

**RONDOUT/NEVERSINK
STREAM MANAGEMENT PROGRAM
ACTION PLAN May 2016 – APRIL 2018**



West Branch Neversink Demonstration 2015

Rondout and Neversink Stream Management Planning Program Action Plan 2016-2018

Executive Summary

Sullivan County Soil & Water Conservation District is currently under contract CAT-443 to NYC DEP to collaboratively deliver the Rondout Neversink Stream Management Planning Program through June 2020. This contract provides Stream Management Implementation Program grants (SMIP) to implement recommendations identified in the prior contract, CAT-389, with broad goals that support watershed stewardship through assessment, planning, education, and stream and floodplain restoration activities in the Towns of Denning (Ulster County) and Neversink (Sullivan County).

Local Flood Hazard Mitigation Analysis is underway in this contract to help communities incorporate flood hazard mitigation into project implementation in conjunction with the municipalities' established stream management recommendations, and to provide eligibility for new programs available through other DEP and DEP-funded partner programs at Catskill Watershed Corporation. The Denning Neversink Local Flood Analysis Committee, with Town-appointed and agency representatives, will continue to meet regularly to guide the process of Local Flood Hazard Mitigation Analysis (LFA) through 2019.

CAT-443 provides resources for continued outreach efforts through educational programming, convening of the Watershed Advisory Group to advise program development, and Subcommittees of this group that meet more frequently and guide project planning and coordination. The web-site established at www.rondoutneversink.org documents accomplishments of the program and communicates progress and important information to participants and partners. Followers can join Rondout Neversink Stream Program's Facebook page and an Instagram feed, @nycheadwaters. Usage of these is growing weekly through the power of social media networking.

To date, 27 projects to vegetate streamside buffers have been completed, representing 7.79 acres, or 1.25 mile of linear buffer, restored with 3,125 containerized native trees and shrubs installed. Many of these projects include bioengineering design components to repair and/or improve stream stability along the banks.

A Stream Management Implementation Program (SMIP) commenced in early 2015, following the adoption of a Memorandum of Understanding by Denning and Neversink Town Boards. The Watershed Advisory Group oversees the development of the SMIP grants program, and meets in subcommittees for Highways & Infrastructure and Education to initiate Round 1 applications for funding through CAT-443.

SMIP applications for 2015 were received by Towns of Denning and Neversink, as well as one each in development with Sullivan County and Ulster County DPWs. 2015 projects implemented included: replacement of a metal grate bridge with 3-sided culvert to improve water quality and providing a local match for a FEMA-funded streambank stabilization in Denning. In Neversink, funds were distributed to conserve a historic map showing 1890s land parcels and river corridor. Round 2 grant applications will be approved May 2016 for pending grant applications: Bridge Obstruction Debris removal for flood hazard mitigation (both Towns); Sugarloaf Brook culvert design (Neversink); Denning Road culvert design for 4 undersized conveyances (Denning); Hunter Road culvert upgrading for flood hazard mitigation (Neversink); and a series of Education grants involving Tri Valley Central School and Time and the Valleys Museum (serving both Towns). A partnership outreach project is in planning with NYC DEP Grahamsville office for repurposing of Neversink's town ballfield was relocated out of the floodplain after Tropical Storm Irene. The new public use area will incorporate demonstration practices and

interpretative exhibits on watershed protection serving agency goals of Sullivan County Soil & Water Conservation and NYC DEP (Neversink).

Due to repeat losses on main roads in this watershed, cooperative efforts were made to identify and explore hazard mitigation funding through Hazard Mitigation Grants Program. Grant application support, site survey and landowner outreach continues to be provided to Ulster County DPW for the safe reconstruction of County Road 47. A Local Flood Analysis is planned in 2016 for the hamlet of Sundown (Denning). Upon completion of Sundown's LFA, further flood mitigation projects will be prioritized together with bank erosion and stream stability projects to produce restoration efforts in 2017 to complete work at the program's top sites in both Towns.

