

# Group challenges need for sewers in Orleans

By Rich Eldred

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ORLEANS - To sewer or not to sewer? It's not exactly the question Shakespeare pondered via Hamlet, but it's one that is being asked in Orleans.

The wastewater validation and design committee reported its findings to selectmen last week, questioning the need for a proposed \$150 million to \$250 million sewer system.

The Massachusetts Estuaries Project's Pleasant Bay Report of May 2006 evaluated nitrogen levels in the bay, calculated nutrient loads in the surrounding watershed and modeled the system to calculate nitrogen loads that would maintain the health of the bay. This report forms the impetus for possible plans to reduce nitrogen input via townwide or local sewer systems.

"We've measured the water (in Pleasant Bay) and know it doesn't have as much nitrogen as they claim it does so why are we talking about building a big system when 80 percent of the land around it doesn't need to be sewerred at all?" asked validation committee vice chairman Ed Daley, a retired missile guidance engineer.

Selectmen charged the committee with doing a peer review of the report that was completed in May 2006.

"We have spent thousands of hours analyzing it," said Daley. "We looked for errors, omissions, risks. There were a lot of good things in there because we used a lot of the data."

The committee tapped a wealth of scientific talent: chairman Paul Ammann graduated from Massachusetts Institute of Technology with degrees in chemical engineering; Jeff Eagles has a background in chemical engineering and hydrology; Greg Horne was a marine geologist at Wesleyan; Judy Scanlon is a marine biologist while Ron Collins is a civil engineer and construction project manager for the town. Current Selectman Sims McGrath also served.

"I live on the water on Town Cove," Daley explained. "My kids and grandkids swim in that water and I want the water quality to remain high. We have no agenda. We have a wide range of scientific talent. We're environmentalists. All of our findings from the first day were published on the town Web site, available for anyone to review or duplicate, open and transparent. We're doing the review based on the facts we find."

They've taken their findings to the state Department of Environmental Protection and to UMass Dartmouth's scientists, who prepared the report on Pleasant Bay.

"We told them this is our independent survey and if they say any findings are incorrect, we will revise our findings. We have no pride of authorship," Daley recounted. "Our scientists should get together with their scientists and everyone should look at the data and work the issues out. All we're doing is asking questions. If they're answered, we'll be fine."

They utilized the Woods Hole Group as consultants for some of the scientific analysis and targeted what they feel were flaws in the Estuaries Project's report; overestimations of nitrogen input from septic systems and underestimates of input from benthic sediments and the ocean at large; problems with the hydrologic model and lack of empirical measurements of eelgrass populations. They also questioned whether nitrogen levels were actually increasing in the water and what effect sewers would have on some of the small saltwater ponds.

Daley noted that nitrogen levels seemed to be dropping in some locales such as Namequoit Point, Meetinghouse Pond and Pah Wah Pond – at least over the 2000-2008 period that was measured.

“In 80 percent of the bay it’s falling,” Daley asserted. “In two ponds the nitrogen was not going down, in Lonnie’s and Arey’s the nitrogen was rising slowly but we didn’t know why. But [a lot of] the nitrogen in Arey’s is coming from benthic flux, from the sediments.”

Data indicate that benthic flux is seven times more important than septic nitrogen in Arey’s Pond.

“That raises the issue is (sewering) going to improve the water quality?” Daley pointed out. “We’re saying 80 percent of the water in the Orleans Estuary already meets specifications so that’s why we find it unnecessary to sewer based on the data.”

The report was also completed before the breach in Nauset Beach, off Minister’s Point in Chatham, created a new inlet to Pleasant Bay. That has increased flushing.

“The breach is not going away. It’s not closing up,” Daley said. “It’ll start shifting slowly south over the next 80 years and sea levels will rise 2 to 5 feet in the next 80 or 90 years.”

The report offers eelgrass restoration as a way to measure the health of the bay but the validation committee says there are no empirical measures of eelgrass populations before 1995, so eelgrass declines are subjective.

“If you talk to people who are out on the bay, and this is just anecdotal, it looks like there is eelgrass all over the bay. The clear water is starting to improve the eelgrass out there,” Daley said. “There are other reasons for eelgrass loss (as well) like wasting disease. Animals eat the stuff. There are over-washes and sand covers it. You can’t really say this is what did it. You can’t prove it.”

On the other hand, Brian Howes of UMass Dartmouth has noted conditions due to the new break are the best they will be. In the future the break will migrate south, decreasing flushing in upper ponds, and the old inlet will likely close up. Daley was also concerned that UMass Dartmouth was closely guarding its mathematical models because they consider it proprietary property.

“There’s a lack of transparency,” he said. “So there is no peer review of the model by the state and Orleans’ plan depends on these models to test the efficiency of proposed sewer systems.”

The committee also questioned the data input into the model.

“We found a lot of biases in the inputs, all in the direction of overloading the model with assumptions of higher nitrogen levels,” Daley declared.

The validation committee believes the town should slow down before leaping forward into the world of town sewers. The committee charge has been continued while they await answers.