

Oh, how the tides have turned



PHOTOS COURTESY/NJMC

Francisco Artigas, director of the Meadowlands Environmental Research Institute, assesses a sensor station recently placed at an East Riser tide gate. The sensors, in real time data, tell engineers what the working conditions of the tide gates are in the district and predict the heights of tide levels so residents and towns district-wide can be alerted of flood conditions. So far, four of 12 planned are installed.

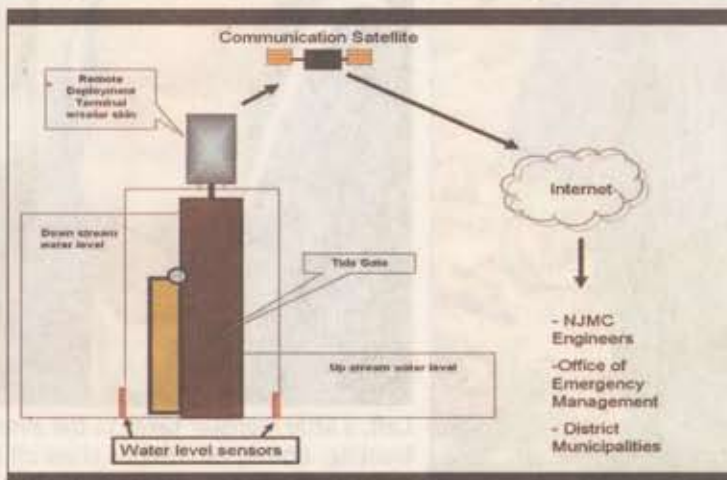
Meadowlands Commission getting upper-hand on flood predictions

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The New Jersey Meadowlands Commission (NJMC) says it is making significant headway on flood management in the district, in not only replacing and fortifying infrastructure to prevent flooding, but integrating a new technological system that has the ability to actually warn district residents, emergency response officials and business owners when possible flooding is imminent.

Dr. Francisco Artigas, head of the Meadowlands Environmental Research Institute, briefed the commission last week on progress being made on a new technological **FLOODING** agency's war chest to safeguard the district against flooding, remote tide gate sensors that transmit live, real-time data on tide levels and predictions of rising tides, which essentially could mean floodwaters, district-wide.

The technology is a digital flood control system, which employs remote solar charged monitors placed at so far, four critical tide gates in the district that not only have the ability to transmit through sensors and satellite technology when flood waters are expected to hit a certain area, but give engineers status updates on the working condition of the gates themselves, many of which are decades old and have been in recent years prone to inoperable working



The sensors use satellite technology to directly feed critical information to emergency management officials, engineers and district municipalities via the Internet. The information is used to assess what levels of flood waters may hit any given place or at any given time.

status.

"The big problem is the traps, it's a common problem and they need to be continually maintained and up until now, it's been a mystery what their operating status was," said Artigas.

Gotham Analytics, one of the businesses in the commission's year-old business accelerator, helped develop the system by designing the data collection and management software that runs the monitors. The same technology has already been battle tested in Iraq, where U.S. troops have used the technology to transmit criti-

cal field data via satellite communication in real time. By year-end, Artigas said six of the 12 planned remote devices will be installed on the district's most critical tide gates.

Why the system is vital is a no-brainer to Artigas. He said the new mapping system that accompanies the real-time flood water data from the remote sensors pinpoint what areas of a town would be inundated at two, four, six and even eight feet of water. For instance, in Carlstadt, you'd want to head to Washington

SEE FLOODING, PAGE A6



PHOTO COURTESY/NJMC

The new tide gate sensors are being strategically placed at 12 of the most critical locations in the district to help safeguard against flooding. Much of the Meadowlands is only two feet above tide levels. The sensors will help predict rising tide levels and imminent flooding along with telling engineers what the working conditions of the tide gates are.

FLOODING

FROM PAGE A3

Avenue in an eight-foot flooding event, which isn't a far cry from reality. It happened in 1960 during Hurricane Donna.

"Floods cause greater loss to property than all other natural hazards combined," said Artigas. "Predictions translate what water elevations will be in the district in a matter of about two to three hours. The result of the first component is an e-mail that has the date and the time and it indicates the tide expected for the flood and points to a specific map."

After the data is transmitted, it is not only fed to the NJMC engineers, but district municipalities and their offices of emergency management. Residents can also sign up to receive e-mail blasts.

In addition, the NJMC last week entered into a memorandum of agreement with the New Jersey Department of Transportation (NJDOT) to commence Phase II of the major Rutherford/East Rutherford Drainage Ditch System project, in which Phase 1 was complet-

ed in May. The first phase included the installation of 10, 72-inch culvert pipes and 10 associated tide gates. The second phase of the project will clear tidal ditches that stretch over a mile out in the marshes, most of which have filled with sediment over the years, enough so that they can no longer control the flow of water, dispersing overflow rain water into currently affected flood-prone areas. Original bids submitted to the NJMC hovered around \$2 million for the project, but the NJDOT agreed to kick in \$500,000 for the project and use its current contractor working on Route 17 construction to commence the Phase II cleanout. The contract with Tilcon, at a total of \$1.5 million, will be handled as a change order by the NJDOT.

However, residents remain skeptical that any progress is even being made. Rutherford resident Marge Schak said she's heard complaints in her borough that the dreaded flooding on Route 17 has not gone away despite the multi-million dollar effort to combat it and clear the highway for vehicular traffic during

large rainstorm events.

"I heard something that there is more water under the Rutherford/East Rutherford bridge and I want to know has that happened or has that been corrected," said Schak.

NJMC Executive Director Bob Ceberio said with the completion of the first phase of the project, a significant decrease in flooding has already occurred and with the second phase complete, the problems will lessen even further.

"Phase one is complete and we are starting to see a significant improvement in how many times the road [Route 17] has been closed," said Ceberio.

To be included on the flood warning subscriber list, e-mail Alex Marti at alex.marti@njmeadowlands.gov or Robert Saverino at Robert.saverino@njmeadowlands.gov

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