Each section of this Action Plan reflects a category of the current contract scope of work, followed by the specific stream management plan recommendations addressed by the tasks for Year 1 and 2 of the Plan. A proposed calendar (to be used as a general guide) is included.

Category: Stream Management Plans including Local Flood Mitigation Analysis

Stream Management Plan tasks address these General Recommendations:

6.1.1 Annual Action Plans

6.1.5 Advisory Committees General & Technical

6.1.6 Updating & Revision of Rondout Creek Management Plan

6.1.7 Town Adoption of Management Plan

6.1.6 Future Update and Revision of Chestnut Creek Management Plan

6.1.10 Post-Flood Technical Assistance

6.4.9 Hazard Mitigation Plans

6.5.4 Watershed Association Upper Rondout

6.8.2 Digital FIRM Maps

6.8.3 Flood Ordinance Review

6.8.4 Community Rating System

6.8.5 SFHA Notification

6.1.8 Public Lands

Year 1: 2016-2017

Watershed Advisory Group meetings April & December to review the Action Plan through 2018 and to report on annual accomplishments. Initiate grants program by releasing Education grant applications in February. LFA Committee supports Local Flood Analysis (LFHMA) through RFP to engineering firms for 3 population centers through bimonthly meetings to advise on project. Quarterly E-News. Bi-monthly meetings of Highways & Infrastructure Subcommittee. Convene third annual Anglers Symposium fisheries to engage landowners and angling community to identify priority recommendations for research. SMIP grant applications reviewed and selected for Round 2. Bi-annual meetings of Education Subcommittee. Research Subcommittee will convene in July and accept Round 1 proposals on priority topics for implementation in 2017. Completion of Claryville LFHMA study and initiation of Sundown study. Initiate design/construction of initial Claryville FHM projects.

Year 2: 2017-2018

Sundown flood analysis underway with meetings through summer and fall. SMIP grant applications for 2017 will be accepted in fall. Construction of Claryville LFA projects will begin; initiation of design of Sundown LFA projects. Initiate Chestnut Creek LFA.

Category: Stream Assessment

Stream Assessment tasks address these General Recommendations:

- 6.2.1 Identify Locations of Water Quality Impairment
- 6.2.4 Watershed Assessment of Major Rondout Creek/Neversink River Tributaries
- 6.2.8 Highway Activities & Infrastructure for Water Quality Improvement
- 6.3.12 Documentation of Eroding Banks
- 6.3.2 Establish Riparian Reference Reaches
- 6.3.3 Inventory Watershed Wetlands
- 6.5.1-6.5.3 Fisheries Research, Detailed Fisheries Assessment, Restoration Project Fisheries Assessment
- 6.8.7 Flood Damage Database

Year 1: 2016-2017

Bank Erosion Hazard Index (BEHI) assessment will be ongoing on the Rondout, Neversink and Chestnut Creeks to document change at high priority sites, prioritize and inform future implementation grants. At least one new reference reach selected and surveyed, and two previously surveyed reaches resurveyed. Completed projects will be monitored during establishment period. Additional stream study if needed on Sundown LFA area. Japanese Knotweed monitoring suppression plan in coordination with CRISP (Catskill Region Invasive Species Partnership). Stream feature inventory will be conducted on two major tributaries; more detailed GPS mapping of large woody debris using the protocol proposed by Wohl, et al. will be piloted in at least one tributary. Research Subcommittee will identify projects to be initiated this year to address issues in fisheries and suspended sediment loading.

Year 2: 2017-2018

Additional stream study if needed on Chestnut Creek LFA area. Japanese Knotweed monitoring suppression plan in coordination with CRISP (Catskill Region Invasive Species Partnership). Stream feature inventory will be conducted on two major tributaries. Research Subcommittee will identify projects to be initiated this year to address priority goals established through its first year of active projects.

