2015 Annual Report

NYS Soil & Water Conservation Districts

NEW YORK STATE OF OPPORTUNITY.

Soil and Water Conservation Committee

NYS SOIL AND WATER CONSERVATION COMMITTEE

The NYS Soil & Water Conservation Committee (State Committee) works to advance comprehensive natural resource management through the support of local Soil & Water Conservation Districts (District).

The State Committee operates within the NYS Department of Agriculture and Markets to establish policy, foster partnerships, and support diverse District programming.

Districts experienced growth in many areas in 2015, whether it is in restoring resources from natural disasters, providing expert assistance in stormwater management, or being the "go-to" agency for agricultural environmental management.

The State Committee is pleased to have assisted Conservation Districts in their efforts to enhance leadership and continually improve the way they provide programs that protect New York's natural resources for generations to come.

NYS Soil & Water Conservation Committee:

Dale Stein, David Brass, Ronald Montesi, and Darin Hickling

Advisory Members:

NYS Dept. of Agriculture & Markets
NYS Dept. of Environmental Conservation
NYS Dept. of Health
NYS Dept. of State
USDA NRCS
Cornell Cooperative Extension
Cornell University
SUNY ESF
NYS Conservation District Employees' Association

2015 District Highlights

OPEN SPACE AND TRAILS

17 Open Space Plans
29 Open Space Projects

685 miles of new trails created across NYS

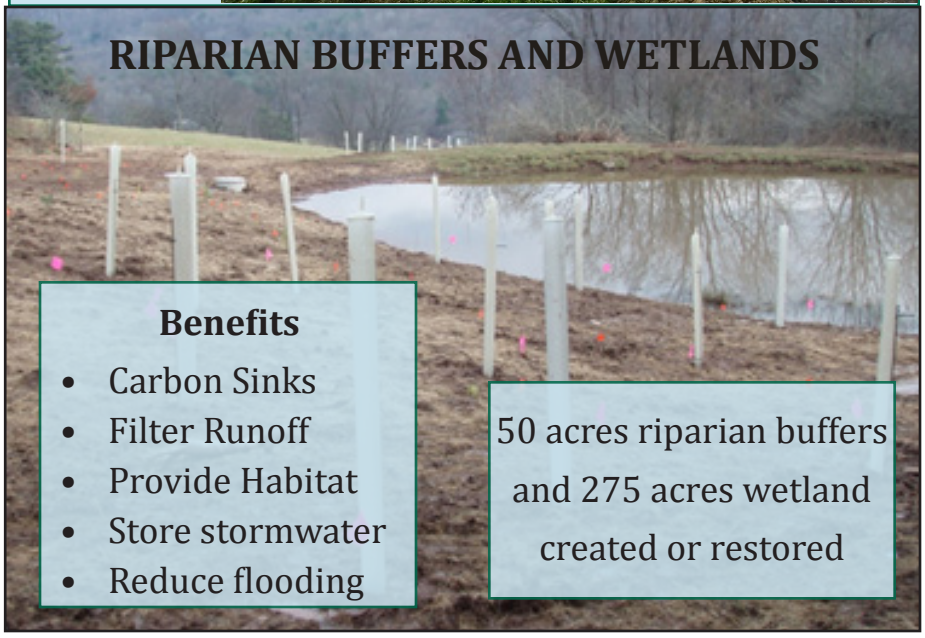
31 trail projects, Total cost: $545,000

STREAM STABILIZATION

265 projects stabilizing 22 miles of streambank

Total Costs: $9.2 M

RIPARIAN BUFFERS AND WETLANDS



Benefits

- Carbon Sinks
- Filter Runoff
- Provide Habitat
- Store stormwater
- Reduce flooding

50 acres riparian buffers and 275 acres wetland created or restored

INVASIVE SPECIES

In 2015 Districts:

- Trained police & others on boat inspection techniques
- Installed invasive species disposal stations at boat launches
- Implemented biological control with purple loosestrife beetles
- Conducted Invasive Species Management: site assessments & mapping, harvesting (pictured), herbicide

