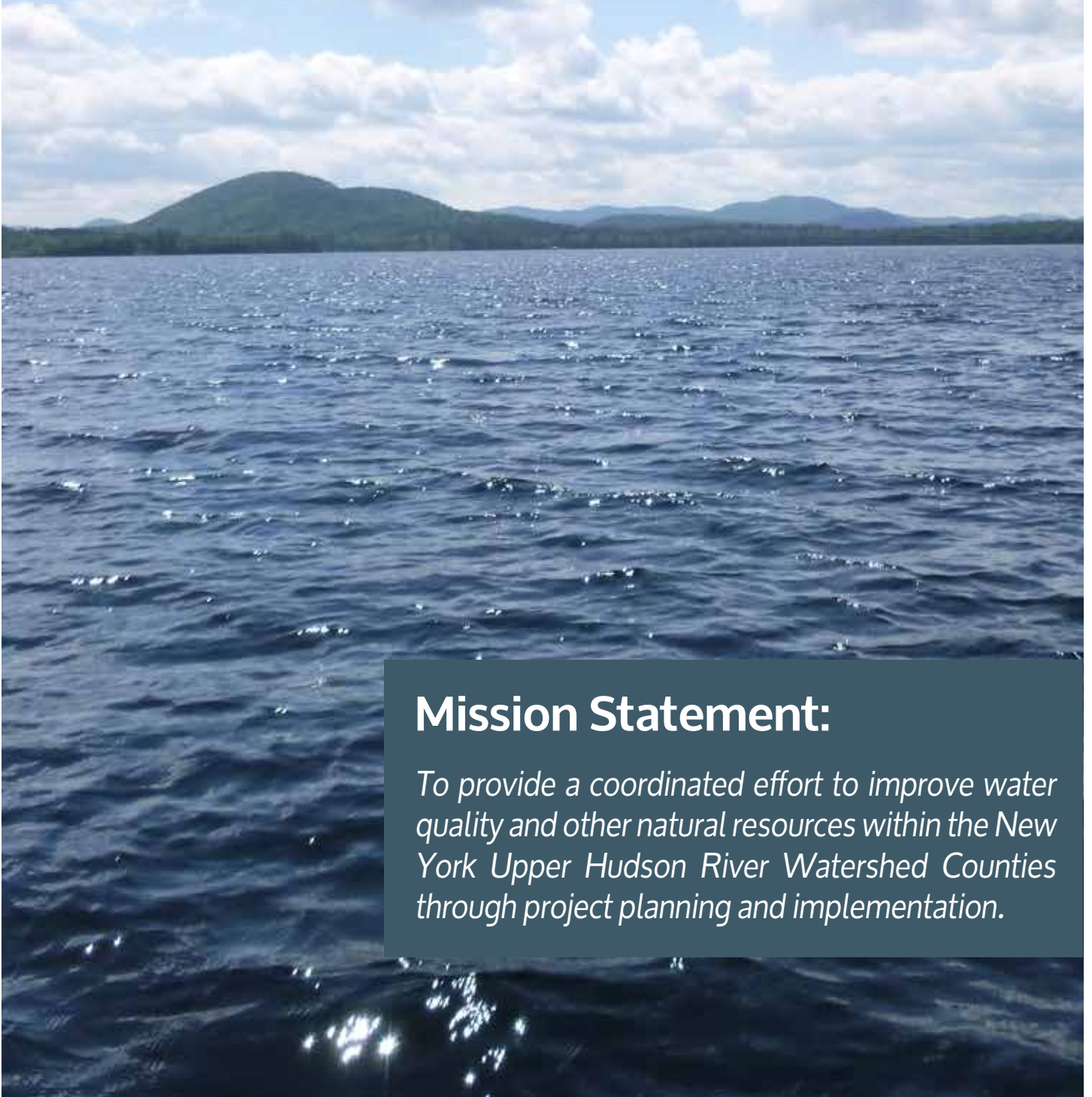


# Upper Hudson River Watershed Coalition

Priority Issues and Actions  
February 2014



## **Mission Statement:**

*To provide a coordinated effort to improve water quality and other natural resources within the New York Upper Hudson River Watershed Counties through project planning and implementation.*

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## Membership:

Membership will consist of representatives from Essex, Fulton, Hamilton, Rensselaer, Saratoga, Warren and Washington counties in New York with the following members:

- One representative from each of the seven county Soil and Water Conservation Districts (SWCD).
- One representative from the Lake Champlain-Lake George Regional Planning Board (LCLGRP).
- One representative from the Greater Adirondack Resource Conservation and Development Council (GARCD).

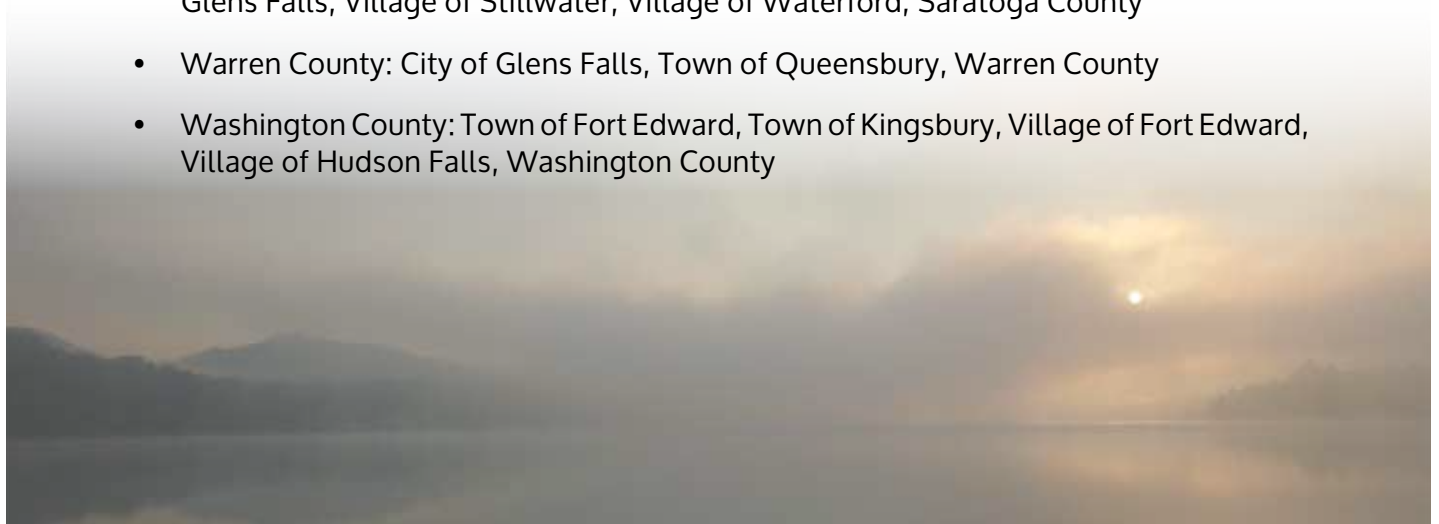
## Priority Issues:

