



AGENDA ITEM COVERSHEET

PREPARED BY: Jeremy Hardison, Planning Director

DEPARTMENT: Planning

MEETING: Town Council – 22 MARCH 2022

SUBJECT: Developing a model for hindcasting chronic flooding and real-time flood sensor network on Canal Dr

BACKGROUND:

In recent years, the Town of Carolina Beach has experienced more frequent and increased flooding of the public and private infrastructure located along Canal Drive and Florida Avenue that borders the Carolina Beach Yacht Basin. Flooding is primarily due to seasonal high tide events (commonly referred to as King Tides), storm related high tides and rainfall events. Faced with existing flooding challenges and recognizing the reality of rising sea levels, the Town performed an engineered study to assess the vulnerability of bulkheaded shorelines along Canal Drive and Florida Avenue and the influence that bulkhead condition and elevation plays on flooding of this part of the Town.

There are two sources of high water that result in flooding from the yacht basin 1) a lack of or overtopping of existing bulkheads and 2) water backing up through the stormwater system. Backflow prevention devices installed on stormwater outfalls can be ineffective at preventing flooding if the valves do not seal properly allowing water to backup into the stormwater system and come up through the catch basins or street inlets along the roadways. High water levels in the basin can also reduce or eliminate the hydraulic head necessary to transfer water from the stormwater inlets through the stormwater system and out through the outfalls that drain into the yacht basin. Significant rainfall events also result in flooding, which may be due to a number of factors affecting the stormwater systems effectiveness to drain the road and properties along Canal Drive and Florida Avenue.

The Town of Carolina Beach has partnered with Katherine Anarde, NC State Engineering Department and Miyuki Hino, UNC Department of City and Regional Planning to apply for a NC Sea Grant to identifying the drivers of chronic coastal flooding. This project consist of deploying a new sensor flood network, establishing an early warning system, and conducting modeling to help better understand the sources of the flooding we experience. The early-warning system and access to real-time camera and data feeds will enable us to manage our emergency response more efficiently, enhancing public safety and limiting unnecessary use of public resources. As we work to develop a long-term solution for flooding, we will use the research findings to ensure that any investments we make are sustainable and effective against rising water levels.

As described in the attached proposal, we will be engaged throughout this project. At the start of the project, we will help guide decisions on the final locations of sensors and cameras to maximize their benefit. We will work with the research team to refine an online web interface for the data and develop an early-warning system that meets our needs. In addition, we will provide input on the development of flood mitigation scenarios. We plan to meet with the project team on a quarterly basis to facilitate this collaborative effort.

ACTION REQUESTED:

No action needed. Informational only.

RECOMMENDED MOTION:

N/A