3,239 acres treated

Total cost: $1.15 million

25,000 tons harvested

ENVIRONMENTAL EDUCATION

Nearly 1,000 events

100,000+ participants

1,500 attended 50 conservation tours

18,800 celebrated 60 Earth Day & Arbor Day events

Game of Logging workshop

14,600 conservation safety workshop participants

Pruning workshop

18,000+ school children educated

Community center youth learn about glass eels

2015 Highlights Continued

AGRICULTURAL BEST MANAGEMENT PRACTICE SYSTEMS

Over 3,000
Ag BMP projects

Total Costs:
$102 M

Examples

- Cover Crops
- Rotational Grazing
- On-farm Digester
- Bedded Pack Barn
- Erosion Control
- Managing Irrigation

ALTERNATIVE ENERGY

Examples

- Methane digester (pictured)
- Solar installations
- Reverse osmosis for maple syrup operations

Total costs:
$10 M

5.8 M kWh
generated

FLOOD MITIGATION

402
projects

Public &
Private
lands

30,000
acres
managed

Fulton SWCD aids in the replacement of an undersized culvert to reduce flooding (left).

STORMWATER MANAGEMENT & GREEN INFRASTRUCTURE (GI)

60 GI Projects

1.7M gallons stormwater capacity

Total cost: $988,000

Projects include:

- Riparian restoration
- Stormwater planter
- Bioswales
- Green roof
- Rain barrel distribution
- Natural shorelines
- Rain gardens
- Porous pavement

