPS	Global Positioning System
HABs	Harmful Algae Blooms
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OCHD	Onondaga County Health Department
OCSWCD	Onondaga County Soil and Water Conservation District
OEC	Onondaga Earth Corps
OEI	Onondaga Environmental Institute
PDH	Professional Development Hour
SGEIS	Supplemental Generic Environmental Impact Statement
SLA	Skaneateles Lake Association
SLWAP	Skaneateles Lake Watershed Agricultural Program
SPDES	State Pollution Discharge Elimination System
SWCS	Soil and Water Conservation Society
UFI	Upstate Freshwater Institute
USDA	United States Department of Agriculture
USDA NRCS	United States Department of Agriculture, Natural Resources Conservation Service
US EPA	United States Environmental Protection Agency
USTF	Upstate Safety Task Force
WAPRC	Watershed Agricultural Program Review Committee
WQIP	Water Quality Improvement Project

Appendices

Appendix A – Maps

Skaneateles Lake Watershed

Protected Parcels



March 2023

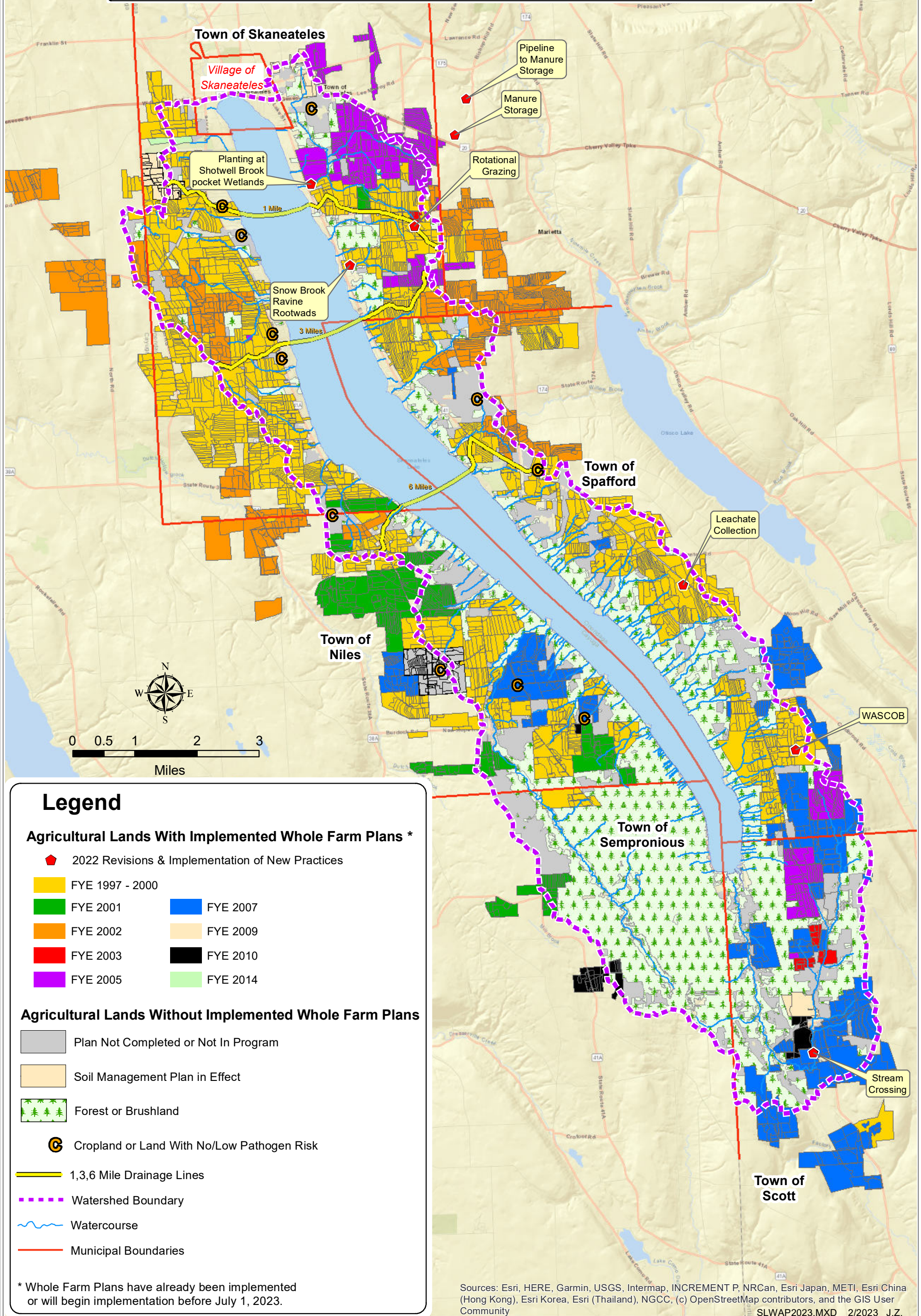
Legend

- Watershed Boundary
- STATE
- STATE FOREST
- LOCAL MUNICIPALITY
- NOT FOR PROFIT PRESERVE / CE
- CITY OF SYRACUSE (Operations)
- CITY OF SYRACUSE Conservation Easement Closed

A Denotes Area Open For Public Access
 No Public Access On Non-Profit Conservation Easements or
 City Of Syracuse Conservation Easements



Skaneateles Lake Watershed Agricultural Program Whole Farm Plan Implementation Progress



Legend

Agricultural Lands With Implemented Whole Farm Plans *

- ◆ 2022 Revisions & Implementation of New Practices
- FYE 1997 - 2000
- FYE 2001
- FYE 2002
- FYE 2003
- FYE 2005
- FYE 2007
- FYE 2009
- FYE 2010
- FYE 2014

Agricultural Lands Without Implemented Whole Farm Plans

- Plan Not Completed or Not In Program
- Soil Management Plan in Effect
- Forest or Brushland
- Ⓞ Cropland or Land With No/Low Pathogen Risk
- 1,3,6 Mile Drainage Lines
- - - Watershed Boundary
- ~ Watercourse
- Municipal Boundaries

* Whole Farm Plans have already been implemented or will begin implementation before July 1, 2023.

Appendix B - Skaneateles Lake Watershed
Agricultural Program Progress Report



Onondaga County Soil and Water Conservation District

**6680 Onondaga Lake Parkway
Liverpool, NY 13088**

Phone: (315)-457-0325

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Fax: (315)-457-0410

Web: www.ocswcd.org

Progress Report –

Skaneateles Lake Watershed Agricultural Program

March 2022 – February 2023

I. Introduction

The Onondaga County Soil and Water Conservation District (OCSWCD) signed a contract with the City of Syracuse initiating the Skaneateles Lake Watershed Agricultural Program (SLWAP) in September of 1994. SLWAP was created as part of the filtration avoidance criteria established by the NYS Department of Health for the City of Syracuse in accordance with the 1986 Safe Drinking Water Act. On October 1, 1994, the OCSWCD entered into agreement with our conservation partners to implement the program. These partners included: the SWCD's of Cayuga and Cortland counties; the Cornell Cooperative Extension Associations of Onondaga, Cayuga and Cortland counties; and the USDA Natural Resources Conservation Service (NRCS).

In addition to the conservation partners, a Watershed Agricultural Program Review Committee (WAPRC) consisting of seven watershed farmers and one representative of the City of Syracuse was formed. The primary function of WAPRC is to give guidance, develop and recommend SLWAP policy for approval by SWCD district boards, and review and recommend approval of Whole Farm Plans to district boards that are developed by SLWAP.

The objective of SLWAP is to carry out a voluntary, cost-effective whole farm planning and implementation program for the watershed's agricultural community that will reduce the risk of contamination of the lake from agricultural nonpoint sources. Priority agricultural nonpoint sources of pollution include pathogens, nutrients and sediment. Whole farm plans must not only meet the water quality objectives of the program; they must also meet business objectives of the farming enterprise to be successful. Plans are developed by a multi-agency team, which includes the farm manager, and utilizes a tiered approach to whole farm planning. The whole farm plan recommends Best Management Practices (BMPs) to be implemented on the farm to address priority water quality concerns. According to NYS Soil and Water Conservation Districts Law, BMP "means a practice or combination of practices determined to be the most effective, economically feasible and practicable means of preventing or reducing pollution generated by nonpoint sources." BMP implementation is paid for through the SLWAP with principal funding provided by the City of Syracuse and other outside sources.

The program team began developing plans in March of 1995 by taking participants through Tiers I and II. The first whole farm plan was completed in February 1996. SLWAP now has participants' at all five tiers of the whole farm planning process.

II. Participation

There are currently 37 farms enrolled in the program that meet the definition of a "farm". *For the purpose of the SLWAP, a farm is defined as "land used in a single farming operation for the production for sale of crops, livestock or livestock products of an average (over the past two years) gross sales of \$10,000 or more."* This represents an 88% participation rate in the SLWAP. Five (5) farms that meet the definition of a "farm" do not want to participate in the program but are visited annually to discuss any issues/opportunities for SLWAP to provide technical assistance. Two of these non-participating farms have whole farm plans developed, and two farms have chosen to self-implement Best Management Practices identified in the plan. Twenty three (23) of the original farms are either no longer in active production or no longer meet the definition of a farm; "land used in a single farming operation for the production for sale of crops, livestock, or livestock products of an average (over the past two years) gross sales value of \$10,000 or more." Typically, a portion (or all) of the land base associated with these farms is being utilized by other agricultural operations in the watershed and the land is included in that farm's whole farm plan.

Of the land in the watershed in agricultural production, approximately 93% has been enrolled in the program. It is important to note that some farmers have retired and have sold or leased their land to another watershed farm. This land has stayed in agricultural production within the watershed.

Efforts will continue to enroll those farms that have yet to sign up with the program. A continued goal of the program is to eventually involve 100% of the active farm operations in the watershed.

III. Planning Status (Tiers I, II, III & IV)

Through February 2023:

- 37 farms have completed Tier I (farm inventory and identification of potential water quality concerns).
- 37 of these farms have completed Tier II (verification of water quality concerns).
- 36 farms have completed whole farm plans (Tier III) for their operations (76.82 Farm Equivalents). Note: One farm equivalent is equal to 400 acres of agricultural land, which includes forested land. (Some farms have been replanned to incorporate the management of the new owners: Allan and Ronk).

- 30 farms have completed Tier IV plan implementation (67.38 Farm Equivalents). Two (2) additional farms have self-implemented portions of whole farm plan prepared by SLWAP.

Planning Progress by Fiscal Year – Whole Farm Plans Completed*

FY	Planning Time (months)	Plans	Updates to Plans	New Acres Planned	Updates to Previously Planned Acres	Farm Equivalents
95-96	6	5		1,200		5.56
96-97	12	11		3,747		13.87
97-98	12	7		4,618		13.79
98-99	12	4		5,580		19.81
99-00	12	5		2,866		8.76
00-01	12	4		1,735		7.92
01-02	9	5		2,628		8.43
02-03	11	2		1,470		4.08
03-04	11	4		257		4
04-05	7	1		188		1
** ,***						
05-06	12	2		489		2
06-07	12	3		1,367		5.25
07-08	12	2		466		2.14
08-09	12	2		286		2
09-10	12	4		1,016		4.65
10-11	12	3		520		3
11-12	12	0	3	-	137	3.39
12-13	12	0	1	37	0	1
13-14	12	1	0	89	0	1
14-15	12	1	1	60	1048	3.62
15-16	12	0	1	0	125	1
16-17	12	0	3	15	108	3
17-18	12	0	2	0	3032	8.22
18-19	12	0	2	0	279	9.25
19-20	12	2	0	217	0	2
20-21	12	0	1	0	24	1
21-22	12	1	0	210	0	1
22-23	12	1	1	81	0	1
TOTAL		69	15	29,142	4,753	141.74

* Note: Data in this report has been updated to reflect the number of Whole Farm Plans that are currently being applied to agricultural land that is in active production, within the watershed. During the last 28 years, some farms have gone out of business and some of that land has been absorbed by other farmers (new or existing). Therefore, many of the values that are now being reported are lower than in previous reports. By way of our database, an historical record of all farms who have participated in the SLWAP has been maintained.

** Note: Two farms already accounted for in previous fiscal years required additional planning to account for changes in the operation. This additional planning effort was equivalent to 2.65 Farm Equivalents and 642 acres of agricultural land. This data was not recorded for the 04-05 Fiscal Year.

*** Note: Planning team suspended Whole Farm Planning for four months to assist implementation team.

IV. Implementation Status (Tier IV)

Through February 2023, SLWAP has fully implemented whole farm plans for 30 farms (67.38 farm equivalents). During the past year revisions were planned and implemented to existing BMPs on four farms (17.93 farm equivalents). BMP implementation (survey/design/build) occurred on two new farms (2 farm equivalents). SLWAP is now primarily in a maintenance phase. Throughout the 2023 construction season, we anticipate BMP implementation to occur on at least one new farm and revisions to BMPs on four existing farms.

