

**RONDOUT/NEVERSINK
STREAM MANAGEMENT PROGRAM
ACTION PLAN May 2014 – APRIL 2016**

Streambank Stabilization, Town of Neversink November 2013



Catskill Streams Buffer Project in Denning October 2013



Rondout and Neversink Stream Management Planning Program Action Plan 2014-2016

Executive Summary

Sullivan County Soil & Water Conservation District is currently under contract to NYC DEP to collaboratively deliver the Rondout Neversink Stream Management Planning Program through 2014. A follow-up contract for Stream Management Implementation Program grants (SMIP) is in the final stages of preparation to provide funds to implement recommendations planned in the current contract. The broad goals of this contract are to support watershed stewardship through assessment, planning, education, and stream and floodplain restoration activities. A new program area was added, post-Irene, to help communities incorporate flood hazard mitigation activities into project implementation in conjunction with the community's established stream management recommendations.

FAD deliverables completed in this contract were stream management plans for the upper Rondout and upper Neversink basins, with prioritized recommendations for the major rivers in the basin; the construction of a demonstration restoration project in each basin; and development of a streamside assistance program for landowners focused on vegetative stabilization of banks and floodplains (Catskill Streams Buffer Initiative). Additionally, non-FAD contract deliverables include educational programming; development of a Watershed Advisory Group to advise program development; and initiation of Subcommittees of this group to meet more frequently and guide project planning and coordination. A Community Flood Analysis stakeholder meeting is convening monthly, with the purpose of initiating the process of Local Flood Hazard Mitigation Analysis (LFHMA) in 2014.

To date, fifteen landowners have participated in the program to vegetate streamside buffers on their property. Many of these projects include bioengineering design components to repair and/or improve stream stability along the banks. Final restoration plantings have been completed at all demonstration projects, including those delayed by storm flows in 2011-12. A pilot SMIP grant was awarded to the Town of Denning in 2013 to replace an old, undersized bridge believed to be the culprit of extensive flooding in roadways and homes in the center of the town population center at the site of the Claryville Fire Department.

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 was provided to Ulster County DPW for the safe reconstruction of County Road 47; and to Frost Valley YMCA for a bridge replacement on Biscuit Brook. In addition, the Rondout Neversink Stream Program has supported a grant application by Northeast Regional Office of Trout Unlimited to complete a detailed assessment of road culverts on the Neversink River with the intention of providing hydraulics analysis and conceptual design for replacement designs on priority locations for proper fish passage.

A Stream Management Implementation Program (SMIP) will commence in late 2014, following the recent 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 has begun meeting in subcommittees for Highways & Infrastructure and Education to initiate its direction under the current contract. 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

6.5.4 Habitat Improvement Project

Year 1: 2014-2015

Watershed Advisory Group meetings April & December to review the Action Plan through 2015 and to report on annual accomplishments. Initiate grants program by releasing Education grant applications in September. Committee meets monthly to shepherd and coordinate with Towns to support their Community Flood Analysis (LFHMA) through RFP to engineering firms for 3 population centers. Initiate quarterly E-News; bi-annual print news. LFHMA Committee meets monthly. Distribute Chestnut summary plan for Town adoption including neighborhood meeting on Chestnut Creek Management Units; Bi-monthly meetings of Highways & Infrastructure Subcommittee. Convene fisheries landowners to identify priority recommendations for research. Engineer contracted for flood analysis. Release SMIP grant applications. Bi-annual meetings of Education Subcommittee. Annual Report print newsletter.

Year 2: 2015-2016

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: 2014-2015

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). Rondout and Neversink Demo project will be monitored during establishment period. BEHI Surveys and reference reach survey; tributary stream feature inventory
May-October: Japanese Knotweed monitoring suppression plan in coordination with CRISP (Catskill Region Invasive Species Partnership).

Year 2: 2015-2016

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: Demonstration Projects

Demonstration tasks address these General Recommendations:

6.1.3 Debris Management

6.1.8 Public Lands

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

Year 1: 2014-2015

Support critical area seeding as requested by Towns. Adjustments made to Demo projects as needed during their establishment period. Identify projects for 2015 construction season through grant applications from Towns and initial surveys of flood hazard mitigation analysis. An annual cycle of funding and implementation of stream management projects in the Rondout & Neversink Basins will evolve with execution of the successor contract. Monitoring of the Rondout and Neversink demonstration projects will continue throughout the establishment period.

Year 2: 2015-2016

This category will be re-named from "Demonstration" to "Restoration Projects." Through the SMIP grants cycle, projects will be identified, designed and constructed based on the activities of the sub-Committees of the program, and applications by Towns.

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

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

Year 1: 2014-2015

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 2014 and spring 2015.

