

RONDOUT/NEVERSINK STREAM MANAGEMENT PROGRAM ACTION PLAN May 2015 – APRIL 2017

Town of Denning November 2014
Rip Rap Vegetation Installation on County Road 47



Town of Neversink November 2014
Catskill Streams Buffer Planting Chestnut Creek



Rondout and Neversink Stream Management Planning Program Action Plan 2015-2017

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 2019. 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).

A new program area of Local Flood Hazard Mitigation Analysis is initiated 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 to 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 (LFHMA) 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. A web-site was established at www.rondoutneversink.org to document accomplishments of the program and to communicate progress and important information to participants and partners. Followers can join Rondout Neversink Stream Program's Facebook page and an Instagram feed, @nycheadwaters.

To date, ## projects to vegetate streamside buffers have been completed, representing ## acres, or # mile of linear buffer, restored with ## containerized native trees and shrubs installed. . Many of these projects include bioengineering design components to repair and/or improve stream stability along the banks. The Vegetator planting device was fabricated and successfully tested to provide a novel way to retrofit existing rip rap road protection with plant material to increase resilience and improve water quality. A riparian planting project incorporating up to 8 sites is in development for fall implementation. Round 1

A Stream Management Implementation Program (SMIP) commences 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. Sample 2015 projects: piloting improvement practices for better road ditch resilience, 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.

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 assistance 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 Frost Valley YMCA to explore facility-wide flood hazard mitigation options.

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: 2015-2016

Watershed Advisory Group meetings April & December to review the Action Plan through 2017 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 second annual Anglers Symposium fisheries to engage landowners and angling community to identify priority recommendations for research. SMIP grant applications reviewed and selected for Round 1. Bi-annual meetings of Education Subcommittee.

Year 2: 2016-2017

A Research subcommittee will be initiated to identify and prioritize studies to illuminate stream conditions affecting ecosystem integrity, particularly fisheries and water quality. Completion of Claryville LFHMA study and initiation of Sundown study. Initiate design/construction of initial Claryville FHM projects; initiate Sundown flood analysis. Release SMIP grant applications for 2016.

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: 2015-2016

Bank Erosion Hazard Index (BEHI) assessment ongoing on the Rondout, Neversink and Chestnut Creeks to document change, prioritize and inform future implementation grants. Stream feature inventory on tributaries to aid in same and to initiate sediment studies for turbidity and bedload assessment; monitoring and suppression of invasive Japanese Knotweed sites will continue. Reference reaches selected and documented (ongoing). Completed projects will be monitored during establishment period. Additional stream study on entrenchment ratio will be completed in cooperation with SUNY ESF to collect data specific to Catskills to improve design engineering for effective sediment transport. Japanese Knotweed monitoring suppression plan in coordination with CRISP (Catskill Region Invasive Species Partnership). Frost Valley's Natural Resource staff initiates water quality monitoring with SMIP grant for fisheries health at locations identified by fishing members in coordination.

Year 2: 2016-2017

Stream feature inventory will be conducted on two major tributaries. Reference reach stream and riparian surveys will be conducted in each of the three basins. Research Subcommittee will identify projects to be initiated this year to address issues in fisheries and suspended sediment loading.

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: 2015-2016

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

2015 projects include local match for dewatering and riparian planting at FEMA streambank stabilization project (Denning); a three-sided culvert installation to replace a metal grate stream crossing on Town Road (Denning); a Town Road ditch resilience improvement project (Neversink); and a streambank stabilization for Town Road protection (Neversink). 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. An annual cycle of funding and implementation of stream management projects in the Rondout & Neversink Basins will evolve with execution of the CAT contract. Release SMIP applications for Round 2 funding.