There are a total of 40 Impaired Waterbodies and several classified with Minor Impacts within the Upper Hudson River Watershed, as identified in the NYS Department of Environmental Conservation Priority Waterbodies List, which includes waterbodies listed on the Final 2012 Section 303 (d) List. A summary table of these waterbodies, locations, impairments and sources is located in Appendix 1.

In response to these impairments, the Upper Hudson River Watershed Coalition has identified six (6) major Priority Issues to be addressed watershed-wide as well as on a per County basis.

### 1. STORMWATER

- There are a total of 31 Municipal Separate Storm Sewer System (MS4) Municipalities either wholly or partially within the Watershed, including several that were recently permitted in 2013. They include:
- Rensselaer County: City of Troy, Town of Brunswick, Town of Schaghticoke, Rensselaer County
- Saratoga County: City of Mechanicville, City of Saratoga Springs, Town of Ballston, Town of Charlton, Town of Clifton Park, Town of Greenfield, Town of Halfmoon, Town of Malta, Town of Milton, Town of Moreau, Town of Stillwater, Town of Waterford, Town of Wilton, Village of Ballston Spa, Village of Round Lake, Village of South Glens Falls, Village of Stillwater, Village of Waterford, Saratoga County
- Warren County: City of Glens Falls, Town of Queensbury, Warren County
- Washington County: Town of Fort Edward, Town of Kingsbury, Village of Fort Edward, Village of Hudson Falls, Washington County



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- In several impaired waterbodies, including the Upper Hudson, increases in nutrients, sediment, pathogens and decreases in oxygen demand are contributed to urban stormwater runoff from municipal storm sewers, construction operations and private/commercial/industrial operations. All are results of stormwater runoff originating from urbanized areas.

## **2. AGRICULTURE**

- Agricultural operations within the watershed range from hobby farms to large Concentrated Animal Feeding Operations (CAFO). Causes of waterbody impairments from agricultural operations include pathogens, sediment loading and thermal changes.

## **3. EROSION**

- Roadside Erosion
  - Sediment loading from roadside banks and ditches increases priority organics in rivers and lakes.
- Streambank Erosion
  - Failing streambanks contribute sediment, nutrients, promote algal/weed growth and contribute to thermal changes. Scour can occur from undersized or improperly installed culverts, which also has an effect on fish passage.
- Logging Operations
  - Improper logging operations cause erosion of logging roads and streambank crossings. This contributes to sedimentation in the receiving waterbodies.

## **4. WATER SUPPLY/WASTEWATER**

- Municipalities
  - Issues include pathogens in waterbodies from Combined Sewer Overflows (CSO) and Sanitary Sewer Overflows (SSOs) from municipal stormwater and wastewater discharges.
- Failing Onsite Septic Systems
  - Failing onsite systems impact waterbodies by increasing nutrients, which promotes algae/weed growth. They also can contribute pathogens if not properly maintained.

## **5. INVASIVE SPECIES**

- Increases in invasive and problem species is attributed to habitat modification as a result of development.

## **6. FISH AND AQUATIC ORGANISM PASSAGE**

- Improperly placed or sized culverts have created significant migration barriers for fish and aquatic organisms throughout the watershed. This, coupled with habitat modification, has decreased the natural hydrologic connectivity of the watershed and segregated aquatic populations.

It is also acknowledged that there are numerous waterbodies impaired from contaminated sediment and atmospheric deposition, however, little can be done on a county scale to remedy those issues.

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## Goals and Objectives:

### **Goal:**

*Identify or develop a sustainable funding source for planning and implementation for UHRW priority issues.*

#### **OBJECTIVES:**

1. Develop Funding Strategy for group.
2. Obtain Baseline Funding for Each County.
3. ID Local, State and Federal Legislators that can be source of funds.
4. Promote this organization to local and state governments.
5. Identify and contact key organizations with interest in Upper Hudson River Water Quality Issues.
6. Identify innovative technologies with ideas toward additional funding.

### **Goal:**

*Create watershed-wide and local planning strategies and documents.*

#### **OBJECTIVES:**

1. Compile information from County Water Quality Coordinating Strategies and other local documents to identify planning needs.
2. Produce a watershed-wide planning document, while supporting local planning efforts.
3. Develop stream inventories.
4. Develop road bank inventory.
5. Create and obtain funding for a Rural Road Management Program modeled after Vermont's Better Back Roads Program.
6. Provide riparian landowners with specific water quality management plans.
7. Support the County Agricultural Environmental Management (AEM) Programs and encourage farmer participation in the creation of conservation plans and Nutrient Management Plans.
8. Obtain funding for and perform planning objectives.

### **Goal:**

*Develop a list of implementation projects to reduce resource impacts in the UHRW.*

#### **OBJECTIVES:**

1. Develop inventory of implementation projects that are in line with priority issues, including costs and potential remediation efforts.
2. Develop a priority projects list based on available funding categories or lack of funding.
3. Develop individual county projects and fund them.
4. Inventory water quality issues and develop a joint project for all counties and obtain funding for it.

