

**DELAWARE COUNTY STREAM CORRIDOR MANAGEMENT PROGRAM
TWO-YEAR ACTION PLAN FOR THE WEST BRANCH DELAWARE RIVER
CANNONVILLE RESERVOIR BASIN**

May 2011 - April 2013



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Introduction:

A comprehensive Stream Corridor Management Plan (SCMP) for the West Branch Delaware River was completed in 2005 by the Delaware County Soil & Water Conservation District (DCSWCD) Stream Corridor Management Program, New York City Department of Environmental Protection (NYC DEP), and Delaware County Planning Department (DCPD). The DCSWCD in partnership with DCPD and NYCDEP, are implementing the plan's 17 recommendations. This Two-Year Action Plan for the West Branch Delaware River outlines action items that are related to the implementation of the SCMP recommendations and the overall program development.

During the development of the West Branch Delaware River SCMP, a Project Advisory Committee (PAC) was formed to represent the interests of local officials, residents, businesses, and agencies living and working in the Cannonsville Reservoir watershed. The PAC assisted in the preparation of the SCMP recommendations and is now working collaboratively to guide the Stream Corridor Management Program (SCMP_r) in the implementation of the recommendations. Since completion of this plan, the program has also completed a SCMP for the East Branch of the Delaware River (2007) and was assisted by a separate PAC. Since the completion of the East Branch Delaware SCMP the two PAC's have merged. This joint PAC provides review and comment on program development and projects in both West and East Branch basins to the SCMP_r. The PAC is assisted by four sub-committees with the following focus: Fisheries and Recreation, Education and Outreach, Highway Infrastructure, and Floodplain Management. These sub-committee contribute their expertise to furthering the fulfillment of the relevant recommendations of the SCMP.

The implementation of the recommendations are accomplished through the following program elements;

Delaware Watershed Stream Management Implementation Grant Program

The Delaware Watershed Stream Management Implementation Grant Program (SMIP), established in 2010, funds eligible stream and floodplain construction projects and programs that advance the recommendations for municipalities that have adopted the Stream Corridor Management Plan and signed a Memorandum of Agreement with the Delaware County Soil and Water Conservation District.

Catskill Streams Buffer Initiative (CSBI) funding

Catskill Stream Buffer Initiative (CSBI), established in 2009, works with local streamside landowners to provide assistance to enhance and maintain riparian buffers. Technical assistance includes; landowner consultation, landowner riparian corridor management plans that include operation and maintenance plans, and native vegetative plantings to establish or enhance riparian buffers.

Demonstration project funding

Demonstration projects utilize new and innovative stream management techniques with educational value. These projects make use of fluvial geomorphic principles and the scale of the project may vary from localized activities such as stream bank stabilization to more extensive stream restoration projects.

Conservation Resource Enhancement Program (CREP) Assistance

Provide assistance for the implementation of Conservation Resource Enhancement Program (CREP) in areas where streambank stability issues make those lands ineligible for buffer enhancement under the CREP's guidelines. .

Stream Corridor Management Program technical assistance and general support

Stream Corridor Management Program staff from each of the partnering agencies (the Delaware County Soil and Water Conservation District, New York City Department of Environmental Protection and Delaware County Planning Department) provide technical, planning and education support for a range of stakeholders on water quality related issues such as floodplain management, flood response and recovery, debris and infrastructure management, property protection, aquatic habitat and recreation concerns. Support can include assessments, plans, designs, training workshops and general advice to stakeholders.

The following recommendations from the West Branch Delaware SCMP are related to one or more of these elements and draw upon the respective program staff and financial resources. The separate Two Year Action Plan for the East Branch Delaware River SCMP also directs the activities of the program and commitment of funds for projects and programs in the Pepacton basin.

Recommendation 1: Integration of the Stream Corridor Management Program and the Watershed Agricultural Program

The New York City Department of Environmental Protection (NYCDEP), Stream Corridor Management Program (SCMP) and Watershed Agricultural Council (WAC) should develop and implement mechanisms to comprehensively integrate stream corridor management and stewardship into the Whole Farm Planning and implementation process.

