Pine Grove sewers reduce nutrients in Niantic River

Report shows how project improved water quality

By JUDY BENSON
Day Staff Writer

East Lyme — Sewers installed in the Pine Grove neighborhood in 2008 and 2009 reduced nitrogen input into the Niantic River by 43 percent just two years after completion of the project, a U.S. Geological Survey report concludes.

The report, presented last week to the Niantic River Watershed Committee, verifies the value of sewer projects in improving water quality in the river, and quantifies the benefit from sewers in the 35-acre, 172-home neighborhood on the south side of Smith Cove, said John Mullaney, hydrologist with the USGS' Connecticut office.

Dan Danila, a member of the watershed committee and director of the Friends of Oswegatchie Hills Nature Preserve, a protected forest on the river, said the study results provide useful information for efforts of both groups.

"What we're afraid of is that the river is going to reach a tipping point in nitrogen levels," he said. "Any reduction in nitrogen is important."

Excess nitrogen is one of the main reasons the river is considered "impaired" for wildlife habitat by the state Department of Energy and Environmental Protection. High levels of nitrogen can overload a waterway with nutrients — a condition called eutrophication — and cause nuisance algae blooms that can lead to hypoxia, or low levels of dissolved oxygen needed by marine life.

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To view the report, visit: http://pubs.usgs.gov/sir/2015/5011/

Sewers boost river water quality

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In the study, groundwater from each of 20 monitoring wells was sampled a total of 18 times. The samples were collected before, during and after the sewer project. Chemical analysis of the samples before the sewer installation confirmed that the main source of nitrogen in the groundwater was discharges of treated wastewater from septic systems, the study states.

Nitrogen concentrations before the sewering averaged about 7.5 mg per liter. After sewers began operating, nitrogen levels fell to an average of about 5.2 mg per liter, the study shows. The largest decline was in a sample that had nitrogen levels of 20 mg per liter before sewering, and 8.3 mg per liter afterward. Mullaney said his analysis estimated the total nitrogen input from the Pine Grove neighborhood was 1,675 pounds per year before sewering, falling to about 963 pounds per year afterward.

Since groundwater moves slowly, he said, it will take several years for all the remaining wastewater from septic tanks to flow into the river. By the time it is completely discharged, the study said, nitrogen levels in Pine Grove groundwater are expected to range from 202 pounds per year to 423 pounds per year.

He said the response to sewering was relatively quick.

"We were seeing things within a two-year period," he said.

Danila said the results provide support for the position he and other members of the Friends' group have taken urging the town to proceed with a sewer project in Saunders Point, the neighborhood to the north of Smith Cove. In addition, he said, it strengthens arguments against a housing project proposed by Landmark Development for a forested area near the Oswegatchie Hills Preserve, where the developer wants to tie into town sewers to treat 118,000 gallons per day of wastewater from 840 housing units. The developer is appealing the Water and Sewer Commission's decision to allocate 14,434 gallons of sewage capacity per day to the proposed developement.

The study, Danila said, verifies the need for the town to reserve its remaining sewage capacity for neighborhoods on the river, such as Saunders Point and portions of downtown Niantic, rather than for a new development. According to the USGS study, Saunders Point is contributing about 1,500 pound per year to 4,300 pounds per year of nitrogen into the river.

"We need to give priority to existing neighborhoods we know are contributing" to excess nitrogen in the river, he said.

Brad Kargl, the town's utility engineer, said the Water and Sewer Commission hopes to commission a feasibility study of a project to sewer Saunders Point, a neighborhood of about 250 homes. DEEP is reviewing a proposed scope of work for the study to determine whether it will provide funding for the work, he said.

Mullaney said his study was funded with an initial grant of about $160,000 from DEEP and the USGS, with some supplemental funding added in later years.

The Planning Commission will consider at its meeting at 7 p.m. Tuesday at Town Hall whether Landmark's latest application to build in the Oswegatchie Hills is consistent with the Plan of Conservation and Development, according to the agenda. The application from the developer is to turn 123 acres in the hills into an affordable housing district in which 87 acres would be set aside as open space. The application will later go before the Zoning Commission for a public hearing.

Day Staff Writer Kimberly Drelich contributed to this story.

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