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5. Identify low cost pilot projects to implement in the short term.
  6. Assist landowners and municipalities with implementation of BMPs.
  7. Encourage and provide technical assistance for implementation projects.
  8. Set up prioritization schedule for existing point source and non-point source concerns.
  9. Utilize County Water Quality Strategies to identify existing efforts that were ineffective.
  10. Provide on-site wastewater treatment assistance.
  11. Establish a dedicated crew to implement stream corridor, roadside erosion, and watershed improvement projects.
  12. Encourage projects to maintain viability of agriculture in the watershed.
  13. Develop phosphorous reduction credits and tracking for non-ag BMP implementation.

**Goal:**

*Educate landowners and communities on the importance of maintaining and improving water quality.*

**OBJECTIVES:**

1. Develop newsletter.
2. Encourage input from landowners and municipalities to identify local needs.
3. Identify and educate organizations throughout the watershed on the goals and objectives of the Coalition.

**Goal:**

*Coordination, Cooperation, and Communication.*

**OBJECTIVES:**

1. Formalize the group.

## Individual County Information:

Although it is important to identify needs on a watershed-wide basis, each County is unique in their local challenges and solutions, and it is important to work together to achieve local as well as regional success. This next section provides County specific information based on priorities identified by each County Water Quality Coordinating Committee and other local partners, while also taking into consideration the water quality impairments identified by the NYS Department of Environmental Conservation Rotating Integrated Basin Studies (RIBS) Program. **Specific projects and programs have been identified, totaling almost \$3 Million in needs throughout the Watershed.**

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## ESSEX COUNTY

Contact: Dave Reckahn, Essex County Soil and Water Conservation District  
3 Sisco Street, Westport, NY 12993  
(518) 962.8225 | Fax: (518) 962.4002 | email: dreckahn@westelcom.com

### COUNTY INFORMATION

Essex County is home to the headwaters of the Hudson River as well as the Schroon River, a major tributary to the Upper Hudson. These waters originate in the high peaks of the Adirondacks where much of the land area is forest preserve. There is a large network of state, County and local roads, including Interstate 87, built along many of the County's waterbodies with significant roadside and streambank erosion concerns. During the storms of 2011, severe damage was done to several streams and rivers within the County, including the Schroon River. While only a small portion of the Schroon River has been documented for damage in the towns of North Hudson and Schroon, what was inventoried was substantial. The landowners that have noticed these damages are concerned as they have seen changes in fish populations, less clear waters due to increased sedimentation, and changes in the rivers course. Roads and bridges may also be affected if these issues continue as they are, including major roadways like Interstate 87 and NYS Route 9.

### COUNTY PRIORITIES

1. EROSION/STREAMBANK
2. EROSION/ROADSIDE
3. INVASIVE SPECIES

### PRIORITY PROJECTS

**Schroon River Stabilization Project:** Large eroding banks are evident from several areas along roadsides. In order to stabilize the river banks and reduce the amount of sediment being deposited into the river, toe wood structures are proposed to be installed. These structures would be made from on-site wood sources, when available, to help reduce costs and will provide excellent fish habitat once completed. Hydroseeding will be performed to produce a groundcover and willow stakes will be installed to aid in stabilization. This project will also help to reduce road runoff by creating a filtration zone when located near roads.

**Proposal Cost: \$75,000                      Local Match: \$25,000                      Total Cost: \$100,000**

**Schroon River Blockage Removal:** A blockage consisting of wood and sediment is located on a portion of the Schroon River that is utilized by Interstate 87, causing the flow of the river to cut into the bank. This project would involve removing the blockage and creating a toe wood structure to stabilize the damaged bank. Materials from the blockage will be used to create the structure and to reduce material and disposal costs. Hydroseeding and planting willow stakes will act as a stabilization aide and filtration zone.

**Proposal Cost: \$25,000                      Local Match: \$10,000                      Total Cost: \$35,000**

**Schroon River Inventory:** The District has begun a preliminary inventory of the damages the Schroon River sustained in the recent high powered storms; however the information obtained is limited. Inventorying additional locations along the River, most notably those without easy access points, will help to document sites in need of remediation. This inventory will also aid in identifying areas where damages are concentrated.

**Proposal Cost: \$6,000                      Local Match: \$2,000                      Total Cost: \$8,000**

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## COUNTY PARTNERS

- Schroon Lake Association
- Town of North Hudson
- Town of Schroon
- Trout Unlimited
- US Fish and Wildlife Service
- Town of Minerva
- Essex County DPW
- NYS DOT

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# FULTON COUNTY

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(518) 762.0077 | Fax: (518) 762.7020 | email: jpersch@frontier.com

## COUNTY INFORMATION

Approximately 120,000 acres, or 35%, of Fulton County is located in the Upper Hudson River Watershed. There are a total of 25 lakes, numerous streams, and most notably the Sacandaga River, which is a major tributary to the Upper Hudson River. The majority of the land mass that makes up the watershed falls within the Adirondack Park, and there are a total of 5 Towns and 3 Villages that are located either wholly or partially within the watershed. Fulton County has an array of natural resources such as the Great Sacandaga Reservoir, Mayfield Lake, Little Northville Lake, Chase Lake, and Lily Lake. Land-use varies from lake-side second homes, to agriculture, to the more urban areas of Gloversville and Johnstown. Most of the resource impact concerns stem from nonpoint source issues such as stormwater, erosion and improper onsite wastewater discharges from primary and secondary homes situated along the shores of the County's waterbodies. Additional issues include aquatic and terrestrial invasive species, most notably the Spiny Waterflea and Eurasian Watermilfoil.

## COUNTY PRIORITIES

1. **STORMWATER**
2. **EROSION**
3. **INVASIVE SPECIES**

## PRIORITY PROJECTS

**Northville, Mayfield & Broadalbin Stormwater Assessment Project:** Several recent high-powered storms, including Hurricane Irene and Tropical Storm Lee, have had a significant effect on the roadside ditches, streambanks, and culverts throughout the County. This has created the need for a comprehensive assessment of this infrastructure in the Towns of Northville, Mayfield and Broadalbin. This information will identify high priority areas in need of replacement or repair. These three municipalities are the most populated and traveled in the watershed, thus taking priority for this program.

