

Protecting New York City Water: Wastewater Programs in the Catskill-Delaware Watershed

by *Diane Galusha*

The Big Apple is a thirsty city. Every day, the businesses, institutions, and residents of New York City's five boroughs, as well as most of the communities in Westchester and Putnam Counties, utilize 1.3 billion gallons of water. Ninety percent of it comes from six large reservoirs in the Catskill Mountain region to the north and west, while 10 percent of the city's water comes from reservoirs east of the Hudson River. Some nine million people—half of the state's population—depend on this precious resource; indeed, the city could not survive long without it.

Helping to keep New York City's water clean is the Catskill Watershed Corporation (CWC), a nonprofit, local development corporation established in 1997. That year, New York City, under pressure from the U.S. Environmental Protection Agency to either filter the water or protect it at its source, signed a Memorandum of Agreement (MOA) with municipalities in its upstate watersheds, the state, and representatives of the environmental community.

The groundbreaking pact required the city to pay for environmental protection programs, and to capitalize an economic development fund in the five-county West-of-Hudson (WOH) watershed. In exchange, the city got a waiver from filtering its vast Catskill-Delaware supply. The New York City Department of Environmental Protection, which manages the water system and is responsible for watershed protection, received permission to institute tougher regulations and was granted a permit to purchase vacant land from willing sellers to prevent development in perpetuity.

The CWC was formed to develop and implement a number of the programs outlined in the MOA. Several more programs

were added, or enhanced, when the city's filtration waiver was renewed in 2002 for another five years. These programs include the following:

Septic Rehabilitation and Replacement

The CWC pays to repair or replace residential septic systems of less than 1,000 gallons per day serving one- or two-family homes or home-business combinations. As of the end of May 2005, a total of 1,983 systems had been repaired or replaced, or were being maintained pending connection to new municipal wastewater treatment plants that are under development in some communities.

The program reimburses permanent residents 100 percent of eligible costs of repairing or replacing a failed septic system. Non-primary homeowners—those with rental units or second homes in the watershed—are reimbursed 60 percent of eligible costs. Systems installed for new homes are not eligible for assistance, nor are those for businesses or institutions.

The 2002 Filtration Avoidance Determination provided additional city funding to replace up to 300 systems a year for five years. There are an estimated 20,000 residential septic systems in the five-county WOH watershed, and a 50 percent failure rate has been speculated throughout the watershed.

Septic Maintenance

This program is intended to extend the life of septic systems installed under the above Septic Rehabilitation and Replacement program. Homeowners who participated in the latter at least three years ago can get 50 percent reimbursement for inspections and pump-outs. The CWC does not pay for enzyme treatments or system additives.

Septic Monitoring

Many residential properties in the Catskills are insufficient for conventional onsite systems due to poor soils, small size, proximity to watercourses, high groundwater, or steep slopes. The CWC is investigating the use of the best available technology for long-term, onsite wastewater treatment under less than optimum conditions.

This research project is funded in part by federal Safe Drinking Water Act monies administered through the New York State Department of Environmental Conserva-

tion. The State University of New York College of Environmental Science and Forestry is acting as consultant to CWC during the field-testing period. The project involves installation of several alternative technologies, including aerobic treatment, peat filters, sand filters, and raised systems, as well as conventional septic tank/leach-field systems (as prescribed in Appendix 75-A of the New York State Department of Health Standards for Individual Household Systems), at up to 38 homes in the WOH watershed. Groundwater will be sampled at 20 of those selected sites over one to two years to observe the relative level of treatment (carbon, nutrient, and pathogen removal); and the cost of installation, operation, and maintenance of various technologies. The data will be used by CWC to evaluate and select technology to repair or remediate existing septic systems as part of its septic replacement program.

Community Wastewater Management Program (CWMP)

The CWMP is intended to fund the planning, design, and construction of community septic systems and/or the creation of septic maintenance districts in up to five WOH communities where full-scale wastewater treatment plants may not be warranted or desired.

The hamlets were named in a priority list of communities in need of wastewater treatment, included in the MOA. The governing town boards of those hamlets were solicited for voluntary participation in this program.

Seven other communities preceding these hamlets on the MOA priority list are being served by the city-funded and separately managed New Infrastructure Program (NIP). Through the NIP and CWMP, wastewater treatment is being provided to watershed homes and businesses, enabling the decommissioning of hundreds of onsite septic systems where either centralized sewers and treatment plants or community septic systems provide the optimal solution.

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