THE IKE DIKE: A COASTAL BARRIER PROTECTING THE HOUSTON/GALVESTON REGION FROM HURRICANE STORM SURGE

William Merrell, Ph.D.
George P. Mitchell Chair in Marine Sciences
Texas A&M University at Galveston
1675 Galveston, Texas 77553

Hurricane Ike was a perfect storm – hitting just after midnight at high tide under a full moon. Officially ranked as a category two hurricane, Ike had deceptively low wind speeds but, because of its huge size, produced a high surge. Unlike Hurricane Katrina, when the media and the power of political process focused on the difficulties in New Orleans, the impact of Ike was quickly forgotten as attention turned to the US presidential race and the worldwide financial meltdown.

Despite the initial lack of attention, Hurricane Ike may well be a watershed storm. It has already changed how NOAA will classify hurricanes by giving more credence to surge potential. Moreover, the devastation caused by Ike clearly pointed out the vulnerability of the Houston/Galveston area to hurricane storm surge and triggered ideas on regional approaches to suppressing surge for this urbanized region.

One such approach is the Ike Dike, a coastal barrier that would protect the Houston-Galveston region including Galveston Bay from Hurricane storm surge. The project would extent the protection afforded by the existing Galveston Seawall along the rest of Galveston Island and along the Bolivar Peninsula, with a 17ft high revetment near the beach or raising the coastal highways. The addition of flood gates at Bolivar Roads, the entrance to the Houston, Texas City, and Galveston ship channels, and at San Luis pass would complete a coastal spine that would provide a barrier against att Gulf surges into the Bay. The Ike Dike could be built using existing, proven technology such as the gates and barriers now in use in the Netherlands.

The Ike Dike concept was introduced in early 2009 and local decision-makers quickly began to consider the idea as a possible solution to storm surge in the Gulf Coast region. Harris, Brazoria, Chambers, Galveston, Jefferson and Orange Counties have formed a six-county public corporation, Gulf Coast Community and Recovery District, Inc, for the purpose of mitigating storm surge, flood, and wind damage. The nine directors on the board will consider possible solutions and make recommendations regarding their feasibility. This newly-formed public corporation represents a significant movement towards a coordinated approach to regional storm response and surge protection.