Best Management Practices (BMPs) that have been constructed on farms in the watershed include:

BMP	Quantity Implemented
Pathogen Management Systems	27
Barnyard Runoff Management Systems	30
Temporary Manure Nutrient Storage/Composting Systems	23
Nutrient Management Systems (~ AEM Tier 4)	31
Alternative Water Supply	44
Buffer Strips	39.69 acres
Access Road Improvement Sites	73
Diversions	28,973 feet
Fencing	128,419 feet
Milking Center Waste Water Treatment & Disposal Systems	15
Short Duration Grazing Systems	13
Strip-cropping on Contour	1,375 acres
Water & Sediment Control Systems (WASCOBs)	69
Waterways – grass, stone lined	50,427 feet
Critical Area Protection – vegetation control	394 acres
Critical Area Protection – streambank stabilization	8,737 feet
Nutrient Management Reviews (annually)	26
Mortality Composting Systems	10
Cover Crops (cumulative acres - 2022)	909
Conservation Cover in Wheat, grass, hay (cumulative acres–‘22)	737
Roof Water Dripline (ft) -2019	23
Road Ditch Stabilization Projects w/ Heavy Armoring (#)	1

Tire Recycling (# tires since 2019)	60,151
Hydroseeded Road Ditch-Cleaned by Municipalities ('22 Miles)	8

Measurable results from the implementation of these BMPs include:

- Per the Chesapeake Bay model for NYS, a forest buffer applied along a pasture can provide up to a 57.57% reduction in sediment loading. The model also reports that a forest buffer applied along a pasture can provide up to a 39.43% reduction in Phosphorous loading (no value provided for Nitrogen from this model).
- The SLWAP and District have participated with Greenfield Farms for two years to monitor tile outlet water and water coming from a wooded stream nearby the crop field. Results have shown that between May 1 and November 1, 2021, it was observed in all but three instances, there was more Total Phosphorous in the water sampled coming out of the woods versus water coming out of the tile outlet in 2021. For two of those instances, there was no water available for sampling coming out of the woods (June 7 and June 21). October 18 was the only sample event where TP was higher in the tile outlet water. This occurred after a major rain event on October 16, 2021. In 2022, TP was higher coming out of the woods versus the tile line, except for June 6, at which time only the tile line was flowing water. After June 6, through December 5, 2022, both the tile line and the woods were dry, even though precipitation occurred between May 17 and June 2, 2022.
- Overall, Total Dissolved Phosphorous (TDP) was higher coming out of the woods than out of the tile outlet. There were only three times that tile outlet water had higher concentrations of TDP than stream water sampled coming out of the woods. For two of those instances, there was no water available for sampling coming out of the woods (June 7 and June 21). On September 20 TDP was higher than that measured in stream water. In 2022, TDP was higher coming out of the woods versus the tile line, except for June 6, at which time only the tile line was flowing water. After June 6, through December 5, 2022, both the tile line and the woods were dry, even though precipitation occurred between May 17 and June 2, 2022.
- In all but three instances, Nitrogen Oxides (NO_x) were higher in stream water sampled coming out of the woods as compared to tile outlet water. Again on June 7 and 21, there was no water in the stream to sample, when the tile was flowing. On October 18, the second most significant rain event of the growing season affected the project area. Corn was already harvested. NO_x samples were higher in tile outlet water versus stream water. In 2022, TDP was higher coming out of the woods versus the tile line, except for June 6, at which time only the tile line was flowing water. After June 6, through December 5, 2022, both the tile line and the woods were dry, even though precipitation occurred between May 17 and June 2, 2022.

In conclusion, water quality in agricultural tile lines can be of high quality if the farmer has a focus to build and maintain soil health, like Greenfield Farms has! This means establishing and maintaining vegetative buffers on the downslope side between your fields, streams and ditches. Planting cover crops annually also enhances soil health!

Hire a qualified agricultural nutrient management planner to develop a plan. Strictly adhere to the nutrient management plan (NMP)! A NMP will determine the nutrients your fields need for the intended crop growth. It is important to only apply the amount of nutrients needed.

If you are an animal farmer, work with your NMP and/or your local Soil and Water Conservation District to sample your manure to determine the amount of nutrients in that manure. Then have a planner develop a NMP so that you can maximize the nutrient benefits of your manure. One local farmer in the Skaneateles Lake watershed “estimates \$180 per acre saved due to efficient manure management. For my 1,400 acres that receive manure nutrient applications, that’s over \$250,000 in savings to my farm’s bottom line every year!”

Other BMPs in the agricultural tool box to help protect water quality and to build soil health include, but are not limited to:

- Buffers
- Protected/enhanced wetlands
- No-till planting
- Filter Strips
- Terrace
- Grassed Waterways
- Strip Cropping
- Crop Rotation
- Bio Reactors
- Residue & tillage management
- Cover Crops
- Diversions
- Water & Sediment Control Basins (WASCOBs)

Research has shown that better drained soils have better growing seasons. Tile drained soils provide the farmer greater flexibility when timing fertilizer and manure applications. This allows animal farmers to have more flexibility to stay off fields during higher risk times (rain and/or snow melt events). And, tile drained fields generally provide longer periods to harvest crops and spread manure. All of which means cover crops can be planted sooner in the fall!

- Cornell University in cooperation with Onondaga County Soil and Water Conservation District and funding from the USDA-Natural Resources Conservation Service (NRCS) Conservation Innovation Grants Program have been working with a watershed farm, since 2016, to reduce nitrate-rich farm runoff that could be discharged via tile (subsurface) drains to waterways.

Denitrifying bioreactors, also called wood chip bioreactors, utilize a carbon source in the form of wood chips which support denitrifying bacteria, converting nitrates into nitrogen gas that is released to the atmosphere. Tile drainage water is diverted by a water control structure through the bed of wood chips. This practice does not require land to be pulled out of production and does not inhibit the normal operation of subsurface drainage systems. Monitoring of previously installed bioreactors in the Susquehanna and Finger Lakes watersheds has shown a 57% reduction in nitrogen that enters our streams.

The performance of the denitrifying bioreactors is being monitored to determine if these can become part of the NRCS best management practices and to further develop a Conservation Practice Standard for New York to design and implement them. The cost of implementation is quite reasonable, typically less than \$10,000, since woodchips are readily available and the diversion structures to control the flow of the water through the bioreactor are less than \$1000 each. Operation and maintenance costs are also low because they work passively underground (Figure 3). Since the denitrifying bacteria are always hungry, as long as there is a supply of nitrate and some woodchips to decompose, they are expected to continue to work. The decomposition of the woodchips is very slow because the intent is to keep the woodchip bed saturated and in an anaerobic, oxygen deficient type of environment where the nitrate-consuming bacteria thrive best.

Results between 2017 and 2021 have shown a 43% (2017 – high of 42.9 ppm on inlet side and low of <0.5 ppm on outlet side) to 68% (2021 – high of 21 ppm inlet side to low of <0.5 ppm on outlet side) reduction in Nitrate as N in one bio reactor during the months of June and early July and an 85% (2021 – high of 15 ppm on inlet side to low of <0.5 ppm on outlet side) reduction in Nitrate at N in a second bio reactor during that same time period.

On August 30 and 31, 2022 SLWAP staff and a watershed dairy farmer went to the University of Vermont to observe a bio reactor that was designed to use clean iron filings to treat Phosphorous laden runoff. The team also toured a bio reactor which was being used to treat silage leachate. Results of our visit suggested that it may take another five years before the project technology could be ready to be deployed on farm-scale projects in the watershed for treating phosphorous laden runoff and silage leachate. Results were encouraging overall.

- The SLWAP has also participated in graduate level research projects with SUNY College of Environmental Science and Forestry. Those research projects included:

Pradhanang, Soni. 2009. Monitoring and Modeling of Water Quality in Streams of Skaneateles Lake Watershed, NY. 185 p.

Abe, Noaya. 2006. Dissertation. Studies in Resources Economics: Scrap Tire Management and Watershed Management for Water Source Protection. 321 p.

- When a farm goes out of business, there is a “vacuum” in the watershed. Typically, there are 3 to 5 farms bidding to purchase the outgoing farm to keep that land base and the BMPs in active agricultural production.
- Fertilizer recommendations have been made for all 39 farms with a Tier III Whole Farm Plan. Nutrient savings in the watershed are achieved through better timing and placement of the nutrient application, as compared to traditional practices. Today, nutrient recommendations are based upon maximum economic yields, as determined by Cornell University’s “Cropware” program. The end-result of using Cropware is that nutrients are applied at a scientifically-balanced rate as opposed to a producer “guessing” as to what a crop needs to grow.
- Crop rotations and BMPs have helped reduce soil erosion by an average of 3,770 tons/year.
- Three barriers to pathogen movement (heard health, following barnyard maintenance and manure spreading schedules at agronomic applications on approved fields, and excluding livestock from water courses), are established on 18 out of 22 “active” livestock farms enrolled in the watershed agricultural program. Progress is being made to establish the three barriers to pathogen movement on all remaining livestock farms.
- According to the Procedure for Estimating Agricultural Nonpoint Source Phosphorus Runoff (Lake Champlain Basin Program – USDA/NRCS and University of Vermont), BMPs implemented through the SLWAP will prevent approximately 19,525 pounds of phosphorus/year from entering Skaneateles Lake. BMPs responsible for the reduction include Barnyard Runoff Management, Milking Center Waste Water Treatment & Disposal Systems, Animal Waste Management Systems, and Short Duration Grazing Systems.

There are currently three remaining livestock farms in the watershed that require some amount of implementation to complete their whole farm plan goals. Implementation has commenced on these farms.

V. Whole Farm Plan Annual Evaluation (Tier V)

Tier V of the Tiered Approach to Whole Farm Planning is the annual review, evaluation, operation, maintenance, update and potential revision of completed

whole farm plans. SLWAP has been developing and implementing plans since 1995, therefore the evaluation of previously completed plans is critical. It is important to determine if the plan agreed to by the farmer is effectively being followed and protecting water quality as designed. Tier V provides the opportunity to revise and update the plan as needed and reinforces the objectives of the plan with the farm manager. Most plans require revisions in crop rotations and an update to the nutrient management plans (i.e. fertilizer recommendations and manure spreading schedules). Accordingly, Whole Farm Plans are “living” documents that are always changing.

In January 2013, SLWAP initiated a more-in-depth annual evaluation of whole farm plans for farms in the watershed with completed plans. Specifically, all the BMPs from the long-form of the whole farm plan were plotted on an aerial photo base GIS map. Staff went farm-to-farm to identify and evaluate BMP installations on the farm. Staff also continued to hold one-on-one meetings to collect information necessary to update the plans. In addition, this meeting allows SLWAP to determine how well the plan and the BMPs are being operated and maintained. It has helped staff to anticipate any new revision projects that will be needed to protect water quality. Reviews were conducted between January and March 2019. Any new revision projects will be added to the existing data base and will be planned and implemented as revision projects are completed and removed from the existing database, subject to the availability of unencumbered funds.

The Annual Farm Consumption Reviews of the recent years have been most comprehensive, stream-lined reviews ever completed in recent history of the watershed program. The data collected was extremely accurate and took into account amounts of items such as livestock housed, manure applied, fertilizer applied, etc. for land that the farms owned and/or operated both inside of and outside of the watershed. The farmers were provided with an “annual review refresher letter” as to what data was necessary to collect and present during the annual review to stream-line future annual reviews.

In the winter of 2016, SLWAP utilized services of an Intern from Onondaga Community College (OCC) to graphically analyze data from past Farm Consumption Reviews. The results were inconclusive, so the project was redone by a new OCC intern to achieve more accurate results and results were reviewed by the SLWAP Whole Farm Planner. The goal of the project was to observe trends in livestock numbers, manure volumes spread, production acreage, fuel, and pesticide usage. These data were last updated in 2020.

VI. Conservation Reserve Enhancement Program (CREP)

In 2001, the USDA Secretary of Agriculture approved a Conservation Reserve Enhancement Program (CREP) for Syracuse and the Skaneateles Lake Watershed. This USDA program focuses on removing highly erodible cropland, within 800 feet of eligible water bodies and marginal pasture found adjacent to open water bodies

(riparian areas), from active agricultural use. Participating Landowners are compensated by USDA’s Farm Service Agency (FSA) with land rental payments, multiple incentive payments, maintenance fees, and cost share for the installation of associated BMPs. Land entered into the Skaneateles Lake Watershed CREP must be included in a whole farm plan. All pasture acreage enrolled in the program must be established with trees and shrubs, while any cropland entered can be established with either grasses or woody vegetation. All BMP’s through CREP must be maintained for the life of the contract (ten to fifteen years). The intent of establishing a vegetative cover is to effectively reduce/remove pathogens, nutrients, and sediments from field and pasture runoff, while providing high quality wildlife habitat. The agreement between USDA and Syracuse allows for a total of 1000 acres to be enrolled in CREP, with a combined contribution of \$900,000 over 15 years (\$250,000 from Syracuse and \$650,000 from USDA).

No farms enrolled land into CREP in 2022. A continued effort is being made to identify potential farms for CREP enrollment and then to sell these farms on the conservation benefits of CREP participation. To this end, SLWAP and the Onondaga County Soil & Water Conservation District posted a USDA-authored article on the benefits of participating in CREP on their websites as well as in both programs’ quarterly newsletters. The efforts have not yet resulted in any new CREP enrollments in either the Skaneateles Lake watershed.

Year	# of CREP Farms Planned	Acres of CREP Planned	Farms Implemented	Acres Implemented	# Farms / Acres – Enhanced	# Farms / Acres – Re-enrolled
2022	0	0	0	0	0	0
2021	0	0	0	0	1 / 1.2	1 / 1.2
2020	0	0	0	0	0	
2019	0	0	0	0	1 / 1.4	
2018	0	0	0	0	2 / 8.4	
2017	0	0	0	0		
2016	0	0	0	0		
2015	0	0	0	0		
2014	0	0	0	0		
2013	0	0	0	0		
2012	0	0	0	0		
2011	0	0	0	0		
2010	1	0.7	1	0.7		
2009	0	0	2	3.3		
2008	3	5.8	1	2.5		
2007	2	5.9	2	6.7		
2006	0	0	1	6.3		
2005	4	84	3	74		
2004	2	9	3	18		
2003	3	21	2	13		
2002	1	22	1	22		

TOTAL	16	148.4	16	146.5	4 / 11 ac	N/A
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VII. Soil Conservation Tools in the Watershed

In the summer of 2017, the SLWAP sold the 6-Row John Deere 1750 Conservation Planter and the 10' Great Plains 1006 No-Till Drill that was purchased in 2009 by the City of Syracuse. It is important to note that the City's goal of the program was to provide these implements for usage on farms (at a nominal fee). Ideally, the farm would be satisfied with the results of the implements on their land and then would purchase this type of conservation implement when they update their equipment in future years. The program was very successful.

Since the City of Syracuse purchased these implements in 2009, four farms operating large acreages have purchased the conservation-type implements. Two farmers have purchased the 30-foot AerWay manure incorporation tool (these two large farms work a combined 5,500 acres of tillable land, which accounts for approximately 20% of the tillable land in the watershed), one farm has purchased a 30-foot Great Plains drill and one farm has purchased a 12-row planter that utilizes some of the conservation technology.