Outreach for the recruitment of CSBI grant applicants will continue to take place year round through a variety of forums. Grant applications will be received by June 1st for implementation in the Fall of 2014, and November 1st for implementation in Spring 2015, 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 suppression strategy for suppression of target species will be developed and implemented in the fall of 2014. Existing native willow (*salix spp.*) planting beds will be expanded on NYC DEP land; expanded permissions will be pursued for willow harvesting on private lands. A seasonal field intern may be hired in fall for assistance during CSBI project implementation.

Year 2: 2015-2016

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 2015 and spring 2016. CSBI will also offer full planting support to the pilot stream restoration projects that result from projects initiated by the grants program for Highways and Infrastructure.

Outreach for the recruitment of CSBI grant applicants will continue to take place year round through a variety of forums. Grant applications will be 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; 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 will be pursued, expanded permissions for willow harvesting on private lands will continue to be pursued.

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: 2014-2015

An E-news format will be mailed quarterly to landowners and partners. An annual report to document yearly accomplishments (electronic) is scheduled for December. Initial outreach will be conducted for a Research Subcommittee. Focus will be on orientation and training for the Denning Neversink Community Flood Analysis Committee to gain the skills and information required to direct the LFHMA process. Stream Program Coordinator participates in Inter-basin Education and Outreach quarterly meetings and new program initiatives such as LFHMA. Program staff will attend Rosgen training Level 3 to increase knowledge in natural stream processes. Arm of the Sea Theater performance of Rejuvenary River Circus at Tri Valley CS. Presentations on Hydraulics, Flood Mapping, and Benefit/Cost Analysis by MMI to Committee and community members. Hemlock Woolly Adelgid Informational Woodswalk (CRISP) for Invasive Species Week in July. Fisheries Roundtable for Landowners, August. In September, release applicant packet for Round 1 Education SMIP Grants; September: Ulster County Creek Week Stream History Tour. Initiate public search engine tool with Google to make Stream Feature Inventory and Stream Management Plan recommendations data available online.

Year 2: 2015-2016

Bi-annual newsletters 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. Execute the sharing of Stream Feature Inventory data on Google's public search engine format; add crowdsourcing of photos.

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)

Emily Smith, Seasonal Field Intern

Brenden Wagner, Riparian Field Technician

John Kline, Les Kirby (Liberty Office)

NYC DEP Stream Management Program:

Mark Vian, Rondout / Neversink Basin Project Manager

Rondout Neversink Stream Management Program - Action Plan 2014-2015

	May 2014	June 2014	July 2014	August 2014	September 2014	October 2014
Stream Management Plans	Finalize Annual Action Plan Googlemaps Public Data Planning Meeting Highways & Infrastructure Committee Meeting	Distribute Chestnut Creek SMP		Highways & Infrastructure Committee Meeting Post-Flood Channel Geometry Guide Chestnut Creek SMP Summary	Prioritize Bank Erosion Sites Release SMIP Grant Applications for 2015 Chestnut Creek SMP for Town Adoption	
Assessment	BEHI (Bank Erosion Hazard Index) Surveys Initiate Suspended Sediment Loading Study	Stream Feature Inventory/Tribs Reference Reach Surveys	Stream Feature Inventory/Tribs Reference Reach Surveys	Stream Feature Inventory/Tribs Reference Reach Surveys	Stream Feature Inventory/Tribs Reference Reach Surveys	Field Data Processing
Restoration Projects	Restoration Project Monitoring West Branch Neversink Demo As-Built Survey Hydroseeding with Town/County DPW	Japanese Knotweed Monitoring			Japanese Knotweed Suppression	2015 Restoration Project Selection Contract w/ Restoration Designer Stinger Demonstration Planting
CSBI	Install CSBI spring implementation Fall CSBI project planning	CSBI Project Monitoring		Complete RCMPs for fall project landowners		CSBI fall implementation Plant delivery & inventory
Local Flood Analysis	LFA Committee Meeting Release RFP for Flood Analysis Claryville	LFA Committee Meeting Select Contractor	LFA Committee Meeting Contract for LFA? (budget-contingent)	LFA Committee Meeting Phase 1 LFA	LFA Committee Meeting Phase 1 LFA Labor Day Community Mtg? (Flood photos intake)	LFA Committee Meeting Phase 1 LFA
Education & Outreach	Japanese Knotweed Prevention Ulster Co DPW CSBI Landowner Ads Mail E-News #2	Googlemaps Public Data Planning Meeting	Landowner Comments on Chestnut SMP Japanese Knotweed Landowner Notification Mail E-News #3/Print Newsletter #3 Hemlock Woolly Adelgid Woodswalk	Landowner Comments on Chestnut SMP Fisheries Landowners Research Roundtable	Ulster Co Creek Week Stream History Tour Explore WARSS Training in Watershed Initiate projects with Tri Valley Photography class	Catskill Env Research Conference Mail E-News #4 Annual Reports for Partners: EPA, CWT
	November 2014	December 2014	January 2015	February 2015	March 2015	April 2015
Stream Management Plans	Education SMIP Meeting Highways & Infrastructure SMIP Meeting	Watershed Advisory Group SMIP Grants				Watershed Advisory Group Meeting
Assessment	Data processing from summer assessments	Data processing from summer assessments	Data processing from summer assessments	Data processing from summer assessments		
Restoration Projects	Schedule design/build 2015 projects Survey 2015 Restoration Project(s)	Design Report(s): Objectives, Hydrology, Geomorphology (Table 2) HEC-RAS Current Conditions Conceptual Design(s)		Feb 15 60% design landowner consultations/agreements submit permit applications	90% design	Final design Bid Book Publish Request for Bids Stinger Demonstration Planting
	Additional geomorphic data as needed to complete Table 2		Infrastructure Projects Development	Infrastructure Projects Development	Infrastructure Projects Development	
CSBI	CSBI Applications Due Nov 1 CSBI Planning for Spring 2015	CSBI Planning for Spring 2015		Complete RCMPs for spring project landowners		
Local Flood Analysis	LFA Committee Meeting Public Meeting?	LFA Committee Meeting Phase 2 LFA	LFA Committee Meeting Public Meeting? Select FHM Project to develop	LFA Committee Meeting FHM Project Development (design)	LFA Committee Meeting FHM Project Development (design)	LFA Committee Meeting 60% Design
Education & Outreach	CSBI Landowner Ads		Mail E-News #5 Annual Report/Print Newsletter #4 Launch Googlemaps public data			Mail E-News #6

