

Seneca Lake Area Partners In 5 Counties: *SLAP-5*

Chemung Ontario Schuyler Seneca Yates

Newsletter: Summer 2009

Municipalities, agencies and public citizens working together to protect Seneca Lake



Members of the SLAP-5 working group gather on the lawn at the Finger Lakes Institute, Hobart and William Smith Colleges. SLAP-5 has been active in watershed protection efforts for the past twelve years.

This edition of the SLAP-5 newsletter will focus on wastewater treatment system issues and highlight recent educational programs offered to benefit watershed and water quality protection.

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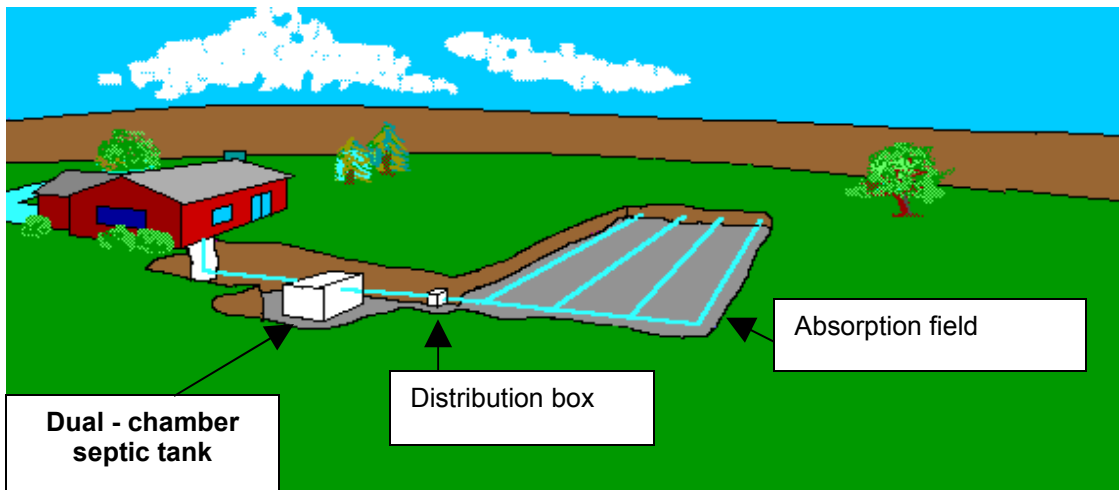
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Components of a Conventional Onsite Wastewater Treatment System



Onsite Wastewater Treatment (Septic) Systems have been identified by municipal leaders as a priority concern in the Seneca Lake Watershed with a high potential to be major contributors to pollution of Seneca Lake.

Septic systems are a beneficial part of the water cycle if they are functioning properly. As treated water infiltrates the soil, it replenishes groundwater supplies that feed wells, streams and lakes. All Finger Lakes are replenished in part by groundwater flows. A malfunctioning wastewater system is a threat to public health, water quality in the area and is particularly dangerous for persons living nearby.

Although many residents of the Seneca Lake Watershed own one of these systems, all too often they know very little about the location, capacity, maintenance and function of their wastewater treatment system. It is important that all these issues are monitored.

In order for treatment of wastewater to take place, all components of the system need to be structurally sound. A leaking septic tank will allow sewage to infiltrate nearby soil and groundwater. A common cause of contaminated well water is a malfunction septic tank on the property.

Septic tanks allow solids to settle out of the wastewater. A scum layer composed of fats and oils collects on top of the liquid. The scum layer does not interfere with the functioning of the septic tank. Additives advertised to rid the tank of scum are damaging, as oils entering the absorption field seal off soil pores, diminishing absorption capacity.

An outlet filter at the exit baffle of the septic tank prevents solids from entering the absorption field. These are reusable, may be retrofitted, and are inexpensive protection for the expensive absorption field.

The distribution box sends equal amounts of wastewater through the perforated pipes laid in gravel that comprise the absorption field. Uneven distribution may lead to overloading of one pipe and surface outbreaks of sewage.

The absorption field is the most important – and most expensive- part of the wastewater system. It is the place where the major part of treatment occurs. Oxygen-breathing (aerobic) bacteria in the upper layers of soil consume pathogens in the wastewater. This cleaning function is missing in seepage pits and cess pools as the wastewater is injected into the soil at lower levels where aerobic bacteria do not exist.

How Much Effluent?