Action Items:

1. Provide Stream assessment training to Watershed Agricultural Program planning and technical staff to identify and classify impaired stream segments during the development or revision of individual Whole Farm Plans.
 - June 2011 Workshop, SCMP Staff
2. Develop and implement a formal protocol for providing technical assistance to the Watershed Agricultural Program
 - June 2011, DC SWCD SCMP Coordinator, DCSWCD Executive Director, and DCSWCD Technical Coordinator, NYCDEP Project Manager
3. Provide assistance to the WAP Planning Staff in techniques for proper placement and planning of stream related agricultural Best Management Practices.
 - June 2011 – April 2013 DCSWCD SCMP Staff
4. Provide engineering approval, technical support, and individual project design assistance to Watershed Agricultural Program engineers and technicians as per the Protocol identified in action item #2 above.
 - June 2011 – April 2013, DCSWCD SCMP Coordinator, SCMP Professional Engineer, and DCSWCD SCMP Staff

Recommendation 2: Provide Technical Support to the USDA Conservation Reserve Enhancement Program (CREP)

The Stream Corridor Management Program (SCMP_r) and the NYCDEP should continue to fund and provide technical and design assistance for stream bank stabilization projects at potential CREP sites. The goal of this assistance is to stabilize stream banks so they are eligible for CREP participation.

Action Items:

1. Develop the prioritization process for providing technical and financial assistance to the WAP on CREP projects.
 - May 2011 – July 2011 SCMP_r Coordinator, NYC DEP Project Manager, WAP Program Managers
2. Provide stream evaluation and assessment assistance to the Watershed Agricultural Program planners to determine if stream instability issues will preclude CREP enrollment.
 - May 2011 – April 2013 SCMP_r Coordinator, SCMP_r PE, SCMP_r technicians, and NYC DEP as needed
3. Provide design assistance and engineering approval to the Watershed Agricultural Program engineers and technicians in the preparation of approved stream stabilization designs and projects that facilitate CREP enrollment.
4. Provide funding to the Watershed Agricultural Program for stream stabilization projects that facilitate CREP enrollment.
 - May 2011 – April 2013 SCMP_r Staff
5. In cooperation with the Watershed Agricultural Program, evaluate stream instability issues for remediation on existing CREP sites.
 - May 2011 - April 2013 SCMP_r Coordinator, SCMP_r PE, and SCMP_r Technicians
6. Provide funding to the Watershed Agricultural Program for stream projects that stabilize existing CREP sites.
 - May 2011 – April 2013 SCMP_r Staff
7. Develop and implement an evaluation approach to determine success of these projects
 - May 2011 – April 2013 SCMP_r Staff

Recommendation 3: Enhance the Implementation of CREP on New York City Watershed Cropland and Explore Long – Term CREP Contracts

The Stream Corridor Management Program (SCMP) should work with the New York City Department of Environmental Protection, United States Department of Agriculture, US Environmental Protection Agency, Watershed Agricultural Council and other pertinent federal, state and local agencies and organizations to enhance CREP implementation on cropland and explore long-term CREP contracts.

Action Items:

1. Develop an interagency working group to prepare a white paper requesting USDA / FSA to enhance rental payments for CREP riparian buffers on cropland.
 - February 2012 WAP Staff, DEP Staff, SCMP Staff
2. Explore options to maintain riparian buffers after CREP contract expiration and submit written recommendations.
 - May 2011 – June 2013 WAP Staff, SCMP Staff, DEP Staff

Recommendation 4: Implement a Variable Width Riparian Buffer Pilot Program

The Delaware County Soil and Water Conservation District (DCSWCD) Stream Corridor Management Program (SCMP_r) should work with the New York City Department of Environmental Protection (NYCDEP), New York State Department of Environmental Conservation, Watershed Agricultural Council, Catskill Watershed Corporation, Cornell Cooperative Extension and other pertinent federal, state and local agencies and organizations to develop and implement a pilot program to establish variable width riparian buffers along unstable stream reaches and monitor their effectiveness.

Action Items:

- 1. CSBI will initiate a process defining eligible sites and for implementing variable width buffers**
 - **May 2011 - May 2012 DCSWCD CSBI Coordinator and NYC DEP CSBI Coordinator with NYC DEP and DCSWCD staff input**

- 2. Identify potential sites for demonstration of a variable width riparian buffer pilot project. implement one demonstration project**
 - **May 2011 – April 2013 SCMP_r Staff, DEP Staff, WAP Staff**

Recommendation 5: Participation with the Catskill Watershed Corporation

The Stream Corridor Management Program (SCMPr) should cooperate with the Catskill Watershed Corporation (CWC) to explore the enhancement of existing CWC programs and explore the development of new CWC funding programs that address stream related stormwater issues, stream stewardship, public education and outreach, and stream stability issues.

