



# Owasco Lake Watershed Inspection Program

## 2017 Annual Report

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### Moving Up..

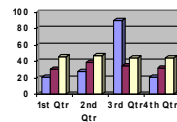
Since the early 1900's, when the city of Auburn began drawing water from the lake for distribution and consumption, the watershed inspections and surveillance have been conducted primarily at ground level by train, boat, motorcycle, bicycle, horse and foot.

Technological advancements will allow for additional visual perspectives from the "birds-eye" view, which can provide dramatic photos and aid in determining episodic impacts and assist in damage evaluation.

The Inspection Program is underway with adopting new drone capabilities and policies to assist with surveillance efforts, assessing and tracking problems and identifying sources of pollution.



### Revised Program Funding



Funding for the Inspection Program is generated through municipal water sales from water treated and distributed by the City of Auburn and the town of Owasco.

Historically, those purchasing city water have paid a small fee, based on consumption rates, with each water billing cycle. Typically, these amounts varied from season to season and provided uncertain funding to the Inspection Program.

In 2017, the city of Auburn revised their funding mechanism to a defined, designated amount, eliminating the consumption-based uncertainties. With this new funding structure, the Inspection Program will have better capabilities to formulate its annual budget and manage finances.

Program funding will continue to be an important topic as Owasco Lakes' water distribution and consumption continues to expand throughout Cayuga County. Currently, the distribution system supplies over 48,000 residents and numerous businesses in 13 municipalities with Owasco Lake water.

Increasing Program capacity and capabilities is essential to protect the health of the lake and the water consumers.

### Program Mission

To make regular and thorough inspections of Owasco Lake, its watercourses, and its watershed to ascertain compliance with the Rules and Regulations of the Owasco Lake Watershed and to provide educational outreach to the watershed community to foster lake stewardship.

# Seasonal Highlights

## The Tale of 2 Summer Weather Patterns

From start to finish, 2017 was a year of localized extreme weather-related events. These events demonstrated how the 208 square miles of Owasco Lake's watershed, as well as the lake itself, can be dramatically impacted in a various ways from north to south.

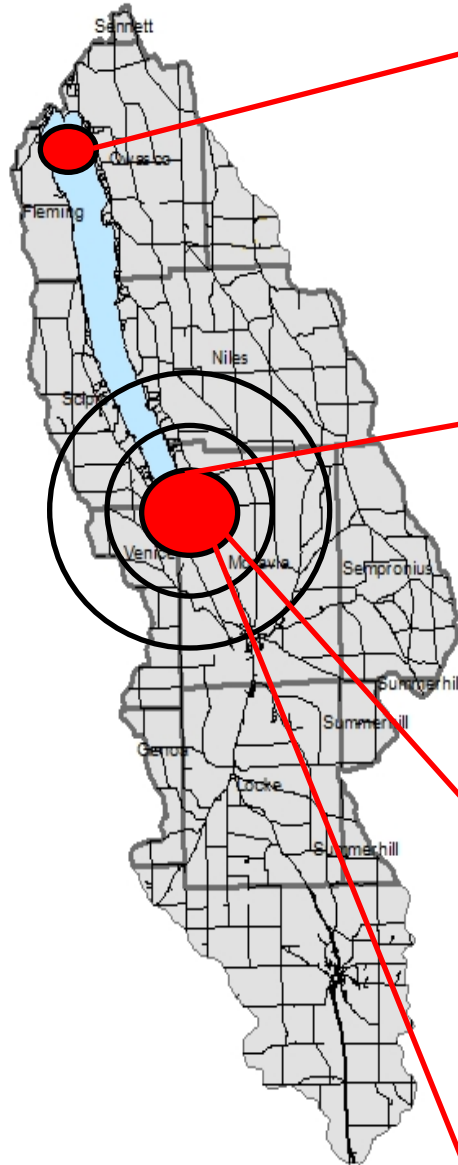
The towns situated within the central portion of the Owasco Lake watershed, including Moravia, Locke, Niles and Summerhill, were in the "precipitation bullseye" during 2017.