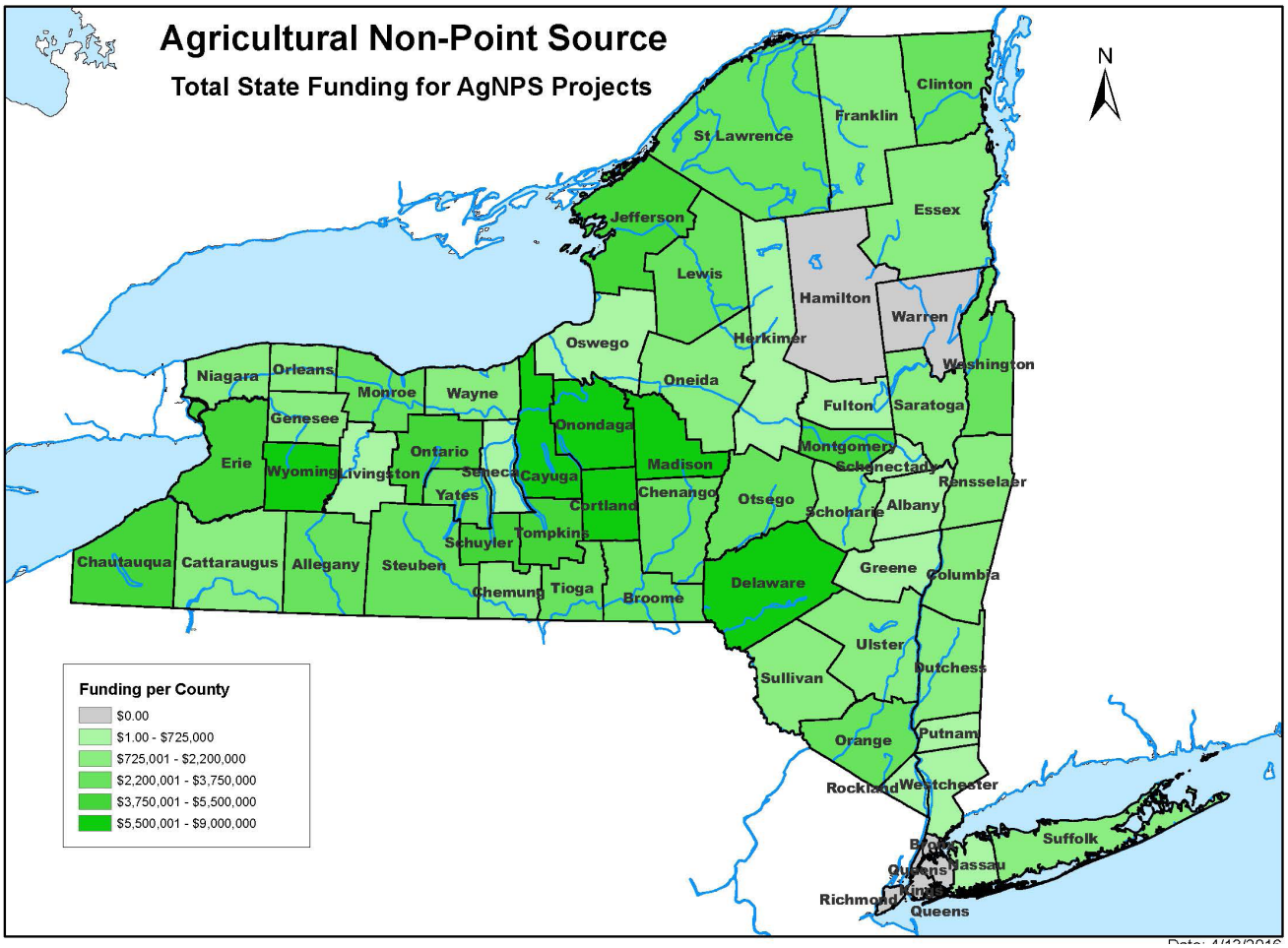
1,400 stormwater site visits conducted

$2.1 M services provided

10,000+ attendees at stormwater trainings

Clockwise starting top left; Rain garden at Guilderland Library by Albany County SWCD. Students work with Rockland County SWCD to place signage on storm drains. Orleans County SWCD demonstrating surface water runoff display. Green roof visited during Green Infrastructure Tour hosted by NYC SWCD.

Agricultural Nonpoint Source Grant Program



Ag NPS Grant Program

The Agricultural Nonpoint Source Abatement and Control Grant Program (AgNPS) announced Round 21 awards in September 2015; over $13 million in state funds will assist 150 farms. Soil and Water Conservation Committee staff are managing 198 active contracts, representing over $56 million currently being invested in agricultural conservation efforts. All of the funding is for Best Management Practice (BMP) systems or a suite of elements that together protect water quality. This ensures that environmental stewardship goals will be met. To date, 578 grant projects have been completed, investing over $80 million in agricultural environmental stewardship statewide. The map above shows the amount of AgNPS funding awarded per county since the program's inception.

More than 90% of New York's remaining water quality problems are due to nonpoint sources of water pollution. Contributors of nonpoint source pollution include construction runoff, streambank erosion, road salt application, timber harvesting, as well as agricultural activities, such as fertilizer and pesticide applications, manure spreading, and field cultivation. Individually, each of these sources may not be noticeable, but when added together, they can have a significant impact on water quality. The goal of the AgNPS grant program is to support New York's diverse agricultural community in their efforts to reduce nonpoint sources of pollution.

Precision application pesticide sprayer funded thru the Soil and Water Conservation Committee's Ag NPS Grant.

The Yates County Soil and Water Conservation District (SWCD) worked with vineyards in the Finger Lakes region to develop Integrated Pest Management (IPM) strategies and modify their pesticide sprayers. IPM focuses on a range of pest management practices and pest prevention. Pesticides are applied only after monitoring indicates they are needed and treatments are made with the goal to remove only the target organism. The pesticide sprayers were modified with precision application equipment for more accurate and direct use of pesticides (pictured). Reducing the amount of pesticides applied to the crop minimizes pesticide drift, or the airborne movement of pesticides away from the intended target. Precision application of pesticides reduces risk of water contamination, and effects to human health and the environment.

