



## Engineer makes case for cluster systems in Orleans

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ORLEANS — The hottest topic in Cape wastewater treatment is Pio Lombardo and his cluster systems, judging from the 50 people who crowded into town hall yesterday to listen to the engineer.

Lombardo views cluster systems, small neighborhood plants that collect, treat and dispose of wastewater, as the way for Cape towns to keep nitrogen from septic systems out of their coastal waters.

Nitrogen fuels algae growth in bays and inlets and can deplete oxygen levels, killing off fish and other marine life.

Cluster systems also provide a 25 to 40 percent savings over conventional sewers that pipe wastewater to a large treatment plant, Lombardo said yesterday.

That surprised Orleans officials because the town's study found that the cluster approach was more expensive than sewers. According to the study, the major cost is the need to acquire as many as 11 sites around town for cluster treatment and disposal of wastewater back into the ground.

Townsppeople also don't want to take land by eminent domain when the town already owns a central treatment and disposal site, according to wastewater steering committee member Ann Hodgkinson.

Lombardo estimated five to 10 cluster sites would require three acres of land, plus buffer areas. The cluster approach is so much cheaper because solid waste stays in private septic treatment tanks and only liquid waste is piped away to a nearby treatment site, he said.

Cluster systems save money primarily by eliminating large sewer pipes, related roadwork and the treatment of solids.

In addition to comparing the cost of clusters vs. sewers, Orleans selectmen also want to host a pilot study of Lombardo's Nitrex wastewater system, Selectman Mark Carron said yesterday.

The selectmen saw Lombardo's permeable barrier, which removes nitrogen in the groundwater before it seeps into the town's coastal waters, at a recent Upper Cape forum.

Lombardo estimated the cost at \$1.2 to \$2.8 million for a true demonstration project on an inlet such as Lonnie's Pond. The selectmen hope federal and state grants will offset most of the cost.

More than 1,000 townspeople have petitioned selectmen to look into alternatives to the town's proposed \$150 million treatment plant and sewer system.

The barrier doesn't require permits from the state Department of Environmental Protection because it is not a wastewater treatment system, according to David DeLorenzo, deputy director of municipal services for the state Department of Environmental Protection yesterday.