Action Items:

1. Provide technical assistance as requested for stream related CWC funded projects.
 - May 2011 – April 2013 SCMPr Staff, NYC DEP Staff, CWC Staff
2. Explore ways to coordinate stream related education and outreach efforts (such as Catskill Streams and Watershed Education Program) with CWC.
 - May 2011 – April 2013 SCMPr Staff, CWC Staff

Recommendation 6: Stream Corridor Management Plans for Non-Agricultural Riparian Landowner Stewardship

The Stream Corridor Management Program (SCMP) should seek funds to develop a program to provide non-agricultural riparian landowners with their own site specific Stream Corridor Management Plans.

Action Items:

- 1. Continue the implementation of the Catskill Streams Buffer Initiative (CSBI) through the DCSWCD Stream Corridor Management Program Contract funded by NYC DEP.**
 - May 2011 – April 2013 SCMP Staff, NYC DEP CSBI Coordinator
- 2. Develop a protocol for prioritizing the implementation of the Catskill Streams Buffer Initiative.**
 - June 2011 – December 2011 SCMP Coordinator, DCSWCD CSBI Coordinator, NYC DEP CSBI Coordinator
- 3. Development of a minimum of 5 Riparian Corridor Management Plans (RCMP) per year.**
 - June 2011 – June 2013 DCSWCD CSBI Coordinator, DCSWCD SCMP Staff,
- 4. Implement a minimum of 3 Riparian Corridor Management Plans per year by means of contractual planting services. Implement 1 demonstration or educational riparian Corridor Management Plan per year by means of volunteer plantings or landowner plantings.**
 - June 2011 – June 2013 DCSWCD CSBI Coordinator
- 5. Education and outreach for CSBI shall be accomplished by facilitating at least one riparian workshop for landowners per year. Education and outreach shall also be accomplished by active participation at relevant local events, direct mailings, web site usage, and local media.**
 - June 2011 – June 2013 DCSWCD CSBI Coordinator

- 6. Secure landowner license and maintenance agreements for long-term access by DCSWCD and NYCDEP to facilitate**

ongoing maintenance and monitoring.

- **June 2011 – June 2013 DCSWCD CSBI Coordinator**
- 7. Develop planting plans as requested for applicable Stream Program projects in coordination with Stream Program staff.**
 - **June 2011 June – 2013 DCSWCD SCMPr Staff and DCSWCD CSBI Coordinator**
 - 8. Develop and implement a monitoring program for riparian buffer projects to identify project success and effectiveness.**
 - **June 2011 – June 2013 DCSWCD CSBI Coordinator, NYC DEP CSBI Coordinator**
 - 9. Develop local resources to maintain availability of native vegetation planting stock as needed.**
 - **June 2011 – June 2013 DCSWCD CSBI Coordinator**

Recommendation 7: Stream Gravel Deposition Issues

The Delaware County Soil and Water Conservation District (DCSWCD) Stream Corridor Management Program, New York City Department of Environmental Protection and Delaware County Department of Watershed Affairs will identify opportunities to work with the New York State Department of Environmental Conservation and U.S. Army Corps of Engineers for the purpose of identifying options pertaining to the management of deleterious gravel deposits within the West Branch of the Delaware River system.

Action Items:

1. **Develop and implement an educational and outreach program to teach municipal leaders and community members about the specific stream processes involved in the mobilization and transport of gravel and debris.**
 - **November 2011 – April 2012 SCMPr Staff**
2. **Encourage one or two municipalities to apply for grant funding through the SCMPr to scientifically study stream reaches with identified gravel deposition issues for potential case studies to be used in Item 1.**
 - **May 2011 – April 2013 SCMPr Staff**
3. **Design and implement two demonstration projects that utilize the existing gravel management protocol developed by the SCMPr.**
 - **May 2012 – April 2013 SCMPr Staff**
4. **Develop a Delaware County protocol for municipalities to manage woody debris in stream systems.**
 - **September 2011 – April 2012 DCSWCD SCMPr Coordinator, NYC DEP Project Manager and Stream Engineering Coordinator, DCDPW**
5. **Undertake a periodic review of the gravel maintenance protocol developed by the SCMPr.**
 - **May 2011 – April 2013 SCMPr Staff, NYC DEP Staff**

Recommendation 8: Streamline Stream Work Permitting

The Stream Corridor Management Program (SCMP_r) proposes that the permitting process for stream work be simplified and streamlined. It is proposed that an interagency working group composed of representatives from the New York State Department of Environmental Conservation, U.S. Army Corps of Engineers, Delaware County Soil & Water Conservation District (DCSWCD), New York City Department of Environmental Protection, neighboring Soil & Water Conservation Districts, Delaware County Department of Public Works (DCDPW) and local community leaders identify ways to delegate, simplify and streamline the permitting process for the benefit of all agencies and stakeholders.

