Alternative Wastewater Technologies In Real Life

Examples From The Canandaigua Lake Watershed
Canandaigua Lake Watershed Facts

Drainage area – 174 square miles (111,360 acres)

Surface area of Lake – 16.7 square miles (10,600 acres)

Watershed Includes:

**Ontario County:** Towns of Canandaigua, Bristol, South Bristol, Gorham, Naples, Hopewell City of Canandaigua, Villages of Naples and Rushville

**Yates County:** Towns of Middlesex, Potter, Village of Rushville

**Steuben County:** Towns of Cohocton and Prattsburgh

**Livingston County:** Town of Springwater

Dimensions of Lake: 15.5 miles long  
1.1 miles wide (average)  
276 feet maximum depth  
1” Lake Water = 300 mil. Gal.  
13.4 years, hydraulic retention  
429,400,000,000 gallons capacity  
688 feet above sea level

Shoreline: 35.9 miles  
34.7 miles (97%) privately owned  
1.2 miles (3%) publicly owned
Land Use of Shoreline: Residential – 29.8 miles (83%)
Forest – 4.7 miles (44%)
Other – 1.4 miles (5%)

Land Use in the Watershed: Cropland – 40,852 acres (37%)
Forestland - 48,618 acres (44%)
Other – 11,290 acres (20%)

Lake Water Uses – As a NYSDEC AA rated as a drinking water source, permitted withdrawal of 18.2 million gallons per day provides drinking water for over 65,000 people
Onsite Wastewater Treatment

Conventional and Alternative Systems
Septic Systems = Wastewater Treatment

* Soils are used to treat wastewater (not disposal)
* System size & design based on soils & system use.

* Proper care and maintenance key for long term effective use (regular septic tank pumping & water conservation, etc.)
Properly designed, sited, constructed, and maintained systems pose no undue stress on the environment.

BUT, all four (4) criteria must be met.
Everything was perfect.

[Except their Septic system.]
Design

* must meet state/local regulations

* must size pretreatment tank properly

* must have appropriate soil type area, depth to water table, etc.
Minimum Distances for Components

- Well: 100 ft
- House: 10 ft
- Garage: 20 ft
- Absorption field with 50% expansion (gray line)
In New York State

* need 4 feet of usable soil

* need percolation rate of 1-60 minutes / inch

* need proper slope

* need adequate area
Septic System Problems

* **Public Health** – pathogens & nitrogen
  – Dysentery, giardiasis, methmoglobinemia ("Blue-Baby Syvdrom")

* **Economics** – promotes “lake aging”
  - Decreases property values
  - Decreases recreation values
  - Increased public health costs
What if site does not meet 75-A standards for conventional systems?

* In areas without local regulations, for replacement systems, “do the best you can” with 75-A, but....be aware of the risks / liability if the site is severe!

* Recommendation: Severe sites – Homeowner retain a design professional

* Why? Protects: Homeowner, Town, CEO from liability (not all!)
Part 75-A allows certain alternatives to conventional wastewater treatment systems
Introduction

What are difficult sties?

What are alternative systems?
Aerobic Treatment System

- house
- aerobic unit
- "D" box
- absorption field
Holding Tanks

All holding tanks shall be equipped with an alarm (audible and visual) located in a conspicuous location to indicate when pump out is necessary.

Wastewater must be pumped by a NYSDEC permitted septage waste waste transporter.
Summary

* Develop effective and economic alternative systems for difficult limited sites.
* Encourage strict compliance with DOH standards
* Know your code & tools, use them!
* Know your limitations and use available resources on sever sites.
* In the long run, good systems benefit the homeowner, and the community, public health and the environment.