



## Greene County Soil & Water Conservation District 2016 ANNUAL REPORT

Celebrating 55 years of Managing Greene County's Natural Resources

In 2016, GCSWCD continued to assist Greene County landowners, municipalities and others in meeting their natural resource management objectives. The District continues to focus on multiple benefit programs that help achieve a balance between community growth and conservation. Over the years, the District has positioned itself as a respected agency that is known for its ability to address complex natural resource issues. The District continues to expand its technical capabilities and uses them to help constituents throughout the County. While the District continues to increase its natural resource planning activities, it still maintains its primary strength as an agency that implements effective on the ground conservation. The following sections summarize some of the diverse activities undertaken this past year.

For the District, 2016 brought to a close the work undertaken with emergency funding from tropical storm Irene. The final project was the demolition of a commercial property in the hamlet of Prattsville that was decimated by the flood waters of this event. The property was the last of those purchased under the FEMA Buyout Program and was one of twenty three properties that entered into the program in eight of the county's municipalities. Greene County was the applicant on behalf of the towns and administered the program for them.



After Irene, which is officially the storm of record for Greene County, much thought was given to how to do things differently going forward. Particularly in light of the fact that the county is experiencing storm events that are producing greater rainfall amounts, more frequently and at a greater intensity. One of the positive outcomes has been a number of programs that have been initiated to be more proactive in anticipating future flood events and positioning communities to be more resilient. This is a paradigm shift from the past practice of just reacting to the flood and rebuilding what was previously there.

In the NYC watershed, additional funding has been made available to communities through the District's contract with the NYCDEP to undertake local flood analyses which look at possible alternatives to lower flood elevations in their population centers. With the advancement of computer modeling, different scenarios can be run through the model to see what effect the alternative will have in lowering flood elevations. One of the alternatives that is looked at is the widening of bridges. In the case of Prattsville, it was determined that widening the bridge over the Schoharie Creek and removing the pinch point where the current bridge is will lower flood elevations upstream. NYS DOT not only considered the analysis but incorporated the findings in the design of the new bridge that will be bid out in 2017.

To date, analyses have been completed in Prattsville, Lexington, and Windham and are underway in Ashland and Hunter.

Another program that the District has taken advantage of in the eastern part of the county is the North Atlantic Aquatic Connectivity Collaborative. This project is a partner-driven, science-based approach for identifying and prioritizing culvert road stream crossings to increase resilience in future floods while improving aquatic connectivity for fish passage. This past year 117 crossings of the Hans Vosen Kill, which is a sub-watershed of the Catskill Creek were assessed by District and CCE staff. This sub watershed includes parts of the towns of Athens, Catskill, Cairo and Greenville. Priority culverts established under this program are eligible for funding for replacement through the Hudson River Estuary grant program.

## Stream Project Implementation

A key component of the District's stream program is the implementation of best management practices to provide for stream stability. This year, four stream restoration projects and two culvert replacements were undertaken totaling \$900,000. All project survey, design, and construction oversight was done by District staff.



Eroded streambank displaying clay toe and glacial till

This site was originally identified through the 2006 Schoharie Creek stream feature inventory as a priority water quality site, due to the incision of the stream invert through the overlaying glacial tills into the lacustrine soils underneath. At this time the stream management program began a bank erosion monitoring station at the site.

In 2010, one of the landowners applied to the Stream Management Implementation Program (SMIP) for funding to address the erosion. In 2011, tropical storm Irene flooding exacerbated erosion at the site, threatening a Verizon underground fiber-optic line leading to a temporary line repair. Following all the other repairs associated with Irene, GCSWCD Started designing a reach-scale restoration for this site.

The Schoharie Creek restoration was a 750' streambank repair that also included 1,500' of riparian buffer restoration. An integrated stabilization method was chosen as the best alternative to meet the agreed upon goals of mitigating turbidity and excess sediments from clay-rich sources, improving ecological integrity, and restoring riparian forest while protecting public infrastructure. Objectives that will be measured include halting streambank erosion in the treated area from flow events up to the 100-year frequency and providing riparian buffer species diversity and composition.

A riparian buffer is the vegetated area adjacent to a stream that plays a key role in protecting water quality and providing various environmental benefits. A healthy riparian buffer usually consists of a diverse assemblage of tree and shrub species. Deeply rooted riparian buffers stabilize streambanks by anchoring sediment particles in place, and therefore play an essential role in the prevention of erosion. These buffers also intercept and filter surface runoff from upland sources which may contain contaminants such as sediment, pesticides, and nutrients before entering the stream channel. Many of the unique wildlife species seen in the Catskill region rely on riparian areas for critical habitat.



Regraded bank with stone toe, before plantings

Maintaining healthy and intact riparian areas and improving the condition of degraded riparian buffers are high priorities of the Catskill Streams Buffer Initiative (CSBI) program.

## Stream Project Implementation



The Cranberry Road culvert replacement was a joint undertaking with the town of Hunter Highway Department and the District using a stream implementation grant to purchase the new culvert. The existing culvert was undersized and water overtopped the road on a regular basis creating a flooding hazard, causing structural damage to the road, as well as creating stream instability. A first step in designing a replacement was conducting a hydrology and hydraulic study to properly size the culvert replacement.

The new culvert was designed to pass a 100- year storm event and was installed to allow for aquatic organism passage. The installation was done in-house by the town highway employees and District staff.



### Agency Funding

Source	Amount	Percent (%)
Greene County	\$ 254,538	12
NY State	\$ 82,174	4
NYCDEP	\$ 1,752,603	84
<b>Total</b>	<b>\$ 2,089,315</b>	<b>100</b>

## Education & Outreach

Some of the events the education and outreach program presented in 2016.

