### DELAWARE COUNTY STREAM CORRIDOR MANAGEMENT PROGRAM

## TWO-YEAR ACTION PLAN FOR THE EAST BRANCH DELAWARE RIVER (PEPACTON RESERVOIR BASIN)



May 2012 - April 2014

### **Table of Contents**

### Introduction

### **RECOMMENDATION #1**

Scientifically-Based Post-Flood Emergency Stream Intervention

### **RECOMMENDATION #2**

Provide Technical Assistance To Local Highway Departments

### **RECOMMENDATION #3**

Implement Streamside Assistance Program

### **RECOMMENDATION #4**

Continue with and Enhance Education and Outreach Efforts

### **RECOMMENDATION #5**

Provide Annual Floodplain Development Permit Training for Municipal Officials

### **RECOMMENDATION #6**

Enhance Local Land Use Laws and Ordinances

### **RECOMMENDATION #7**

Adopt Principles of Stream Stewardship at the Municipal Level

### **RECOMMENDATION #8**

Streamline Stream Work Permitting

### **RECOMMENDATION #9**

Selective Stream Gravel Management

### **RECOMMENDATION #10**

Provide Assistance to Community Watershed Groups/Associations and Government Entities

### **RECOMMENDATION #11**

Participation with the Delaware County Action Plan (DCAP)

### **RECOMMENDATION #12**

Debris Management

### **RECOMMENDATION #13**

Prioritization of Identified Stream Intervention Projects

#### **RECOMMENDATION #14**

Enhancement of East Branch Watershed Fisheries

### **RECOMMENDATION #15**

**Enhance Recreation Opportunities** 

### **RECOMMENDATION #16**

Invasive Species Management

### **RECOMMENDATION #17**

Flood Hazard Mitigation and Flood Response and Recovery

### **RECOMMENDATION #18**

**Utilize Existing Funding Sources** 

### **RECOMMENDATION #19**

Develop a Process for Updating the EBDR Stream Corridor Management Plan

### Introduction:

A comprehensive Stream Corridor Management Plan (SCMP) for the East Branch Delaware River (EBDR) was completed in December 2007 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 and NYCDEP is transitioning to the implementation phase of the local Stream Corridor Management Plan's (SCMP) 19 recommendations. This Two-Year Action Plan for the East Branch Delaware River outlines certain action items that are pertinent to the implementation of the SCMP recommendations and the overall program development.

Throughout the development of the East Branch Delaware SCMP, a Project Advisory Committee (PAC) was formed to represent the interests of local officials, residents, businesses, and agencies living and working in the NYC watershed. The PAC assisted in the development of the SCMP recommendations and is now working collaboratively to guide the Stream Corridor Management Program in the implementation of the SCMP recommendations. The PAC provides review and comment on program development and projects to the SCMPr and the DCSWCD board. The PAC is further broken down into four sub-committees: Fisheries and Recreation, Education and Outreach, Highway Infrastructure, and Floodplain Management. These sub-committee contribute their expertise to the relevant recommendations of the SCMP.

## **Summary of Program Status:**

In response to Tropical Storms Irene and Lee, DCSWCD, DCPD and DEP have committed resources aiding EBDR communities to recover from the flood and build greater resiliency to future flood events. This is evident in the action items of this plan, in particular its support for flood hazard mitigation planning, flood recovery projects under the Emergency Watershed Protection program, floodplain mapping and continuation of flood response training.

### **Delaware Watershed Stream Management Implementation Grant**

The Delaware Watershed Stream Management Implementation Grant Program is available to fund construction projects and programs within the NYC water supply watersheds for the implementation of the recommendations and the SCMP 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. This program is the Delaware basin version of the FAD required Stream Management Implementation grant Program (SMIP).

### **Stream Corridor Management Program (SCMPr)**

Stream Corridor Management Program shall consist of all partnering agencies, such as the Delaware County Soil and Water Conservation District, New York City Department of Environmental Protection and Delaware County Planning Department.

### Catskill Stream Buffer Initiative (CSBI) Funding

Catskill Stream Buffer Initiative (CSBI) will work with local streamside landowners to provide assistance to enhance and maintain riparian buffers. Technical assistance from staff members can include; landowner consultation, landowner riparian operation and maintenance plans, and vegetative plantings to establish riparian buffers.

### **Demonstration Project Funds**

Demonstration projects provide significant opportunities to design, build, and monitor cutting-edge stream management techniques. These projects make use of fluvial geomorphic principles and may involve complete reconstruction.