Rondout Neversink Stream Management Program - Action Plan 2015-2016

	May 2015	June 2015	July 2015	August 2015	September 2015	October 2015
Stream Management Plans	Finalize Action Plan 2015-2017 Watershed Advisory Group Meeting Highways & Infrastructure Meeting					
Assessment	BEHI (Bank Erosion Hazard Index) Surveys Suspended Sediment Loading Study	BEHI (Bank Erosion Hazard Index) Surveys Reference Reach Surveys	BEHI (Bank Erosion Hazard Index) Surveys Reference Reach Surveys	BEHI (Bank Erosion Hazard Index) Surveys Reference Reach Surveys	BEHI (Bank Erosion Hazard Index) Surveys Reference Reach Surveys	
Restoration Projects	Restoration Project Monitoring West Branch Neversink Demo As-Built Survey Receive Bids 2015 Restoration Project(s) Hydroseeding with Town/County DPW	Infrastructure Projects Development/Execution Contract w Contractor	Infrastructure Projects Development/Execution July 15 Start Construction	Infrastructure Projects Development/Execution Construction	Infrastructure Projects Development/Execution Construction	Planting As-built survey
CSBI	Install CSBI spring implementation Fall CSBI project planning	CSBI Project Monitoring		Complete RCMPs for fall project landowners		CSBI fall implementation Plant delivery and inventory
Local Flood Analysis	LFA Committee Meeting FHM Project Development (design) Landowner Agreements and Permits	LFA Committee Meeting FHM Project 90% design	LFA Committee Meeting Final Design and Bid Doc Publish RFBs	LFA Committee Meeting Select contractor	LFA Committee Meeting Construction	LFA Committee Meeting
Education & Outreach	CSBI Landowner Ads West Branch Neversink History Reprint	Mail E-News #7/Print Newsletter #5 Beneficial Pollinators for Streamside Landowners	Hemlock Tour/ NYS Invasive Species Week		Ulster County Creek Week Event TBD	Mail E-News #8 Annual Reports for Partners, EPA, CWT
	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016
Stream Management Plans	Education SMIP Meeting Highways & Infrastructure SMIP Meeting	Watershed Advisory Group SMIP Grants	Mail E-News #9 Annual Report/Print Newsletter #6			
Assessment	Data processing from summer surveys	Data processing from summer surveys	Data processing from summer surveys	Data processing from summer surveys		
Restoration Projects	2016 Project Design Report(s): Objectives, Hydrology, Geomorphology (Table 2) HEC-RAS Current Conditions Conceptual Design(s)		Feb 15 60% design landowner consultations/agreements submit permit applications	90% design	Final design Bid Book Publish RFBs	
CSBI	CSBI Application Due Nov 1 CSBI Planning for spring 2015	CSBI planning for spring 2015		Complete RCMPs for spring project landowners		CSBI spring implementation
Local Flood Analysis	LFA Committee Meeting	LFA Committee Meeting	LFA Committee Meeting	LFA Committee Meeting	LFA Committee Meeting	LFA Committee Meeting
Education & Outreach			Mail E-News #9 Annual Report			Mail E-News #10