### *Municipal*

**Schoharie Watershed Summit (April)** - This was the 10th anniversary of this event, which is planned for municipal leaders. The 2016 theme was *Streams to Tunnel: Watershed Management in the Schoharie Basin*. The program included the history of the Stream Management Program, understanding the NYC Filtration Avoidance Determination (FAD), the presence of Hemlock Woolly Adelgid and Emerald Ash Borer in the Catskills and their potential threat to the forest and water quality.

**Highway Ditch Stabilization Workshop (April)** - Highway supervisors and staff from throughout the county attended a half day workshop at the Greene County Emergency Services building to learn about innovative stabilization materials and practices that are currently available to treat roadside ditches.

**Stream Crossings Workshop (September)** - This all-day workshop presented to the county highway departments included presentations from staff representatives of the Hudson River Estuary Program (HREP), NYS Department of Environmental Conservation (NYSDEC), U.S. Army Corps of Engineers (USACE), and Greene County Soil & Water Conservation District (GCSWCD). The workshop highlighted the tools and resources available to municipalities and techniques for incorporating fish passage and sediment transport in stream crossing retrofits and new construction.

### *Youth and General Public*

**Schoharie Watershed Month (May)** - This was the 7th Annual Schoharie Watershed Month, which involves a series of watershed-focused educational programs for families throughout the month of May. This year's programs included: Student Art Exhibit Opening Reception, "RiverWebs" documentary film showing, volunteer tree planting in Windham, Schoharie Reservoir Bus Tour, Local Stewardship Lectures with visiting speakers at the Platte Clove Neighborhood Center, a guided walk & riparian buffer discussion at the Windham Path, "Hemlocks through History" event with Mike Kudish and Dan Snider at the Mountain Top Arboretum, and the Arm-of-the-Sea's "Rejuvenary River Circus" theater performance.

**Greene County Youth Fair (July)** - The GCSWCD team set-up a display table, an agricultural model, and the EmRiver stream table at the Greene County Youth Fair. The stream table is an interactive model stream that allows visitors to see how streams form, how erosion occurs, test different stabilization techniques, and create their own stream features. Youth-focused activity sheets, bookmarks, and colored pencils were offered to visitors to the GCSWCD booth.

**CCE's Environmental Awareness Days (September)** - GCSWCD set-up the EmRiver stream table at Cornell Cooperative Extension's Environmental Awareness Days. The stream table provides a hands-on way for students to learn about natural stream processes. Students learned that streams are dynamic and have a natural tendency to flow in a meandering pattern. The demonstrations led to a discussion on how human development in floodplains can have negative impacts on both people and wildlife.



Schoharie Reservoir Tour



Highway Stream Crossing Workshop



Hemlock History Lecture

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**Established 1961**



### **Watershed Assistance Program**

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## Watershed Assistance Program (WAP)

WAP was formed in 2002 to provide support to mountain top communities in the NYC Watershed. It is an advocate on watershed issues for public and private interests and assists to maximize opportunities to benefit from watershed programs and resources. Some key coordination areas:

Flood Mitigation Assistance – assists communities with Flood Hazard Mitigation Programs funded by FEMA/SEMO and NYCDEP.

- 1) Facilitated the FEMA Buyout Program, which was completed in 2016.
- 2) The WAP will assist eligible landowners approved by their municipality in a new voluntary flood buyout program in the NYC watershed funded by NYCDEP.
- 3) Provides coordination for the Local Flood Analysis (LFA) program.
- 4) Assisted Lexington in securing a CWC LTAP grant to identify areas within the municipality suitable to serve as a new location for residences and/or businesses to be relocated after purchase under the New York City Flood Buyout Program.

Catskill Park committees/organization and participation –

- 1) Facilitates monthly meetings of the Mountain Cloves Scenic Byway Inc.
- 2) Formed a Catskill Park transportation working group with NYSDOT and NYSDEC to improve coordination and communication.
- 3) Attends Catskill Park Advisory Committee (CPAC) meetings, an organization that provides guidance to NYSDEC, NYCDEP and other land managers in the management of the New York State Forest Preserve, the Catskill Park.
- 4) Kaaterskill Clove Working Group – smaller group formed out of CPAC to deal with Kaaterskill Clove specific issues.
- 5) Ongoing facilitation of the Mountaintop Supervisors and Mayors Assoc. and attendance at the Coalition of Watershed Towns meetings.

Outdoor Recreation Improvements – the WAP provides coordination with local, regional and state agencies and not-for-profit organizations on natural resource-based recreation that is good for the local economy and is compatible with watershed protection.

1) Under the WAP leadership, the Hunter Area Trail Coalition formed in July 2016 to develop an integrated, connected trail system throughout Hunter and the two villages. The HATC represents 11 public and private organizations.

2) Kaaterskill Rail Trail (KRT) working with multiple agencies, non-profits and landowners, is advancing a KRT master plan.

Phase 1 will be completed with the opening of a key section next to the

Mountain Top Historical Society property. This parcel adjacent to the MTHS was purchased with \$120,000 in contributions from three not-for-profits.

Phase 2, a pedestrian bridge on DEC property, completed in September 2016, connects the KRT to the popular North/South Lake campground.

Phase 3 extends KRT from the MTHS property to Tannersville's Huckleberry Trail. The group is presently working with landowners on trail easements and conditions analysis for building the trail.

Phase 4 – Tannersville to Village of Hunter. Beginning work with NYCDEP, NYSDOT and private landowners to connect to Dolan's Lake.