### **Conservation Resource Enhancement Program (CREP) Funds**

Provide assistance for the implementation of Conservation Resource Enhancement Program (CREP) in areas that are currently not eligible under the Program's guidelines.

## Recommendation 1: Scientifically-Based Post-Flood Emergency Stream Intervention

The SCMPr should work cooperatively with the NYCDEP and the Project Advisory Committee to improve immediate post-flood emergency intervention capabilities by demonstrating and training contractors and local municipalities in scientifically-based stream principles, procedures and methods.

- 1. Provide Post-Flood Emergency Stream Intervention training to contractors, local municipalities, and agencies.
  - May 2012 December 2012 Workshop, SCMPr Staff, NYC DEP Project Managers
- 2. Continue to provide technical assistance to municipalities with emergency stream intervention measures during flood recovery.
  - May 2012 April 2014 SCMPr Staff

## Recommendation 2: Provide Technical Assistance To Local Highway Departments

The SCMPr, in cooperation with the Delaware County Department of Public Works (DCDPW) and the NYCDEP, should enhance communication with local highway departments. These efforts should be developed and implemented in cooperation with the PAC and the DCPD, and utilize Catskill Watershed Corporation (CWC) program funds for stormwater retrofits and other practices as appropriate.

- 1. Provide technical assistance and support on the Medium Hydraulic Structure Study SMIP contract to evaluate watershed culverts for hydraulic capacity and prioritize them for upgrade through the SMIP Grant Program.
  - May 2012 April 2014 DCDPW, SCMPr Staff
- 2. Provide technical assistance and educational support to municipalities for sizing and the design of routine culvert replacements.
  - May 2012 April 2014 SCMPr Staff, DCDPW
- 3. Enable municipalities to apply for funding through the grants program for infrastructure projects causing stream instability and/or water quality issues.
  - May 2012 April 2014 SCMPr Staff, DCDPW
- 4. Attend regular meetings of Municipal Highway Superintendents and keep them up to date on status of SWCD projects, training opportunities and flood recovery efforts.
  - May 2012 April 2014 SCMPr Project Coordinator

- 5. Advise and assist EBDR communities and the DCPD with updates to the local Highway Management Plans to address best management practices as they relate to roadway and stormwater infrastructure improvements.
  - May 2012 April 2014 SCMPr Staff, DCPD, DCDPW and EBDR communities
- 6. Provide technical assistance to EBDR community highway departments and DCDPW by reviewing potential stream crossings including ;large culverts and bridges.
  - May 2012 April 2014 SCMPr Staff, DCDPW and EBDR communities
- 7. Continue to support best management practices for construction of stream crossings through the SMIP Grant Program by allowing the acquisition of necessary equipment (i.e. dewatering pumps, hydro-seeder, etc.)
  - May 2012 April 2014 SCMPr Staff, DCPD, DCDPW and PAC

## Recommendation 3: Implement the Streamside Assistance Program (renamed Catskill Streams Buffer Initiative)

The SCMPr should implement the Streamside Assistance Program as defined in the 2007 Filtration Avoidance Determination. This effort should be developed and implemented in cooperation with the PAC.

- 1. Continue the implementation of the Catskill Streams Buffer Initiative (CSBI) through the DCSWCD Stream Corridor Management Program Contract funded by NYC DEP.
  - May 2012 April 2014 SCMPr Staff, NYC DEP CSBI Coordinator
- 2. Continue to update and enhance the protocol for prioritizing the implementation of the Catskill Streams Buffer Initiative.
  - May 2012 April 2012 SCMPr Coordinator, DCSWCD CSBI Coordinator, NYC DEP CSBI Coordinator
- 3. Development of a minimum of 5 Riparian Corridor Management Plans (RCMP) per year (both EBDR and WBDR).
  - June 2012 June 2014 DCSWCD CSBI Coordinator, DCSWCD SCMPr 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 2012 June 2014 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 2012 June 2014 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 2012 June 2014 DCSWCD CSBI Coordinator
- 7. Develop planting plans as requested for applicable Stream Program projects in coordination with Stream Program staff.
  - June 2012 June 2014 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 2012 June 2014 DCSWCD CSBI Coordinator, NYC DEP CSBI Coordinator
- 9. Develop local resources to maintain availability of native vegetation planting stock as needed.
  - June 2012 June 2014 DCSWCD CSBI Coordinator

### Recommendation 4: Continue with and Enhance Education and Outreach Efforts

The SCMPr should cooperate with the NYCDEP and the PAC to better inform and educate all stakeholders regarding stream stewardship, the importance of floodplain function, stream processes, and the importance of streamside vegetation. Education and outreach efforts should be developed and implemented in cooperation with the PAC, with cooperation from the Catskill Watershed Corporation's (CWC) Education Program.

