

Educational Demonstration

Wetland systems are being used as an educational tool to demonstrate the use of alternatives to the traditional septic systems. You have the unique opportunity to promote the benefits of wetland treatment systems by letting your local government agencies, schools and other organizations know about your wetland system. Get to know your system, watch it grow, pick the flowers, pull the weeds and remember that recycling wastewater by treating it in a constructed wetland will help protect our land and water. For more information on your wetland treatment system, call or send an email to NAWE.



If you have questions regarding the wetland treatment system, contact:

North American Wetland Engineering, P.A.
20920 Keewahlin Avenue
Forest Lake, MN 55025
Phone: 651.433.2115
Fax: 651.433.4280
E-mail: nawe@visi.com

What Is A Wetland Treatment System?



An Introduction To:

Septic Systems

Outside of large metropolitan areas, household sewage is disposed of in septic systems. Septic systems apply wastewater to the soil for treatment and disposal. The first step in the process is a septic tank that provides for settling of solids.

The sewage is then applied to the soil by a mound or drainfield. Bacteria growing in the soil treat the sewage as it percolates downward. Because the water is discharged before it is treated, there are strict code limitations on the amount of sewage that can be applied to the soil and the depth (vertical separation) between the mound or drainfield and the seasonal high water table.

Sewage exiting the septic tank still has very high levels of disease-causing organisms, and this liquid must be kept underground. Continual application of organic matter and nutrients eventually causes soil clogging and system failure. This can result in the surface discharge of partially treated sewage, placing community health and safety at risk.

Consequently, homeowners using a septic system should be aware of how the system works, and the limitations inherent in all septic systems.



What Is A Wetland Treatment System?

The NAWE treatment system serving your home is called a subsurface flow constructed wetland. This unique and innovative constructed wetland is used to treat and dispose of the sewage from all homes in the community.

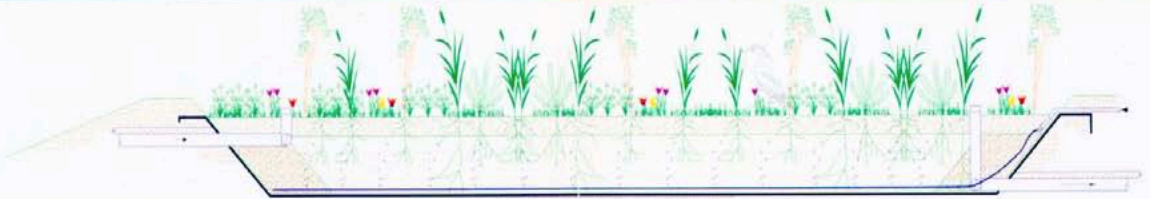
After settling, the liquid is pumped into a constructed wetland for treatment. This wetland consists of a plastic liner, gravel bed, and insulating mulch layer. Wetland plants and bacteria work in concert to purify the water as it flows vertically through the cell. No water is exposed during the treatment process.



Wastewater Treatment and Disposal Schematic

A wetland treatment system differs from a standard septic system because the water is treated before it is applied to the soil. The process starts with septic tanks.

After treatment in the wetland cell, the water is discharged into an unlined infiltration bed. The pretreated water undergoes additional treatment (polishing) as it percolates down through the soil.



What can I put into my Wetland Treatment System?

The NAWE treatment system is designed to remove organic matter, pathogens, and nutrients normally found in household sewage. Non-degradable items such as plastic or trash should never be discharged to any septic system, because these materials clog the system and reduce its effectiveness.

Because the wetland uses infiltration to dispose of treated water, it can only process a finite amount of water in a day. The NAWE wetland has been designed to accommodate normal water use (up to 75 gallons per person per day). Excessive or wasteful water use, if carried to extremes, can temporarily overload the system.

Septic systems are not designed to remove volatile organic compounds (VOC's) or other contaminants. VOC's can result in explosive conditions in the sewage collection system. These pollutants can pass through the system and can contaminate the groundwater. Consequently, items like solvents, paints, oils, antifreeze, or household hazardous waste should never be dumped into the system. Most communities prohibit discharging these contaminants into a sewer system.

What are VOC's?

Volatile organic compounds (VOC's) are chemicals such as gasoline, kerosene, paint, acetone, and diesel fuel. Materials that include VOC's specify them on canisters and labels. They must be disposed of in accordance with state regulations and should never be placed in the wastewater system.

Where can I dispose of VOC's and other waste?

Homeowners should follow state and local ordinances for disposal of these materials. Contact your local county environmental services or the Minnesota Pollution Control Agency at 651.296.6300.

What kind of maintenance is required?

The wetland system is monitored to ensure it is working properly. Sample results are regularly reported to the Minnesota Pollution Control or the County Environmental Department. As with any septic system, the septic tanks need to be pumped periodically to remove accumulated solids. The average septic tank needs to be pumped every one to three years, depending on use.

The wetland system uses two pumps to lift liquid out of the filter tank up to the wetland treatment cell. A small blower is used to supply oxygen to the patented Forced Bed Aeration™ system. The blower and pumps will require periodic maintenance checks every 5 years or so.

