

~10. Watershed Programs~

Watershed Agricultural Council

The Watershed Agricultural Council (WAC) was formed in 1992 to assist the NYCDEP in the development and implementation of voluntary watershed protection programs that include agriculture and forestry, with the overall objective of safeguarding and improving source water quality in the New York City watershed region through various conservation programs. Two programs pertinent to stream management are the Watershed Agricultural Program (WAP) and the Watershed Forestry Program, further described below. Further information is available on the WAC website: www.nycwatershed.org (Verified September 27, 2007)

Watershed Agricultural Program

WAP is a contractual partnership between WAC and the following agencies: Delaware County Soil & Water Conservation District, USDA Natural Resources Conservation Service (NRCS) and Cornell Cooperative Extension (CCE). These partner agencies develop and implement Whole Farm Plans (WFP) that address goals documented in the United States Environmental Protection Agency's Filtration Avoidance Determination and the WAC contract with New York City. WAP program staff consists of NRCS planners, agronomists and engineers, DCSWCD civil engineering technicians and technicians, and CCE crop, livestock, and nutrient management specialists.

WAP teams work collectively to plan and implement agricultural Best Management Practices (BMPs) as an integrated system on each participating farm in both large and small farm programs in the Catskill/Delaware Watersheds. These water quality BMPs are designed and constructed to NRCS standards and specifications and include: barnyard management systems, manure storage, roof runoff management, grazing systems, livestock water systems, livestock trails, comprehensive nutrient management, diversions, and crop rotation, to name a few. The Conservation Reserve Enhancement Program (CREP), implemented by USDA through WAP, is a very important riparian buffer program for land under agricultural production. Other practices not covered by NRCS standards are designed and implemented by a team of WAC engineers and technicians.

Watershed Forestry Program

WAC administers the Watershed Forestry Program with funding from the U. S. Forest Service and NYCDEP to address forestry needs within the Catskill/Delaware Watersheds. Community-based forestry groups and foresters provide technical support with the New York State Department of Environmental Conservation. The program encourages private forest landowners to actively manage their forests using sustainable best management practices and offers information and technical assistance to help them reach their goals, while observing practices that ensure the preservation of water quality.

The program offers training for consulting foresters and loggers and partners with the New York Logger Training's "Trained Logger Certification" program to help timber harvesters learn about a range of topics from safety and first aid to sustainable forestry to BMPs for water quality. The program also encourages forest land owners to develop and implement Forest Management Plans and provides technical assistance and some cost-sharing for implementation of forest management and riparian forest BMPs. In addition, the Watershed Forestry Program also coordinates four model forests throughout the watershed that integrate research, demonstration, continuing education and public outreach.

With funding from the USDA Forest Service Economic Action Program, eligible wood-based businesses in the NYC Watershed regions East and West of the Hudson River are awarded grants through the Forestry Grants Program to assist in a variety of projects ranging from website design and marketing to apprenticeship programs and new equipment. The results are improved safety and efficiency, cutting-edge wood technology and innovative marketing campaigns, all of which emphasize WAC's goal that forestry remain a viable enterprise to protect water and to bolster economic vitality in watershed communities.

Delaware County Action Plan

The Delaware County Action Plan (DCAP) was formulated in 1999 to address water quality issues in the New York City watershed. DCAP is a comprehensive strategy developed to meet the needs of Delaware County as a result of the Cannonsville basin being designated a phosphorus-restricted basin. DCAP coordinates with public and private agencies (listed below) to develop water quality initiatives and seek funding for implementation.

DCAP lead agencies include the DCSWCD and the following Delaware County Governmental Departments: Planning, Public Works, Watershed Affairs and Economic Development, and the New York State Water Resources Institute (WRI). Other DCAP participants include: Delaware County: Industrial Development Agency, Chamber of Commerce, and Cornell Cooperative Extension; Regional: Catskill Watershed Corporation, Watershed Agricultural Council and NYCDEP; New York State Departments: Environmental Conservation, Health, State, Agriculture and Markets, Soil and Water Conservation Committee, and Cornell University researchers. Federal Agencies: Environmental Protection Agency, Department of Agriculture, Natural Resources Conservation Service, and Army Corps of Engineers.

DCAP adopted a multiple barrier approach to address potential pollutants, particularly phosphorus. The barriers utilized are called the Initial Source Barrier, the Transport Barrier and the Stream Corridor Barrier. Current components of DCAP include management programs for stormwater and flooding, highway runoff, on-site septic systems, precision livestock feeding, forage management, SCMP, and monitoring and modeling of best management practices to assess phosphorus reduction. By coordinating all water quality efforts under the DCAP umbrella, these programs are working together

to collectively reduce pollutants entering watercourses and to improve overall water quality. The following categories demonstrate DCAP effectiveness to date:

Stream Corridor Management

Data has been gathered in the watershed for development of this Plan. This information will be useful for residents and municipalities to aid in making stream management decisions. This information is also being integrated with other DCAP efforts, particularly with stormwater management and highway maintenance programs, to further enhance the effectiveness of these local water quality initiatives, further described below:

Stormwater Management

The Delaware County Planning Department (DCPD) has developed the following long-term management programs:

- Inventory, Assessment and Evaluation of Stormwater Sources and Infrastructure
Goal: to identify all point and non-point sources of stormwater in village and hamlet areas and manage them to reduce their impact on water quality.