**Proposed Cost: \$30,000**

**Local Match \$7,500**

**Total Cost \$37,500**

**Vegetative Erosion and Sediment Control Program:** Establishment of a hydroseeding program to stabilize road and streambanks utilizing hydroseeding and power mulching techniques. This program would be run by the County SWCD to provide free or low cost hydroseeding efforts to local municipalities.

**Proposal Cost: \$60,000**

**Local Match: \$15,000**

**Total Cost (1 year): \$75,000**

**Great Sacandaga Reservoir, Mayfield Lake Invasive Species Assessment Project:** Production of a plan for aquatic invasive species management within these two priority waterbodies. Work to be done includes identifying native and non-native vegetation within the waterbodies and mapping the location and density of aquatic invasive species. In addition, the installation of two boat washing stations on the Great Sacandaga Reservoir and one station on Mayfield Lake will aid in spread prevention both into and out of the waterbodies.

**Proposal Cost: \$150,000**

**Local Match: \$37,500**

**Total Cost (1 year): \$187,500**



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## COUNTY PARTNERS

- Fulton County Department of Public Works
- Town Highway Departments
- NYS Soil and Water Conservation Committee
- USDA- Natural Resource Service

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# HAMILTON COUNTY

Contact: Elizabeth Mangle, Hamilton County Soil and Water Conservation District  
PO Box 166, Lake Pleasant, NY 12108  
(518) 548.3991 | Fax: (518) 548.5602 | email: hcswcd@frontiernet.net

## COUNTY INFORMATION

There are 577,389 acres of the Upper Hudson River Watershed in Hamilton County including one of the Upper Hudson's major tributaries, the Sacandaga River. Although the majority of the waterbodies within the County are relatively clean, pollutant inputs include acid rain; de-icing agents; unstable road ditches and stream banks; septic system inputs; invasive species; development; and improper shoreline management. Because the region's economy is dependent on tourism, non-point source pollution not only threatens the quality of the County's natural resources, but residents' livelihood as well.

One major threat to the watershed is invasive species. Previous to 2001, only one lake in the County was confirmed with Eurasian watermilfoil, but it has now been discovered in several additional lakes. Spiny waterflea, a crustacean that competes with native fish for food, was confirmed in Sacandaga Lake in 2009. Terrestrial invasive plants such as toxic giant hogweed, purple loosestrife, Japanese knotweed, common reed grass, and garlic mustard are also prevalent throughout the County.

Sedimentation from the maintenance of roadways has also had an impact on the waterbodies within the County by filling in important habitat for fish and invertebrates. Streambank erosion has also contributed to this issue, in addition to creating unstable banks that can result in flooding. Also, within the rivers and streams themselves, improperly installed culverts prevent fish and other aquatic organisms from passing through. This has the potential to impact aquatic habitats and segregate fish populations.

## COUNTY PRIORITIES

1. **INVASIVE SPECIES**
2. **EROSION**
3. **FISH AND AQUATIC ORGANISM PASSAGE**

## PRIORITY PROJECTS

**Invasive Species Assessment and Management:** Inventorying terrestrial invasive species along roadsides and aquatic invasive species within un-assessed lakes throughout the County. This will include the purchase of additional mapping equipment and aid in invasive species management efforts.

**Proposal Cost: \$75,000**

**Local Match: \$25,000**

**Total Cost: \$100,000**

**Invasive Species Prevention Program:** Purchase of a portable boat washing station for use throughout the County, in addition to the installation of Internet Landing Installed Device Sensors (I-LIDS) on priority waterbodies. The I-LIDS systems can detect aquatic invasive species on boat trailers before they are launched without requiring 24-hour staffing of a boat launch.

**Proposal Cost: \$90,000**

**Local Match: \$22,500**

**Total Cost: 112,500**

**Volunteer Lake Monitoring Program:** It is imperative for the health of the waterbodies within Hamilton County to have consistent monitoring to detect changes in the water chemistry or biota as a result of non-point source pollution or aquatic invasive species establishment. By working with landowners and lakeside residents, priority waterbodies within the County will be monitored on a

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yearly basis to detect a need for rapid response.

**Proposal Cost: \$10,000**

**Local Match: \$2,500**

**Total Cost: \$12,500**

**Hamilton County Education and Outreach Program:** The District will undertake a comprehensive education and outreach program for the residents of and visitors to Hamilton County. There are several components to the Program, including the establishment of a Floating Classroom Program modeled after that of the Lake George Association, production of a Watershed Eco-Awareness Kiosk and yearly Ecofest event, production of Waterfront Eco-Trail Educational Signage and Kiosks, and the purchase of an EM River Model.

**Proposal Cost: \$130,000**

**Local Match: \$33,750**

**Total Cost: \$163,750**

**Fish Passage Barrier Assessment and Improvements:** There are numerous culverts within the County that create barriers for fish passage as well as many culverts within the County that have not yet been assessed. By producing a comprehensive inventory of these culverts and their needs for replacement, several priority culverts can be identified and remediated.

**Proposal Cost: \$75,000**

**Local Match: \$25,000**

**Total Cost: \$100,000**

**Green Infrastructure Demonstration Projects:** Several of the lakeside Hamlets within the County could benefit from the installation of green infrastructure projects, including bioretention areas, cisterns, and permeable pavers. This funding will aid the municipalities with the planning and installation of these projects that will be used to demonstrate the uses of green infrastructure within small communities.