Action Items:

- 1. Work in cooperation with NYSDEC, US Army Corps of Engineers, NYC DEP, and DCDPW to enhance the authority thresholds of the DCSWCD General Permit as delegated by the NYSDEC for approved stream management practices within the County.**
 - November 2011 SCMP_r Staff, NYCDEP RRE and SMP staff, US Corps of Engineers, DCDPW**

Recommendation 9: Assist Municipalities with Culvert Sizing and Design

The Stream Corridor Management Program (SCMP_r), in cooperation with the Catskill Watershed Corporation, Delaware County Department of Public Works and NYCDEP should develop a program to provide technical assistance to Town Highway Superintendents for culvert design, sizing and placement.

Action Items:

- 1. Provide technical assistance and educational support to municipalities for sizing and the design of routine culvert replacements.**
 - May 2011 – April 2013 SCMP_r Staff, DCDPW**

- 2. Enable municipalities to apply for funding through the grants program for high priority culverts that are improperly sized or aligned and causing stream instability and/or water quality issues.**
 - May 2011 – April 2013 SCMP_r Staff, DCDPW**

Recommendation 10: Participation with the Delaware County Action Plan (DCAP)

The Stream Corridor Management Program will continue to work closely with all DCAP participants to integrate the West Branch Delaware River Stream Corridor Management Plan and its recommendations into all relevant components of the Delaware County Action Plan.

Action Items:

- 1. Attend regular meetings of DCAP and advocate for inclusion of Stream Corridor Management Plan and its recommendations into all relevant components of the Delaware County Action Plan.**
 - May 2011 – April 2013 DCPD Director, DCSWCD Executive Director, SCMPr Coordinator**

Recommendation 11: Expand Public Education and Outreach Efforts

The Stream Corridor Management Program (SCMP_r) should expand public education and outreach efforts to better inform and educate all stakeholders, including municipalities, regarding stream stewardship, the importance of floodplain function, stream processes and the importance of riparian vegetation. These efforts should be developed and implemented in cooperation with the Project Advisory Committee with funding from the Catskill Watershed Corporation.

Action Items:

- 1. Fund and implement education and outreach activities identified and prioritized by the Project Advisory Committee Education and Outreach sub-committee.**
 - May 2011 – April 2013 PAC, SCMP_r Staff, DCPD staff

- 2. Educate municipalities and communities on the importance of floodplain function and the benefits of preserving floodplains, and opportunities for improving flood protection and reducing flood damages through the refinement and use of flood insurance rate maps (FIRMs) and other State/Federal programs.**
 - May 2011 – April 2013 DCPD Staff, SCMP_r Staff, NYSDEC

Recommendation 12: Geomorphic Assessments at Bridges and Culverts

The Stream Corridor Management Program (SCMP_r) and NYCDEP should develop a protocol and program to perform a full geomorphic assessment at prioritized bridges and large culverts. This program should be developed in cooperation with the New York City Department of Environmental Protection, Delaware County Department of Public Works, Delaware County Planning Department, Town and Village Highway Superintendents and New York State Department of Transportation.

Action Items:

1. Explore funding opportunities to provide local match a grant to conduct a full geomorphic assessment of small (5' – 20') publically owned hydraulic structures throughout Delaware County.
 - May 2011 – April 2013 DCDPW, SCMP_r Staff

2. Continue to advise and/or fund municipalities through the grants program for the replacement of publicly owned stream crossing structures that are causing stream instability and/or water quality issues.
 - May 2011 – April 2013 SCMP_r Staff

Recommendation 13: Flood Hazard Mitigation and Flood Recovery

Work with Delaware County Planning Department and Emergency Services to develop a county-wide Hazard Mitigation Plan. Continue to work with the Delaware County Board of Supervisors, New York City Department of Environmental Protection (NYCDEP), New York State Department of Environmental Conservation (NYSDEC) and the State Emergency Management Office (SEMO) to revise the Federal Emergency Management Agency (FEMA) flood study and floodplain maps.

