

# Experts sift data on storm water pathogens, await new filter system

By Catherine Kozak  
The Virginian-Pilot

## NAOS HEAD

The construction of a bacteria-catching filter at an ocean outfall here is on hold, but a study of eight Outer Banks outfalls is overflowing with information on the water traveling through the storm drains.

For two years, coastal scientists have been testing

the storm water that flows through the big pipes into the ocean during and after rainfall. They now have a massive amount of data to analyze the concentration and flow of potentially dangerous pathogens in storm water discharged into the ocean.

"There's 900,000 to 1 million gallons flowing through each pipe for every inch or two of rain," said Nancy White, direc-

tor of the University of North Carolina at Chapel Hill Coastal Studies Institute in Manteo. "There's tens of thousands of cells of bacteria in every liter of water. The hard part is figuring out where the bacteria is coming from."

White said that the goals of the \$15 million outfall study, funded by the state

See WATER, PAGE 5



COURTESY OF UNC COASTAL STUDIES INSTITUTE

A \$15 million study is looking for ways to reduce the storm water flowing from ocean outfall pipes and the pathogens in it.

Continued from Page 1

Department of Environment and Natural Resources, are to find ways to reduce the amount of storm water that makes it into an outfall and reduce the pathogens going through the outfalls.

When the \$1.1 million filter system on Conch Street is completed in the fall, that discharge will also be analyzed to see how much bacteria remains after going through it.

The system, known as the AbTech Smart Sponge, is designed to capture 80 to 95 percent of bacteria before the water reaches the ocean, said Johnny Martin, project manager for Raleigh-based engineering firm Moffatt & Nichol. He said the system has been used in Connecticut, Rhode Island and California.

Enclosed within a 62-by-14-foot concrete box under the beach access parking lot, the system directs water through two rows of 60 bacteria-attracting filter packs.

Martin said the filters will have to be replaced in a year or two, depending on the rainfall amount. A \$660,000 maintenance budget has been provided by the state to cover four years.

Once the outfall data is analyzed, it will be easier to understand the pattern of pollution and which sites are most vulnerable at what times, said

Corey Adams, an institute research specialist.

The huge drains have been dumping storm water – excess water on lawns, roads and bridges – directly into the ocean and sound for decades on the Outer Banks. Sometimes, the water harbors bacteria from septic tanks or animal waste, making swimming near them a hazard to health.

A recreational water quality program conducted by the state regularly tests water near outfalls. Swimming alerts are issued if elevated levels of enterococcus, bacteria from the intestines of warm-blooded animals, are detected.

After the analysis of the data is completed by June 2010, including an assessment of the filter system, White said, the institute will determine the best way to address the storm water. Implementation will take additional state money.

The self-contained, underground filter system may turn out to be more practical than other storm water management tools such as retaining ponds, rain gardens and constructed wetlands.

"So while it's expensive," White said, "it may turn out that this does a better job at removing bacteria at a better price than removing bacteria with a lot of land."

Catherine Kozak, (252) 441-1711,  
cate.kozak@pilotonline.com