Agricultural Environmental Management

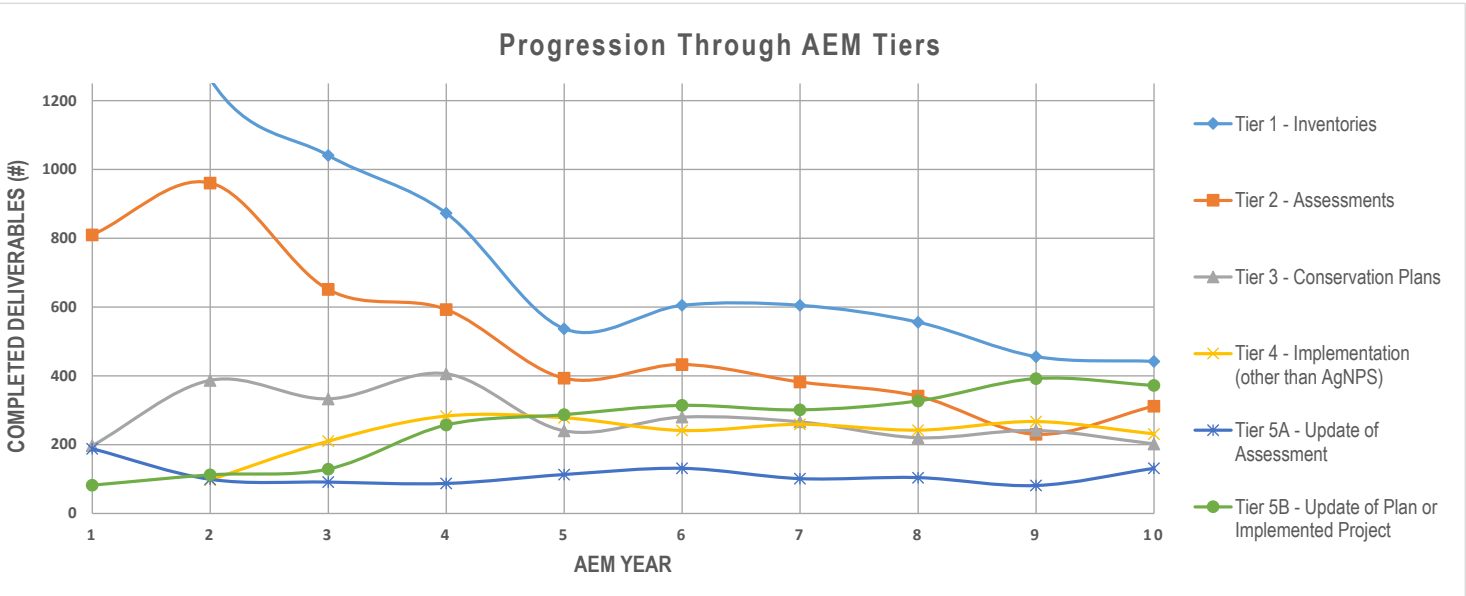
AEM Base Program Celebrates 10 Years

All of the State Committee's environmental programs are grounded in the Agricultural Environmental Management (AEM) framework and rooted in the relationship among the local Soil and Water Conservation District, the farmer, and other conservation partners. The AEM process starts with a general introduction and inventory of the farm (Tier 1) and proceeds to a formal assessment of existing stewardship and environmental concerns on the farm (Tier 2). The District and the farm (and sometimes an external farm planner) then plan practices to mitigate the risks identified (Tier 3), which are then implemented (Tier 4). The District then can reassess the status of the environmental risks on the farm (Tier 5A) and/or the operations and maintenance of the plan or implemented practices (Tier 5B).

The AEM Base Program portion of the overall AEM framework provides technical assistance funding for Districts to work with farmers through the AEM Tiers. In 2015, the value of AEM work reimbursed to Districts amounted to $2.27 million. Such work prepares quality, high priority projects for implementation, which may be further assisted through competitive cost-share programs such as Ag Nonpoint Source, Climate Resilient Farming, and other local, state, or federal programs. Nearly a third of all farms in the state have participated in some level of AEM, and more than 2,500 have reached through Tier 5 evaluation.