**Proposal Cost: \$75,000**

**Local Match: \$25,000**

**Total Cost: \$100,000**

## **COUNTY PARTNERS**

- Hamilton County Highway Department
- Town Municipalities and Highway Department
- NYS Department of Environmental Conservation
- Adirondack Park Invasive Plant Program
- US Department of Agriculture's Animal & Plant Health Inspection Service

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# RENSSELAER COUNTY

Contact: Jason Cass, Rensselaer County Soil and Water Conservation District  
61 State Street, Troy, NY 12180  
(518) 271.1740 | Fax: (518) 271.1806 | email: Jason.cass@ny.nacdnet.net

## COUNTY INFORMATION

Rensselaer County is located in the Capital District of upstate New York along the east side of the Hudson River and is home to the Troy Dam, which separates the Upper Hudson River Watershed from the Lower Hudson River Watershed. Nearly half of the County's land base is located within the Upper Hudson River Watershed, with much of the area consisting of agricultural lands worked by small dairies, beef, vegetable, and crop farmers. There is also a significant amount of forested land that impacts the watershed in addition to several urban areas, three of which are designated MS4 communities along with Rensselaer County.

In addition to the numerous streams that flow throughout the County, the Tomhannock Reservoir is a public drinking water supply for over 100,000 people. Most of the resource concerns for these waterbodies are the result of non-point source pollution from agricultural operations as well as road bank and stream bank erosion. There is also concern for the hydrologic connectivity of the County's streams and the barriers that exist to fish and aquatic organism passage.

## COUNTY PRIORITIES

1. EROSION
2. AGRICULTURE
3. FISH AND AQUATIC ORGANISM PASSAGE

## PRIORITY PROJECTS

**Streambank Stabilization Project:** Utilizing rock rip rap, natural stream channel design, and biotechnical methods, 500 feet of eroding streambank along the Little Hoosic River will be protected. This will help remediate a significant source of sediment and nutrient runoff from entering into the River.

**Proposal Cost: \$22,500                      Local Match: \$7,500                      Total Cost: \$30,000**

**Erosion and Sediment Control Program:** Assessment and remediation of road banks and sites in need of critical area seeding in cooperation with County and Town Highway Departments, contractors, and loggers. The goal of the program is to reduce sediment runoff and soil erosion on state, County and local and private roads throughout the watershed.

**Proposal Cost: \$7,500                      Local Match: \$2,500                      Total Cost: 10,000**

**Agricultural Runoff Reduction Program:** Develop and implement a shoreline buffer program for farms located directly on the County's lakes and streams. Priority will be given to Class A trout streams and public drinking water sources. The program will consist of site identification, design, and installation of shoreline buffers utilizing native plants and grasses for the benefit of agricultural runoff uptake.

**Proposal Cost: \$7,500                      Local Match: \$2,500                      Total Cost: \$10,000**

**Fish and Aquatic Organism Passage Assessment Program:** Improperly placed or sized culverts have created significant migration barriers for fish and aquatic organisms throughout the watershed. This program would involve walking surveys, GIS mapping, and documentation of these barriers to catalog problems and develop preliminary solutions to remediate these sites.

**Proposal Cost: \$7,500                      Local Match: \$2,500                      Total Cost: \$10,000**

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## COUNTY PARTNERS

- USDA/Natural Resource Conservation Service
- New York State Department of Ag and Markets
- Rensselear County Highway Department
- Town Highway Departments

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# SARATOGA COUNTY

Contact: Dustin Lewis, Saratoga County Soil and Water Conservation District  
50 West High Street Building #5, Ballston Spa, NY 12020  
(518) 885-6900, Ext. 3 | Fax: (518) 885.3116 | email: dustinlewissaratogaswcd@gmail.com

## COUNTY INFORMATION

Saratoga County is highly diverse, with land use spanning from the urban areas of Waterford, Clifton Park and Saratoga Springs to the rural, mountain towns of Day and Hadley, both of which reside in the Adirondack Park. This great variation in the geography of Saratoga County creates a wide variety of issues and opportunities in regards to the water and natural resources of the County.

The Upper Hudson River creates the northern and eastern boundaries of the County, resulting in 715 square miles, or 89% of the County, lying within its watershed. There are two major drainage basins within the County, (1) the direct Upper Hudson River, which is made up of many small tributaries, the largest being Fish Creek, which drains Saratoga Lake, and (2) the Sacandaga River, which drains Great Sacandaga Lake.

The watershed for the Sacandaga River consists almost entirely of wild forested areas with very little development. The Upper Hudson River Watershed, however, is a combination of urban and rural landscapes, consisting of farmlands as well as forests at the foothills of the Adirondacks. There are also a total of 18 MS4 communities within the County, many of which are situated along the Upper Hudson River, resulting in urban stormwater and wastewater discharge impairments in the Upper Hudson River.

Agriculture is a major industry in the County and as a result has a large impact on its natural resources. There are 641 farms in the county, 12 of which are regulated by the state as Concentrated Animal Feeding Operations (CAFOs). The Saratoga County SWCD works with agricultural producers through the County's Agricultural Environmental Management (AEM) program to assist farmers in implementing best management practices to help protect and promote natural resources.

## COUNTY PRIORITIES

1. AGRICULTURE
2. STORMWATER
3. WATER SUPPLY/WASTEWATER

## PRIORITY PROJECTS

**Conservation Tillage Promotion:** Provide funding to assist farmers with the implementation of a conservation cropping system. This would include the purchase of a no-till seeder that would be made available for farmers to use to create a buy-in system for implementation of no-till seeding practices and reduce the burdens of equipment costs on local farmers.

**Proposal Cost: \$30,000                      Local Match: \$10,000                      Total Cost: \$40,000**

**MS4 Compliance Program:** Continuation of the current Saratoga County Inter-Municipal Stormwater Management Coalition, which was established to implement a regional approach to the NYS DEC MS4 Program. Work performed for and by the 19 MS4 communities within Saratoga County under this program includes public education and outreach, illicit discharge detection and elimination, stormwater retrofit projects, and construction site operation inspections.

**Proposal Cost: \$150,000                      Local Match: \$50,000                      Total Cost: \$200,000**

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**On-Site System Mapping and Assessment:** Map the on-site septic systems in the Ballston Lake subwatershed and provide funding for septic tank pump-outs and system inspections. The goal of this program is to identify failing systems that may be contributing to nutrients in the lake.