Year 2: 2016-2017

2016 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: 2015-2016

Riparian Corridor Management Plans (RCMPs) will be written for a minimum of 6 streamside landowners in the program area this year, each resulting in planting projects to be planned and implemented in Fall 2015 and Spring 2016. Outreach for the recruitment of CSBI grant applicants continues year round. Grant applications received by June 1st for implementation in the Fall of 2015, and November 1st for implementation in Spring 2016, 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 2015 through a partnership with Catskill Regional Invasive Species Partnership (CRISP). Existing native willow (*salix* spp.) planting beds improved on NYC DEP land; expanded permissions pursued for willow harvesting on private lands. A seasonal field intern may be hired in fall for assistance during CSBI project implementation. Labor for project installation will be explored through The Student Conservation Association (SCA) again.

Schedule for Actions:

Receive CSBI grant applications by June 1st; Develop RCMPs (3); year one vegetation monitoring for 6 projects installed in 2014, year 3 monitoring at 3 project sites installed in 2012, annual photo monitoring at 14 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 (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 grow-out nursery.

Year 2: 2016-2017

Riparian Corridor Management Plans will be written to target the goal of 6 streamside landowners in the program area this year, each resulting in a planting project to be planned and implemented in Fall 2016 and Spring 2017. CSBI will also offer full planting support to the pilot 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 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; 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 expanded permissions for willow harvesting on private lands.

Schedule for Actions:

May-September: CSBI project implementation for Spring projects; Receive and inventory plant materials from nursery; complete RCMPs (3) for Fall projects; Vegetation Monitoring for year 1 projects installed in 2015, Year 3 monitoring for projects installed in 2013, and Year 5 monitoring for projects installed in 2011. 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 2016 projects. November: CSBI grant applications due by 1st, CSBI project planning for Spring 2017. February: Complete RCMPs (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 grow-out nursery.

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: 2015-2016

An E-news format continues to be emailed to landowners and partners. Second 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. 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: 2016-2017

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:

Brian Brustman, District Manager (Liberty Office)
Stacie Howell, Catskill Streams Buffer Initiative
Karen Rauter, Stream Program Coordinator
Lisa Schick, Program Assistant/Bookkeeper (Liberty Office)
John Kline, Les Kirby (Liberty Office)
Student Conservation Association Interns
Brenden Wagner, Riparian Field Intern

Contract Management and Partner Staff/NYC DEP Stream Management Program:

Mark Vian, Rondout / Neversink Basin Project Manager
Chris Tran, Catskill Streams Buffer Coordinator
Emily Smith, SUNY Ulster Stream Assessment and GIS Support

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	1	2
FHM Plan Development						
					Awards Announced Press Release on SMIP Projects 60% SMIP Tracking Sheet	Frost Valley Board
3	4	5	6	7	8	9
FHM Plan Development						
					E-News Distributed	
10	11	12	13	14	15	16
FHM Plan Development						
	Spring planting					
	Staff Meeting				Payment Request	
17	18	19	20	21	22	23
FHM Plan Development						
	Spring planting					
			FHM Feasibility Plan Flood Committee			
24	25	26	27	28	29	30
	Memorial Day	Sping planting				
			Public Meeting to			
31	1	2	3	4	5	6
	Vegetation Monitoring					
		Field Assessments				

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
	Vegetation Monitoring					
		Field Assessments				
7	8	9	10	11	12	13
	Vegetation Monitoring					
	Staff Meeting	Field Assessments				
			FHM Presentation to			
14	15	16	17	18	19	20
	Vegetation Monitoring					
	Community LFA	Field Assessments				
			Town of Shandaken			
21	22	23	24	25	26	27
		Field Assessments				
28	29	30	1	2	3	4
		Field Assessments				

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	1	2	3	4
		Field Assessments				
5	6	7	8	9	10	11
		Field Assessments			E-News Distributed	
		Presentation to			Invasive Species	
12	13	14	15	16	17	18
	Staff Meeting	Field Assessments				
19	20	21	22	23	24	25
	Community LFA	Field Assessments				
26	27	28	29	30	31	1
		Field Assessments				SMIP Tracking Sheet

Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
		Field Assessments				SMIP Tracking Sheet
2	3	4	5	6	7	8
	JKW Assessment					
	SMIP Funding	Field Assessments				
9	10	11	12	13	14	15
	JKW Assessment					Payment Request
	Staff Meeting	Field Assessments				
16	17	18	19	20	21	22
		Field Assessments			Chestnut Creek SMP	
23	24	25	26	27	28	29
	Hunter Rd Floodplain Drains					
	Community LFA					
30	31	1	2	3	4	5
		Town Projects @ TBD, Hunter Rd?				