Over the last ten years of the AEM Base Program, Districts and farmers have steadily progressed through initial inventory and assessment to the more involved work of planning, implementing, and evaluation (see chart below). District staff continue to train and seek planner certifications to provide current and quality technical assistance across the AEM tiers.

AEM continues to evolve to meet agricultural and environmental needs. New priorities include more emphasis on climate change and resiliency concerns, as well as additional outreach to more farmers. The State Committee looks forward to building on program successes as AEM Base moves into the next ten years.



The State Committee held a two day meeting in Batavia, NY in October 2015, including field tours of manure storage cover and flare, cover crop, and riparian buffer projects.

Shown: State Committee Chair Dale Stein's manure storage cover (right) and flare (below).

Climate Change

New Climate Resilient Farming Program Launched

Climate change has disrupted lives in New York State in a variety of ways, but no sector is more reliant on the weather than agriculture. Climate change heightens the risks for soil erosion, reduced soil quality, lower agricultural productivity, runoff events, and ultimately food security. Unlike nearly every other sector, which can only aspire to reduce emissions to as close to zero as possible, agriculture has the capacity to become a net sink of carbon or absorb carbon dioxide from the atmosphere while also advancing ecological, water quality, and other environmental issues.

In response to these concerns and opportunities, the State Committee has launched the Climate Resilient Farming (CRF) program, New York State's first -ever competitive cost sharing grant program to assist agricultural producers with climate change issues. The goal of the CRF program is to reduce the impact of agriculture on climate change (mitigation) and to increase the resiliency of New York State farms in the face of a changing climate (adaptation).

The CRF program is working to integrate climate change concerns throughout the state's Agricultural Environmental Management (AEM) framework so that county Soil & Water Conservation Districts (SWCD) will work with farmers to reduce climate risks along with water quality and other environmental risks. CRF has partnered with Cornell University and the Upper Susquehanna Coalition of Conservation Districts to develop AEM Tier 2 background sheets, Tier 3A planning tools, and a GIS prioritization tool. The State Committee also conducted a meeting in Batavia, NY in October 2015 to discuss and educate partners on climate change issues.

The pilot round of the program was released in October 2015 with funding provided for manure storage cover and flare systems to reduce methane emissions, on-farm riparian floodplain and upland water management systems, or soil health systems. These categories were chosen as systems that achieve both climate mitigation and adaptation. The pilot received statewide interest and excitement, **17 applications from 12 SWCDs were submitted, totaling more than $2.5 million. A request of almost double the $1.4 million available!**

The State Committee looks forward to a second strong round in 2016. Stay tuned for another request for proposals and other opportunities!

The three tracks of the CRF pilot round were manure storage cover and flare systems; on farm riparian, floodplain, and upland water management systems; and soil health systems.

Shown: Riparian forest buffer plantings in Monroe County (left) and cover crops in Jefferson County (above).

Emergency Stream Intervention Implementation

Upper Susquehanna Coalition Wins Environmental Excellence Award

Jeff Parker and Mike Lovegreen explain ESI to DEC Commissioner Basil Seggos

The Upper Susquehanna Coalition (USC) of Conservation Districts in the Susquehanna Watershed (16 Districts in NY, 3 in PA) has been honored for their implementation of the Emergency Stream Intervention (ESI) training. ESI was developed by Delaware County Soil and Water Conservation District (SWCD) in 2006 and adopted as a statewide protocol following Hurricane Irene and Tropical Storm Lee. The ESI trainings teach government officials, regulators, and stream managers the best ways to respond following a storm—how to prioritize where to work, how to identify the stream's natural flow patterns, which tools to use, and what not to do.

