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Neptune Beach working to protect city from rising sea levels

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Neptune Beach is taking proactive measures to prioritize the redesign of its stormwater system and better protect the city from rising sea levels. The City Council Monday unanimously approved \$91,300 in funding to complete Phase II of the Resiliency Lab Storm Sensor Project.

Last summer, Neptune Beach partnered with Smart North Florida to develop a Resiliency Lab at Jarboe Park. The goal is to pilot innovative technologies to help the city prioritize critical infrastructure improvements.

In March, the city installed a small sensor at the outfall of the city's stormwater system and a weather station at Jarboe Park to collect data for monitoring stormwater system performance in real-time. The information will ultimately feed into a public-facing dashboard that will allow citizens to better understand the city's resiliency planning efforts.

The second phase of the project includes 20 additional sensors to monitor the capacity of the storm sewer system east of Third Street, including five culverts that have been identified as bottlenecks and the three points where stormwater enters the Hopkins Creek system from Atlantic Beach and Jacksonville Beach.

“So far, the data we’ve collected at our outfall at the Kings Road Bridge has been very helpful. It updates the level of the water flowing under the bridge every five minutes,” said City

Manager Stefan Wynn. “The software is pretty interesting to see what our flow levels are.

“This project is to implement a number of storm sensors within our existing storm sewer system. These are flow sensors that go in manholes; these sensors go inside our catch basins and monitor the level of water that currently flows through it. So, think of it this way. You might not get as much in your catch basin, but within a manhole that’s connected to your storm sewer, if we start seeing constant flow of water, that could also be an implication that there’s a broken water main that needs to be repaired. When it’s not raining, that storm system is supposed to be empty, so we might find some additional issues that can come up.”

Because of the significant funding required for the complete overhaul of this system, the data from these sensors will help Neptune Beach prioritize such capital improvement projects as well as provide the valuable information to apply for State and Federal grants.

Digitalization of critical infrastructure provides the city with high-resolution insights that enable cities to understand issues impacting their infrastructure, best respond ahead of and during storms, and design capital-intensive infrastructure projects as we adapt to climate change.

“There’s a couple of different things that this program uses that is different from FEMA. FEMA maps show that all of the area east of Third is not in a high hazard area for flooding and that the area by the Intracoastal is within a high hazard area for flooding. SUPER score used different analytics. It’s saying that even though some of these places are high or built up at a higher elevation east of Third, there is a much larger potential for catastrophic flooding,” said Wynn.

“We plan to utilize this system for a period of one to two years to collect enough data to drive what is currently already in place for design with our storm sewer system. This information will be used to help prioritize design projects and get a good snapshot on our existing storm system to see how undersized we already believe it to be.”

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