Heavy rain flooded the village of Moravia on multiple occasions, destroying infrastructure, property, streambanks, and property throughout the town. Summerhill, Locke, and Niles fared similarly to Moravia with widespread damages, especially with roadway infrastructure.

A number of lake shore locations (including Indian Cove), on the eastern shore of Owasco Lake, experienced rapid formation or extension of shoreline deltas as a result of massive sediment transport and deposition. Over 25 inches of rain fell throughout the southern end of the watershed from April 1 to July 31 in 2017, approximately 8 inches above average\*, pushing the Owasco Inlet to and above flood stage on 4 separate occasions!

In contrast, the northern portions of the watershed were spared of the heavy summer precipitation, destructive rains and floods, but had to endure weeks of severe late summer Harmful Algae Blooms (HAB's).

\*Rainfall data provided by Christopher Keller, Moravia, NY



Algae Bloom on northern Owasco Lake  
September, 2017



Delta expansion in Indian Cove shore  
Moravia, July 2017



North Main Street destruction  
Moravia, July 2017



Severe residential erosion  
Moravia, July 2017



# Seasonal Highlights, Cont'd

## 2017 Inspections by the Numbers

The Inspection Program had a productive year in 2017, assisting municipalities with ditch stabilization projects, monitoring and identifying issues associated with rainfall, identifying state and local violations, assembling informational packets for new residents, and providing stream and lake monitoring and sampling assistance.

Aside from consistent stream and lake surveillance, we conducted over 50 sites visits in an effort to assist with violation identification or provide technical assistance and guidance throughout the 3 counties of the watershed.

Staff also coordinated a short volunteer lake cleanup day with Xylem Corporation along the northern shore of the lake in early 2017. We collect an estimated 200 pounds of trash washed ashore!

Below is the numerical summary of the 50+ site visits conducted by the Inspection Program in 2017:

Site Visits Conducted:	Totals	Result
Cayuga County	46	8 Violations
Onondaga County	3	2 Violations
Tompkins County	3	0 Violations
<b>Total Violations Found:</b>	<b>10</b>	
Stormwater (Runoff)	3	Improper ditching, parking lot drainage
Agriculture	4	Manure stockpiling, tile discharge
Logging	1	Equipment in stream
Unauthorized Disposals	1	Container of oil in ditch
Failing Septic Systems	2	Poor drainage field
<b>Length of Stream Surveilled:</b>	<b>5 miles</b>	Hemlock, Inlet, Dresserville
<b>Length of Shoreline Surveilled:</b>	<b>15 miles</b>	
<b>Helicopter Surveillance:</b>	<b>1</b>	East and West sides of Lake



Stockpiles of manure placed too close to stream  
Sucker Brook subwatershed, 2017