How much wastewater enters the soils of the Seneca Lake Watershed daily? An exact answer is impossible to determine presently, as information about the number of systems is incomplete. An estimate can be made based on the numbers for municipalities where an accurate count of wastewater systems is available.

NYS Department Of Health estimates water usage at 75 gallons per person daily for household use. After a septic tank is initially filled, an equal amount of water is pushed out of the tank into the absorption field every time water enters the tank, so an estimate of 75 gallons of septic effluent per person per day is justifiable.

Three diverse areas of the watershed where fairly accurate counts are available are listed in this table. The Schuyler County Watershed Protection area is predominantly rural, with two villages offering municipal sewerage. Some Yates County municipalities are governed under the Keuka Watershed Improvement standards: areas noted here are in the Seneca Lake Watershed. Town of Geneva numbers reflect residences using onsite systems in the Seneca Lake Watershed.

Municipality	Onsite Wastewater systems within the watershed (est.)	Persons per household (US Census, 2000)	75 Gallons daily usage per person	Gallons /day Effluent
Schuyler County	2800	2.52	75	529,200
Yates County area of Seneca Lake Watershed where KWIC standards apply	900	2.53	75	170,775
Town of Geneva Ontario county	800	2.53		151,800

Using these figures as a template to estimate usage in other parts of the watershed, a conservative estimate would indicate approximately 3 million gallons of septic system effluent are released to the soils of the Seneca Lake watershed daily. If the onsite systems are functioning properly, cleaned wastewater will infiltrate to the groundwater aquifers and eventually flow toward Seneca Lake.

The NYS Department of Health estimates the average life of an onsite system at 25-30 years with proper maintenance. Ensuring that timely maintenance and appropriate repairs take place are of paramount importance if groundwater resources and Seneca Lake are to be protected.

Local Wastewater Management Models

Under New York's home rule laws, municipalities have the ability to regulate resource protections and wastewater management requirements that can be more stringent but not less stringent than those adopted by New York State Department of Health. There are a broad range of practices and protections in use across the Seneca Lake watershed.

Some approaches that have produced good results locally are:

- Establishing a watershed protection agency to provide soils evaluations, inspections at the time of deed transfer and other services such as regular inspections.
- Establishing a tiered zone system of regular inspections. Areas closest to lakes and drinking water sources are considered to be in the most sensitive zones and are inspected more frequently than outlying zones.
- Maintaining a system of recording pump-outs of holding tanks (usually found on small lots near the lakes).
- Requirement of contracts with certified manufacturers' representatives to maintain and service aerobic treatment units for the lifetime of the unit. Service dates and observations are recorded in the inspector's office.

New York State is less stringent in its requirements for onsite systems than many other states in the Northeast and elsewhere in the country. (A recent publication of the Adirondack Park Agency recently ranked New York State as 37th in the nation for onsite wastewater regulatory protection.)

Technological innovations including aerobic treatment units, gravel-less infiltrator chambers for absorption fields and peat moss filtering units have been accepted for use. Use of tire chips instead of gravel in absorption fields is currently being tested.



Photograph: Peat moss modules installed at a lakeshore residence. These modules receive effluent from the septic tank, promote enhanced pathogen removal, and discharge effluent to the absorption field.

EPA INITIATIVE:
 RESPONSIBLE MANAGEMENT ENTITIES FOR ONSITE SYSTEMS
 Voluntary National Guidelines for Management of
 Onsite and Decentralized Wastewater Treatment Systems

Inspection programs and regulatory oversight of onsite wastewater systems are not uniform within towns, counties, New York State or the United States. To enhance the protection of water resources and safeguard the health and well being of residents the US Environmental Protection Agency has been pursuing an initiative to establish responsible management entities for oversight of wastewater systems.

While recognizing that centralized sewer systems in lightly populated areas are not feasible, EPA also recognizes that lack of monitoring of individual onsite systems will likely produce undesirable results. Increasing population and density of rural residences means increasing risks to public health and water resources. Following is a synopsis of the management models EPA is pursuing through voluntary programs nationwide.

