



DECENTRALIZED WASTEWATER TREATMENT CAN BE COST EFFECTIVE AND ECONOMICAL

DECENTRALIZED WASTEWATER TREATMENT CAN PROVIDE A LONG-TERM AND COST-EFFECTIVE SOLUTION FOR COMMUNITIES

- **Avoid** large capital costs
- **Reduce** operation & maintenance expenses
- **Promote** business & job opportunities
- **Create** green space
- **Protect & recharge** water supplies



HOW CAN DECENTRALIZED WASTEWATER TREATMENT BE COST-EFFECTIVE AND ECONOMICAL?

WHERE IT HAS WORKED

Caroline County, VA

AVOIDING LARGE CAPITAL COSTS

- Decentralized systems typically involve a small initial investment for a community relative to larger systems.
- Generally, total per connection cost of a decentralized system will be lower than the equivalent conventional sewer serving the same area.
- Decentralized systems can be built “just-in-time” to meet local demands and take advantage of the latest cost-saving technology.
- Can help communities delay or avoid costly infrastructure capacity upgrades to larger facilities.
- The costs of transporting water over longer distances to reach existing public wastewater treatment facilities can also be avoided.



“Using decentralized systems may also make it easier for a community to employ water reuse techniques and, as a result, reduce the demand for treated drinking water”

REDUCING OPERATION AND MAINTENANCE COSTS

- Typically use small and relatively simple equipment that can be easy and affordable to operate, maintain, and replace.
- Additionally, because these types of systems treat wastewater close to the source of generation and often use some passive treatment, such as soil dispersal, these systems may offer substantial savings in energy costs.
- Finally, because systems frequently serve a fairly small number of users, disruptions and costs associated with malfunctions are also relatively small.

In the late 1990s, the Virginia Department of Health noted public health issues arising in the Dawn area of Caroline County, Virginia. Early plans to connect with a centralized wastewater treatment plan proved cost-prohibitive, so the County turned to a decentralized solution. To finance the Dawn Project, non-local funding sources were pursued, including Community Development Block Grant funds, an EPA State and Territorial Assistance Grant, as well as other grants and loans. Three years later in the summer of 2007, the first homes were fully connected to the working decentralized system (including advanced control units, septic tank effluent pumping (STEP) tanks, and fixed activated flood treatment (FAST) units.

Within the next 18 month, 182 homes and businesses were connected to the Dawn Decentralized Wastewater Treatment System, thereby eliminating reliance upon conventional septic systems and the health risks of failing systems. More than half the connected homes are owned by low-to-moderate income deed holders. The community was fully engaged throughout the project, through surveying and construction. By the completion of the project, the community felt its needs were addressed.

PROMOTING BUSINESS AND JOB OPPORTUNITIES

- Can generate local economic opportunity for service providers such as inspectors, installers, designers and pumpers.
- Jobs can be generated for service providers such as installers and pumpers as well as manufacturers—through increased demand.

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