**Proposal Cost: \$20,000**

**Local Match: \$5,000**

**Total Cost: \$25,000**

## **COUNTY PARTNERS**

- Saratoga County Water Quality Coordinating Committee
- Saratoga County Cornell Cooperative Extension
- Saratoga County Inter-Municipal Stormwater Management Program
- Natural Resource Conservation Service
- NYS Department of Ag and Markets

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# WARREN COUNTY

Contact: Jim Lieberum, Warren County Soil and Water Conservation District  
394 Schroon River Road, Warrensburg, NY 12885  
(518) 623.3119 | Fax: (518) 623.3519 | email: jim99@nycap.rr.com

## COUNTY INFORMATION

Approximately 75% of Warren County is located in the Upper Hudson River Watershed, with 12 out of 13 municipalities having lands wholly or partially within the watershed. The land use varies from rural locales to the City of Glens Falls and Town of Queensbury, both of which are NYS DEC MS4 Communities. Smaller Hamlets within the County include Chestertown, Warrensburg, Stony Creek, North Creek and Lake Luzerne. This creates a large, diverse mixture of land uses, from urbanized areas to small hobby farms and Forever Wild Forest to substantial logging operations.

Warren County has an abundance of natural resources including the Upper Hudson River, Schroon Lake, Brant Lake, Lake Luzerne, Friends Lake and Garnet Lake, as well as many other smaller lakes, rivers and streams. Most of the resource impact concerns for these waterbodies stem from nonpoint source pollution, including stormwater, road bank and streambank erosion and onsite wastewater system failures. Additional impacts have been created by the disconnection of proper hydrologic connectivity in rivers and streams due to barriers or improper road crossings structures.

## COUNTY PRIORITIES

1. **STORMWATER**
2. **EROSION**
3. **FISH AND AQUATIC ORGANISM PASSAGE**

## PRIORITY PROJECTS

**Chestertown Stormwater Remediation Project:** From a stormwater assessment conducted in the Hamlet of Chester, three main areas of concern have been identified for remediation: (1) Riverside Drive at Church Street, (2) Panther Mountain Dr. east of NYS Rte. 9 and (3) South of the intersection of Foster Flats Road and NYS Rte. 9. Remediation efforts for these areas include capturing and infiltrating stormwater through the installation of several drywell systems.

**Proposal Cost: \$31,000                      Local Match: \$11,000                      Total Cost: \$42,000**

**Warrensburg Stormwater Remediation Project:** Remediation of significant stormwater runoff stemming from 2 acres located on Richards Avenue and Alden Avenue in the Town of Warrensburg. This will be achieved by capturing and infiltrating stormwater through drywells and potentially incorporating green infrastructure technologies.

**Proposal Cost: \$18,000                      Local Match: \$7,000                      Total Cost: \$25,000**

**Vegetative Erosion and Sediment Control:** The Warren County SWCD averages 8-10 acres of hydroseeding per year for routine roadside erosion maintenance practices. Hydroseeding and power mulching are two of the most cost effective practices for addressing sediment and erosion control concerns, and it is imperative to maintain this program which provides free or low cost hydroseeding efforts to local municipalities.

**Proposal Cost: \$20,000                      Local Match: \$8,000                      Total Cost (1 year): \$28,000**

**Hudson Street Culvert Project:** There is currently a multi-plate pipe arch locate on State Route 28 that empties Millington Brook into the Upper Hudson River. The pipe arch has a degraded bottom and a significant drop, preventing fish passage upstream. There is also substantial leaking, causing



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bank erosion and movement of the pipe bedding material into the brook and the nearby Upper Hudson River. Replacing the current structure with a properly sized, three sided structure will reduce scour and bank erosion and reconnect approximately 2.5 miles of trout and spawning stream to the Upper Hudson River.

**Proposal Cost: \$165,000**

**Local Match: \$60,000**

**Total Cost: \$225,000**

**Schafer Brook Culvert Replacement:** Two culverts on Schafer Brook have been plugged with boulders and woody debris, causing significantly higher water levels on the upstream side of the road and threatening the integrity of the road structure. To remediate this issue, larger bottomless culverts will be installed to allow water and materials to pass through. The culverts will also be lengthened and aligned correctly to improve hydraulics through the structure. These two adjustments will allow the road to be widened which will improve traffic safety and passage and assist with winter road maintenance operations.

**Proposal Cost: \$150,000**

**Local Match: \$50,000**

**Total Cost: \$200,000**

### **COUNTY PARTNERS**

- Warren County Water Quality Coordinating Committee
- Warren County Department of Public Works
- Town Highway Departments
- Lake Champlain – Lake George Regional Planning Board
- NYS Soil and Water Conservation Committee
- USDA - Natural Resource Service

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# WASHINGTON COUNTY

Contact: Joe Driscoll, Washington County Soil & Water Conservation District  
2530 State Route 40, Greenwich, NY 12834  
(518) 692.9940 Ext 3 | Fax: (518) 692.9942 | email: joseph.driscoll@ny.nacdnet.net

## COUNTY INFORMATION

Washington County is nestled between the Adirondacks of New York State and the Green Mountains of Vermont. The southern portion of the County is bordered on the west by the Upper Hudson River, which drains over half of the County's land mass. The Battenkill and Hoosic Rivers, which both originate in the adjacent Vermont Highlands, serve as the two major tributaries to the Upper Hudson, and drain a considerable amount of acreage not only in Washington County, but also in the neighboring counties of Rensselaer and Bennington (Vermont). The Battenkill is the focus of local and regional concern as it is a nationally renowned cold water fishery for both fly fishing and anglers due to its wild trout population. Unfortunately, the Battenkill and many other waterbodies within the watershed are impacted by roadside and streambank erosion, which degrades habitat and compromises bank stability.

Land use within the five sub-watersheds of the Upper Hudson region is mainly agricultural, specifically larger scale dairy farming. Staff at the County SWCD has worked diligently with many local farmers to address their operations and produce Nutrient Management Plans as a component of the County's Agricultural Environmental Management (AEM) Program. However, nutrient loading from agricultural operations still remains an issue throughout the County.

