
Lakefront Communities: Pioneers in the Management of Onsite Wastewater Treatment

by Candace Balmer

In New York State, the management of onsite wastewater treatment systems is being pioneered primarily by lakefront communities. The Canandaigua Lake Watershed Inspection Program, for instance, has been in place for over three decades. This is not surprising since the bigger lakes are often used as sources of drinking water for large numbers of people. They are usually huge recreational treasures that contribute significantly to the attraction of a region and to the local economy as well. And, unlike groundwater supplies, the contamination and degradation of lake water quality can be quite apparent. Also, many lakefront homes were originally seasonal vacation properties. This, combined with the often challenging terrain, has helped to make central sewers less attractive and prohibitively expensive.

Another incentive for managing onsite systems as an alternative to central sewers has been land use planning. For example, the Town of Woodstock (which is not on a lake) collects and treats wastewater from the core hamlet, but a larger, outlying ring is served by managed onsite treatment systems. This solution was chosen deliberately to prevent the development that so frequently accompanies the advent of a municipal sewer system.

In the following article, four lakefront communities are highlighted. In each case, several thousand individual onsite systems are managed as part of a long-term community wastewater solution. The

Canandaigua Lake and the Keuka Watershed Improvement Cooperative programs ensure that onsite systems are inspected and remediated as needed. Capital costs are born by the individual property owner. Both programs operate within a budget of approximately \$70,000 per year.

The communities on Greenwood and Skaneateles Lakes are taking advantage of high-efficiency treatment technologies to replace inadequate systems on difficult sites. As it is with similar communities, the targeting of specific properties with failed or undersized systems and the installation of alternate technologies where needed is expected to prove far less expensive than central collection and treatment. Ultimately however, it is the element of ongoing oversight by a responsible management entity that gives folks confidence in a management strategy and in the application of alternate technologies.

Candace Balmer is a water resource specialist with RCAP Solutions. She is vice chair and curriculum chair of the New York State Onsite Wastewater Treatment Training Network (OTN).

Canandaigua Lake Watershed Inspection Program

by George Barden

The Canandaigua Lake Watershed Inspection Program protects the source of drinking water for over 60,000 persons. Organized under New York State Department of Health law, the Canandaigua Lake Watershed Commission exercises water quality oversight of the 174-square-mile watershed with the goal of providing safe, clean drinking water to the public. The watershed commission is made up of five municipalities—the City of Canandaigua, the Town of Gorham, and the Villages of Palmyra, Newark, and Rushville—that withdraw water from Canandaigua Lake for sale to their residents and to 15 other municipalities. Watershed rules and regulations, with a primary emphasis on human waste, were adopted in the 1950s, though the watershed inspection program did not officially begin until around 1970. A full-time inspector has been employed since 1979. In 1991, the administration of the program was transferred to the Ontario County Soil and Water Conservation District, and this relationship continues today.

Historically, many water quality problems have been associated with improperly sited or failed septic systems in the watershed. A municipal sewer district resolved many of the septic system problems in the northern one-third of the watershed near the shoreline; however, concern continues for the remainder of the shoreline and other areas beyond the sewer district. Onsite wastewater treatment system plans are reviewed, soils investigations are performed, and system installation inspections are carried out by George Barden, the current watershed inspector. Repairs of damaged or failing systems are

also under his jurisdiction, as are spill responses and other water quality threats, in coordination with the New York State Department of Environmental Conservation and other appropriate entities. The pending update of the Canandaigua Lake watershed rules and regulations will require additional oversight of soil erosion and sediment control within the watershed area.

The Canandaigua Lake watershed area is experiencing a building boom, with the construction of million-dollar homes on extremely challenging (small and/or steep) sites becoming commonplace. Use



Overlooking Canandaigua Lake

continued on page 38

continued from page 37

of innovative wastewater technologies to provide wastewater treatment for these sites has increased. Aerobic treatment units are subject to requirements for service contracts for the life of the system. Reports of service must be submitted to the watershed inspector's office for verification that the system remains in good working order. Likewise, owners of holding tanks (used as a last resort on postage-stamp-sized lots for existing lakefront properties but which are not allowed for new construction) are required to submit pump-out records to ensure proper management practices.

Wastewater treatment system inspection at the time of property transfer is being requested by an increasing number of lending institutions, attorneys, and real estate professionals within the Canandaigua Lake area. The inspections adhere to the New York State Onsite Wastewater Treatment Training Network (OTN) standards and involve

- pumping the septic tank and inspecting it for structural soundness,
- inspecting the baffles and outlet filter,
- opening the distribution box or drop boxes,
- investigating the in-house plumbing to detect separate gray water disposal systems, and
- inspecting the surface of the leach field.

Site plans, soil investigation reports, and inspection records for individual properties are currently being entered into a database that will be coordinated with Ontario County geographic information systems. The conversion to a computerized database is being done as part of an onsite wastewater treatment system management grant between the U.S. Environmental Protection Agency and the Ontario County Soil and Water Conservation District.

The Canandaigua Lake Watershed Commission has concluded that it must develop and enhance its management approach. Under the grant, management options are being evaluated and include an in-depth study of the many elements that may meet the needs and capabilities of the commission. The commission will undertake a cooperative program effort, bringing together stakeholders in a relationship-building process that will serve as the basis for a management approach. The public will be involved in the process, as will agencies, watershed groups and lake associations, and private sector service providers.

George Barden has been the Canandaigua Lake watershed inspector for 15 years. He has worked both for private firms and as a self-employed designer/design draftsman and construction inspector for municipal and land development projects, which included public and private water supply, municipal sewer systems, and onsite wastewater treatment systems.



Decentralized Wastewater Planning in Orange County, New York

by Simon L. Gruber

Greenwood Lake, about 50 miles from New York City, straddles the New York/New Jersey border and is a 303(d) listed water body due to excessive phosphorus loading. Lakeshore communities on the New York side include areas in the Village of Greenwood Lake and the Town of Warwick, all served entirely by onsite septic systems. While the area developed as a summer vacation area with many small lots, many of the homes have been converted to year-round use. Limiting conditions, including shallow depth to groundwater and bedrock, make septic system siting problematic, and it's believed that many older systems are failing. A 2002 feasibility study estimated the cost of a centralized system at \$45 million, so a decentralized management strategy is viewed as the most feasible option.

An ordinance enacted by the Village of Greenwood Lake requires septic tank pump-outs by property owners every three years, and the village recently began contacting noncompliant owners. To address water quality issues, the Greenwood Lake Watershed Commission was formed by legislatures in both states and is gradually developing funding sources and capacity to undertake water quality projects.

In response to a decentralized wastewater planning and management initiative of Orange County, Senator Charles Schumer secured \$290,000 in federal funding for the Orange County Water Authority (OCWA) to undertake a decentralized demonstration project in Greenwood Lake. Including the local match, this project will total about \$500,000 and will include a detailed needs assessment using existing geographic information system data and new information developed through soils analysis and other field work, as well as construction and monitoring of replacement systems using innovative technology, with a focus on phosphorus removal. Together with local education programs, it's expected that this work will help the municipalities, with the support of the county and other stakeholders, to develop a sustainable wastewater management plan for Greenwood Lake, potentially including a new management district(s). The municipal role in management and long-term funding options for full implementation, clearly, are major challenges that must be addressed in this process.

The solution will probably include a mix of individual septic systems, including some upgrades or new systems, combined with small



Protection of bathing beaches is a critical issue.

continued on page 40