Delaware County SWCD was awarded the NYS Environmental Excellence award in 2013 for their efforts in developing the ESI protocol when responding to a flood event. USC was honored again in 2015 for their successes in implementing and training the ESI protocol. USC provided 20 overview trainings to 745 people and 13 detailed three-day trainings on active stream management projects to more than 300 people. Berm removal and floodplain reconnection were achieved for almost 4,000 feet of stream during these field trainings.

Participants have utilized their training to address local stream management challenges in an environmentally sensitive way, worked cooperatively with regulatory agencies, and leveraged countless dollars through non-traditional emergency services in establishing functional stream channels, thus, leaving the stream in a balanced functional state and reducing return maintenance work increasing climate resiliency.

USC has facilitated over 30 local trainings to over 1,000 local, state, and federal government officials, regulators, landowners, and others.

New York State stream and watershed resources cannot be effectively managed through regulation or restoration grants at the state level. Responsibility lies at the local level—the resource owners, landowners, land managers, municipalities, natural resource first responders, and local organizations—and it is crucial that local actors know how to make the best decisions possible in each specific instance.

The State Committee endorsed the ESI protocol to unify local District stream work under a single protocol and facilitated its distribution to Districts statewide to promote local action. County SWCDs are ideal providers of local support and empowerment. They understand the geology and hydrology of stream dynamics as well as the importance of local leadership and grassroots decision-making to successfully manage natural resources. SWCDs hosted 29 ESI training events in 2015 with over 660 participants.

Congratulations to USC and all who have been involved!

Emergency Stream intervention (ESI) projects clear debris and reconnect streams with their floodplains.

Shown: Otadawa Creek before (left) and after (below) ESI

Mount Academy Wins NYS Envirothon

The Envirothon is an annual competition in which teams of high school students from across the state put their knowledge and skills of natural resource science, public speaking, and civic engagement to the test. Students participate in a series of field station tests in the areas of soils/land use, aquatic ecology, forestry, wildlife, and an emerging environmental issue. The 2015 environmental issue focused on Urban and Community Forestry.

Forty-three teams from across New York State went head-to-head at Hobart and William Smith Colleges in May 2015 (pictured above). Teams qualified for the 26th annual NYS Envirothon through regional competitions put on by County Soil and Water Conservation Districts.

Mount Academy students from Ulster County were named state champions. Each member of the team received a scholarship and had the opportunity to compete against other top teams at the North American Envirothon in July 2015 at the University of Missouri. For more information visit: www.nysenvirothon.net

2015 Top Scoring Teams:

1st – Mount Academy, Ulster County

2nd – Skaneateles HS, Onondaga County

3rd – Oswego HS, Oswego County

High School Students compete at the NYS Envirothon at Hobart & William Smith Colleges.

NYC Urban Soils Institute

Soil is the fundamental material that supports human and living green infrastructure. Only this kind of matrix can hold water, break down hydrocarbons, sequester metals, and facilitate all the workings of nature. As urban centers embrace green infrastructure for climate resiliency, water resources management, urban heat island mitigation, food security, and long term sustainability, soil is no longer just for agricultural sciences. This shift has resulted in more interactions with urban soils as evidenced by requests for urban soils data, information and training.

New York City Soil and Water Conservation District, building on a partnership that resulted in the first urban soil survey in the country, has partnered with Brooklyn College, the Gaia Institute, and USDA NRCS to create the NYC Urban Soils Institute (USI) to advance the scientific understanding and promote the sustainable use of urban soils. The Urban Soil Institute will focus on:

Soils Testing and Technical Services - for planning and interpretations

Education & Outreach - soil science and conservation training opportunities

Data Depository - a platform for soils data storing and sharing for NYC

Research - coordination of an urban soil science research agenda for the City.

Visit the NYC USI at ***www.usi.nyc***

Stormwater Pollution & Green Infrastructure Solutions

The Nassau County Soil and Water Conservation District (SWCD) produced an educational film, ***Stormwater Pollution and Green Infrastructure Solutions.*** The film, which can be viewed at www.NassauSWCD.org, highlights stormwater runoff impacts throughout New York State and showcases several green infrastructure solutions to help mitigate the issues associated with stormwater runoff pollution.