Action Items:

1. Provide assistance to the Delaware County Planning Department and Delaware County Emergency Services through steering committee meetings for the development of the Multi Jurisdictional All Hazards Mitigation Plan.
 - May 2011 – December 2011 DCSWCD SCMPr Coordinator
2. Provide documentation of completed flood hazard mitigation projects to the Hazard Mitigation Coordinator.
 - May 2011 – April 2013 SCMPr Staff
3. Provide assistance as requested by the Director of Emergency Services to the Emergency Operations Center during flood related events.
 - May 2011 – April 2013 SCMPr Staff
4. Develop a list of historic problem areas where streams impact infrastructure during flood events and correlate to stream gage stage heights.
 - May 2011 – April 2013 SCMPr Staff
5. Work with communities to understand, utilize and revise (FEMA) floodplain maps.
 - May 2011 – April 2013 DCPD, NYC DEP Project Manager, NYSDEC, SCMPr Staff
6. Work with communities to update local ordinances, laws and comprehensive land use plans to incorporate elements of the Stream Corridor Management Plan its recommendations and stream stewardship principles.
 - May 2011 – April 2013 DCPD, SCMPr Staff
7. Provide technical assistance to municipalities with emergency stream intervention measures during flood recovery.
 - May 2011 – April 2013 SCMPr Staff

Recommendation 14: Continuation of Geomorphic Research / Assessments

The Stream Corridor Management Program (SCMP_r) and New York City Department of Environmental Protection, in consultation with the Project Advisory Committee, should continue Rosgen Level II assessments and perform Rosgen Level III and Level IV assessments at prioritized locations throughout the West Branch Delaware River watershed.

Action Items:

1. Perform Rosgen Level II assessment of Steele Brook in Delhi
 - June 2011 – October 2011 SCMP_r Staff
2. Coordinate the development of the Village of Walton Third Brook Management Plan to be created by a consultant, funded by the NYS DOS and NYC DEP.
 - June 2012 SCMP_r Staff
3. Work with the PAC to identify and prioritize stream reaches that require further assessments.
 - May 2011 – April 2013 SCMP_r Staff

Recommendation 15: Seek Funds Necessary for Construction of Walton Streambank Stabilization Projects

The Stream Corridor Management Program (SCMP_r) will continue to seek all funds necessary to implement two streambank stabilization projects located at Terrace Avenue and South Street in the Village of Walton.

Action Items:

- 1. Terrace Avenue Project completed.**
- 2. South Street Project completed.**
- 3. Monitor and evaluate the effectiveness of select projects.**
 - May 2011 – April 2013 SCMP_r Staff**

Recommendation 16: Prioritization of Identified Stream Intervention Projects

The Stream Corridor Management Program, working with the Project Advisory Committee and New York City Department of Environmental Protection, will prioritize potential restoration reaches relative to the type and level of intervention needed.

Action Items:

1. **Develop a formal protocol for the prioritization of Stream intervention projects**
 - **October 2011 SCMPr Staff, NYC DEP, PAC**
2. **Implement the Village of Walton Floodplain Reclamation project at West Brook in collaboration with the Open Space Institute and the Village of Walton. This project is a FAD deliverable due May 2012.**
 - **May 2011 – October 2011 SCMPr Staff**
3. **Implement the Third Brook Corridor Mass Slope Failure Mitigation (WRDA grant) project at Third Brook as per the NYSDOS watershed management plan recommendations.**
 - **June 2012 – April 2013 SCMPr Staff**
4. **Implement the East Brook Slope Failure Project (County Route 22 Phase II project a FAD deliverable due May 2012)**
 - **May 2012 SCMPr Staff**
5. **Design and implement approved Delaware Watershed Stream Management Implementation Grant Program projects within the West Branch of the Delaware River watershed.**
 - **May 2011 – April 2013 SCMPr Staff**

List of projects approved to date under the grant program:

**Mallory Brook culvert replacement, Town of Hamden
Lake Odell Road stormwater project, Town of Harpersfield
Pines Brook culvert outfall, Town of Walton**

Roxbury Mountain Road culvert replacement, Town of Stamford
Beers Brook Stream Bank Stabilizations (site 8a and site 8d), Town of Walton
Pine Swamp Rd. debris management project, Town of Tompkins
Chambers Hollow streambank stabilization project, Town of Hamden
Hydroseeder for intermunicipal use in stream and watercourse erosion control, Town of Walton

Recommendation 17: Develop a Process for Updating the West Branch Delaware River Stream Corridor Management Plan

In cooperation with the Project Advisory Committee and New York City Department of Environmental Protection, the Stream Corridor Management Program shall develop a process for updating the West Branch Delaware River Stream Corridor Management Plan.

Action Items:

1. **Work with the Project Advisory Committee and its Sub-Committees to initiate a comprehensive review of The West Branch Delaware River Stream Corridor Management Plan and initiate a process to update the plan as required.**
 - **November 2012 PAC, DCPD, SCMPr Staff, DEP staff**