A new 12-foot Esch 5512 no-till drill was purchased during the summer of 2017. The drill is two-foot wider to help the farmers plant more ground with each pass. A unique feature of the drill is that it has a folding draw bar so that it is only 8.5 feet wide when trailering down the road between farms. This was a great advancement for safety of the staff member that delivers the implement to farms.

The drill can plant small grains, cover crops, small seeds, soybeans, and buffer strips. It has 5.5-inch row spacing, two seed boxes, and requires a 100-horse power tractor to operate.

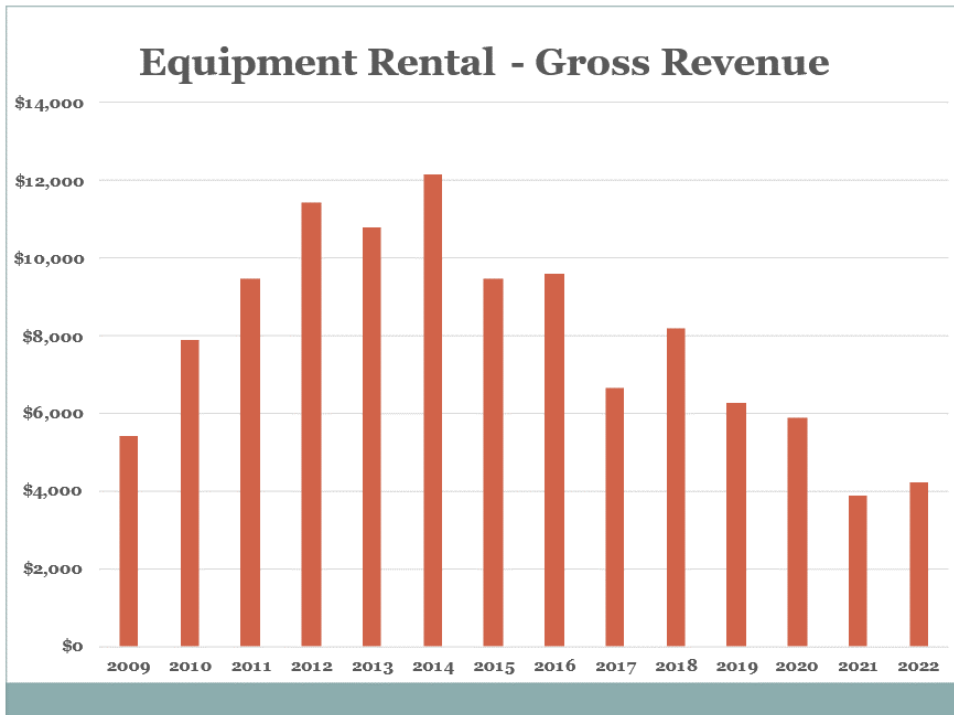


Implement Usage Summary

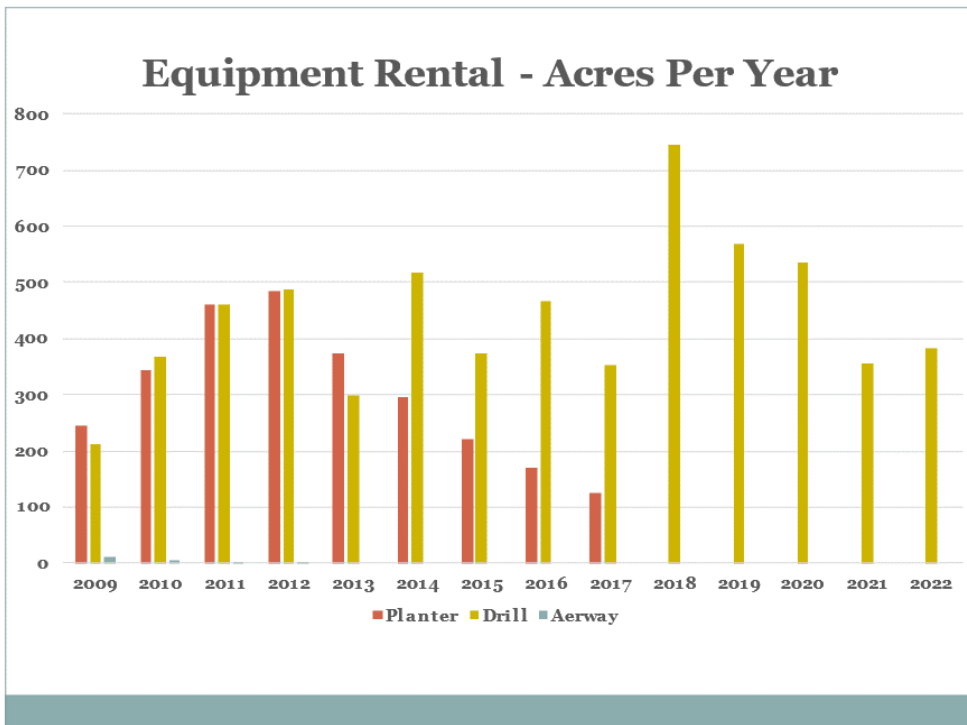
In 2022, the Esch was utilized on 383 acres of cropland between the watershed and Onondaga County. SLWAP staff advertised these implements to SLWAP producers utilizing the following means: printer flyers, website, and by posting a video of the equipment being used on YouTube.

SLWAP staff, the City of Syracuse, WAPRC, and Onondaga County SWCD District Board of Directors review the rental rates annually for each equipment rental season. The rental rates will remain affordable enough so that farmers will continue to try the equipment, be satisfied with the results, and “will purchase these types of implements when their current implements wear out.” The 2022 rental rate stayed the same at \$11/acre with a \$100 delivery fee.

A bar graph showing gross revenue from the equipment rental program is presented below.



A bar graph showing implement usage is presented below. *(Please note: Aerway usage is reported as number of users per year. Aerway sold in fall of 2012).*



VIII. Funding Assistance

A component of the SLWAP contract with the City of Syracuse is to secure additional funding sources to assist with whole farm planning and implementation.

Five outside funding sources were applied for in 2022 for a total of \$239,186 to supplement City funds. They are as follows.

-\$178,550	CRF 6 – Skaneateles Cover Crops for 8 Farms/3 years
-\$14,568	ESC 2 – Tucker Stream Crossing
-\$6,500	ESC 2 – Jackson Diversion / WASCOD
-\$14,568	ESC 2 – McMahon Stream Crossing
-\$25,000	ESC 2 – Richards WASCOD

As new project opportunities arise, SLWAP staff will certainly apply for grant funding to continue to offset implementation cost to the City.

The total of grant funds secured by SLWAP for implementing projects on the land since the beginning of the program is \$6,181,673.80.

IX. Awards & Recognition

Aldo Leopold Conservation Award (NYS)

On August 11, 2022, New York State Agriculture Commissioner Richard A. Ball joined the Sand County Foundation to announce that Greenfield Farms of Skaneateles was selected for the 2022 New York AEM-Leopold Conservation Award. The distinguished award honors a farm for its extraordinary efforts to promote and protect the environment through the preservation of soil and water quality while ensuring farm viability for future generations.

The Greenfields are fourth generation farmers. "Just about every acre that the farm owns or rents has views of Skaneateles Lake!" Greenfield Farms, LLC produces corn grain, soybeans, hay, wheat, and oats on 1,400 acres of crop land in both the Skaneateles and Owasco Lake Watersheds.

The unique part about Greenfield Farms, LLC is they believe, and therefore operate their farm, based upon the guiding principle "Our most valuable commodity is not corn or soybeans, it is our topsoil!" The farm sold their moldboard plows in 2000 and they were the first farm in the area to invest in no-till conservation technology. Today the farm is on its fourth no-till drill!

The farm is operated by brothers Bill, Tom and Jim Greenfield as well as Tom's son TJ (the fourth generation!) Bill assists with all aspects of the farm operation, drives trucks and helps install practices for neighbor relations. "Everybody has their own role and responsibilities on the farm".

The farm leads by example by demonstrating their conservation ethics daily. Greenfields have adapted over the years and have been able to mentor other farms that aspire to be strong conservation leaders in the community! Their vision and mission statement, which was produced in 1997 with the farm's voluntary participation in SLWAP, still guides them today. Both are below.

Vision Statement: "Greenfield Farms, LLC will be an economically viable business that works harmoniously with the community to improve water quality in Skaneateles Lake."

Mission Statement: "To operate a diversified, profitable, hay and cash crop farm that maintains neighbor relations through improved environmental management practices".

All members of Greenfield Farms, LLC go to work every morning with the understanding that "topsoil is our most valuable commodity". Everything that the farm does daily, provides protection of their natural resources. And, because the farm protects their natural resources, they help to protect the City of Syracuse's drinking water supply at Skaneateles Lake.

They do all that they can to increase and maintain soil organic matter concentrations through crop rotations, residue management and cover cropping. This creates a 1,400 acre "bigger-better sponge" to help absorb storm water from ever changing weather patterns. Their diversification into many commodity markets enables them to weather "financial storms" that are frequently experienced in the agricultural industry. All their efforts work together to provide a busy, tiring, but excellent quality of life for the Greenfield family, their employees, neighbors, and community!



3 Generations of Greenfields celebrate receiving the Aldo Leopold Conservation Award. August 11, 2022.



Before the awards ceremony, guests were treated to a hay wagon tour of Greenfield Farms and their sustainable conservation practices.



Greenfield Farms. The best view of Skaneateles Lake from anywhere in the watershed!

Environmental Steward of the Year

The SLWAP recognizes outstanding cooperators in the watershed agricultural program throughout the years .Below is a table of past recipients.

Award recipients are listed below.

Year	Farm Name	Farm Type
2019	City of Syracuse Watershed Agricultural Program	Water Purveyor
2018	Ireland Farms	Crop
2015	Birdsall Farm	Beef
2014	John F. Tucker & Sons	Dairy/Crop
2013	McMahon's E-Z Acres	Dairy
2008	Congressman James T. Walsh	Government
2006	Fesko Farms	Dairy
2005	Weeks Farm	Crop/Beef
2004	Greenfield Farms	Crop

Municipal Partner of the Year

Award recipients are listed below.

Year	Farm Name
2021	Town of Spafford / Highway Department
2015	Onondaga County / Highway Department

X. Information & Education Activities

SLWAP has established an Information & Education program designed to support, reinforce and expand planning, implementation and revision efforts. A summary of Information & Education activities is listed below:

- Watershed Journal – our program’s newsletter, is designed to keep all farmers in the watershed up to date with program activities. Our articles focus on various water quality BMPs, timely reminders on BMP Operation and Maintenance, a calendar of environmentally oriented meetings and seminars in the area, and the results of farmer experiences with various BMPs. The journal publication is published four times a year and sent out by US Mail and electronically. Distribution is 529 copies.
- The SLWAP web page is integrated with the Onondaga County Soil and Water Conservation District home page. Updates are made to the site periodically and current newsletters are available on the website. The web address is www.ocswcd.org. During peak viewership we receive in excess of 2,400 hits per day.
- The Skaneateles Lake Watershed Agricultural Program Watershed Agricultural Program Review Committee had five meetings in 2021. (Feb. 23, Apr. 20, Jun. 21, Aug. 24, Sept. 21, Dec. 5).
- Program Manager Burger Attended numerous regularly scheduled and special meetings of the Skaneateles Lake Municipal Website Committee meeting. (Feb. 2, May 6, Jun. 10, Aug. 12, Sept. 23, Dec. 2)
- Program Manager Burger presented to NYS Soil and Water Conservation Committee on Urban Agriculture work in City of Syracuse with Dr. King Elementary and Brighton Academy (Feb. 16).
- Six annual reports sent to NYS Department of Agricultural and Markets for 2021 activity. February 15, 2022. The Annual Report of the Treasurer was submitted by April 15, 2022.
- SLWAP Program Manager Burger and Onondaga County Conservation District Technician T. Link participated in Legislative meetings by

Zoom w/ NYS elected officials in Albany (throughout month of February).

- Staff members attended annual training at Water Quality Symposium by Zoom to enhance staff skills and study new approaches (and BMPs) to address environmental concerns on farms in the watershed. March 14-25, 2022.
- Program Manager Burger and OCSWCD Technician C. Larkin presented NYS DEC 4-hr Erosion and Sediment Control to 14 student employees at Onondaga Earth Corps (the City's job readiness training center for at-risk young adults).
- Program Manager Burger participated in the lake's 9-Element Plan meeting (Apr. 7).
- Program Manager Burger attended Water Fest in Cortland to promote accomplishments of the ag program (Jun. 4).
- Program Manger Burger, City of Syracuse Watershed Control Coordinator R. Abbott and the Greenfield family participated in two days of on-farm interviews for video c/o Aldo Leopold Conservation Award (Jun. 28-29).
- SLWAP staff and WAPRC attended award ceremony for Greenfield Crop Farm winning the 2022 Aldo Leopold Conservation Award (Aug. 11).
- OCSWCD and SLWAP hosted a 3-day classroom and field stream training with instructor Dave Derrick (retired US Army Corps of Engineers). Conservation professionals from around NYS attended this training (Aug. 15-17). More frequent and intense storms and erosion justified this training opportunity!
- Resource Conservation Specialist E. Jensen held first ever Cover Crop Seeding Experient using Drone Technology (Aug. 25).
- Prepared FY 22/23 SLWAP budget for submittal to City of Syracuse, Department of Water. (Oct. 11).
- Program Manager Burger presented to NYS Association of Conservation Districts on Urban Agriculture work in the City with Dr. King Elementary and Brighton Academy (Oct. 19).

