

STD-2: Storms, Tides, and Disasters

MAST-602: Introduction to Physical Oceanography

Fall 2008 (Andreas Muenchow)

Deliverable: 15 min PowerPoint due Sept.-23, 2008



Galveston, TX, Sept.-12, 2008

The landfall of hurricane Ike in the early morning hours of Sept.-13, 2008 Galveston, Texas has been studied closely by Sussex Emergency Management officials. They observe that devastation was caused by extensive flooding of the Louisiana and Texas coastlines. Most deaths were attributed to drowning: a 16-year old boy in Texas who fell through a floor board inside his flooded home. Bodies were also retrieved from people drowning inside their cars trying to escape. Associated Press reports [Brian Skoloff, Sept.-14, 2008]:

Forecasters warned of "certain death," a possible 25-foot surge of water that would wash across the Texas and Louisiana coast, wiping away towns in a white-capped, churning mess of debris.

What Hurricane Ike actually brought was a storm surge much smaller than that, still causing widespread flooding and damage, but far less than the catastrophic predictions.

The experts were "dead on" with their latest forecasts that Ike would come ashore close to Galveston, even as the track shifted over several days, and that it would hit as a strong Category 2 storm, noted National Hurricane Center spokesman and meteorologist Dennis Feltgen.

Yet, storm surge size remains one of the most daunting calculations to make, say hurricane forecasters. Ike's maximum surge was about 15 feet near the Texas-Louisiana border.

Please prepare a 15 minute PowerPoint presentation to advise Lewes City Council on how storm surge predictions are made, what is needed to make them. Please make sure that your facts are accurate and can be verified (presentation due Tuesday Sept.-23, 2008).

What is the larger picture? What can presently be predicted well? What can presently be predicted only with difficulty? What is a prediction? How are predictions made? The recent landfall of Ike and the reporting of it in the media should give you a tremendous amount of material to work with. Some of it may be applicable to Lewes, some of it may not. If something from Ike is applicable, why? If Lewes is different from Galveston, TX, what is different and why? What underlying physics may apply?

Consider other factors and physical processes that may enhance or mitigate the risks posted by water and that should be considered by city, county, and state officials before they decide on evacuation orders and areas.