Management Model 1: Homeowner Awareness	Inventorying existing systems and assessing their level of functioning is a basic beginning of managing wastewater effluent. Homeowners must be aware of the location, condition and maintenance requirements of their systems.
Management Model 2: Maintenance Contracts	Aerobic and other enhanced treatment systems have mechanical components needing regular service in order to maintain proper functioning. Operating permits may be required. Inspection reports from certified manufacturer's representatives recording dates of contact insure adequate functioning of these installations.
Management Model 3: Operating Permits	Limited term operating permits are issued to owners and are renewable if the system remains in compliance. Wellhead protection zones, source water protection areas and public beaches benefit from this level of protection.
Management Model 4: Responsible Management Entity (RME) Operation and Maintenance Model	Professional operation and management services may be contracted through the RME. System ownership remains with the property owner, but the operating permits are assigned to the RME. Maintenance responsibility is thus transferred to the RME.
Model 5: Responsible Management Entity Ownership	Areas of greatest environmental sensitivity where reliable management is required, including sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters protected. System performance and monitoring requirements and qualified operators are mandated. Allows use of onsite systems in areas of extreme environmental sensitivity while providing protection as secure as that provided by central sewerage.

SLAP-5 Educational Programs : A Water Workshop for Realtors

A Water Workshop for Real Estate Professionals was offered to realtors working within the Seneca Lake watershed on May 26. The course was accredited by NYS Department of State for 5.5 continuing education units. It was held at the Seneca Falls Elks Club. SLAP-5 and the Ontario County Soil and Water Conservation District sponsored and organized the event.

Working knowledge of the water supply, waste water treatment system and stormwater management issues affecting a residence is a valuable asset for realtors. This knowledge is also extremely beneficial to prospective buyers, as the realtor is often the means of transmitting such information from one owner to the next.

Understanding the functioning and maintenance requirements of these water systems helps homeowners live comfortably and healthfully in their surroundings. Seneca Lake water quality is protected and enhanced by proper management of water in individual homes.

Patrick Emerick (Ontario County SWCD), Richard Moravec (Barney Moravec Water Wells, Inc.), George Barden (Canandaigua Lake Watershed Inspector) and Edith Davey (Ontario County SWCD, SLAP-5) taught components of the workshop.



*Above: Richard Moravec discusses proper testing of water wells.
Below: P J Emerick and Edith Davey make a point about stormwater management.*



Planning for Good Water Quality

Members of Planning Boards, Zoning Boards and Zoning Boards of Appeals in all Seneca Lake watershed municipalities were invited attend one of two workshops held June 22 in Geneva and June 25 in Montour Falls.

Persons serving their municipalities on these boards are required to obtain a number of hours of appropriate training. This presentation was designed to help fulfill those requirements while acquainting Board Members with water quality and water resource issues at stake in their decisions.

Water resources that must be considered in planning and zoning decisions include groundwater wetlands and surface waters (streams and lakes.) All these water resources are interconnected, as groundwater eventually joins surface water. Wetlands link groundwater and surface water and are beneficial in slowing runoff from storms and in filtering contaminants from runoff before it enters Seneca Lake.

Increasing amounts of impervious surfaces (roofs, roads, sidewalks, driveways, Hardscapes, etc.) in Finger Lakes watersheds have decreased infiltration of water into the ground and increased both the amount and the speed of stormwater runoff. These factors have lead to increased erosion with sediments and nutrients entering surface water. Increased nutrient loading has lead to increased vegetative growth in the lakes. Municipalities may experience more flooding, road damage and road bank erosion as development increases unless steps are taken to promote infiltration and slow runoff.

Stormwater management planning during development and construction, what should be expected on a good development site and steep slope issues were discussed.

Onsite wastewater treatment systems, innovative wastewater management technologies, maintenance of systems and the requirements of NYS Department of Health setbacks were also discussed by Edith Davey, SLAP-5 educator.



Photograph: Jim Balyszak, SLAP-5 Chairman, welcomes participants.

Seneca Lake Area Partners in 5 Counties	Current Members Include
<p>Chairman: Jim Balyszak Yates County SWCD 315-536-5188</p> <p>Treasurer: Patrick J Emerick Ontario County SWCD 585-306-1450</p> <p>Educator: Edith Davey Ontario County SWCD 585-396-1450</p>	<p>Chemung County SWCD Cornell Coop. Ext of Schuyler County The Finger Lakes Institute at Hobart & William Smith Colleges Genesee/Finger Lakes Regional Planning Council Keuka Watershed Improvement Cooperative Municipal Representatives Ontario County Water Resources Council Ontario County SWCD Schuyler County SWCD Schuyler County Watershed Protection Agency Seneca County SWCD Seneca County Planning and Development Seneca Lake Pure Waters Association Southern Tier Central Regional Planning and Development Board Yates County SWCD</p>