- Program Manager Burger participated in lakes 9-Element Plan meeting (Oct. 19).
- Program Manager Burger sat on panel to discuss SLWAP efforts on “Employee and BOD Member Recruitment and Retention”. Meeting was called by NYS Soil and Water Conservation Committee for all SWCD’s in NYS. (Dec. 13-14). East Syracuse, NY.
- OCSWCD Program Manager A. Buchta and Technician M. Vandewarker attended a tour of manure gas production and usage at Spruce Haven Dairy Farm in Cayuga County, NY (Dec. 19). This technology may be applicable in the watershed in the future because of the new State of New York renewable energy and carbon emissions reductions initiatives.
- SLWAP Annual Meeting (virtual). December 5, 2022. First in-person meeting since Covid. Dr. Frank Rossi presented on an Update on Agricultural Sciences at Cornell University and Compared the Similarities Between Practices Employed by Golf Courses to Preserve Water Quality on Golf Courses and Lawns to the Preservation Practices of Farmers. SLWAP’s Eric Jensen delivered a review of the first year of Cover Crop seeding using a drone. Rick Jordan of CNY Drone Services presented the results of a drone cover crop seeding project recently completed in the watershed. Onondaga County SWCD’s M. Vandewarker presented data on the two-year study comparing tile outlet water from an agricultural field to water coming out of tiles lines. Fifteen watershed farms attended representing 67% of the tillable acres in the watershed. The “next generation” from five farms were in attendance. Approximately 26 people attended the meeting.
- The OCSWCD participated in a React Snow Plow Blade Study in the winter of 2022/2023. The goal of the project was to determine if snow plow blades that contour the road surface could remove more snow/ice and thereby reduce road salt applications. The results were very promising (soon to be written up into a newsletter article). The award winning T. Spafford Highway Department is very interested in updating the blades on their fleet for the upcoming winter.

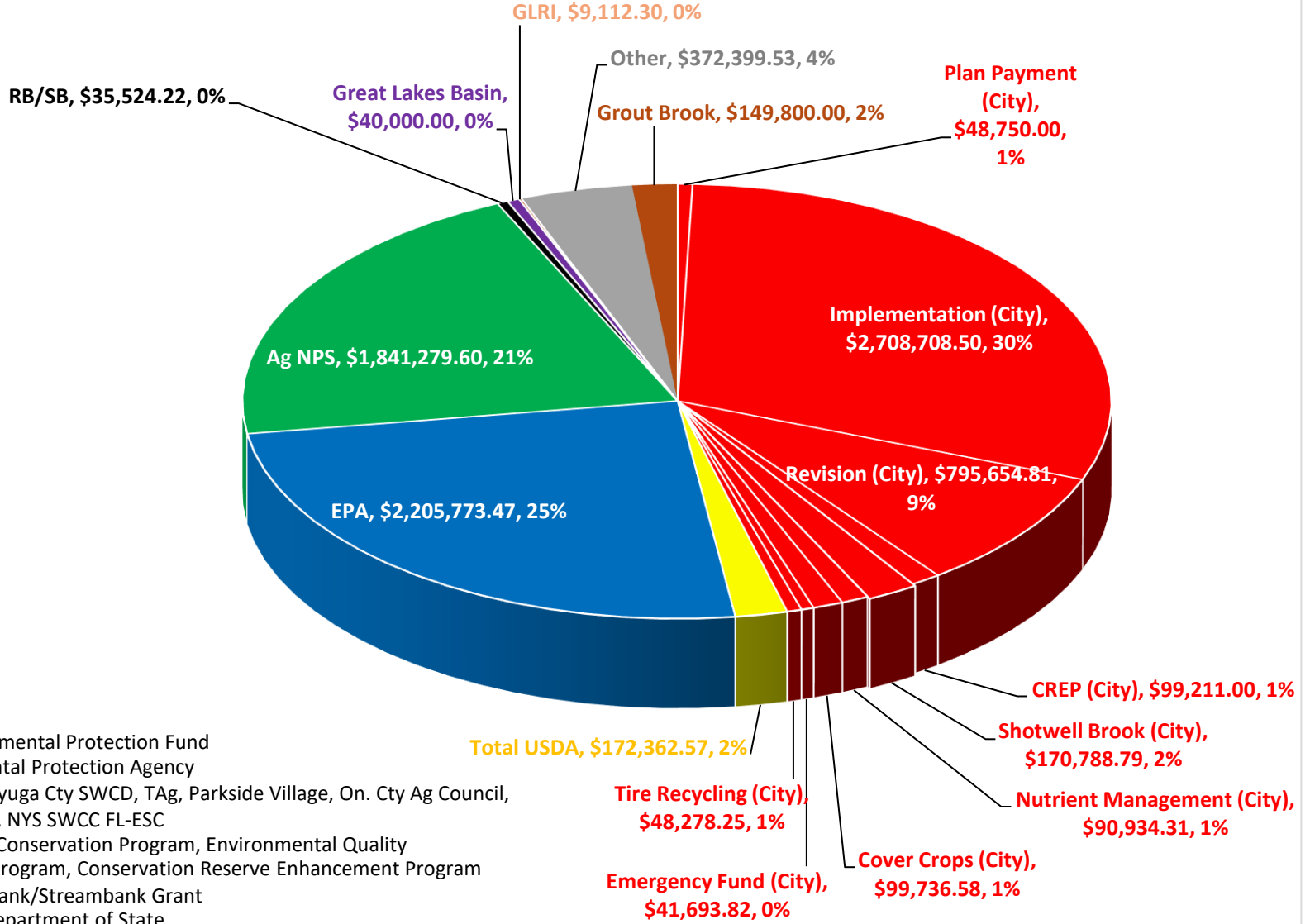
XI. Conclusion

The SLWAP remains a successful model of the Agricultural Environmental Management approach to whole farm planning. The program has been an

excellent opportunity for farmers in the Skaneateles Lake watershed to voluntarily work towards water quality protection while keeping agriculture viable within the watershed. Secondary benefits of the program include preservation of open space and continued maintenance of a safe and reliable food supply.

SLWAP Implementation Costs 1/1995 Through 2/28/2023

Note: 0% is equivalent to less than 1%. Please use available financial data for calculations.

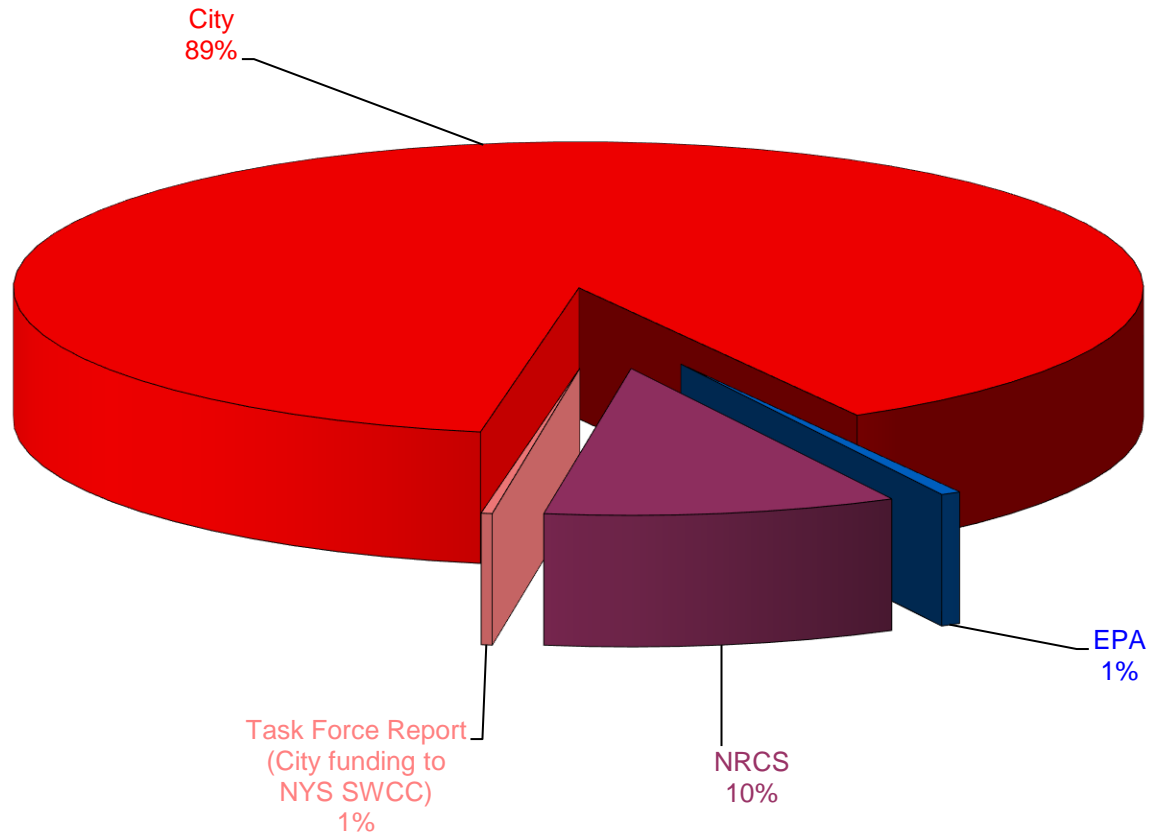


Key:

- AgNPS-NYS Environmental Protection Fund
- EPA-US Environmental Protection Agency
- Other-Graze NY, Cayuga Cty SWCD, TAg, Parkside Village, On. Cty Ag Council, CRF, Part C, NYS SWCC FL-ESC
- USDA - Emergency Conservation Program, Environmental Quality Incentives Program, Conservation Reserve Enhancement Program
- RB/SB-USDA Roadbank/Streambank Grant
- Grout Brook-NYS Department of State
- GLRI-Great Lakes Restoration Initiative
- Nut. Mgnt. Revisions - Nutrient Management updates w/ soil & manure samples
- Emergency Fund - Proceeds from equipment rental program dedicated to storm damage repairs (2017)

Total Implementation Costs = \$8,903,007.75
 City Share = \$4,103,756.06
 Grant Share = \$4,826,251.69

SLWAP Operating Costs 1/1994 Through 2/28/2023



Total Operating Costs = \$11,350,432.93
City Share = \$10,136,148.98
Grant Share = \$1,214,283.95

Key:
NRCS - USDA Natural Resource Conservation Service
EPA - US Environmental Protection Agency
NYS SWCC - NYS Soil and Water Conservation Committee

Note: 1% may actually be less than 1%. Please use available financial data for calculations.

Please note: figures denoted as 1% are actually less than 1%.

Appendix C - CCE Water Quality Education Program
for the Skaneateles Lake Watershed

Skaneateles Lake Watershed Water Quality Education Program Program Report for January - December 2022

Workshops and Events

<i>Date(s)</i>	<i>Event Name</i>	<i># of Participants</i>	<i>Location(s)</i>
2/1	Road Salt Impacts on Water Quality - A Case Study of Mirror Lake	36	Online (Zoom)
3/23	Meadow, Thicket, Woods, and Water: The Patterns of Native Landscape Design	139	Online (Zoom)
4/27	Planning for the Unplanned: Native Design as an Ecological Process	120	Online (Zoom)
5/31	Responding to the Rain	19	Online (Zoom)
6/13	Ask the Experts: Invasive Species!	23	Online (Zoom)
6/24	Ecology Based Design: In the Field	40	Doce Lume Farm/GoNative Perennials, Skaneateles
7/13	Filter your Pollution through a Beautiful Rain Garden	33	Skaneateles Library and John Barrow Art Gallery, Skaneateles

Trainings and Stewardship Opportunities

<i>Date(s)</i>	<i>Event Name</i>	<i># of Participants</i>	<i>Location(s)</i>
6/24, 6/29, 8/3, 9/15	Skaneateles Rain Garden Project	3	Syracuse Water Department Building, Skaneateles

Municipal/Organizational Support

<i>Date(s)</i>	<i>Constituent/ Meeting</i>	<i># of Participants</i>	<i>Location(s)</i>
2/11, 3/18, 5/6, 6/10, 9/23, 12/2	Skaneateles Municipal Stakeholders Website Meetings	9-13	Online (Zoom)
1/12, 2/2, 3/2, 4/6, 5/4, 6/1, 7/6, 9/7, 11/2	Skaneateles Lake Association (SLA) Lake Ecology Team Meetings	30	Online (Zoom)
3/11, 5/17	Skaneateles Lake Association (SLA) Community Education and Outreach Committee Meetings	12-14	Online (Zoom)

4/7, 5/19, 7/15, 8/24, 9/28, 10/19	Nine Element Plan Watershed Advisory Committee Meetings	20	Online (Zoom)
4/29, 5/13, 5/25	Nine Element Plan Public Outreach Subcommittee Meetings	5	Online (Zoom) and Lourdes Camp, Skaneateles
10/20	CCE Onondaga Annual Meeting	30	Camp Brockway, Pratts Falls Park, Manlius
12/5	Skaneateles Lake Watershed Agricultural Program Annual Meeting		Grace Chapel, Skaneateles

Community Presentations

<i>Date</i>	<i>Presentation Title (Group)</i>	<i># of Participants</i>	<i>Location(s)</i>
11/12	Building Community into Environmental Education: How localities strengthen connections (2 panel presentations)	25	SUNY ESF

Community Outreach

<i>Date(s)</i>	<i>Event Name</i>	<i># of Participants</i>	<i>Location(s)</i>
1/10, 1/21	SUNY ESF Job Shadow	3	Online (Zoom)
4/23	Baltimore Woods Earth Day	120	Baltimore Woods, Marcellus
6/15, 6/22	Nine Element Plan Public Meetings	30 and 43	Lourdes Camp, Skaneateles and Online (Zoom)
7/11	4-H Stream Systems and Water Quality Program	15	Camp Brockway, Pratts Falls Park, Manlius
10/5, 10/6	Environmental Field Days	130 and 143	Green Lakes State Park
11/12	Building Community into Environmental Education: How localities strengthen connections (tabling)	15	SUNY ESF

Original Publications*

<i>Date</i>	<i>Title</i>	<i>Format</i>	<i>Distribution</i>
Oct. 2022	Phosphorus FAQ	Fact sheet	Added to Skaneateles website

*All original publications are also posted to our website. All are available for free download as PDF by visiting ceonondaga.org and clicking on the “resources” tab at the top. For WAVE Review newsletters, visit: ceonondaga.org/environment/skaneateles-lake/wave-reviews-newsletter.

