## Monitoring and Modeling

Monitoring and modeling serve a number of purposes related to water quality and the effects of land use and management programs upon it. Used together, monitoring and modeling can assist in decision-making by helping managers understand how environmental systems work and how these systems may react to changes made on the land.

Monitoring is used to gather information about how systems naturally operate, such as baseline data, identification of trends, and evaluation of direct changes in water quality as a result of implementation of management practices. Models can be employed to simulate natural systems and show what could be expected under specified conditions.

Confirmation by monitoring and modeling of the ability of selected best management practices to significantly reduce phosphorus losses is one important need.

## Stream Corridor Management

Stream corridors are complex ecosystems with their own unique management issues.

Sediment transport and associated nutrient loading from unstable stream banks are a major concern to water quality and aquatic habitat. The Delaware County Soil and Water Conservation District is currently gathering data for development of a comprehensive Stream Corridor Management Plan to address water quality improvement, aquatic habitat enhancement, flood hazard mitigation and stream channel stabilization. Fluvial geomorphic principles and techniques will be used in Plan Development.

## DCAP Mission:

*To assist Delaware County's residents, farmers, businesses and communities in meeting water quality restrictions and objectives without loss of economic vitality and growth.*

## Prepared by:

*Delaware County Board of Supervisors*

## Lead Agencies:

*Delaware County Departments of:*
*Watershed Affairs*
*Planning*
*Public Works*
*Economic Development*
*and the*
*Delaware County Soil and Water Conservation District*
*and*
*NYS Water Resources Institute*

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***For more information, contact the Delaware County Department of Watershed Affairs***
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***Telephone: (607) 746-8914***

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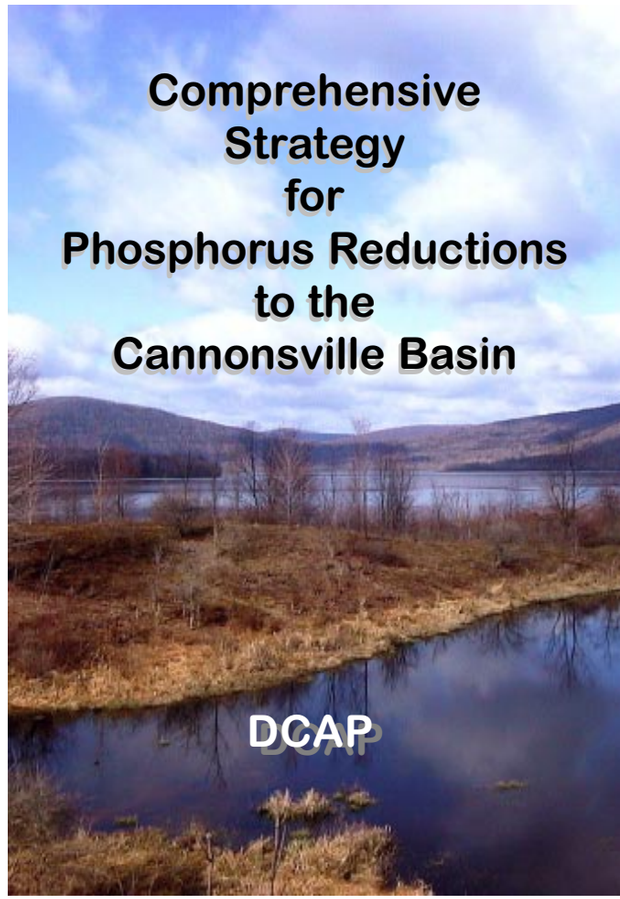



# Delaware County Action Plan

# Components of the Delaware County Action Plan

## *Stormwater Management*

Planning, designing and scientifically assessing and monitoring water quality projects for the purpose of protecting water quality and encouraging development consistent with the Memorandum of Agreement is the overriding principle of this component of DCAP. Identifying sites that may pose a potential threat to water quality based upon the three-barrier approach to water pollution (source, field and watercourse) is the goal.

Assessing existing stormwater infrastructure and identifying deficiencies provides information necessary to develop efficient and effective localized management tools. Incorporating these ideals into municipal planning as a basis for planning and design projects is critical in establishing a comprehensive stormwater runoff program.

## *Highway Runoff*

Locally specific management practices to minimize surface water contamination originating from County roads and highways in the Cannonsville Basin are underway.

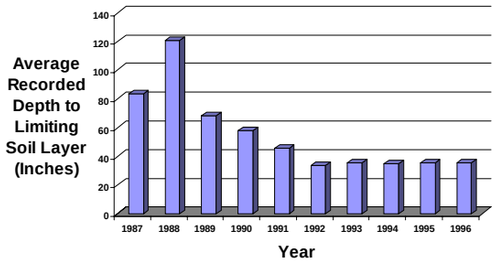
Associated research project questions are twofold:

1. What are the road features (drainage ditches, culverts, shoulder and embankments) in Delaware County, and to what extent are roads a source of nutrients and contaminants that adversely affect local water quality?
2. What Stormwater Management Practices are most suitable for roads in the Delaware County portion of the Cannonsville Basin to mitigate the transport of nutrients such as phosphorus to water courses as a result of runoff and snowmelt?

## *On-Site Septic Systems*

Estimating contributions of on-site septic systems to the total phosphorus load within the Cannonsville basin is the purpose of this component.

Results show that the majority of soils have characteristics that present problems to proper installation and functioning of conventional systems. Principal problems are restrictive subsoil, steep slopes and




shallow perched water tables. It appears likely that a large portion of pre 1991 septic systems are not treating wastewaters as intended.

Results indicate that 6,773 residential septic systems exist in the basin with an average age of 30 years and at an average distance of 417 feet from streams. Between 939 and 2190 kg of total phosphorus is entering surface waters per year from these systems, representing 15 to 35 percent of the total generated by this source.

## *Precision Feed Management*

Precision feed management involves investigating and implementing strategies to improve the phosphorus mass balance on dairy farms by reducing the imported and excreted (manure) phosphorus and improving phosphorus cycling within the farm. This is being accomplished by addressing purchased feed phosphorus supplementation and home-grown forage management.

Project results show that substantial reductions in phosphorus imports and excretions are possible through improved feed management.

**Simplified phosphorus cycle of the dairy farm.**