- 1. Fund and implement education and outreach activities identified and prioritized by the Project Advisory Committee Education and Outreach sub-committee.
  - May 2012 April 2014 PAC, SCMPr Staff
- 2. Continue to 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 participation in East Branch Delaware Flood Commission, the Map Steering Committees supporting the refinement and use of flood insurance rate maps (FIRMs) and other State/Federal programs.
  - May 2012 April 2014 DCPD Staff, SCMPr Staff, NYSDEC
- 3. Work with EBDR area schools and BOCES programs to educate students and promote awareness of stream process, floodplain preservation and streamside vegetation. Develop and promote a stream awareness program that can be used in EBDR area schools and with you the groups.
  - May 2012 April 2014 SCMPr Staff, DCPD staff, NYCDEP, CWC, BOCES and EBDR area schools

- 4. Provide training and outreach to area real estate agents and bankers about the importance of preserving floodplains and the required disclosures of floodplain development permitting requirements.
  - May 2012 April 2014 SCMPr Staff, DCPD staff and NYCDEP

# Recommendation 5: Provide Annual Floodplain Development Permit Training for Municipal Officials

The SCMPr, in cooperation with the NYSDEC, NYCDEP, DCPD and PAC should work toward providing annual Floodplain Development Permit training for local municipal officials.

- 1. Provide opportunity for annual floodplain development permit training for local municipal officials.
  - May 2012 April 2014 PAC, SCMPr Staff, NYC DEP, NYS DEC
- 2. Development opportunity for Municipal Officials to obtain credits for participating in educational activities.
  - May 2012 April 2014 DCPD, SCMPr Staff
- 3. Support training of Floodplain Administrators (Code Officers), Planners and Stream Managers in various aspects of floodplain management through State and Federal programs to enable them to achieve and maintain Certification as Floodplain Managers through the Association of State Floodplain Managers.
  - May 2012 April 2014 DEC, FEMA, ASFM, NYSAFSM

### Recommendation 6: Enhance Local Land Use Laws and Ordinances

The SCMPr, in cooperation with the DCPD, NYCDEP, PAC and other interested stakeholders, should work toward including a stream management component in local Comprehensive Plans, local laws and local management practices as may be appropriate.

- 1. Provide assistance to local municipalities in development of stream components in local comprehensive plans, local laws and local management practices.
  - May 2012 April 2014 PAC, DCPD, SCMPr Staff, NYC DEP
- 2. Provide technical assistance to local municipalities to enhance local laws and local management practices.
  - May 2012 April 2014 PAC, DCPD, SCMPr Staff, NYC DEP
- 3. Continue to provide technical review assistance to local planning and town boards when working on projects that include streams, culverts or floodplain infringements.
  - May 2012 April 2014 DCPD, SCMPr Staff

## Recommendation 7: Adopt Principles of Stream Stewardship at the Municipal Level

Local legislative boards should incorporate principles of stream stewardship into the creation and/or revision of their town or village comprehensive plans and local land use regulations.

### **Action Items:**

1. Adoption completed for the following:

### Towns:

Andes, Bovina, Halcott, Hamden, Hardenburg, Middletown, Roxbury

### Villages:

Margaretville, Fleischmanns

- 2. Promote and secure adoption and extension of MOUs within EBDR communities
  - May 2012 April 2014 DCPD, SCMPr Staff
- 3. Encourage municipalities to continue to develop good stream stewardship in their local comprehensive plans and land use regulations.
  - May 2012 April 2014 DCPD, SCMPr Staff, NYC DEP
- 4. Encourage municipalities to continue to participate in the PAC and Sub-committees.
  - May 2012 April 2014 SCMPr Staff, NYC DEP, DCPD

### **Recommendation 8: Streamline Stream Work Permitting**

The Stream Corridor Management Program (SCMPr) 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.

- 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.
  - 2012 2014 SCMPr Staff, NYCDEP RRE and SMP staff, US Corps of Engineers, DCDPW

## Recommendation 9: Selective Stream Gravel Management

The SCMPr, NYCDEP, and the Delaware County Department of Watershed Affairs should work with the NYSDEC and U.S. Army Corps of Engineers to identify and fund an independent stream scientist or engineer to create a guidance document with recommendations on how, when and where to scientifically manage problematic gravel deposits within the East Branch Delaware River system. Such a document might require a study. In this interim, the Delaware County SCMPr Draft Stream Maintenance Protocol would be employed.