FEATURED on Local News Sources: Video, Article, Print

<i>Date</i>	<i>Title</i>	<i>Newspaper/ Channel</i>	<i>Format</i>
2/28	<i>Beginning to understand road salt's impact on watersheds in Syracuse</i>	Daily Orange	Article
4/11	<i>New York State Hemlock Initiative aims to control Eastern Hemlock infestation</i>	Daily Orange	Article
3/18	<i>Cornell Cooperative Extension offering watershed educational program</i>	Skaneateles Press	Article
4/20	<i>Locally Grown and Much More</i>	Skaneateles Press	Print Article

CCE Onondaga Water Quality E-newsletters: MailChimp

<i>Date</i>	<i>Topics (s)</i>	<i>Reach</i>
1/18	Skaneateles Education Program January Updates	230
1/31	Reminder Email - Road Salt Impacts on Water Quality	211
2/22	Skaneateles Education Program February 2022 Updates	198
3/21	Skaneateles Education Program March Updates 2022 Businesses	60
3/21	Skaneateles Education Program March Updates 2022	218
4/26	Skaneateles Education Program April Updates 2022	233
5/17	Skaneateles Education Program May Updates 2022	237
6/6	Skaneateles Education Program June Updates 2022	222
6/13	Don't forget to sign up for one of these events!	206
6/22	Skaneateles Watershed Nine Element Plan: Virtual Public Meeting	221
7/11	Skaneateles Education Program July Updates 2022	217
8/4	Skaneateles Education Program August Updates 2022	218
9/12	Skaneateles Education Program September Updates 2022 - WAVE Newsletter	196
10/4	Skaneateles Education Program October Updates 2022	223
11/3	Skaneateles Education Program November Updates 2022	205
12/7	Skaneateles Education Program December Updates 2022 - Winter WAVE Newsletter	218

Skaneateles Lake Watershed Website Analytics

<i>Month</i>	<i>Visits</i>	<i>Unique Visitors</i>	<i>Page views</i>
January	418	303	661
February	618	440	954
March	939	682	1,450
April	825	618	1,215
May	1,074	831	1,721
June	1,416	1,039	2,337
July	1,515	1,171	2,375
August	1,510	1,087	2,453
September	857	658	1,350
October	565	443	856
November	436	335	585
December	377	289	601

Water Quality Social Media Posts

<i>Month</i>	<i>Facebook Posts (#)</i>	<i>Twitter Posts (#)</i>	<i>Instagram Posts (#)</i>
January	3	3	3
February	3	3	3
March	4	4	4
April	3	3	2
May	2	2	2
June	4	1	3
July	0	0	0
August	1	1	2
September	2	2	2
October	3	5	3
November	0	0	0
December	2	2	2

Consumer Calls and E-mail Inquiries

<i>Month</i>	<i># of calls/e-mails</i>
January	2
February	3
March	4
April	5
May	2
June	6
July	3
August	3
September	5
October	2
November	2
December	1

Program Evaluations, Surveys, and Feedback *

<i>Date</i>	<i>Evaluation/Survey Title</i>	<i>Attendees</i>	<i>Responses</i>	<i>Response Rate (%)</i>
2/1	<i>Program Evaluation: Road Salt Impacts on Water Quality</i>	36	9	25%
3/23	<i>Program Evaluation: Meadow, Thicket, Woods, and Water</i>	139	51	37%
4/27	<i>Program Evaluation: Planning for the Unplanned</i>	120	28	23%
6/13	<i>Program Evaluation: Ask the Experts: Invasive Species</i>	23	4	17%

6/24	<i>Program Evaluation: Ecology Based Design</i>	40	7	18%
7/13	<i>Program Evaluation: Filter your Pollution through a Beautiful Rain Garden</i>	33	10	30%

* Surveys were distributed electronically in 2022.

Report compiled and submitted by Camille Marcotte, CCE Onondaga, on 3/13/2023.

Water Quality Education Program for the Skaneateles Lake Watershed - 2022 Report

Cornell Cooperative Extension of Onondaga County provides environmental education and outreach to four primary groups within the Skaneateles Lake Watershed, including:

1. Residents and property owners within the watershed,
2. Rural landowners managing agricultural, forested or open space land within the watershed,
3. Municipal leaders and officials of the towns, villages and counties within the watershed, and
4. Community groups, lake associations, and other organizations that currently act as stewards of the lake and watershed, or may potentially in the future.

Education and outreach are provided by the CCE Onondaga Natural Resources Team Educators. In 2022, Educators covered topics including landscaping for water quality (transitioning lawns to meadows), stormwater management, riparian buffers, non-point source pollution, invasive species, land stewardship, road salt, flood resiliency, and overall water quality protection efforts. These topics were developed and delivered by educators in the following ways:

Workshops and Events

- **Road Salt Impacts on Water Quality - A Case Study of Mirror Lake** (February 1st, Zoom): This program focused on the unintended consequences of road salt on water quality. Dr. Brendan Wiltse spoke about his research on road salt in Adirondack lakes, with a focus on Mirror Lake (an oligotrophic lake) as a case study of road salt impacts. 36 attendees
- **Meadow, Thicket, Woods, and Water: The Patterns of Native Landscape Design** (March 23rd, Zoom): This was the first of four events in the Landscape Design for Heavy Rains, Beauty and Butterflies series. Selecting and arranging plants is at the heart of all landscape design. In native design, selecting plants according to their environmental associations, and arranging them according to their natural distribution patterns plays a crucial role. This presentation examined how to arrange overall habitat typologies within a site, then drilled down to the formulation of specific species compositions within those habitat types. Case studies illustrated how this approach can be applied on a wide variety of landscape scales and settings. Presented by Larry Weaner of Larry Weaner Landscape Associates. 139 attendees
- **Planning for the Unplanned: Native Design as an Ecological Process** (April 27th, Zoom): This was the second of four events in the Landscape Design for Heavy Rains, Beauty and Butterflies series. Landscape professionals and their clients have become aware of the benefits of including native plants in their landscapes. The importance of incorporating ecological processes, factors that often determine the success or failure of plants in the wild, is far less understood. This session explored how incorporating natural

Helping Put Knowledge to Work

processes like disturbance, succession, competition, pollination, and colonization can help designers and contractors consistently establish the ecology-based landscapes that their clients increasingly seek. Presented by Larry Weaner of Larry Weaner Landscape Associates. 120 attendees

- **Responding to the Rain** (May 31st, Zoom): Even after all the tried-and-true flood prevention efforts are carried out, lake communities still experience the aftermath of intense flash floods. In this presentation, experts from the Skaneateles Lake Association, Cornell Cooperative Extension Onondaga County, and the New York State Department of Environmental Conservation discussed strategies in responding to rain events. Presented by Frank Moses, Skaneateles Lake Association Executive Director, Camille Marcotte, CCE Onondaga Water and Ecology Educator, and Trendon Choe, Environmental Analyst in the Division of Environmental Permits at the NYS Department of Environmental Conservation Region 7. This event was held as part of the Lake Friendly Living Awareness Week – a series of free virtual education sessions and resources to inform and empower watershed residents to make changes to protect the Finger Lakes. This educational week was organized by the Finger Lakes Regional Watershed Alliance, specifically the Lake Friendly Living Coalition of the Finger Lakes, which consists of the many different lake associations in the region. 19 attendees
- **Ask the Experts: Invasive Species!** (June 13th, Zoom): This "Ask the Experts" session focused on invasive species, with experts on terrestrial, aquatic, and landscape/garden invasives. Attendees asked questions related to all three categories, and received tips for managing invasive species, as well as ways to get involved in the fight against invasives, like Spotted Lanternfly and Hydrilla. Speakers: Terrestrial: Matt Gallo, Terrestrial Program Outreach Coordinator, Finger Lakes PRISM; Aquatic: Sydney VanWinkle, Invasive Species Project Coordinator, Finger Lakes PRISM; Landscape/Garden Pests: Brian Eshenaur, Sr. Extension Associate, Cornell University, NYS Integrated Pest Management Program. This program was hosted as part of NYS Invasive Species Awareness Week as a collaboration with the Master Gardener Program. 23 attendees
- **Ecology Based Design: In the Field** (June 24th, Go Native! perennials, 3130 East Lake Rd, Skaneateles NY): This was the third of four events in the Landscape Design for Heavy Rains, Beauty and Butterflies series. This on site, outdoor, interactive session, presented various landscapes on the Doce Lume Farm/Go Native! perennials property and discussed how the natural patterns and processes have influenced their current condition and the techniques that were used to achieve them. The program also discussed techniques to assess the current state of the plantings to best formulate an effective management plan going forward. A variety of planting types were examined including meadow, woodland, and native garden. Demonstration and discussion conducted by Sam Quinn, SUNY ESF Restoration Science Center and Larry Weaner, Larry Weaner Landscape Associates. 40 attendees
- **Filter your Pollution through a Beautiful Rain Garden** (July 13th, Skaneateles Library, 49 E Genesee St, Skaneateles, NY – presentation, and John Barrow Art Gallery, 49 E Genesee St, Skaneateles, NY - reception): This was the fourth and final event in the Landscape Design for Heavy Rains, Beauty and Butterflies series. It is not uncommon for properties to have drains or ditches that take heavy rainfall directly into a lake tributary or to the lake itself – and into our drinking water. Downspouts and other drainage inlets do a great job at quickly conveying water away from structures and surfaces to a discharge

point, but they provide little chance for reduction of runoff or opportunity for improved water quality downstream. Green infrastructure practices such as bioswales, rain gardens, and green roofs can be used to slow the flow of water. This presentation explained why slowing the flow is such an important step to stormwater quality and discussed the nuts and bolts of planning and implementing green infrastructure practices to enhance existing stormwater management systems. The session was immediately followed by a Series Wrap Up, Reception/Refreshments and Tour of the Gallery, allowing Skaneateles residents and stakeholders to mingle and discuss the events of the series. Presented by Emily Garavuso, Project Manager and Senior Landscape Architect with EDR. 33 attendees

Trainings and Stewardship Opportunities

- **Skaneateles Rain Garden Project:** CCE Water and Ecology Educator, with the help of three Master Gardener volunteers, began work to restore the Skaneateles demonstration rain garden at the City of Syracuse Water Department building at 20 West Genesee Street in the Village of Skaneateles. There were four garden work days in 2022 (June 24th, June 29th, August 3rd, and September 15th). Additional work is planned for 2023 to plant diverse native species, as well as improve signage.

Municipal and Organizational Support

Municipal Stakeholders Meetings are meant to encourage communication and collaboration between the municipalities and organizations within the Skaneateles Lake Watershed towards protecting and maintaining water quality. CCE Onondaga participated in several stakeholder and municipal meetings in 2022 (below). Additional one-on-one meetings were held with municipal stakeholders and partner organizations as needed throughout the year (Village of Skaneateles Environmental Advisory Board, CNY Regional Planning and Development Board, CCE Yates County, and The Nature Conservancy).

- **Skaneateles Lake Association (SLA) Lake Ecology Team Meetings** (January 12th, February 2nd, March 2nd, April 6th, May 4th, June 1st, July 6th, September 7th, and November 2nd, Zoom) CCE Water Quality Educator attended monthly meetings for the SLA Lake Ecology Team focused on preventing nonpoint source pollution and harmful algal blooms in Skaneateles Lake, and other water quality related initiatives. About 30 attendees on average
- **Skaneateles Lake Association (SLA) Community Education and Outreach Committee Meetings** (March 11th and June 17th, Zoom) CCE Water Quality Educator attended two meetings for the SLA Community Education and Outreach Committee to discuss planned and upcoming programs, newsletter outreach, and website/digital outreach. 14 attendees on March 11th and 12 attendees on June 17th
- **Skaneateles Municipal Stakeholders Meetings:** CCE Water Quality Educator shared updates and analytics on the Skaneateles Lake Watershed website, and received feedback and input from municipal stakeholders. Efforts to promote, publicize, and update the website were also discussed, as well as additional initiatives the group could undertake. A list of meetings by date is included below (all meetings were held via Zoom):
 - February 11th, 9 municipal leaders and decision makers attended

- March 18th, 10 municipal leaders and decision makers attended
- May 6th, 13 municipal leaders and decision makers attended
- June 10th, 13 municipal leaders and decision makers attended
- September 23rd, 11 municipal leaders and decision makers attended
- December 2nd, 11 municipal leaders and decision makers attended
- **Nine Element Plan Watershed Advisory Committee Meetings** (April 7th, May 19th, July 15th, August 24th, September 28th, October 19th, Zoom): CCE Onondaga attended the Nine Element Plan Watershed Advisory Committee meetings to provide feedback on the plan's process. CCE Onondaga Water and Ecology Educator also met with CNY Regional Planning and Development Board on December 16th to share more specific information about the Skaneateles Lake Education Program. About 20 attendees
- **Nine Element Plan Public Outreach Sub-Committee Meetings** (April 29th, May 13th, Zoom and May 25th, Lourdes Camp): CCE Onondaga served on the Nine Element Plan Public Outreach Subcommittee to help plan the first public outreach events (both virtual and in-person). 5 committee members
- **CCE Onondaga Annual Meeting** (October 20th, Camp Brockway at Pratt's Falls Park, Manlius): CCE Water and Ecology Educator provided a display with general information on the Skaneateles Lake Education Program and water quality topics. 30 attendees
- **SLWAP Annual Meeting** (December 5th, Grace Chapel, Skaneateles): Annual meeting for the Skaneateles Lake Watershed Agriculture Program

Community Presentations

To engage watershed residents, Skaneateles Lake water supply consumers, and other watershed stakeholders who might not be able to attend public workshops, CCE educators gave the following presentations to organizations and community groups upon request in 2022:

- **Building Community into Environmental Education: How localities strengthen connections** (November 12th, SUNY ESF): CCE Water and Ecology Educator participated in this event by the Student Environmental Education Coalition (SEEC) at SUNY ESF. Panel one talked about working in the environmental education sector. The second panel focused on stewardship and community-centric environmental education. Attendees were mostly students, but some faculty, staff, and outside organizations also attended. 25 attendees (both sessions combined)

Community Outreach

Typically, to expand reach, increase water quality awareness, and promote stewardship in the watershed community and amongst water supply consumers, CCE educators provide education and outreach, mostly through tabling, on water quality related topics. Topics include, but are not limited to watersheds, nonpoint source pollution, and water quality, HABs and other contaminants, and best practices for homeowners and landowners.