There are also a total of four MS4 communities within the watershed; Town of Fort Edward, Town of Kingsbury, Village of Fort Edward, and Village of Hudson Falls, in addition to Washington County. These municipalities, along with several others in the watershed, have antiquated combined sewer systems, which transport stormwater and wastewater overflows into local waterbodies. This has resulted in several waterbodies listings on the NYS DEC PWL list as impaired for pathogens.

## COUNTY PRIORITIES

1. AGRICULTURE
2. EROSION
3. STORMWATER

## PRIORITY PROJECTS

**Farmstead Concentrated Sources:** Aid local agricultural operations in the implementation of their CAFO Plans to address an array of Farmstead Concentrated Sources for the prevention of nutrient loading and sediment runoff.

**Proposal Cost: \$250,000**

**Local Match: \$62,500**

**Total Cost: \$312,500**

**Cover Crop Utilization Program:** Increase the total number of farms that use cover crops in their crop rotations as well as increase the number of acres established to reduce soil erosion and sediment loss on highly erodible lands.

**Proposal Cost: \$15,000**

**Local Match: \$15,000**

**Total Cost: \$30,000**

**Managed Grazing System Program:** Install fencing and watering systems to exclude livestock from streams and wetlands, thereby reducing nutrient deposition and sediment loading. This program will also educate farmers on planned grazing methods for the purpose of better soil health and higher forage production.

**Proposal Cost: \$75,000**

**Local Match: \$25,000**

**Total Cost: \$100,000**

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**Batten Kill Stream Corridor Assessment and Remediation:** Several years ago the Washington County SWCD completed a comprehensive inventory of failing streambanks along the Batten Kill River. Since then, several high powered storms, including Hurricane Irene, have created new areas of streambank erosion and further compromised areas where issues already existed. As a response, the SWCD will produce a comprehensive update of their previous assessment and utilize the information found to remediate high priority areas.

**Proposal Cost: \$50,000**

**Local Match: \$25,000**

**Total Cost: \$75,000**

**Roadside Stormwater BMP Implementation:** Installation of road side Best Management Practices such as sediment basins, check dams, infiltration basins, hydroseeding, grouting on steep slopes, and high water velocity ditch lines, as well as maintenance and cleanout of stormwater basins and existing sediment structures.

**Proposal Cost: \$93,750**

**Local Match: \$31,250**

**Total Cost: \$125,000**

**Stormwater System Separation Planning:** Create preliminary engineering designs for the separation of sanitary and storm sewer systems within the MS4 Urbanized Area. This project will include input from the Washington County Sewer District No. 2 with the goal of reducing of Combined Sewer Overflows into the Upper Hudson River. This will also reduce the amount of unnecessary inflow into the Sewer District Plant.

**Proposal Cost: \$225,000**

**Local Match: \$75,000**

**Total Cost: \$300,000**

#### **COUNTY PARTNERS**

- Washington County Water Quality Coordinating Committee
- Natural Resource Conservation Service
- Washington County DPW
- Washington County Sewer District No. 2
- New York State Department of Ag and Markets
- Battenkill Alliance
- NYS DEC Region 5
- Cornell Cooperative Extension of Washington County

**Appendix A.** List of Waterbodies, Impacted Uses, Types of Pollutants and Sources within the Upper Hudson River Watershed. Information and Classifications are derived from the NYS Department of Environmental Conservation Priority Waterbodies List.

County	Waterbody	Municipality	Uses Impacted	Type of Pollutant	Source of Pollutant	Classification
<b>Essex</b>	Alder, Crane Ponds	Schroon, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Minor Lake Tribs to Upper Hudson	Lake Tribs above Newcomb	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Stony Pond	Minerva, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
<b>Fulton</b>	Chase Lake/ Mud Lake	Northville, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Holmes Lake	Gloversville, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Kennyetto Creek, Lower and minor Tribs	Broadalbin, Town	Aquatic Life Recreation	Nutrients Pathogens	Failing On-Site Systems Urban Runoff	Minor Impacts
<b>Hamilton</b>	Indian River and Minor Tribs	Indian Lake, Town	Aquatic Life Habitat/Hydrology	Water Level/Flow	Hydrologic Modification Habitat Modification	Minor Impacts
	Kings Flow	Indian Lake, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Lake Durant	Indian Lake, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Minor Lake Tribs to Cedar River	Indian Lake, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Minor Lake Tribs to Indian River/Lake	Indian Lake, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Minor Lakes in Up. W. Br. Sacandaga Watershed	Arietta, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Rock Pond	Long Lake, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Round Pond	Long Lake, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Round Pond	Long Lake, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Sacandaga Lake	Lake Pleasant, Town	Fish Consumption Water Supply	Metals Other Pollutants	Atmospheric Deposition Other Source	Impaired
	Sand Lake	Arietta, Town	Fish Consumption Aquatic Life	Metals Acid/Base (pH)	Atmospheric Deposition	Impaired
	Silver Lake	Benson, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
Spy Lake	Arietta, Town	Fish Consumption	Metals	Atmospheric Deposition	Impaired	