Category: Restoration Projects

Demonstration tasks address these General Recommendations:

- 6.2.4 Critical Area Seeding Program
- 6.3.6 Knotweed Eradication/Suppression
- 6.3.7 Invasive Species-Free Area and Spread Prevention
- 6.3.9 Participate in CRISP
- 6.2.8 Highway Activities
- 6.2.9 Stream Stability Restoration
- 6.5.4 Habitat Improvement Project
- 6.1.3 Debris Management

Year 1: 2016-2017

Stream Management Implementation Program begins with annual grant funding cycle to identify projects via subcommittees for approval by Watershed Advisory Group:

- Highways & Infrastructure Subcommittee
- Education Subcommittee
- Research Subcommittee
- Denning Neversink Flood Analysis Committee

2016 projects listed in Executive Summary (above). There is potential to add a streambank toe protection project in conjunction with Ulster County at Denning Road Bridge replacement. Support critical area seeding as requested by Towns. Adjustments made to Demo projects as needed during their establishment period. Release SMIP applications for Round 2 funding (fall) for 2017 projects.

Year 2: 2017-2018

2017 restoration projects will be identified through Denning Neversink Local Flood Hazard Committee for Claryville. Sundown and Grahamsville LFAs are underway. Frost Valley YMCA submits application for facility-wide LFA to identify stormwater improvements at Main Camp to mitigate future flood damage and improve water quality.

Category: CSBI (Catskill Streams Buffer Initiative)

CSBI tasks address these General Recommendations:

6.3.1 Riparian Vegetation Mapping

6.3.5 Catskill Streams Buffer Initiative

6.2.4 Critical Area Seeding Program

6.3.6 Knotweed Eradication/Suppression

6.3.7 Invasive Species-Free Area and Spread Prevention

6.3.9 Participate in CRISP

6.2.8 Highway Activities

Year 1: 2016-2017

Riparian Corridor Management Plans (RCMPs) will be written for a minimum of 5 streamside landowners in the program area this year, each resulting in planting projects to be planned and implemented in Fall 2016 and Spring 2017. Outreach for the recruitment of CSBI grant applicants continues year round. Grant applications received by June 1st for implementation in the Fall of 2016, and November 1st for implementation in Spring 2017, with the flexibility to roll potential projects into future rounds when appropriate and necessary to ensure project success. Invasive species control is an integral part of this program; a long-term control strategy for suppression of target species will continue to be implemented in Fall 2016 through a partnership with Catskill Regional Invasive Species Partnership (CRISP). Existing native willow (*Salix* spp.) planting beds improved on NYC DEP land; continued permissions pursued for willow harvesting on private lands. A seasonal field intern may be hired in fall for assistance during CSBI project implementation or through The Student Conservation Association (SCA) again.

Schedule for Actions:

Receive CSBI grant applications by June 1st; Develop RCMPs (2-3); year one vegetation monitoring for 5 projects installed in 2015, year three monitoring for 5 projects installed in 2013, year five monitoring at 3 project sites installed in 2011, annual photo monitoring at 13 remaining sites; Complete RCMP's for Fall projects. June-October: submit Japanese Knotweed plots to CRISP/partners database; assist with enforcement of JKW prevention protocol for project contractors July- October: Complete planting plans for Fall projects, CSBI project planning and implementation. November: CSBI grant applications due for potential spring projects; CSBI project planning for Spring 2016. February: Complete RCMPs (2-3) for Spring projects. Ongoing: Japanese Knotweed Control through partnership with private landowners, Town and County DPWs, Maintain an accurate inventory of plant materials center; Outreach for CSBI applicants; Oversee and manage Plant Materials contracts with Greenbelt and One Nature nurseries.

Year 2: 2017-2018

Riparian Corridor Management Plans will be written to target the goal of 5 streamside landowners in the program area this year, each resulting in a planting project to be planned and implemented in Fall 2017 and Spring 2018. CSBI will also offer full planting support to the stream restoration work that result from projects initiated by the grants program for Highways and Infrastructure, and Local Flood Analysis mitigation projects.

