



Septic System Maintenance Helps Keep Vision of Nags Head Alive

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Legend and lore of the 18th century includes tales of land-based pirates who tied lanterns around their horse's necks at night and walked them up and down the beach along the coast of Nags Head, North Carolina. Merchant skippers out in the ocean's waters would mistakenly identify the lights as those of other ships and change course to come ashore. Then these pirates on shore would ransack the naïve skippers' cargo.

Today, however, visitors no longer have to be lured to the beach of Nags Head. In fact, during a typical summer day the population of the town swells from 2,800 to 50,000 people. And with all the sun, surf, and turf, probably the last thing on these vacationers' minds is what they should and should not flush down the toilet. But in order to protect the environment and the integrity of the town of Nags Head, officials are trying to change that mentality through a Septic Health Initiative program aimed at educating residents and tourists about the maintenance of septic systems.

The Town's Vision

Part of Nags Head's vision statement reads:

"The town of Nags Head is working to build a community with an economy based on family vacation tourism. The base of that economy is a diverse supply of accommodations, primarily single-family homes, but including hotel and multi-family dwelling units. Important elements in developing and maintaining this economy are:

- A natural environment typified by clean waters and the natural landscape of sand dunes and salt-tolerant vegetation.
- An ocean-front beach that is accessible, usable, and not blocked by large structures.
- Accommodations that attract and are accessible to visitors from a wide range of economic and social strata.
- Commercial services provided by locally owned and operated businesses that share in the building of the community.

- Recreational amenities and attractions, both commercial and non-commercial, that are wholesome and appeal to a broad spectrum of family members."

In order to preserve this vision of Nags Head as a small, family-oriented vacation spot, the town's mayor, Robert Muller felt that installing a centralized wastewater treatment plant would ignite the town's growth, thus extinguishing the town's vision. To prevent this from happening, Muller knew that steps had to be taken to maintain their current onsite septic systems.

"We've known for a long time that onsite waste disposal was an important element in building a vision of the community," Muller said.

And Muller was not alone in his plight. "Our elected board has made it very clear that they're not in favor of a central or municipal sewage plant," said Bruce Bortz, deputy director of planning and development. "They don't want the high population densi-

ties that often occur as a result of the centralized system, and they felt that maintaining and improving our onsite septic capabilities would go a long way in taking away some of the need for a central sewage plant.”

Even though town officials and many local residents agreed that the vision of Nags Head did not include a municipal wastewater treatment plant, they were left with the difficulty of how to maintain the estimated 3,000 septic systems scattered throughout the town.

History of the Septic Health Initiative

In the late 90s, Muller, then a town commissioner, put together a committee that he chaired, which included another commissioner, planning board members, and residents. All of them began brainstorming for answers to their wastewater dilemma.

“We spent a lot of time learning about septic tanks and discovered the concepts of decentralized wastewater management and spun our wheels for a while,” Muller said.

The town applied for a grant through the U.S. Environmental Protection Agency to conduct a master plan study of the area, but the grant was denied. Therefore, they took matters into their own hands and in 1999 developed their own, four-pronged Septic Health Initiative program, which includes an Education Program, Septic Tank Pumping and Inspection Program, Water Quality Monitoring Program, and Decentralized Wastewater Management Plan.

The town receives no outside grant money for the Septic Health Initiative. Instead, the program is funded through the town’s water fund. “The program costs \$250,000 a year, but when you compare that to the cost of operating a central sewerage system for three to four million gallons of wastewater a day, it’s cheap,” Muller said.

Educating the Public

With the influx of vacationers and nonresident property owners, one of the most important facets of the Septic Health Initiative Program is the Education Program. Septic Health Coordinator Todd Krafft said that the program

educates the public by distributing stickers, brochures, door hangers, pens, and letters to the property owners and the Realtors who rent out properties.

“We have door hangers that say do not flush diapers or cigarette butts, and we try and prevent septic failure that way, but we also try and prevent chemical influence by saying don’t flush these types of chemicals and detergents because they could cause problems,” Krafft said.

The town takes the educational component of the program even further by making presentations at area schools, organizations, Realtor groups, civic associations, and community associations to educate the public about proper flushing habits, maintaining septic systems, and an overview of the Septic Health Initiative Program.

“We have about 80 or 90 percent of property owners who are not residents and the majority of those come from areas where there is central sewage, so they’re not familiar with onsite wastewater disposal systems,”



Above: The septic systems along Abram Street in South Nags Head take a beating from stormy weather and have to be monitored closely. Page 18: View of Nags Head from ocean. All photos by Todd Krafft.

Muller said. “That means that we have an educational job to do. Let’s tell them about it.”

Inspecting and Pumping

The Septic Tank Inspection and Pumping Program offers incentives to property and business owners who have their tanks inspected and pumped. Property owners can get their septic tank inspected at no cost by a town-approved contractor. “They inspect things like the age of the tank, type of top it has, various layers of sludge and scum, and any evidence of

tank failure or cracking,” Bortz said.

