

# Expert calls for more detailed flood maps

HAMPTON —

— If a 100-year coastal storm hit Poquoson it would be expected to cause almost \$395 million in damage to buildings and their contents and destroy many homes altogether.

The effect of such a natural disaster on Hampton or Newport News is less clear because detailed studies have not been done, James Koch of Old Dominion University told council members last week.

Koch, an economics professor and president emeritus at ODU, is urging cities such as Hampton to carry out detailed studies to get a clearer picture of what will happen in the event of a major storm.

Koch has been working with the Hampton Roads Planning District Commission on flood solutions. In an Oct. 13 presentation to the Hampton City Council he said Hampton Roads faces a serious threat because of a combination of sea level rises and subsidence to the land.

"The sea level rise is higher in Hampton Roads than anywhere else along the East Coast," he said.

Tidal gauges at Gloucester Point recorded a 15-inch rise in the sea level from 1900 to 2008, while the rise was 17 inches at Sewell's Point in South Hampton Roads.

Koch attributed the numbers to a combination of rising sea levels and sinking land. He said the sinking was due a meteor crater at Cape Charles which gouged out a portion of land. "Our problem is simply worse than anyone else's," he said. The meteor strike is believed to have occurred about 35 million years ago.

He said the entire Peninsula and much of the southside is at risk from storm surges in the case of a hurricane. "Fort Monroe is part of that challenge, too."

But better mapping is needed to make future "what if" predictions, according to Koch.

"We have to recognize the challenge that we face and make this a priority. We certainly need better information."

Koch said LIDAR (Light Detection and Ranging) systems use laser beams to measure the ground "down to millimeter tolerances." As well as finding out more about the land, the system can predict "what's likely to get covered up in a given circumstance."

"We have some LIDAR mapping within the region but we need to map the entire region to know the nature of the problem," he said.

Koch said better geographic information system information is needed to establish what assets the region has.

"It appears as if, during a major storm 20 years from now, nearly all the land east of Route 17 will be covered by water. Yes, it will go away but when it does go away there'll be lots of damage," Koch said.

Koch said only Poquoson has made detailed predictions. Poquoson has done the "best study in Hampton

Roads of any city," he said. It summarized the value of structures and the level of exposure and made loss predictions.

Poquoson's flood maps, based on 2008 data, are detailed down to individual properties that would be swept away in a 100-year storm event.

"The city of Hampton probably needs to do the same thing. I would argue that nearly every city and all the counties in the region need to go through that kind of an analysis," Koch said.

He made an argument for Hampton Roads to lead the way and become a "test bed for dealing with water problems." Koch said the area that pioneers such work is most likely to benefit from federal funds.

ODU and the planning district commission have agreed to jointly fund a study in which they will pick out "census parcels" to look at potential damage to buildings in a storm 20 years from now and economic activity that will no longer occur. The research is expected to begin shortly.

Koch said the work will help develop a better means to manage water and collect it. It could also lead to different building codes and the raising of buildings.

He suggested Hampton considers a study looking at the effect of storms on the city at intervals into the future.

"There is not a single city in Hampton Roads that does not face this kind of problem," Koch said.

"Even ordinary storms are going to become very more problematic in the future because of rising water unless we address these kinds of problems."

Councilman Ross Kearney said the predictions were worrying. He said a hurricane equivalent to that in 1933 would be "just devastating," now.

*See the Hampton Matters blog at [dailypress.com/hamptonmatters](http://dailypress.com/hamptonmatters)*

What is LIDAR?

Light Detection and Ranging (LIDAR) is a remote sensing system used to collect topographic data. These data are collected with aircraft-mounted lasers that have a vertical precision of about 6 inches. After a baseline data set has been created, follow-up flights can be used to detect small topographic changes.

By David Macaulay

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