Adapting Energy and Water Infrastructure Along Texas Coasts to Rising Flooding Risks

The interactive web map is a tool that helps stakeholders visualize flooding risks from past and future hurricanes and assess how warming climates alter flood hazards. By leveraging a set of hurricanes with varying characteristics, including Rita, Ike and Harvey, the tool analyzes impacts under historical and warmer ocean scenarios for an energy-rich region in southeast Texas.

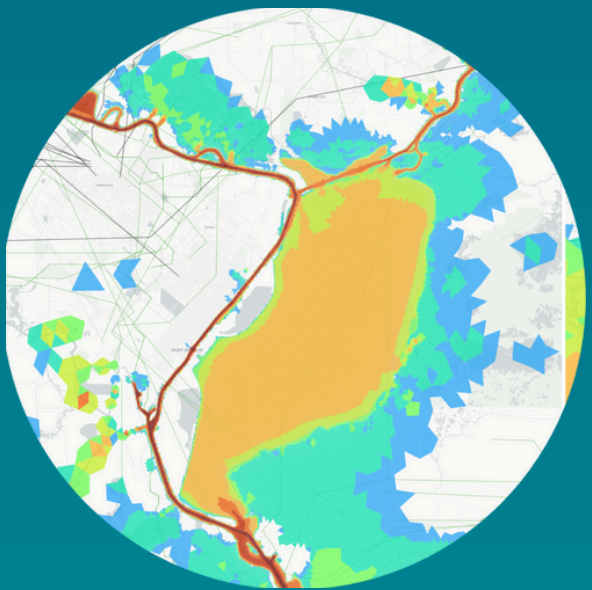
Meteorological conditions simulated by advanced weather models are used to drive a hydrodynamic model that simulates storm surge. The map displays these surge results along with critical infrastructure, including water supplier facilities such as pumping stations and treatment plants, and energy industry assets such as pipelines, transit stations and storage facilities.

More information:
tx.ag/CoastalFloodingAdaptation

Project Goals

This tool is being gradually expanded, and it will be shared with partnering entities, including communities, municipal governments, water and energy industries, and emergency response teams as the project progresses. The project team will offer training to allow the partners to apply the tool as a risk assessment framework to support their decision-making processes through offered TEEX trainings or coordinated Lunch & Learn events. Users have the ability to zoom into their area of interest, view results on an interactive map, and select specific locations to observe flooding depths under both historical and future scenarios. The information provided in the web map enables stakeholders to implement measures that enhance the resilience of critical energy and water infrastructures against potential disruptions caused by catastrophic flooding.

Historical



Future

Sea Grant TEXAS AT TEXAS A&M UNIVERSITY

LAMAR UNIVERSITY

TEXAS A&M AGRILIFE

UTA THE UNIVERSITY OF TEXAS AT ARLINGTON

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

USCRP US COASTAL RESEARCH PROGRAM