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llied ommunity nterprises

Affordable Homes, Strong Communities

What is ACE?

Allied Community Enterprises, ACE, is a not-for-profit corporation that works to increase the supply of diversified affordable housing opportunities for low and middle income households in Westchester and nearby counties. As an advocate for environmental preservation, ACE understands that water resources must be protected. However, the restrictions on new and replacement septic systems have limited commercial and residential development.

ACE believes the time has come for change.

A decentralized wastewater treatment system (DWTS) is a proven alternative to conventional septic systems and the “big pipe” solutions. The DWTS also called Enhanced Treatment Units (ETUs) include individual septic tanks at each at each residence or business to collect the solid waste, small diameter pipes to transport liquid effluent, secondary treatment area, and dispersal to either subsurface or surface water.

Simply put, raw sewage comes out of the house or business via sewage pipe into septic tank for solids settling/collection. Septic tanks provide what is known as primary treatment.



Peat ETU inside a plastic tub treats 150 gallons per day (gpd) to a 90% + level of clean.

From the septic tank, liquid effluent is pumped or transported by gravity via small diameter pipes to the secondary treatment area (ETU) where the effluent is treated to a very high level of clean by various treatment medias (peat, textile sheets, plastic, gravels etc).

The ETU provides secondary treatment levels that exceed 90% levels of clean. Treated effluent is usually dispersed subsurface, but can also be dispersed to surface waters. Treatment performance from DWTS is comparable to that of a large Central Treatment Plants (CTP) also known as “big pipe”. The advantage of ETUs is they can be used for a residential, business, or a small

community cluster system in new developments, existing neighborhoods or small community business districts.

The United States Environmental Protection Agency (USEPA) has encouraged and supported the use of DWTS since 1997 and even more so in the past five years due to the cost savings, environmental benefits and flexibility that DWTS provide to homeowners, business owners and small communities.

WHY Decentralized Waste Water Treatment Systems?

First, the DWTS allow for flexible growth with modular expansion capability. This allows for projects to be phased in on an “as needed basis” helping to preserve the character of a community.

Second, the significantly lower cost of installing a DWTS with the use of septic tanks to collect solids, gravity or small pump (STEG or STEP) transfer of liquid effluent to small diameter pipes to the secondary treatment area versus “big pipe” solutions which send all raw sewage including solids to the central treatment plant.

Third, less disruption to the site, public roads and infrastructure during installation versus a “big pipe” central sewer system which results in lower overall costs.

Example of installed ETU peat system on a very small lot located on Skaneateles Lake. The lake is an unfiltered drinking water supply for the City of Syracuse, NY.



Funded with thanks from the Westchester Community Foundation.



Installation of a commercial ETU system using fixed plastic media for treatment on a small lot serving a large three floor building with a restaurant & pub on the ground floor and residential apartments on the upper floors.

Fourth, ongoing operating and maintenance costs are lower versus “big pipe” making DWTS lower cost and well-suited to affordable housing, small lot properties and supportive of sustainable communities.

Fifth, DWTS offers high levels of treatment performance, environmental benefits from recharging groundwater aquifers and opportunities for treated wastewater reuse.



Small Community Cluster System (SCCS) treatment area for Hillsdale, NY showing seven textile filter based media ETU's.



View into the top of a failing septic tank in Westchester County with concrete material corroded away and the tank is no longer water-tight.

Background:

The issue presenting itself in Westchester County is that older conventional technologies are still being used to repair and replace failed septic systems. On a large scale, the “big pipe central sewer solution” has been the answer for remediation and new construction. The “big pipe” solution is expensive and requires significant disruption to existing infrastructure and roadways based on the larger diameter size of central sewer pipes. Residential conventional septic systems require larger areas of land for the drainfield and in many cases a 100% expansion drainfield field area is required as a set aside for possible future use. Conventional systems require large areas of land because most of the treatment takes place in the soils.

Typical residential conventional septic system showing septic tank, distribution box and drainfield.



Cost Comparison

The average cost for a Small Community Cluster System (SCCS) per 3-4 bedroom residence is an estimated \$15,000.00 per assuming at least 20 residential connections. The SCCS is usually the lowest cost option for small communities.

	'Big Pipe'	ETU	SCCS
Average Cost Per Residence	\$72,000	\$21,500	\$15,000

Note: Estimates are based on 3-4 bedroom residences.

Decentralized Wastewater Treatment Systems in Westchester are the New Water Paradigm

Obstacles: While replacement of existing conventional septic systems is becoming more common, new construction projects are not currently allowed to take full advantage of the powerful DWTS treatment performance with their smaller land requirements since the treatment takes place mainly within the DWTS not in the soils.

Funding for DWTS is available but not commonly awarded due to a lack of knowledge and familiarity with DWTS.

Some folks believe that if you build a smaller, more compact, economical system it is an open invitation for excessive development. This belief is inaccurate as it ignores the fact that only local zoning laws can effectively manage and determine where multi-family housing will be allowed.

DWTS provide the unique combination of lower cost, high treatment performance, environmental benefits, and the ability to better manage growth in small communities.

Contact us today to see how your community can benefit from proven DWTS technologies.



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