- 1. Develop and implement an education 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.
  - May 2012 April 2014 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 2012 April 2014 SCMPr Staff
- 3. Design and implement two demonstration projects that utilize the existing gravel management protocol developed by the SCMPr.
  - May 2012 April 2014 SCMPr Staff

- 4. Develop a Delaware County protocol for municipalities to manage woody debris in stream systems.
  - May 2012 April 2014 DCSWCD SCMPr Coordinator, NYC DEP Project Manager, DCDPW
- 5. Undertake a periodic review of the gravel maintenance protocol developed by the SCMPr.
  - May 2012 April 2014 SCMPr Staff, NYC DEP Staff

## Recommendation 10: Provide Assistance to Community Watershed Groups/Associations and Government Entities

The SCMPr, working with the PAC and NYCDEP, should provide technical assistance and general direction to community watershed groups/associations and government entities that are actively engaged in grassroots stream stewardship/management activities.

- 1. Provide technical assistance and general direction to community watershed groups/association and government entities.
  - May 2012 April 2014 DCPD, SCMPr staff, NYC DEP
- 2. Provide technical assistance and support to East Branch Delaware River Flood Commission.
  - May 2012 April 2014 SCMPr staff, NYC DEP, DCPD

## Recommendation 11: 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 East Branch Delaware River Stream Corridor Management Plan and its recommendations into all relevant components of the Delaware County Action Plan.

- 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 2012 April 2014 DCPD Director, DCSWCD Executive Director, SCMPr Coordinator

## Recommendation 12: Debris Management

The SCMPr should cooperate with the Project Advisory Committee, Delaware County Solid Waste Coordinator and NYCDEP to develop a protocol for inventorying floodplain debris and assist municipalities and communities with developing appropriate action plans for debris management.

- 1. Develop a Delaware County protocol for municipalities to manage woody debris in stream systems.
  - May 2012 April 2014 DCSWCD SCMPr Coordinator, NYC DEP Project Manager, DCDPW
- 2. Design and implement two demonstration projects that utilize the woody debris protocol developed by the SCMPr.
  - May 2012 April 2014 SCMPr Staff
- 3. Undertake a periodic review of the woody debris protocol developed by the SCMPr.
  - May 2012 April 2014 SCMPr Staff, NYC DEP Staff

## Recommendation 13: Prioritization of Identified Stream Intervention Projects

The SCMPr, working with the PAC and NYCDEP, should prioritize potential restoration reaches, including the type and level of intervention needed.

- 1. Design and implement approved grants projects within the East Branch of the Delaware River, as time permits with the implementation of EWP.
  - May 2012 April 2014 SCMPr Staff
- 2. Provide funding and technical assistance for the design and construction of flood recovery projects under the NRCS Emergency Watershed Protection program.
  - May 2012 December 2012, SCMPr staff, NYCDEP, NRCS, Army Corp, NYS DEC, Local Municipalities

### Recommendation 14: Enhancement of East Branch Watershed Fisheries

The SCMPr, in cooperation with the NYSDEC, the NYCDEP, and the PAC, should provide support to local grass-roots efforts, watershed associations, and fisheries organizations to enhance existing fisheries in the East Branch Delaware River watershed.

- 1. Provide technical assistance and general direction to local grass-roots efforts, watershed associations and fisheries organizations to enhance existing fisheries.
  - May 2012 April 2014 DCPD, SCMPr staff, NYC DEP
- 2. Continue to work with the East Branch Recreation and Fisheries in the development and implementation of the recreation management plan.
  - May 2012 April 2014 DCPD, SCMPr staff, NYC DEP
- Encourage groups to work with municipalities to apply for funding through the grants program for high priority critical impacted fishing areas that are improperly sized or aligned and causing stream instability and/or water quality issues.
  - May 2012 April 2014 SCMPr Staff, DCPD, NYC DEP, PAC

## Recommendation 15: Enhance Recreation Opportunities

The SCMPr, in cooperation with the PAC and NYCDEP, should assist communities to enhance streamside recreational opportunities where possible. These efforts should be developed and implemented in cooperation with the PAC and with assistance with the DCPD.