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	31	1	2	3	4	5
Town Projects @ TBD, Hunter Rd?						
6	7	8	9	10	11	12
Town Projects @ TBD, Hunter Rd?						
Labor Day					E-News Distributed	
13	14	15	16	17	18	19
Town Projects @ TBD, Hunter Rd?						
JKW Treatment						
Staff Meeting						
20	21	22	23	24	25	26
Town Projects @ TBD, Hunter Rd?						
Site Visits for Conceptual Designs (Next Year's Projects)						
27	28	29	30	1	2	3
Town Projects @ TBD, Hunter Rd?				Anglers Symposium		
				Conceptual Designs		
				Kurt Fausch River		

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	1	2	3
Town Projects @ TBD, Hunter Rd?				Anglers Symposium		
				Conceptual Designs		
				Kurt Fausch River		
4	5	6	7	8	9	10
Project Survey						
CR-55 Installation					Weather Station	
11	12	13	14	15	16	17
Project Survey						
CR-55 Installation						
Staff Meeting						
18	19	20	21	22	23	24
Project Survey						
Schoenburg Installation						
25	26	27	28	29	30	31
Project Survey						
Schoenburg Installation						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 SMIP Tracking Sheet	2 Project Installation	3	4	5	6	7
8	9 Project Installation Staff Meeting	10	11	12	13 E-News Distributed	14
15 Payment Request	16 Project Installation	17	18	19 30% Design Review 30% Design Due	20	21
22 30% Design Review	23	24	25	26	27	28
29 30% Design Review	30	1 Applications Due	2	3 Subcommittee	4	5

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2 Press Release SMIP SMIP Awards
3	4	5	6	7	8	9
10 Staff Meeting	11	12	13	14	15 60% Design Due	16
17	18 60% Design Review	19	20	21	22 60% Design Meeting	23
24	25 60% Design Revision	26	27	28	29	30
31	1 60% Design Revision Review 60% Design Revision SMIP Tracking Sheet	2	3	4	5	6

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
60% Design Revision Review						
60% Design Revision						
SMIP Tracking Sheet						
7	8	9	10	11	12	13
Landowner Agreements						
60% Design						
Staff Meeting						
14	15	16	17	18	19	20
Landowner Agreements						
Payment Request						
21	22	23	24	25	26	27
Landowner Agreements						
SMIP Subcommittee						
28	29	1	2	3	4	5
Landowner Agreements						
90% Design Review						
90% Design Due						
Joint Application						

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	1	2	3	4	5
Landowner Agreements		90% Design Review				
		90% Design Due				
		Joint Application				
6	7	8	9	10	11	12
90% Design Review						
13	14	15	16	17	18	19
90% Design Review						
Staff Meeting						
20	21	22	23	24	25	26
Announce Requests		Applications Due				
27	28	29	30	31	1	2
100% Design and		Project Site Showing		Subcommittee		

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2
	100% Design and		Project Site Showing	Subcommittee		
3	4	5	6	7	8	9
10	11	12	13	14	15	16
	Spring Project Installation				Plant Sale?	
	Staff Meeting				Bid Opening	
17	18	19	20	21	22	23
	Begin Project Construction Contracting					
	Spring Project Installation				Plant Sale?	
24	25	26	27	28	29	30
Begin Project Construction Contracting						
	Spring Project Installation					

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
Begin Project Construction Contracting						
Awards Announced						
Press Release on						
SMIP Tracking Sheet						