New York has some of the most developed areas in the U.S. As a result, after precipitation, stormwater runoff flows over impervious surfaces collecting and transporting pollutants such as excess nutrients, litter, petrochemicals, and pathogens from animal waste. Stormwater is then directly discharged into streams, lakes, and bays via a Municipal Separate Storm Sewer System (MS4). The water quality of these receiving waterbodies is of major concern due to high concentrations of pollutants that are transported and deposited by stormwater runoff. This translates into real socio-economic impacts such as harmful algae blooms, fish kills, sediment erosion, and beach closures due to bacterial contamination.

Green Infrastructure projects including riparian restoration, natural shorelines, rain gardens, bioswales, porous pavement walkways, rain barrel distribution programs, and green roofs were implemented by SWCDs across the state. Districts leveraged $1 million in 2015 towards 59 high-impact, green infrastructure projects across the state, managing over 1.8 million gallons of stormwater reducing pollution and local flooding issues.

Culvert Assessments

Good for Fish and Floods

Poorly designed, aging, and undersized culverts are barriers to aquatic organisms and hazards to communities during storms. Road crossings or culverts can fragment streams into small pieces, preventing organisms from accessing critical habitat. New York is estimated to have 1.2 million road/stream crossings across the state and studies have found that approximately two-thirds of all crossings are not fully passable to aquatic species. Additionally, culverts become infrastructure liabilities and flooding hazards during storms where undersized and improperly installed culverts can become clogged with debris or overwhelmed, lead to road flooding, streambank erosion, or washout the road itself. Assessing culverts for passability and their capacity to pass storm flows can help prioritize culverts that need to be upgraded, benefiting aquatic organisms and communities alike.

Culvert assessments can prioritize infrastructure needs to mitigate flooding and protect aquatic habitat. Properly sized culvert with full connectivity (above). Poorly designed culvert with no connectivity and possible flooding concerns (right).

The North Atlantic Aquatic Connectivity Collaborative (NAACC) is a standardized method and comprehensive database for culvert assessment developed across 44 governmental and not-for-profit entities in 15 state in the Northeast. The NAACC protocol assesses culverts based on aquatic connectivity and flood risk, and ranks and prioritizes the culverts in order to link the assessment data to funding to replace the high risk structures.

County Soil and Water Conservation Districts, NYS Department of Environmental Conservation (DEC), and interested county and local partners are working to reconnect tributaries by surveying culverts, bridges, and dams to rate culverts for the ease of access for aquatic and riparian species such as American eel, herring, stream salamanders, and macroinvertebrates.

Rockland and Dutchess Conservation Districts have trained staff through NAACC in partnership with NYSDEC Hudson River Estuary Program. SWCD staff assessed culverts in the Cedar Pond Brook sub-watershed. Warren County SWCD and the Upper Susquehanna Coalition of Conservation Districts have also trained staff in the NAACC protocol and are assessing culverts in watersheds within their respective counties.

The Fulton County SWCD assisted in securing the funding through the NYS Department of State (DOS) in association with the Mohawk Watershed Coalition for the replacement of an undersized and deteriorating bridge in the City of Johnstown. The SWCD is conducting culvert assessments throughout the county utilizing the NAACC protocol, but worked with the City DPW to choose a site with frequent flooding issues to install a properly sized arch culvert (pictured below). This project aligned with goals outlined in the Mohawk River Watershed Management Plan, also funded by DOS, that was completed in 2015. Four more projects like this are planned over the next two years to address flooding and habitat issues.

Replacing culverts for flood mitigation and habitat restoration are goals outlined in the Mohawk River Watershed Management Plan developed by a coalition of Conservation Districts.

Shown: Undersized bridge replaced by an arch culvert with design assistance from Fulton County SWCD (above) and after (right).

Hilltop Hanover Farm, Westchester County

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