Outreach for the recruitment of CSBI grant applicants continues year round through a variety of forums. Grant applications received by June 1st for implementation in the Fall of 2017, and November 1st for implementation in Spring 2018, with the flexibility to roll potential projects into future rounds when appropriate and necessary to ensure project success. Invasive species control is an integral part of this program; action items will be in place for the long-term suppression strategy for suppression of target species. The goal of establishing more native willow planting beds on NYC DEP land pursued including continued permissions for willow harvesting on private lands.

Schedule for Actions:

May-September: CSBI project implementation for Spring projects; complete RCMPs (2-3) for Fall projects; Vegetation Monitoring for year 1 projects installed in 2016, Year 3 monitoring for projects installed in 2014, and Year 5 monitoring for projects installed in 2012. June: CSBI grants applications due by 1st for potential fall projects. October: Quarterly meeting; Receive and inventory plant materials from nursery; Complete planting plans for Fall 2017 projects. November: CSBI grant applications due by 1st, CSBI project planning for Spring 2018. February: Complete RCMPs (2-3) for Spring projects. Ongoing: Continue to identify partners for native willow harvest and bed planting establishment; Japanese Knotweed control through partnership with private landowners, Town and County DPWs; Maintain an accurate inventory of the plant materials center; Outreach for CSBI applications; Oversee and manage Plant Materials contract with Greenbelt and One Nature nurseries.

Category: Education & Outreach

Education & Outreach tasks address these General Recommendations:

- 6.1.2 Selective Stream Gravel Management*
- 6.1.4 Historic and Current Condition Analysis and Documentation*
- 6.3.4 Watershed Forestry Program*
- 6.3.8 Early Detection & Rapid Response to Invasives*
- 6.4.2 Flood Response Technical Resources*
- 6.4.5 Flood Damage Prevention Library*
- 6.4.9 Hazard Mitigation Plans*
- 6.6.1 Education & Outreach Working Group Strategy*
- 6.6.2 Educational Workshops*
- 6.6.3 Training of Stream Program Staff*
- 6.6.4 Volunteer Opportunities*
- 6.6.5 Web-based Outreach*
- 6.6.6 Stream Management Publications*
- 6.6.7 News Media Outreach*
- 6.6.8 Training Opportunities*
- 6.6.9 Stream Management Guidelines*
- 6.5.5 Wildlife and Biodiversity Assessments*
- 6.7 Public Recreation*
- 6.8.6 Flood Hazard Education Sessions*

Year 1: 2016-2017

An E-news format continues to be emailed to landowners and partners. Third Annual Anglers Symposium will take place to further engage water quality research stakeholders. Focus will continue of orientation and training for Sundown and Grahamsville streamside residents to gain the skills and information required to participate in the LFHMA process. Stream Program Coordinator participates in Interbasin

Education and Outreach quarterly meetings and new program initiatives such as LFHMA. Program staff will attend Rosgen training Level 4 to increase knowledge in natural stream processes. In September, release applicant packet for Round 2 Education SMIP Grants, although beginning in Spring 2016, applications will be accepted on a rolling basis. Outreach calendar includes: Second Annual Hemlock Woolly Adelgid Summit (April), Public Presentations for Claryville LFA (summer), Second Annual Anglers Symposium (summer). Lark in the Park Hike in partnership with NYC DEP staff to Weather Station (October), Orientation Presentations on LFA process for Sundown and Grahamsville communities (Fall/Winter).

Year 2: 2017-2018

E-news and web updates continue. Ongoing partnership with Tri Valley Central School students; expand to include Ellenville students. Assess needs for supporting the creation of an Upper Rondout Watershed Association. Program staff will attend Rosgen training Level 4 to increase knowledge in channel design and natural stream processes. Initiate public search engine tool with Google to make Stream Feature Inventory and Stream Management Plan recommendations data available online.

Rondout Neversink Stream Program Team

Sullivan County Soil & Water Conservation District:

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Student Conservation Association Interns
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Contract Management and Partner Staff/NYC DEP Stream Management Program:

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