- **SUNY ESF Job Shadow** (January 10th and 21st, Zoom): Connected with students and shared information on current job duties and water quality work. Answered questions about water quality field and current position. 3 students
- **Baltimore Woods Earth Day** (April 23rd, Baltimore Woods, Marcellus): CCE Onondaga tabled at this Earth Day event, providing information and hand-outs on water quality and

natural resource topics. Youth were able to participate in an activity on watersheds, where they could learn more about how watersheds impact water quality. 60 youth and 60 adults reached

- **Nine Element Plan Public Meetings** (June 15th at Lourdes Camp in Skaneateles and June 22nd on Zoom): The first round of public meetings introduced the Nine Element framework, the project schedule, and the draft Vision and Goals for Skaneateles Lake and watershed. Attendees learned more about the process and provided input on the draft vision and goals. 30 attendees on June 15th and 43 attendees on June 22nd
- **4-H Stream Systems and Water Quality Program** (July 11th, Camp Brockway at Pratt's Falls Park, Manlius): CCE Onondaga 4-H youth learned about watersheds, stream systems and different measures of water quality (like velocity, temperature, pH), as well as aquatic life that exist in our waterbodies (macroinvertebrates). The youth were able to get into the stream and do some hands-on water quality testing. 15 youth participated
- **Environmental Field Days** (October 5th and 6th, Green Lakes State Park): Youth from different schools in the county learned about watersheds at this outdoor event. 130 youth on October 5th and 143 youth on October 6th
- **Building Community into Environmental Education: How localities strengthen connections** (November 12th, SUNY ESF): In addition to the two panels mentioned above, CCE Onondaga also tabled at the event, connecting with students (and faculty/staff/organizations) about environmental and water quality education. About 15 attendees

Skaneateles Lake Wave Reviews

The *Skaneateles Lake WAVE Review* is a newsletter by CCE Onondaga that includes updates and information from important watershed agencies and organizations. The newsletter is delivered to watershed residents in print, as well as shared online through CCE's listservs. In 2022, CCE Onondaga published two editions of the Skaneateles WAVE Review newsletter on September 15th, 2022 (summer/fall) and December 7th, 2022 (winter). The summer newsletter was printed through Zoom Printing, Inc. and mailed directly to 2,552 watershed properties.

Summer Skaneateles Lake WAVE Review Newsletter: Topics for the summer edition included:

- A Recap of the Heavy Rains, Beauty and Butterflies Educational Series by CCE Onondaga
- Skaneateles Lake Watershed Nine Element Plan - An Introduction by Central New York Regional Planning and Development Board
- SUNY ESF Satellite Lake Monitoring Pilot Study by the Skaneateles Lake Association
- Helpful Contacts and Resources for Watershed Residents

Winter Skaneateles Lake WAVE Review Newsletter: Topics for the winter newsletter included:

- A Year of Collaborations and Community Events by CCE Onondaga
- Drone Cover Crop Seeding in Skaneateles by the Skaneateles Lake Watershed Agricultural Program, Onondaga County Soil and Water Conservation District
- Land Donation to Protect Skaneateles Lake Water Quality by Finger Lakes Land Trust
- Esker Repair in the Skaneateles Lake Watershed by Central New York Land Trust

- Helpful Contacts and Resources for Watershed Residents

FEATURED in local media (print/video)

To promote programming, in 2022, Educators worked with various news outlets and tracked the Skaneateles Lake Education Program. Educational events and CCE Onondaga were highlighted/featured in 4 articles created, published, and/or broadcasted by outside publications and news platforms:

- [*“Beginning to understand road salt’s impact on watersheds in Syracuse”*](#) (February 28th, Daily Orange): Article
- [*“New York State Hemlock Initiative aims to control Eastern Hemlock infestation”*](#) (April 11th, Daily Orange): Article
- [*“Cornell Cooperative Extension offering watershed educational program”*](#) (March 18th, Skaneateles Press): Article
- [*“Locally Grown and Much More”*](#) (April 20th, Skaneateles Press): Print article

Electronic Communications

Throughout 2022, periodic newsletters and announcements were distributed through the CCE Onondaga Skaneateles Lake mailing lists informing stakeholders of ongoing educational programming and stewardship opportunities in the Skaneateles Lake Watershed. The Skaneateles Lake e-mail list includes over 700 residents, municipal officials, partners, and businesses. Educators also shared information and upcoming events digitally via the CCE Onondaga website, Skaneateles Lake Watershed website, and CCE Onondaga Facebook, Twitter and Instagram accounts.

E-Newsletters

Summarized by e-mail subject, date sent, # of recipients/opens/and link clicks, and a brief description of content. E-mails are all sent through MailChimp to the Skaneateles Lake Watershed listserv. E-mail archives can be accessed by right clicking hyperlinked e-mail subjects below.

- [Skaneateles Education Program January Updates](#) (January 18th). This newsletter shared information on the Road Salt Impacts on Water Quality event, as well as surveying for Hemlock Woolly Adelgid. It was sent to 470 recipients, with 230 opens and 40 clicks on links for more information.
- [Reminder Email - Road Salt Impacts on Water Quality](#) (January 31st). This included a reminder for the Road Salt Impacts on Water Quality event, Hemlock Woolly Adelgid educational events, and the River Runner tool, and was sent to 471 recipients, with 211 opens and 33 clicks on links for more information.
- [Skaneateles Education Program February 2022 Updates](#) (February 22nd). This email provided information on the first two programs in the Landscape Design for Heavy Rains, Beauty, and Butterflies series, more information on Hemlock Woolly Adelgid outreach and education, and the River Runner tool. Also included was the recording from the Road Salt Impacts on Water Quality event, and information on the NYS DEC’s

annual Buffer in a Bag program, and was sent to 470 recipients, with 198 opens and 28 clicks on links for more information.

- [Skaneateles Education Program March Updates 2022 Businesses](#) (March 21st). This email shared information on the first two programs in the Landscape Design for Heavy Rains, Beauty, and Butterflies series. It was sent to 236 recipients, with 60 opens and 4 clicks on links for more information.
- [Skaneateles Education Program March Updates 2022](#) (March 21st). This newsletter shared information on the first two programs in the Landscape Design for Heavy Rains, Beauty, and Butterflies series, the NYS Hemlock Initiative Hemlock Tribune, resources for Flood Safety Awareness Week, Cayuga County's electronics recycling day, and the Healthy Land, Healthy Lake program by Seneca Lake Pure Waters Association; and was sent to 470 recipients, with 218 opens and 16 clicks on links for more information.
- [Skaneateles Education Program April Updates 2022](#) (April 26th). Shared information on the Planning for the Unplanned: Native Design as an Ecological Process event, reminder about the NYS burn ban, Finger Lakes PRISM's volunteer request, the April Gardens and Gutters Newsletter, a save the date for the Responding to the Rain event, and Cortland County's septic system workshops. It was sent to 475 recipients, with 233 opens and 41 clicks on links for more information.
- [Skaneateles Education Program May Updates 2022](#) (May 17th). Shared a reminder for the Responding to the Rain, Ecology Based Design, and Nine Element Plan Public Meeting events. It also included information on Finger Lakes PRISM's volunteer initiatives, clean-drain-dry, and the Climate Smart Communities grant program. It was sent to 474 recipients, with 237 opens and 21 clicks on links for more information.
- [Skaneateles Education Program June Updates 2022](#) (June 6th). Shared information on the Ask the Experts – Invasive Species and Ecology Based Design programs, as well as the Nine Element Plan public meetings. It also included information on clean-drain-dry, and a guided hike at Hinchcliff Preserve, and was sent to 474 recipients, with 222 opens and 21 clicks on links for more information.
- [Don't forget to sign up for one of these events!](#) (June 13th). Shared information on the Ask the Experts – Invasive Species program, the Nine Element Plan public meetings, and guided hike at Hinchcliff Preserve. It was sent to 475 recipients, with 206 opens and 17 clicks on links for more information.
- [Skaneateles Watershed Nine Element Plan: Virtual Public Meeting](#) (June 22nd). This newsletter shared a reminder for the Skaneateles Watershed Nine Element Plan: Virtual Public Meeting, and was sent to 475 recipients, with 221 opens and 18 clicks on links for more information.
- [Skaneateles Education Program July Updates 2022](#) (July 11th). Shared information on the Filter your Pollution through a Beautiful Rain Garden event, Finger Lakes PRISM aquatic invasive species volunteer opportunity, and the July Gardens and Gutters newsletter from CNY Regional Planning and Development Board. It was sent to 476 recipients, with 217 opens and 28 clicks on links for more information.
- [Skaneateles Education Program August Updates 2022](#) (August 4th). This email shared information on National Water Quality month, Finger Lakes PRISM Trail Trek, Skaneateles Watershed website updates, NYS DEC Regenerate Program, harmful algae blooms (HABs), and DEC improvements to Carpenter Falls. It was sent to 476 recipients, with 218 opens and 31 clicks on links for more information.

- [Skaneateles Education Program September Updates 2022 - WAVE Newsletter](#) (September 12th). This edition included the WAVE newsletter (more information above). It also provided information on harmful algae blooms, 10 ways to protect water quality, Cayuga County electronics recycling event, and invasive species biocontrol fact sheets. It was sent to 478 recipients, with 196 opens and 40 clicks on links for more information.
- [Skaneateles Education Program October Updates 2022](#) (October 4th). Shared information on the CCE Onondaga Annual Meeting, harmful algae blooms, septic smart week, Syracuse University Environmental Finance Center events, and the Skaneateles rain garden work. It was sent to 476 recipients, with 223 opens and 28 clicks on links for more information.
- [Skaneateles Education Program November Updates 2022](#) (November 3rd). This newsletter shared information on the 50th anniversary of the Clean Water Act, a DEC and NY Sea Grant training on healthy watersheds and resilient communities, and fuel oil safety tips. Provided a reminder for the Syracuse University Environmental Finance Center events. It was sent to 478 recipients, with 205 opens and 3 clicks on links for more information.
- [Skaneateles Education Program December Updates 2022 - Winter WAVE Newsletter](#) (December 7th). This edition included the Winter WAVE newsletter. It also provided information on the 2022 harmful algae bloom summary, and was sent to 479 recipients, with 218 opens and 44 clicks on links for more information.

Skaneateles Lake Watershed Website

Starting in 2019, CCE Onondaga began putting together a website for the Skaneateles Lake watershed. The website contains sections on: watershed rules and regulations; boating; agriculture; soil and erosion control; septic systems; wells; landscaping; timber harvesting; frequently asked questions; road salt use; and city watershed programs. It presents regularly updated data on lake temperatures, elevation, and dam discharges and has maps of the watershed and protected parcels. The site also provides information on Harmful Algae Blooms (HABs) and invasive species, both critical environmental issues facing the lake. The website was completed and launched July 1, 2020. New content added in 2022 included: historical lake elevation data, information on phosphorus added to the FAQ page, and information celebrating award-winning farms in the watershed on the agriculture page. For more detailed information on website analytics, view the Skaneateles Lake Watershed Website 2022 Analytics report.

Information on website visits and pageviews for January 1, 2022 – December 31, 2022, are included below:

- Total visits: 10,550 (average visits per month: 879)
- Unique visitors: 7,896 (average number of unique visitors per month: 658)
- Total pageviews: 16,558 (average pageviews per month: 1,380)
- Top 5 most viewed pages:
 - Home (5,476 views)
 - Lake Data (2,338 views)
 - Boat Launch Locations (2,103 views)
 - Landscape Design for Heavy Rains, Beauty and Butterflies event page (1,867 views)

- HABs and Blue-Green Algae (559 views)

Facebook, Twitter, Instagram and YouTube

CCE educators posted a total of 27 Facebook posts, 26 Twitter posts, and 23 Instagram posts in 2022 regarding water quality issues of interest for the Skaneateles watershed. The average reach per Facebook post was 86 views, and the average amount of engagements (clicks, reactions, comments and shares) per Facebook post was 3. The average reach per Twitter post was 114 views and the average amount of engagements (clicks, retweets, replies, follows and likes) per Twitter post was 4. On Instagram, the average number of likes per post was 9, with an overall total of 210 likes for the year. Three reels were posted to Instagram in 2022 with a total of 5,325 views and 210 likes. Total CCE Onondaga social media followers (potential reach for posts): 1,169 Facebook followers, 585 Twitter followers and 570 Instagram followers (as of March 13, 2023).

CCE Onondaga shifted to virtual programming at the onset of the COVID-19 pandemic, and has since transitioned to a hybrid educational model. As a result, many programs are recorded and posted to the [CCE Onondaga YouTube page](#). As of February 27th, 2022, videos of programs have the following numbers of views:

- Stewardship in Skaneateles (2020 event): 138 views
- Landscaping for Shorelines (2020 event): 135 views
- Hemlock Woolly Adelgid Planning and Management in Skaneateles (2021 event): 120 views
- Transitioning Your Lawn to a Meadow (2021 event): 198 views
- What's a watershed video (filmed in 2021): 33 views
- Public Information Session for EarthTec Treatment of Harmful Algal Blooms in Skaneateles Lake (2021 event): 35 views
- Stream Systems 101 for Skaneateles (2021 event): 44 views
- Road Salt Impacts on Water Quality: 113 views
- Meadow, Thicket, Woods and Water: The Patterns of Native Landscape Design (only available from 3/23/22 to 4/25/22 per the presenter's request): 114
- Planning for the Unplanned: Native Design as an Ecological Process (only available from 4/27/22 to 5/31/22 per the presenter's request): 142

Consumer Calls and E-mail Inquiries for Water Quality/ Skaneateles

CCE educators also provide direct support to constituents who inquire about water quality issues and watershed protection for both the Skaneateles Lake watershed and greater Onondaga County. Consumer requests for information come to CCE as phone calls, e-mails, and sometimes drop-in visits. Educators provide information, support, and resources depending on the inquiry. All inquiries are provided a response within 2-weeks. In 2022, the average number of consumer calls answered related to water quality and/or the Skaneateles watershed was about 3 inquiries per month; with 38 total consumer calls answered for the year.