Work Completed:

- A detailed evaluation of stormwater sources and conveyance systems is underway in the Pepacton basin using GPS to locate stormwater infrastructure and culvert outfalls in hamlets and villages. A Geographic Information Systems (GIS) database has been created combining this information with soils, land use and topographic datasets.
 - Pilot projects of stormwater collection, conveyance and treatment methods have been implemented in the Cannonsville Basin through stormwater retrofit projects in the Village of Walton and the Village of Hobart.
 - Stormwater assessments have been completed in the Village of Margaretville and a Stormwater Management Plan has been prepared and accepted by both the Village of Margaretville and the Town of Middletown.
 - With the use of grant moneys from New York State all stormwater outfalls have been located in the Pepacton and Cannonsville Basins as part of an on going inventory project to understand and improve stormwater management and reduce flooding and pollution from inadequate stormwater infrastructure.
- Local Implementation and Municipal Plan Development
Goals: to work with each municipality to develop local initiatives for water quality protection through stormwater management and demonstrate the role of water quality to community economic development; also, to develop Stormwater Management Plans consistent with the NYCDEP Watershed Regulations and Phase II EPA Stormwater Regulations.

Work Completed:

- DCPD developed a Stormwater Management Plan for the Village of Margaretville in 2002. The Plan inventoried the existing infrastructure and developed strategies to improve the village stormwater system as well as made recommendations for changes in the Local Laws regulating land use, to include stormwater practices as part of the local review process.
- Source Water Protection Plans have been completed for the Villages of Margaretville and Fleischamns as well as the hamlet of Roxbury in the East Branch corridor and a plan is being prepared for the Village of Walton currently. These plans delineate sensitive areas surrounding the community water supplies and recommends more restrictive land use policies within these areas.

Highway Management Activities

The Delaware County Department of Public Works (DCDPW) completed an inventory and assessment of storm drainage infrastructure along county highways in 1999 and continues to maintain a comprehensive inventory and assessment program for all pipes and their conditions. DCDPW has since evaluated alternative repair strategies for culverts that have reached the end of their useful life. These alternatives include culvert cut and cover practices; line inverts of existing pipes with concrete; slip line existing pipes and fill interstitial space; as well as the use of natural bottom square culverts.

Ongoing management practices include: 1) Sediment removal from culverts and catch basins with a vacuum truck; 2) In-place road culvert stabilization, which includes slip lining failed culverts (when feasible) to minimize sedimentation caused by traditional excavation and replacement. 3) De-icing material control, which includes installation of modern control equipment on material spreaders to facilitate precise metering of de-icing materials. 4) All new structures (drop inlets) installed by DCDPW include sumps. These new structures are part of routine maintenance practices and capital improvement projects.

DCDPW along with the assistance of DCPD has inventoried and cataloged all major drainage features on county highways using GPS and a GIS database. The databases are kept up to date with continual updates from DCDPW crews after maintenance and repairs to any infrastructure. DCPD maintains and houses the databases and provides continuous support to DCDPW on this program.

As a result of Delaware County's efforts to improve stormwater, DCPD along with DCDPW developed a town highway management program. DCPD has been successful at securing moneys from the New York State Department of State (NYSDOS), New York State Department of Environmental Conservation (NYSDEC) and the CWC to inventory town highways and all associated infrastructure and drainage systems. Data has been collected using GPS in the towns of Davenport, Andes, Kortright, Roxbury, Walton, Bovina, Colchester, Deposit and Meredith. Through grant programs from NYSDEC moneys have been secured to complete the inventories in all Delaware County

communities by the year 2010. The inventories have been cataloged through a GIS database and all infrastructure has been mapped along with a connection to pictures of each item. DCPD along with DCDPW has continued to seek funding to continue phase two of developing the town highway management plans. Phase two requires an engineer assessment and evaluation of the infrastructure and the development of a multi-year capital investment plan.

Other activities include creation of wetlands towards the establishment of a mitigation bank on county-owned property in Walton, and research investigating the use of chipped passenger car tire chips as a medium to remove dissolved phosphorus from stormwater.

Additional information is available on the DCAP website:

<http://www.co.delaware.ny.us/depts/h2o/dcap.htm> (Verified September 27, 2007)

Catskill Watershed Corporation

The Catskill Watershed Corporation (CWC) is a not-for-profit local development corporation with a dual goal: to protect the water resources of the New York City watershed west of the Hudson River, while preserving and strengthening communities located in the region. The CWC was formed in January 1997 with the signing of the New York City Memorandum of Agreement between City, State, federal, local and environmental entities. To help offset the costs and restrictions of increased regulations and land purchases by the city, CWC is charged with developing and implementing several city-funded programs including residential septic rehabilitation, replacement and maintenance, community wastewater management, planning and installation of stormwater controls, road salt storage, public education and economic development. CWC also consults on recreational uses of city lands, tax assessment issues, and wastewater treatment plants planned for several watershed communities. These programs are intended to protect the quality of the water which sustains 9 million residents of New York City and its suburbs, while at the same time preserving and strengthening the rural communities within the 5-county Catskill and Delaware Watersheds. Further information is available on the CWC website: www.cwconline.org (Verified September 27, 2007).

Conservation Reserve Enhancement Program

On August 26, 1998, New York City entered into a Memorandum of Agreement (MOA) with the United States Department of Agriculture (USDA) and New York State to implement a Conservation Reserve Enhancement Program in the Catskill and Delaware Watersheds. This MOA allows watershed landowners to enter into 10 to 15 year contracts with the USDA to retire environmentally-sensitive agricultural lands from production. CREP helps establish forested or grass riparian buffers adjacent to watercourses and provides for fencing watercourses to exclude livestock. New York City helps offset costs for participating farms, technical and administrative assistance through its agreement with the Watershed Agricultural Council (WAC) located in Walton, New York. Most CREP implementation in the East Branch watershed consists of the establishment of riparian forest buffers through tree and shrub plantings and exclusionary livestock fencing, both of which are CREP priorities.