County	Waterbody	Municipality	Uses Impacted	Type of Pollutant	Source of Pollutant	Classification
Rensselaer	Hoosic River, Upper, and tribs	Streams/Tribs above Hoosic Falls	Fish Consumption Aquatic Life	PCBs Nutrients	Contaminated Sediment Agriculture	Impaired
	Hoosic River, Upper, and tribs	Route 7 to Hoosic Falls	Fish Consumption Aquatic Life	PCBs Nutrients	Contaminated Sediment Agriculture	Impaired
	Hoosic River, Middle, Main Stem	Hoosic Falls to Walloomsac River	Fish Consumption Aquatic Life	PCBs Nutrients Water Level/Flow	Contaminated Sediment Agriculture Hydrologic Modification	Impaired
	Hoosic River, Middle, Main Stem	Walloomsac River to Johnsonville Dam	Fish Consumption Aquatic Life	PCBs Nutrients Silt/Sediment Water Level/Flow	Contaminated Sediment Agriculture Hydrologic Modification	Impaired
	Hoosic River, Lower, Main Stem	Johnsonville Dam to Mouth	Fish Consumption Aquatic Life	PCBs Nutrients Silt/Sediment Water Level/Flow	Contaminated Sediment Agriculture Hydrologic Modification	Impaired
	Schaghticoke Reservoir	Schaghticoke, Town	Fish Consumption	PCBs	Contaminated Sediment	Impaired
	Tomhannock Reservoir	Schaghticoke, Town	Water Supply	Pathogens Nutrients Silt/Sediment	Agriculture	Threatened (Possible)
Saratoga	Anthony Kill and Minor Tribs	Mechanicville, City	Recreation	Pathogens Floatables	Combined Sewer Overflow Urban Runoff	Minor Impacts
	Ballston Lake	Ballston, Town	Water Supply Public Bathing Recreation	Algal/Weed Growth Nutrients (Phosphorus) Silt/Sediment Water Level/Flow	Failing On-Site Systems Streambank Erosion Agriculture Hydrologic Modification Urban Runoff	Minor Impacts
	Bullhead Pond	Day, Town	Aquatic Life	Acid/Base (pH)	Atmospheric Deposition	Impaired
	Dwaas Kill and Tribs	Clifton Park, Town	Aquatic Life Recreation	Nutrients (Phosphorus) Silt/Sediment Pathogens	Construction Urban Runoff Failing On-Site Systems	Impaired
	Great Sacandaga Lake	Day, Town Hadley, Town	Fish Consumption Aquatic Life Recreation Habitat/Hydrology Aesthetics	Water Level/Flow Metals	Hydrologic Modification Habitat Modification Atmospheric Deposition Streambank Erosion	Impaired

County	Waterbody	Municipality	Uses Impacted	Type of Pollutant	Source of Pollutant	Classification
Saratoga Con't	Lower Sacandaga River	Hadley, Town	Aquatic Life Habitat/Hydrology	Water Level/Flow	Hydrologic Modification Habitat Modification	Minor Impacts
	Saratoga Lake	Ballston Spa, Town Saratoga, Town	Recreation Habitat/Hydrology	Algal/Weed Growth Problem Species Nutrients(Phosphorus)	Habitat Modification Urban Runoff Agriculture	Minor Impacts
	Schuyler Creeks and Tribs	Town of Stillwater	Aquatic Life Recreation	Nutrients (Phosphorus) D.O./Oxygen Demand Pathogens	Private/Commercial/Ind. Urban Runoff	Impaired
	Snook Kill, Lower, and minor Tribs	Gansevoort, Hamlet	Aquatic Life	Silt/Sediment Thermal Changes Nutrients Pathogens	Agriculture Construction Streambank Erosion	Minor Impacts
	Stewarts Bridge Reservoir	Hadley, Town	Aquatic Life Habitat/Hydrology	Water Level/Flow	Hydrologic Modification Habitat Modification	Minor Impacts
	Tribs to Lake Lonely	Saratoga Springs, City	Aquatic Life Recreation Aesthetics	D.O./Oxygen Demand Nutrients (Phosphorus) Pathogens Aesthetics Ammonia Metals	Municipal Storm Sewers Urban Runoff Landfill/Land Disposal	Impaired
	Upper Hudson, Main Stem	Corinth to Spier Falls Dam	Fish Consumption	Metals	Atmospheric Deposition	Impaired
	Upper Hudson, Main Stem	Spier Falls Dam to Sherman Isle Dam	Fish Consumption Public Bathing	Metals Pathogens	Atmospheric Deposition Municipal	Impaired
	Upper Hudson, Main Stem	Sherman Isle Dam to Glens Falls	Fish Consumption Public Bathing	PCBs Pathogens	Contaminated Sediment Municipal	Impaired
	Upper Hudson, Main Stem	Glens Falls to Schuylerville	Fish Consumption	PCBs Pathogens	Contaminated Sediment Municipal	Impaired
	Upper Hudson, Main Stem	Schuylerville to Riverside	Fish Consumption Public Bathing	PCBs Pathogens	Contaminated Sediment Municipal	Impaired
Upper Hudson, Main Stem	Riverside to Mechanicville	Fish Consumption Public Bathing	PCBs Pathogens	Contaminated Sediment Municipal	Impaired	
Upper Hudson, Main Stem	Mechanicville to Troy Dam	Fish Consumption Water Supply Public Bathing	PCBs Pathogens	Contaminated Sediment Municipal Industrial Discharge	Impaired	

County	Waterbody	Municipality	Uses Impacted	Type of Pollutant	Source of Pollutant	Classification
Warren	Brant Lake	Horicon, Town	Water Supply	Other Pollutants	Other Sources	Threatened (Possible)
	Schroon Lake	Chester, Town Horicon, Town	Fish Consumption	Metals PCBs	Contaminated Sediment Unknown Source	Impaired
Washington	Batten Kill, Upper, and Minor Tribs	Streams/Tribs above East Greenwich	Habitat/Hydrology Fish Consumption	Metals Other Pollutants	Atmospheric Deposition Habitat Modification	Impaired
	Batten Kill, Middle, and Minor Tribs	East Greenwich to Greenwich	Habitat/Hydrology	Other Pollutants	Habitat Modification	Impaired
	Cossayuna Lake	Argyle, Town	Recreation Habitat/Hydrology Aquatic Life	Algal/Weed Growth Nutrients (Phosphorus) Problem Species Silt/Sediment Pathogens	Habitat Modification Failing On-Site Systems Agriculture Construction	Impaired

Please note that several of the waterbodies on this list cross Town and County boundaries. The organization and formatting of the waterbodies is consistent with that of the NYS Department of Environmental Conservation Priority Waterbodies List.

PHOTOGRAPHS COURTESY OF HAMILTON COUNTY SOIL AND WATER CONSERVATION DISTRICT