- 1. Provide technical assistance to communities to enhance streamside recreational opportunities.
  - May 2012 April 2014 DCPD, SCMPr staff, NYC DEP
- 2. Continue to work with the East Branch Recreation and Fisheries in the development and implementation of the recreation management plan.
  - May 2012 April 2014 DCPD, SCMPr staff, NYC DEP
- 3. Work with the Delaware County Chamber of Commerce and the East Branch Recreation and Fisheries subcommittee to promote recreational fishing in the Pepacton Reservoir and support the new boating program through outreach promotional activities such as sponsored fishing days, boating safety and fishing safety courses, etc.
  - May 2012 April 2014 SCMPr Staff, DCPD, NYC DEP, EBDR Recreation and Fisheries sub-committee, CWC,
    DC Chamber of Commerce

## Recommendation 16: Invasive Species Management

The SCMPr, in cooperation with NYCDEP, PAC, TNC, Catskill Region Invasive Species Partnership (CRISP), and other interested stakeholders, should continue its involvement with invasive species management, following and promoting all invasive plant programs in the East Branch watershed. These efforts should be developed and implemented in cooperation with the PAC.

- 1. Continue to work collaboratively with Delaware County Solid Waste Facility to compost Japanese Knotweed.
  - May 2012– April 2014 SCMPr staff, DCDPW
- 2. Continue to participate in CRISP
  - May 2012– April 2014 SCMPr staff, DCPD

## Recommendation 17: Flood Hazard Mitigation and Flood Response and Recovery

The SCMPr should continue to work with the Delaware County Planning Department and Emergency Services to implement the county-wide, multi-jurisdictional, All-Hazards Mitigation Plan. The SCMPr should continue to work with the Delaware County Board of Supervisors, the NYCDEP, the NYSDEC, and the State Emergency Management Office (SEMO) to revise the FEMA flood study and floodplain maps.

- 1. Provide assistance to the Delaware County Planning Department and Delaware County Emergency Services by attending regular steering committee meetings for the development of the Multi Jurisdictional All Hazards Mitigation Plan.
  - May 2012 December 2014 DCSWCD SCMPr Coordinator
- 2. Provide documentation of completed flood hazard mitigation projects to the Hazard Mitigation Coordinator.
  - May 2012 April 2014 SCMPr Staff
- 3. Provide assistance as requested by the Director of Emergency Services to the Emergency Operations Center during flood related events.
  - May 2012 April 2014 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 2012 April 2014 SCMPr Staff
- 5. Work with communities to understand, utilize and revise (FEMA) floodplain maps.
  - May 2012 April 2014 DCPD, NYC DEP Project Manager, NYSDEC, FEMA
- 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 2012 April 2014 DCPD, SCMPr Staff
- 7. Provide technical assistance to municipalities with emergency stream intervention measures during flood recovery.
  - May 2012 April 2014 SCMPr Staff
- 8. Continue to support USGS efforts to create inundation mapping throughout the basin.
  - May 2012 April 2014 DCPD, SCMPr Staff
- 9. Work to create a new educational program that promotes a better understanding of meteorology, stream gages and other assessment tools throughout the East Branch Basin schools to better understand and model stream flows and assist with supporting grant application for schools to utilize existing and/or purchase stream gages and rain fall gages to better model the hydrology in the basin.
  - May 2012 April 2014 DCPD, SCMPr Staff
- 10. Facilitate and support scientific flood modeling studies throughout the East Branch basin
  - May 2012 April 2014 SCMPR staff, DEP
- 11. Design and implement flood mitigation practices including but not limited to floodplain reclamation, scientific channel dimensioning, and natural stream design techniques throughout the East Branch basin.
  - May 2012 April 2014 SCMPr Staff, DEP

## Recommendation 18: Utilize Existing Funding Sources

The SCMPr should cooperate with the NYCDEP to explore opportunities for existing funding sources to enable implementation of recommendations identified in this Stream Corridor Management Plan.

- 1. Continue to explore opportunities for utilizing existing funding sources to implement recommendations.
  - May 2012 April 2014 DCSWCD SCMPr Coordinator

## Recommendation 19: Develop a Process for Updating the East Branch Delaware River Stream Corridor Management Plan

In cooperation with the PAC and the NYCDEP, the Stream Corridor Management Program should develop a process for updating the East Branch Delaware River Stream Corridor Management Plan.

- 1. Work with the Project Advisory Committee and its Sub-Committees to initiate a comprehensive review of The East Branch Delaware River Stream Corridor Management Plan and initiate a process to update the plan as required.
  - November 2013 PAC, DCPD, SCMPr Staff, DEP