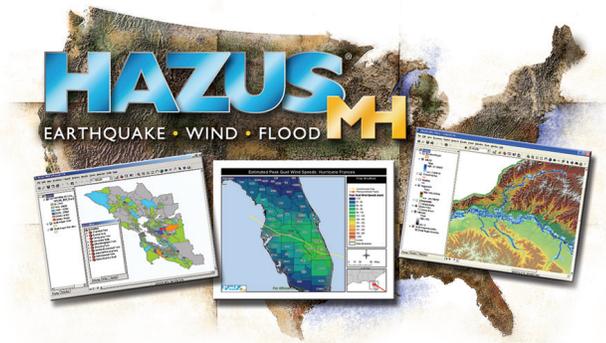


Louisiana State University

Using the Power of HAZUS to Study a Flood-prone State



Background

In the wake of Hurricanes Katrina and Rita, much HAZUS work was being done in the CADGIS lab, on the campus of Louisiana State University. In particular, a graduate student named Michelle Barnett (who now works at the Center for Energy Studies at LSU) produced many significant studies that took advantage of HAZUS methodology to create flooding scenarios. Her subject: the flood-prone parishes located all along the Louisiana Gulf Coast.

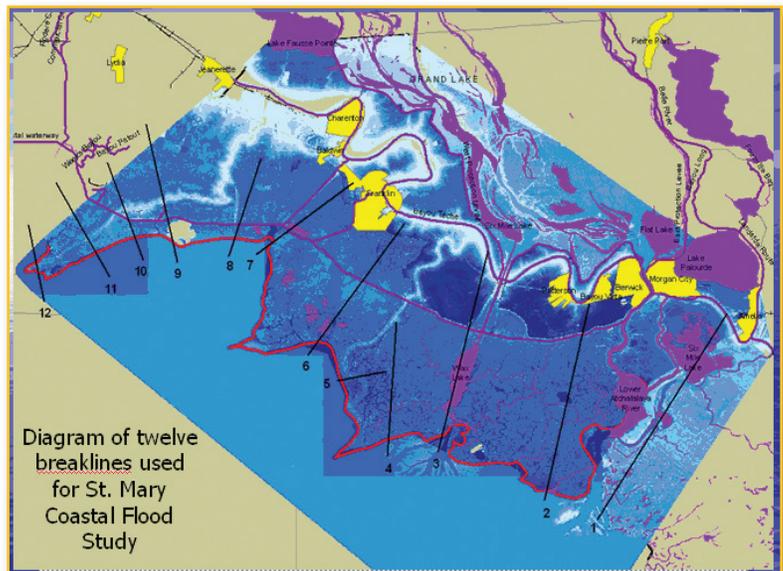


Diagram of twelve breaklines used for St. Mary Coastal Flood Study

This shoreline characterization was a significant variable in the St. Mary Coastal Flood Study conducted by Michelle Barnett, then a graduate student at Louisiana State University.

Images taken from those studies are compelling not only because of the historical significance of these storms, but also because they provide a glimpse of the incredible predictive power that is enabled by using HAZUS-MH methodology.

Projects

Three of the studies of the Louisiana Gulf Coast conducted by Michelle Barnett focused on the lower Amite River Valley, the Calcasieu River Basin, and St. Mary Parish, respectively.

- **Lower Amite River Valley**

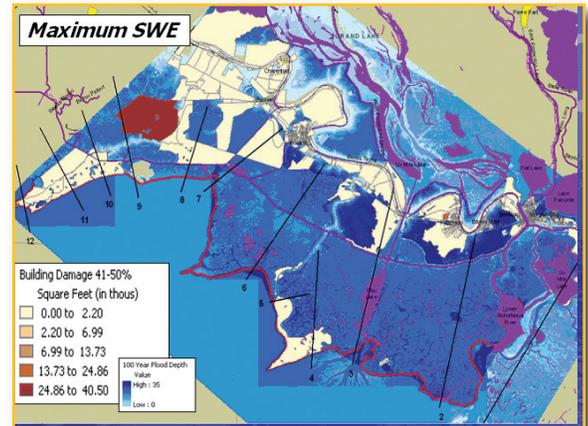
The scope of this study was to determine the flooding scenarios for 20-, 50-, and 100-year floods of the Amite River, which runs southeast of Louisiana’s State Capital, Baton Rouge. The study also estimated potential losses likely to result from each of the three projected events.

- **Calcasieu River Basin**

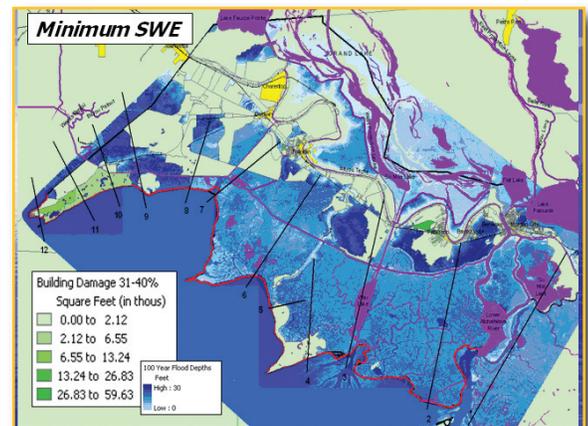
A study similar to the one performed at the lower Amite River Valley was conducted at the Calcasieu River Basin, within Calcasieu Parish (which was struck particularly hard by Hurricane Rita). The study was eventually presented to local municipal authorities.

- **St. Mary Parish**

St. Mary Parish officials requested that this study be conducted because of the area’s considerable coastal vulnerability. Part of the study involved accurately defining the coastline according to the type of land and erosion protection present. The shoreline was divided into transects based on FEMA’s Flood Insurance Study (FIS) for St. Mary Parish. These transects differ in stillwater elevation levels (SWEs) and studies were developed for both maximum and minimum SWEs.



Building damage estimates for maximum stillwater elevation levels (SWEs)



Corresponding building damage estimates for a minimum SWE

Possibilities

Michelle Barnett contends that HAZUS-MH methodology can also prove useful for the energy and conservation sectors, as she argued in a paper she co-authored, titled *The Economic Value of Coastal Preservation and Restoration on Critical Energy Infrastructure*. That paper was presented in Feb. 2007 at the 30th International Conference of the International Association for Energy Economics in Wellington, New Zealand. After that time, HAZUS research was being conducted to consider the coast of St. Mary Parish as if it were hypothetically erosion-protected.

As for Michelle Barnett, in addition to her work at the Center for Energy Studies, she also heads her own enterprise. She realizes

that she’s an early adopter of HAZUS methodology, but has found opportunities for her company to take advantage of it, nonetheless. “Private industry is still very unknowing of the existence, uses, and benefits of such a system,” she reports, but also points out, “As principle of a small energy consulting firm, I have been able to use HAZUS for various projects, as needed.”

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