Program Evaluations, Surveys, and Feedback

In order to continuously improve and grow our programming to effectively reach, engage, educate, and support our target audience and constituents, CCE educators develop and distribute confidential surveys for program participants to fill out after programming, events, and workshops. Educators use the results to evaluate, update, and grow our programming and meet the needs of our constituents. Surveys were distributed electronically in 2022.

- *Program Evaluation: Road Salt Impacts on Water Quality.* This evaluation was distributed after the 2/1/22 program to record and evaluate feedback from the program. There were 36 attendees and 9 evaluation responses, for a response rate of 25%.
- *Program Evaluation: Meadow, Thicket, Woods, and Water.* This survey was distributed after the 3/23/22 webinar to record and evaluate feedback. There were 139 attendees and 51 evaluation responses, for a response rate of 37%.
- *Program Evaluation: Planning for the Unplanned.* This survey was distributed after the 4/27/22 event to record and evaluate feedback. There were 120 attendees and 28 evaluation responses, for a response rate of 23%.
- *Program Evaluation: Ask the Experts: Invasive Species.* This survey was distributed after the 6/13/22 event to record and evaluate feedback. There were 23 attendees and 4 evaluation responses, for a response rate of 17%.
- *Program Evaluation: Ecology Based Design.* This survey was distributed after the 6/24/22 event to record and evaluate feedback from the program. There were 40 attendees and 7 evaluation responses, for a response rate of 18%.
- *Program Evaluation: Filter your Pollution through a Beautiful Rain Garden.* This survey was distributed after the 7/13/22 event to record and evaluate feedback from the program. There were 33 attendees and 10 evaluation responses, for a response rate of 30%.

Salary Full-Time Equivalents used to deliver the program 2022

Team Coordinator (Water Quality)	0.24
Subject Educator (Water Quality)	0.92
*Subject Educator (Water Quality/Forestry)	0.00
*Resource Educator (Water Quality/Forestry)	0.00
Social Media Platform & IT	0.06
Administrative Assistant (Water Quality)	0.11
Total FTE	1.33

*Staffing vacancies in 2022 resulted in no hours billed for the positions noted.

Report compiled and submitted by Camille Marcotte, CCE Onondaga, on 3/13/2023.



ASK THE EXPERTS: INVASIVE SPECIES

Presented by CCE, NYS IPM and Finger Lakes PRISM

JUNE 13, 2022
6:30 PM - 7:30 PM
ZOOM - [REGISTER HERE](#)

Concerned about Jumping Worms in your garden, Hydrilla invading your local lake, or Hemlock Woolly Adelgid killing your Hemlocks? Join us for an "Ask the Experts" session focused on invasive species. We will have experts on terrestrial, aquatic, and landscape/garden invasives. Attendees can ask questions related to all three categories, and will receive tips for managing invasive species, as well as ways to get involved in the fight against invasives.



LANDSCAPE DESIGN FOR HEAVY RAINS, BEAUTY AND BUTTERFLIES

An ecology-based educational series for landscape professionals and homeowners in the Skaneateles Lake watershed.

Presenters: Larry Weaner and Sam Quinn.



Save The Dates!

Wed, March 23, 8:45–10:30 AM

Meadow, Thicket, Woods & Water:
The Patterns of Native Landscapes (Zoom)

Wed, April 27, 8:45–10:30 AM

Planning for the Unplanned:
Native Design as an Ecological Process (Zoom)

Fri, June 24, 8:00–11:00 AM

Ecology Based Design: In the Field (Skaneateles, NY)

Wed, July 13, 6:30–8:30 PM

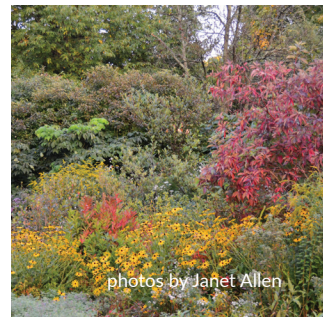
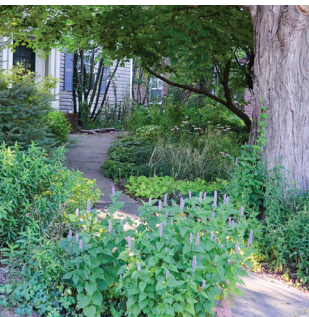
Filter your Pollution through a Beautiful Rain Garden
Series Wrap Up and Reception (John D. Barrow Art Gallery)

Register Here

skanlakeinfo.org/events/nativeplants

Call With Questions

(240) 626-5209



photos by Janet Allen



NATIVE PLANTS DO WHAT NOTHING ELSE CAN

Thank You to Our Sponsors and Partners



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State University of New York College of
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the
Skaneateles
Library

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March 16, 2022

FOR IMMEDIATE RELEASE:

Contact: Camille Marcotte
Organization: Cornell Cooperative Extension Onondaga County
Email: ctm78@cornell.edu
Phone: 315-424-9485 x 232

LANDSCAPE DESIGN FOR HEAVY RAINS, BEAUTY AND BUTTERFLIES *An ecology based educational series for landscape professionals and homeowners in the Skaneateles Lake watershed*

Skaneateles, N.Y. – Cornell Cooperative Extension Onondaga County is excited to join with nine local and regional organizations to offer landscape professionals and homeowners in the Skaneateles Lake watershed a four-part educational series about designing beautiful landscapes with native plants that function to buffer heavy stormwater runoff and to provide habitat and food for wildlife.

The first two sessions of the 4-part educational series will be presented by renowned landscape designer, Larry Weaner. Larry will explain how to create diversified landscapes with native plants that are beautiful and functional via Zoom webinars on March 23rd and April 27th from 8:45am to 10:30am. The third session will be in person at Doce Lume Farm (home of Go Native! perennials LLC) in Skaneateles on June 24th from 8am to 11am. At this session, Sam Quinn from the SUNY ESF Restoration Science Center will discuss creating meadows on your property and Larry Weaner will present on woodlands and native gardens. The final session will be held on July 13th from 6:30pm to 8:30pm and will open with a presentation on building a rain garden to filter downspouts and stormwater at the Skaneateles Public Library. A reception will follow at the John D. Barrow Art Gallery with short presentations on local resources by event sponsors.

Janice Wiles from Go Native! perennials LLC, one of the event co-sponsors, said, “Native plants do what nothing else can. Deep-rooted native plant landscapes buffer our lake and streams from stormwater in a way that short-rooted grass will not. Additionally, native plants are hosts for insects and caterpillars, which are important food sources for birds, fish and other wildlife. And, they are stunningly beautiful. Learning to use them well will only enhance our landscapes.”

Session Details:

- Meadow, Thicket, Woods & Water: The Patterns of Native Landscapes. Wednesday, March 23, 8:45–10:30 AM. (Zoom)
- Planning for the Unplanned: Native Design as an Ecological Process. Wednesday, April 27, 8:45–10:30 AM. (Zoom)
- Ecology Based Design: In the Field. Friday, June 24, 8:00–11:00 AM (Skaneateles, NY)
- Filter your Pollution through a Beautiful Rain Garden / Series Wrap Up and Reception. Wednesday, July 13, 6:30–8:30 PM. (John D. Barrow Art Gallery)

Helping Put Knowledge to Work

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.

Continuing education credits are being offered for landscape professionals through the New York Upstate Chapter of the American Society of Landscape Architects, sponsored by Cornell Cooperative Extension Onondaga County.

For more information and to register, visit www.skanelakeinfo.org/events/nativeplants. Registration is open for the first two sessions (registration for the final two sessions will open on April 27th).

This event is sponsored by: Cornell Cooperative Extension of Onondaga County (with support from the City of Syracuse), Go Native! perennials LLC, Skaneateles Lake Association, Finger Lakes Native Plant Society, Finger Lakes Land Trust, SUNY ESF Restoration Science Center, Cornell Botanic Gardens, Skaneateles Library, Wild Ones Habitat Gardening CNY, and John D. Barrow Art Gallery.

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities. Please contact our office if you need special accommodations.

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Skaneateles Lake Watershed Wave Reviews

Summer 2022 Edition

Visit the Skaneateles Lake website for resources and tips on how to protect the water quality of Skaneateles Lake
www.skanlakeinfo.org

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Skaneateles Lake Watershed Nine Element Plan - An Introduction (p.2) - CNY Regional Planning and Development Board

SUNY ESF Satellite Lake Monitoring Pilot Study (p.3) - Skaneateles Lake Association

Helpful Contacts and Resources for Watershed Residents (p.4)

*Brought to you by the City of
Syracuse Department of Water
Ben Walsh, Mayor*

A Recap of the Heavy Rains, Beauty and Butterflies Educational Series

By: Camille Marcotte, Cornell Cooperative Extension Onondaga County

This spring and summer, several partners in the Skaneateles Lake watershed hosted a series on Landscaping for Heavy Rains, Beauty & Butterflies. There were four educational sessions offered as part of the series:

- **Meadow, Thicket, Woods, and Water: The Patterns of Native Landscape Design** - Wednesday, March 23, 2022
- **Planning for the Unplanned: Native Design as an Ecological Process** - Wednesday, April 27, 2022
- **Ecology Based Design: In the Field** - Friday, June 24, 2022
- **Filter your Pollution through a Beautiful Rain Garden** - Wednesday, July 13, 2022

The first two sessions were held virtually and focused on the patterns of native landscaping and ecological processes behind native design. Speaker Larry Weaner, of Larry Weaner Landscape Associates, presented case studies that showed how native landscaping can be applied on a variety of landscape scales and settings. In session two, he also explored how incorporating natural processes (like disturbance, succession, competition and pollination) can help designers, contractors and homeowners.

The third session was interactive and outdoors at the Doce Lume Farm/Go Native! perennials property with speakers Sam Quinn, from the SUNY ESF Restoration Science Center, and Larry Weaner. Attendees were able to examine a native plant meadow up close, and even assisted in seeding a future native plant meadow. (continued on page 3)



Presenters Larry Weaner (left) and Sam Quinn (right) share information on how to install a meadow at Doce Lume Farm/Go Native! perennials

The Skaneateles Watershed Education Program works to protect the water quality of Skaneateles Lake, a treasured resource that serves as the primary drinking water source for Skaneateles and the City of Syracuse. The City of Syracuse has funded this program since its inception in 1996.

Cornell Cooperative Extension
Onondaga County



Skaneateles Lake Watershed Nine Element Plan – An Introduction

By: Aaron McKeon, Environmental Program Manager, Central New York Regional Planning & Development Board

This spring, the Skaneateles Lake Watershed Nine Element (9E) Plan got underway, with a kick-off meeting for the plan's Watershed Advisory Committee (WAC) held in April and the first public meeting held in June.

9E Watershed Plans are based around a framework established by the United States Environmental Protection Agency (USEPA). This framework consists of nine key elements that are intended to identify the contributing causes of nonpoint source pollution, involve key stakeholders in the planning process, and identify restoration and protection strategies that will address the water quality concerns.



Skaneateles Lake - photo credit: Aaron McKeon

The nine minimum elements to be included in these plans are:

- A. Identify and quantify sources of pollution in the watershed.
- B. Identify water quality goals and the pollutant reductions needed to achieve these goals.
- C. Identify the best management practices (BMPs) that will help to achieve the reductions needed to meet the water quality goals.
- D. Describe the financial and technical assistance needed to implement BMPs identified in Element C.
- E. Describe the outreach to stakeholders and how their input was incorporated.
- F. Estimate a schedule to implement BMPs identified in plan.
- G. Describe the milestones and estimated time frames for the implementation of BMPs.
- H. Identify the criteria that will be used to assess water quality improvement as the plan is implemented.
- I. Describe the monitoring plan that will collect water quality data needed to measure water quality improvement (the criteria identified in Element H).

An important part of the 9E process is the use of digital models of the watershed and the lake itself. These models can use information on land use, weather conditions, underlying soil and bedrock, and water samples from around the watershed to simulate existing conditions. They can also be used to test various scenarios, such as how a proposed BMP would affect overall water quality, and to help establish what BMPs would be most effective in reaching a specific water quality goal.

The 9E Plan will focus primarily on nutrient levels, but the planning process will take other issues, such as invasive species and Harmful Algal Blooms (HABs), into consideration.

The first in-person public meeting for this project was held on June 15th, but more public meetings will be coming. Keep watching the 9E Plan website for more information: <https://skaneateles9e.cnyrpd.org/>

The 9E Plan is being prepared with funding provided by the New York State Department of State under Title 11 of the Environmental Protection Fund, in cooperation with the Town of Skaneateles and the Central New York Regional Planning and Development Board.

(continued from page 1)

The final session took place in July at the Skaneateles Library. Presenter Emily Garavuso from EDR spoke about green infrastructure practices, like bioswales, rain gardens and green roofs, and how they can help slow the flow of water to improve stormwater quality. The event concluded with a series wrap-up and reception with refreshments and tour of the John D. Barrow Art Gallery.

Continuing education credits were offered through the New York Upstate Chapter of the American Society for Landscape Architects.

Thank you to all of the sponsors: GoNative Perennials, Skaneateles Lake Association, Cornell Cooperative Extension Onondaga County, Finger Lakes Native Plant Society, Finger Lakes Land Trust, SUNY ESF Restoration Science Center, Cornell Botanic Gardens, Wild Ones Habitat Gardening CNY, the Skaneateles Library, and the John D. Barrow Art Gallery. A huge thank you to our three speakers throughout the series: Larry Weaner, Sam Quinn, and Emily Garavuso.

Resources from programs are posted to the CCE Onondaga website at: www.cceonondaga.org and the Skaneateles Lake Watershed website at: www.skaneateleslakeinfo.org. If you're not on our mailing list, be sure to sign up for notices about upcoming programs (1-2 emails per month): <http://eepurl.com/bQ22XP>.



Cornell Cooperative Extension
Onondaga County



SUNY ESF Satellite Lake Monitoring Pilot Study supported by SLA and the newly commissioned Dr. Robert Werner Research & Education Boat

By: Frank Moses, Executive Director, Skaneateles Lake Association



Photo (furthest to closest): ESF Graduate Students Andre Luo and Victor Igwe, ESF Professor Dr. Bahram Salehi, SLA Intern Nicole Kleinberg, and SLA Volunteer and Member John MacAllister training on water clarity data collection using a Secchi disc.

