

Community Project Title: Gulf Coast Tide and Storm Tracking Network Expansion

Project Location: Waters of the Gulf of America, within Charlotte Harbor (in both Lee and Charlotte Counties). Note the exact location is to be determined based on input/direction from NOAA.

Is this Community Project also being submitted as a Programmatic Request? No

If Community Project is also being submitted as a Programmatic Request please share the corresponding information: N/A

Project Description:

Over the last five years, multiple catastrophic hurricanes have irreversibly impacted the lives and properties of thousands of our civilians. Most recently, Hurricanes Ian, Helene and Milton brought unprecedented tidal surges into low-lying areas of Southwest Florida coast, causing extensive flooding and destruction of thousands of homes. Last fall's hurricanes also exposed our inability to track the timing, location, and extent of surge and tidal flood events in our area due to the lack of real-time surge water level information in our region.

This issue has been recognized by NOAA, as they highlighted our region as a high-priority data gap in their National Water Level Observation Network Prioritization Technical Report published last year (https://repository.library.noaa.gov/view/noaa/60719/noaa_60719_DS1.pdf). The National Hurricane Center Tropical Cyclone Report for Hurricane Ian (https://www.chnep.org/files/ugd/252fd8_cff85aebc2054d54aec98df0c37abf03.pdf) also included the timeline and location of Storm Surge Forecasts and Warnings as a critique: the peak surge forecast was adjusted to 12 to 18 ft AGL after the onset of tropical storm force winds and any small shift in the track could have cause extreme storm surge flooding in areas that had no storm surge warning issued. From the report, a critique was highlighted that the storm surge forecasting was not precisely accurate in that it states, "The track forecast uncertainty during the warning phase (i.e., within 36 h of the onset of hazardous conditions) warranted the issuance of the storm surge warning for this large area...as only a small northward shift of the track could have caused extreme storm surge flooding in places that were dry during Ian." That certainty could have been achieved had there been a tide gauge in the area.

Charlotte Harbor, the second largest estuary system in Florida, fed by two major rivers (Myakka and Peace) and that straddles both Lee and Charlotte counties, currently does not have a tide gauge (for more information on tide gauges, please see <https://oceanservice.noaa.gov/facts/tide-gauge.html>). With the closest tide gauge currently being in a completely different river and estuary system (the Caloosahatchee) well to the south, surges impacting cities like Punta Gorda and Port Charlotte are not being accurately recorded. This data is necessary not just for more accurate surge and flood forecasting that informs evacuation and emergency orders, it also directly affects citizens seeking reimbursements (which are often tied in amount to local surge records as a proof of level of flooding). Additionally, the Lee County Hurricane Ian Recovery Plan (https://www.resilientlee.com/files/ugd/ce702b_7b200d97269544c1ace1f3a2bcd3ab13.pdf) includes numbers for the damages associated with storm surge and identify insurance repayment as a critical issue. This gauge could assist in that regard.

This community project request is being made on behalf of all the local Counties and Cities (including Lee and Charlotte Counties and the City of Punta Gorda), state agencies and universities (including Florida Gulf University), and federal agencies that work collaboratively through the Coastal & Heartland National Estuary Partnership (CHNEP, a Congressionally authorized and funded National Estuary Program serving Central and Southwest Florida). The CHNEP partners have a guiding collective strategic plan, called the Comprehensive Conservation and Management Plan (https://www.chnep.org/_files/ugd/252fd8_cff85aebc2054d54aec98df0c37abf03.pdf), which highlights a joint priority action to “Conduct data collection, modeling and analysis” with regards to water levels and flows in the CHNEP area. This urgently needed gauge would further address that previously identified joint regional priority.

Not having a tidal gauge inhibits Emergency Operations Center staff from receiving advance notice of potential flooding through installation of telemetry-based water elevation/flow gages. Public demand for online tide gages also increased substantially after Hurricanes Helene and Milton, as our residents and local news affiliates lacked information concerning the exact timing and extent of both onset and cessation of surge conditions affecting our coast. The counties are taking immediate action by installing sensors to help track water levels and flood events as they are occurring onshore. However, those will not provide advanced notice of surge events that a nearshore/offshore gauge can provide. Additionally, often the gauges utilized by counties rely on infrastructure that can be impacted during major storm events, such as cellular data services.

NOAA installing and maintaining the gauge will ensure its ongoing maintenance and monitoring in a fashion consistent with other NOAA gauges in Florida. We also understand via communication from local news affiliates that they utilize data from national sources such NOAA and the National Weather Service, since those are already integrated with their own weather forecasting systems. And finally, local governments simply lack the expertise, manpower, and possibly jurisdictional authority to place and maintain a gauge in the Gulf of America.

For the reasons stated above, we are requesting NOAA’s budget for operating their tide gauge monitoring network to be increased to support the installation and operation of a tide gauge in Charlotte Harbor. As previously mentioned, local governments will continue to try to augment that gauge information where they have jurisdictional and operational capabilities to do so, but this gauge is critically needed for nearshore/offshore monitoring data through NOAA. This investment to add a tide gauge in Charlotte Harbor will help area emergency managers with offering more timely and accurate evacuation notices, helping area citizens with getting appropriate insurance reimbursement for property damage, and creating more accurate area surge and flood forecasting for protecting property and public safety. Community Letters of Support are being submitted via email as directed.

Requested Funding and Total Project Cost: Install costs of approximately \$500,000 and annual maintenance budgetary costs of \$50,000 per year [Note: that current pricing is \$400,000 to install and \$30,000 a year to maintain but request is budgeted higher to account for potential increased costs and future pricing uncertainties.]

Project Budgetary Information: As NOAA is the entity responsible for installation and maintenance of the type of monitoring installation proposed in this request, funding for this work has historically been provided via federal budget appropriations to the aforementioned agency.