If the property owner has the tank pumped, the town will give the homeowner a \$30 water bill credit. To assist property owners with failing systems, the town offers low-interest loans of up to \$3,000 payable over three years to the property owner to have the system repaired or replaced.

“One of the challenges we have is that we don’t have the authority to require people to do these things. So we had to find a way to get them to do it without requirements, and the incentive system has worked well,” Muller said.

The town has inspected 700 septic systems so far and has seen a four percent failure rate. Krafft said that of that four percent, half have been repaired or replaced. The town hopes to inspect all 3,000 septic systems within four years.

“We have found systems that have not been looked at in 25 years, and we go and inspect them, and they are fine because they were treated by year-round property owners who

knew what they were putting down the system. Then we’ve had systems go in and not even 12 months later they’re finished and have got to be completely re-done,” Krafft said. “What is obvious here is that we don’t have flush-and-forget systems. If you treat the system badly, you’re going to know about it pretty quick.”

Testing the Waters and Gathering Data

To test the effectiveness of the Septic Health Initiative, water throughout the town is tested weekly for fecal coliform, ammonium, nitrates, and phosphorus. “We spend more than \$100,000 a year on testing the area water,” Krafft said. “We test ditches, canals, the sound side, the ocean side, and the outfalls. Right now, we have 38 different sites that we are testing.”

The water is also tested weekly by the North Carolina Department of Environment, Health, and Natural Resources (DEHNR), which began monitoring beaches along the North Carolina coast in a program established in June 1997.

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As part of the Septic Health Initiative Program, contractors do an inspection of a homeowner's septic system.

All of the data gathered from the water testing and septic system inspections by the town are compiled to make up the final part of the initiative, which is the development of a Decentralized Wastewater Master Plan. This program is a long-term strategy that will allow the continued use of onsite systems in the town without impacting the water.

Importance of Getting the Word Out

Since the Septic Health Initiative is a voluntary program, and the town has no authority to enforce any part of the program upon residents, officials had to let the public know that the program was out there and gain support.

The town was able to achieve this through direct mailings to residents, by publicizing it in the town's quarterly newsletter, radio and television interviews, newspaper advertisements, and public presentations.

"We want folks to understand how we envision the role of onsite septic systems in our community. We think it's a key part in our strategy to keep our community relatively small, with low density, yet still have clean water, clean ocean, and clean sound around us because our economy is based on folks coming down here and going to the beach. If we lose that clean water, then we have nothing to sell," Muller said.

Ahead of the Curve

"We didn't have water quality problems. This whole effort was to get there ahead of the curve," Muller said.

"The genesis was much more proactive. We wanted to find an answer and have a plan on board before we were driven to do something and that's not uncommon for Nags Head."

For instance, Muller said the town received a national award for a hurricane damage storm mitigation program they developed in the mid-80s. "It's not uncommon for the town to be looking five or 10 years ahead and identifying problems and trying to find solutions to those problems before

they become major crises that we have to deal with," he said.

For his contributions to the Septic Health Initiative, Muller received a Distinguished Leadership Award at the annual North Carolina Marvin Collins Planning Awards Banquet Ceremony in May 2002.

"It's been a gleam in my eye for a long time, but there were a lot of people who worked on it, and I accepted the award on behalf of the entire committee and the entire town," Muller said.

Results of the Program

Educating the vacationers with door hangers and literature in rental properties seems to be having some effect. "In the fall, after the first summer the program was in full process, one of the real estate companies came to us and said they had 50 percent fewer septic problems in Nags Head than they did the previous year," Muller said.

Many residents are taking advantage of the free inspection and having their septic tanks pumped and repaired. "We had a system at a store that was probably built in the 1940s, and the wastewater was straight piped into a wooden box with a sand bottom. I don't think there was a drainfield," Muller said. "These folks came to me

and knew they had this and wanted to take care of it."

Another resident who has taken advantage of the Tank Inspection and Pumping Program is Shirley Garrett, who has lived in the town for five years and has maintained a rental property there for more than 20 years. Garrett said that through the program she had the septic tank inspected and pumped at her rental property.

"It is a great program. I really applaud the town of Nags Head for initiating it," she said. "I feel very fortunate that this was accomplished before we had any problems. It's a nice feeling to know that it is pumped out, and I don't have to wonder if it is full. It gives me the sense of security to know that we shouldn't have any problems for several years."

"We get very good customer/citizen support from it. It is one of the few programs that the government can run that makes our citizens happy," Bortz said, laughing. "They all speak very favorably of it. I don't think we've had any negative comments about the program. We are helping them financially to get their systems pumped, and at the same time, it's helping the town, and it's helping the environment. So it's really a win, win situation."

For more information on the Septic Health Initiative contact Todd Krafft at (252) 449-6047 or e-mail to krafft@townofnagshead.net.



Septic Health Coordinator Todd Krafft and Helen Mattioni, a water quality contractor with Environmental Professionals Inc., conduct water quality monitoring of a site in Nags Head to check levels of nutrients and fecal coliforms.