Along with currently supporting the Citizens Statewide Lake Assessment Program (CSLAP) and Syracuse University's effort in "Developing 350-year records of Nutrient Loading and Environmental Change in Skaneateles Lake," SLA and the Dr. Robert Werner Research & Education Boat, (nicknamed "The Bob"), is now host to SUNY-ESF's Satellite Lake Monitoring Study led by Dr. Bahram Salehi.

On Wednesday, July 27th, Dr. Salehi and his team joined SLA to conduct a kickoff training on field data collection that will be used in machine learning efforts so that satellites can help monitor turbidity in Skaneateles Lake. Dr. Salehi and team will also be exploring the utility of drones in helping provide additional data as well. SLA is working with additional volunteers to collect clarity data with Secchi discs at various points around Skaneateles Lake.

"The Bob" hit the waters on June 27th of this year and is already being put to good use for better understanding Skaneateles

Lake to help guide water protection strategies. To learn more about "The Bob" named after the late Dr. Robert Werner who dedicated his time and expertise to SLA since its inception in 1969, please visit: <https://skaneateleslake.org/thebob/>.

Skaneateles Lake Wave Reviews

CCE Onondaga
6505 Collamer Road,
East Syracuse, NY
13057

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Stay connected!

Join our Water Quality List-serve to receive digital WAVE Reviews, event announcements, and more. Skaneateles Watershed Residents and those looking to protect water quality in their community are encouraged to join.

List serve accessible through this direct link <http://eepurl.com/bQ22XP> or by visiting our website at www.cceonondaga.org and searching for our 'Skaneateles Lake' landing page.

Don't forget to check out the new Skaneateles Lake Watershed website at www.skanelakeinfo.org

Important Contacts for the Skaneateles Watershed

Cayuga County Health Department 315-253-1405
Cayuga County Soil & Water Conservation District 315-252-4171
Cornell Cooperative Extension of Onondaga County 315-424-9485
Cortland County Health Department 607-753-5036
Cortland County Soil & Water Conservation District 607-756-5991
NYS DEC Region 7 Environmental Permits (Onondaga & Cayuga) 315-426-7438
NYS DEC Region 7 Environmental Permits Sub-office (Cortland) 607-753-3095
NYS DEC Spill Prevention and Response 800-457-7362
NYS DEC Region 7 Water & Wastewater (Stormwater, Dam Safety, Flood Control) 315-426-7500
Onondaga County Health Department 315-435-3252
Onondaga County Soil & Water Conservation District 315-457-0325
Skaneateles Lake Watershed Agricultural Program 315-457-0325
Syracuse Water Department (Skaneateles) 315-448-8366

This newsletter was created by Camille Marcotte of Cornell Cooperative Extension Onondaga County and Rich Abbott, City of Syracuse Water Dept. Special thank you to our partnering contributors.

Skaneateles Lake Watershed Education Program

Funding for Cornell Cooperative Extension programming in the Skaneateles Lake Watershed is provided by the City of Syracuse Department of Water.

*Cornell Cooperative Extension is an equal opportunity program and employment provider.
If you need special assistance, please contact our office at 315-424-9485.*

Skaneateles Lake Watershed Wave Reviews

Winter 2022 Edition

Visit the Skaneateles Lake website for resources and tips on how to protect the water quality of Skaneateles Lake
www.skanlakeinfo.org

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Drone Cover Crop Seeding in Skaneateles (p.2) - Onondaga County SWCD (SLWAP)

Land Donation to Protect Skaneateles Lake Water Quality (p.3) - Finger Lakes Land Trust

Esker Repair in the Skaneateles Lake Watershed (p.3) - Central New York Land Trust

Helpful Contacts and Resources for Watershed Residents (p.4)

*Brought to you by the City of Syracuse Department of Water
Ben Walsh, Mayor*

A Year of Collaborations and Community Events

By: Camille Marcotte, Cornell Cooperative Extension Onondaga County

It's been a busy year! CCE Onondaga both led and collaborated on a variety of educational programs throughout the year. We started off with a webinar on road salt in February, collaborated with SLA on the Responding to the Rain event in May, and worked with Finger Lakes PRISM, NYS IPM and the CCE Master Gardeners to hold an invasive species event in June. In March, we began our four-part educational series on Landscaping for Heavy Rains, Beauty and Butterflies, with additional programs held in April, June and July. For a recap of that collaborative event, view the [summer WAVE newsletter](#).

We continued to update the [Skaneateles Lake Watershed website](#), adding information to the agriculture page, as well as [a factsheet on phosphorus](#) to the FAQ page. Also, we distributed two editions of the WAVE newsletter (summer and winter), as well as monthly e-newsletters - [sign-up here!](#)

We got our hands dirty working to restore the rain garden in front of the City of Syracuse Water Department building at 20 W. Genesee Street. A huge thank you to our Master Gardener Volunteers for their help: Emily Adams, Carol Jerosé, and Joy Pople. We will be continuing this work next year by adding plants, creating a drainage swale, and adding ID tags for the plants.

Other water quality work that we completed included helping Onondaga County Save the Rain with their rain barrel program, teaching a streams program to 4-H kids at their nature camp, helping to coordinate the outreach event for the Skaneateles Nine Element plan, and participating in community events like the Baltimore Woods Earth Day, Green Lakes Environmental Field Days, and SUNY ESF Student Environmental Education Coalition event.

Thank you to everyone who supported our programs this year, whether it was as a collaborator, volunteer, or attendee - we appreciate you all! Looking forward to bringing you more hands-on, interactive, and informative programming next year!



Skaneateles rain garden before (left) and after (right). Photo credit: Camille Marcotte

The Skaneateles Watershed Education Program works to protect the water quality of Skaneateles Lake, a treasured resource that serves as the primary drinking water source for Skaneateles and the City of Syracuse. The City of Syracuse has funded this program since its inception in 1996.

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Drone Cover Crop Seeding in Skaneateles

By: Eric Jensen, Resource Conservation Specialist, Onondaga SWCD

This summer the Skaneateles Lake Watershed Ag Program (SLWAP) contracted with CNY Drone Services to apply an annual ryegrass cover crop seed on 97 acres of standing corn silage fields in the Skaneateles Lake watershed. The project was the first-time use of large aerial drone technology for planting seed on central New York farms. The main goal of the project is to establish a cover crop before the crop is harvested. Ryegrass fall establishment was satisfactory in all fields, except one. Our experience shows that advancing drone technology has promising uses on the farm as we learn how to use it effectively.



Drone cover cropping (top and bottom left photos) and hands-on stream training (bottom right). Photo credit: Onondaga SWCD

Annual ryegrass is shade tolerant, so it will germinate and establish under the canopy of corn leaves. It has a successful history of application by aircraft in the Midwest about 6 weeks before crop harvesting. Rainy weather conditions can delay corn harvest or delay cover crop planting after the corn harvest. Without cover crop protection, the soil is vulnerable to erosion from storm and spring runoff events during the dormant season.

The agricultural fields selected for this trial are in a high priority sub-watershed of Skaneateles Lake that has a high impact on drinking water quality. Planting of cover crops with drone technology will allow for a quick establishment of a ‘green carpet’ of growing plants as enhanced protection for this great resource. Cover crops also increase infiltration of water into the soil profile to reduce storm water runoff potential from the fields. Another benefit is cover crops increase soil aggregates and organic matter which increases overall soil health. This a win-win for the farm and the environment. For more information on drone seeding, contact the SLWAP & Onondaga County Soil & Water Conservation District at (315) 457-0325.

Other updates: The Onondaga County SWCD hosted a “very hands-on” Dave Derrick stream training between August 15 and 17, 2022. Eighteen students from across New York State, representing various public agencies, attended to learn more about stream bed/bank stabilization and design. This training opportunity benefited every major watershed in Onondaga County. The goal is to have staff be as well trained and prepared for stream related events and emergencies in our county and the three-county region of the Skaneateles Lake Watershed, as possible.

The first day was in the classroom. The second day was a field trip to multiple restoration sites, and including one upcoming project opportunity for the Onondaga County SWCD. The third and final day was spent in the classroom bringing all the knowledge and experiences together. Primary learning topics included: assessment, design, construction, and bioengineering, innovative construction methodologies, construction layout techniques, and inspection and monitoring master plans and guidelines for stream and river restoration projects. Special focus was spent on grade control methods and habitat restoration features in the projects.

The take home message for all students was to make sure your projects are environmentally compatible and use cost-effective approaches and methodologies for design of river and streambank stabilization and riparian corridor restoration projects. We especially learned to make sure to include Sycamore and Button Bush in our final restoration/live-staking plans. The Onondaga County SWCD was very grateful to have Mr. Derrick in the house and is planning to have him back to guide us on an additional four complex stream project sites.

Land Donation to Protect Skaneateles Lake Water Quality

By: Finger Lakes Land Trust

The Finger Lakes Land Trust (FLLT) accepted the donation of 15 acres of steep forested hillside on Glen Haven Road in the town of Niles, Cayuga County. Located above the southwestern shore of Skaneateles Lake, the property was donated by Cortland residents Karen and Chet Seibert. When asked why they wanted to donate their property for conservation, Karen and Chet said, “We want to protect the precious land and pure water for future generations.”



Siebert property is on the left where there is a break in the cloud shadows. Photo credit: Matt Champlin

The property is dominated by sugar maples and features multiple creeks that flow directly into Skaneateles Lake, the unfiltered drinking water supply for the City of Syracuse. Protection of the parcel will safeguard the lake’s water quality by prohibiting development on its steep slopes. Development pressures are steadily increasing around the lake and protecting steep wooded hillsides stabilizes soils and prevents erosion and sediment loading into the lake.

The 15 acres are adjacent to an existing property acquired by the FLLT in 2020 from Cayuga County and in close proximity to another parcel donated in 2018. In addition to protecting water quality, creating a network of conserved lands at the south end of the lake ensures the scenic character of the area and safeguards wildlife habitat.

Esker Repair in the Skaneateles Lake Watershed

By: Kendra Pearson, Central New York Land Trust

The Central New York Land Trust has begun esker repair work on two contiguous properties on Skaneateles Lake. Both properties were acquired this past year as a part of our ongoing watershed protection initiative. The properties total more than 100 acres with approximately 600 feet of lake frontage. Extensive damage was done to the esker prior to our acquisition with the installation of a logging road and removal of hemlock tree. Eskers are long, steep ridges that run down to the shoreline. These ridges are held together by shallow soil and tree roots. Once the soil is disturbed, these areas become prone to erosion from wind and water.



Esker repair - Photo credit: CNY Land Trust

We began phase one of our repair work this year. These measures include treatment for hemlock woolly adelgid by Onondaga Soil and Water in an effort to retain the remaining hemlock, and installation of retention material to shore up the substrate by Brillo Excavating. Funding for phase one was provided by the Central New York Community Foundation.

Phase two of the repair will commence in the spring of 2023 with re-establishment of native plants and shrubs to help further mitigate erosion and create stability. Funding for phase two will be provided by the Water Quality Improvement Program acquisition grant.

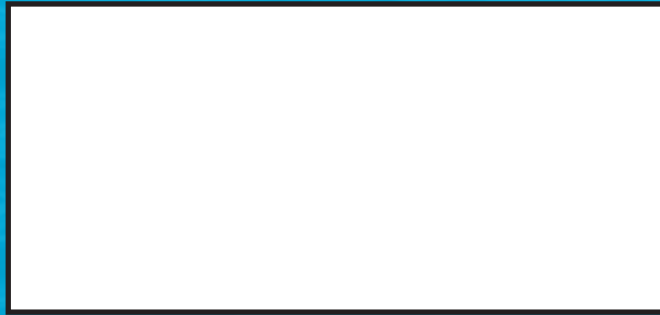
This is a long-term project and a challenging esker repair, but the CNY Land Trust is committed to the success of the project. These important pieces of land are upstream from the water supply intake for the City of Syracuse and pose potential issues for water quality if not restored.

Part of the long-term goals for the project are to partner with SUNY ESF and Syracuse University to establish a center for excellence with a wet lab and research facility on site for graduate and undergraduate students to study blue-green algae, water quality, invasive species such as hemlock woolly adelgid, and to monitor the health of Skaneateles Lake.

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Skaneateles Lake Wave Reviews

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Join our Water Quality List-serve to receive digital WAVE Reviews, event announcements, and more. Skaneateles Watershed Residents and those looking to protect water quality in their community are encouraged to join.

List serve accessible through this direct link <http://eepurl.com/bQz2XP> or by visiting our website at www.cceonondaga.org and searching for our 'Skaneateles Lake' landing page.

Don't forget to check out the new Skaneateles Lake Watershed website at www.skanelakeinfo.org

Important Contacts for the Skaneateles Watershed

Cayuga County Health Department 315-253-1405
Cayuga County Soil & Water Conservation District 315-252-4171
Cornell Cooperative Extension of Onondaga County 315-424-9485
Cortland County Health Department 607-753-5036
Cortland County Soil & Water Conservation District 607-756-5991
NYS DEC Region 7 Environmental Permits (Onondaga & Cayuga) 315-426-7438
NYS DEC Region 7 Environmental Permits Sub-office (Cortland) 607-753-3095
NYS DEC Spill Prevention and Response 800-457-7362
NYS DEC Region 7 Water & Wastewater (Stormwater, Dam Safety, Flood Control) 315-426-7500
Onondaga County Health Department 315-435-3252
Onondaga County Soil & Water Conservation District 315-457-0325
Skaneateles Lake Watershed Agricultural Program 315-457-0325
Syracuse Water Department (Skaneateles) 315-448-8366

This newsletter was created by Camille Marcotte of Cornell Cooperative Extension Onondaga County and Rich Abbott, City of Syracuse Water Dept. Special thank you to our partnering contributors.

Skaneateles Lake Watershed Education Program

Funding for Cornell Cooperative Extension programming in the Skaneateles Lake Watershed is provided by the City of Syracuse Department of Water.

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If you need special assistance, please contact our office at 315-424-9485.*

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