Container of motor oil placed in road ditch  
Along Rockefeller Road, 2017



Equipment in stream—logging operation  
Owasco Inlet subwatershed 2017



Ineffective stormwater practice installation  
Sucker Brook subwatershed, 2017



Inadequate gas station parking lot drainage  
North end of Owasco Lake, 2017



# Watershed Assistance and Assessments

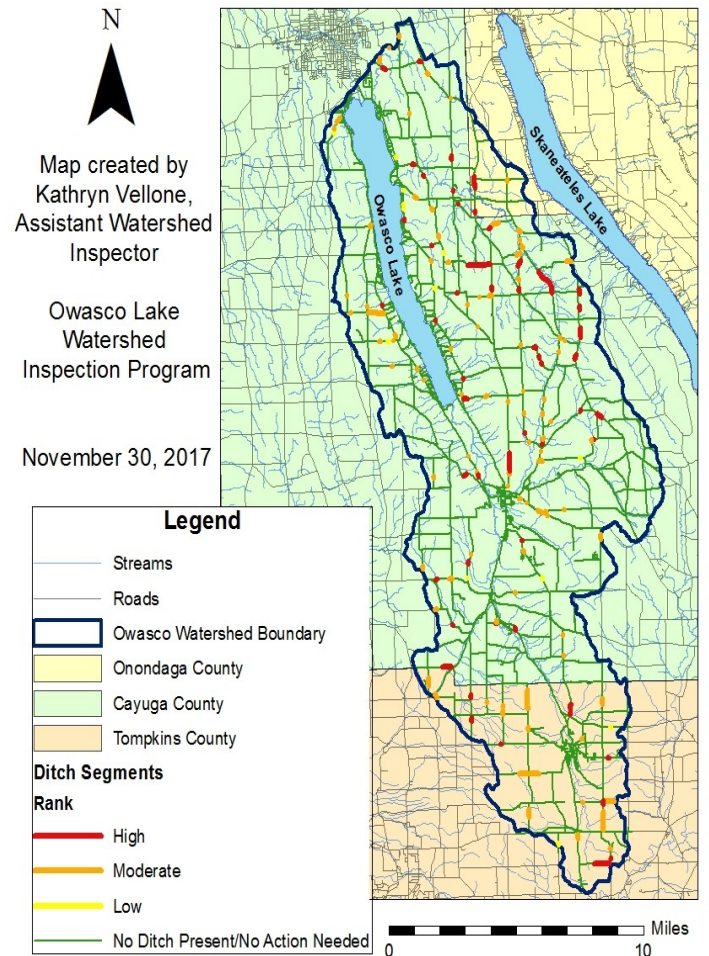
## Road Ditch Assessments and Education

The Inspection Program staff assisted the Cayuga County Soil and Water Conservation District with road ditch stabilization projects and helped facilitate an educational workshop at the Cayuga County highway supervisors May meeting in Moravia, in 2017.

The educational workshop focused on the relationship between road ditching techniques and the functional relationships between those techniques and water quality. The workshop featured a great presentation from Cornell University professor, and ditching expert, Rebecca Schneider. Ms. Schneider illustrated the importance of proper ditch installation and maintenance for the protection of surface and groundwater. The 1/2 day workshop also included a demonstration by the town of Moravia highway crew on how to properly construct a ditch "check dam" for water velocity and sediment control.

Seasonal Inspector, Kathryn Vellone, worked feverishly to complete a preliminary road ditch assessment throughout the watershed in 2017. In total, she identified over 100 sites for a combined total of nearly 10 miles of ditch requiring varying levels of repair (see table below and map on the right).

### Road Ditch Assessment Sites in the Owasco Lake Watershed (Summer & Fall 2017)



Town	# of Sites Assessed	Cumulative ditch segment length in need of stabilization
Fleming	5	1450 ft
Scipio	8	4,450
Venice	1	400 ft
Sennett	2	500 ft
Owasco	19	5,500ft
Niles	30	19,900ft
Moravia	24	10,400 ft
Sempronius	6	2,730 ft
Locke	12	3,800 ft
Skaneateles	3	2,750
<b>Total</b>	<b>110</b>	<b>51,150 ft (9.69 miles)</b>

#### Program Contact Info:

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#### Watershed Inspection Program Sub-Committee Members:

Ed Wagner, Supervisor, Town of Owasco  
 Debra McCormick, Councilor, City of Auburn  
 Aileen McNabb-Coleman, Cayuga County Legislator, District 6  
 Seth Jensen, Director of Municipal Utilities, City of Auburn



#### Owasco Lake Numbers:

**Average Lake Depth:** 95 feet  
**Watershed Area:** 208 Square Miles  
**Number of Residents in Watershed:** ~16,000  
**Length of Shoreline:** 25 miles  
**Number of Residents Drinking Owasco Lake Water:** ~45,000