THE STATUS OF THE IKE DIKE/COASTAL SPINE

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The Ike Dike is a coastal barrier that, when completed, would protect the Houston-Galveston region including Galveston Bay from hurricane storm surge. The project was conceived by Texas A&M University at Galveston in response to the extensive surge damage caused by Hurricane Ike in September of 2008. The project would extend the protection afforded by the existing Galveston Seawall along the rest of Galveston Island and along the Bolivar Peninsula, with a sand-covered revetment near the beach or by 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 all Gulf surges into the Bay. The Ike Dike could be built using existing, proven technology such as the gates and barriers currently used in the Delta Works project located in the Netherlands. Figure 1 is a schematic of the IkeDike concept.

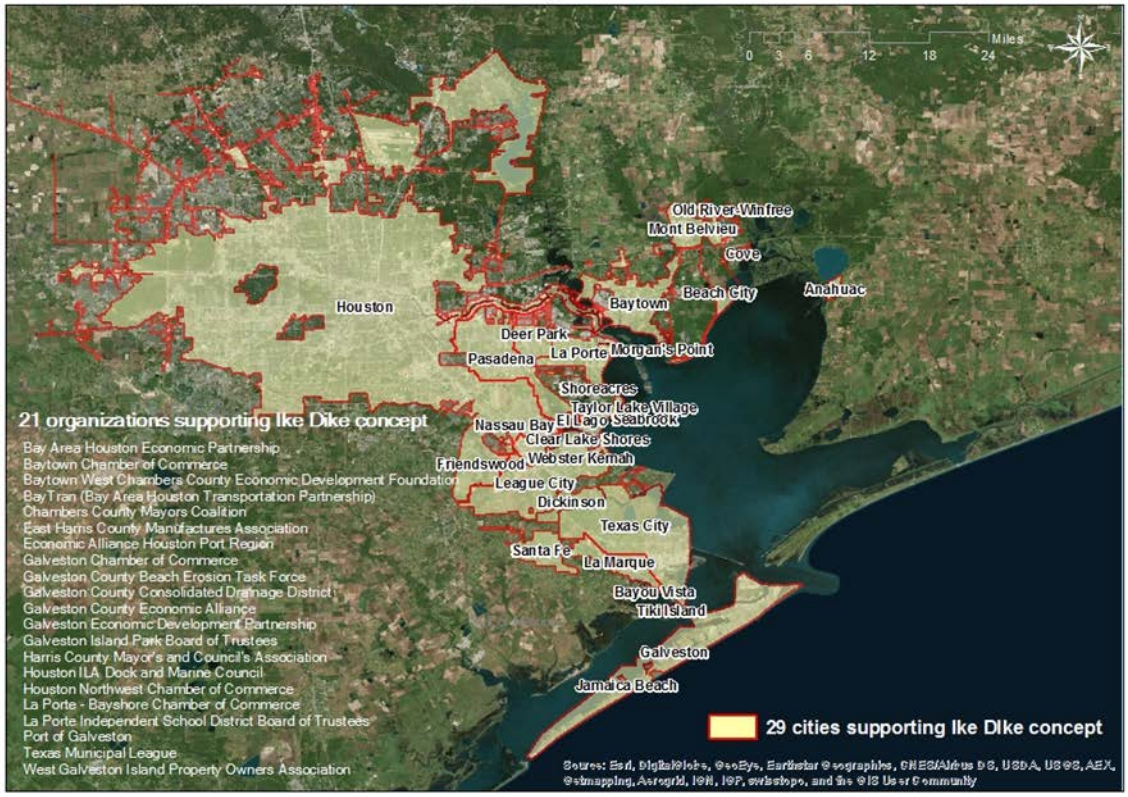
Figure 1: Ike Dike concept

The Houston/Galveston area is home to the largest and most important concentration of petroleum refining and petrochemical processing plants in the United States and the Port of Houston is the second-busiest port in the nation. But the region is hit by a major

hurricane about every 15 years. Hurricane Ike caused about $30 billion in damages, loss of life and considerable damage to the natural environment, yet it was not nearly as destructive as future hurricanes could be.

The Ike Dike protects everyone equally including the nationally strategic assets surrounding the Houston Ship Channel. It will require a regional approach with the counties and cities around Galveston Bay working together to build and maintain the Ike Dike. Strong regional support is evident with 29 cities and numerous civic and economic development organizations supporting the Ike Dike concept. See figure 2 below.

Cities supporting Ike Dike concept



The current path to constructing a coastal barrier for the Galveston Bay region is the standard USACE Corps study process that requires a local matching partner. The Texas General Land Office has agreed to be the local partner and is providing 50% of the study funding. At this point no formal agreement exists for the construction phase.

This process should result in a Tentatively Selected Plan in 2018 with a Draft Report

Released for Public/Agency Comments in July 18, Public Meetings in August 2018 and Final Public/Agency Comments on Draft Report due in Sep-18. A final recommended plan if any would be released in a Chief's Report in April 2021. Assuming the recommendation is positive the USACE would seek authorization and appropriations then.

So the Corps study will be ready to go to congress in 2021 to start the authorization process then the appropriation process. During the Corps study, public input will be requested to identify the locally preferred plan, but no organization is conducting research to determine and study possible locally-preferred options.

We see Texas A&M's roles during the next few years as continuing our research on and outreach for the basic coastal spine concept and focused research directed at producing a conceptual design that is best for Texas and the upper Gulf Coast.

The latter would be a design that not only protects from hurricane-induced surge but also fits into and enhances, where possible, the economic, environmental, social and recreational fabric of the coast. Ultimately we would produce a Texas/locally preferred plan

The standard USACE process has never produced a project of this size. Instead, like in the case of New Orleans after Katrina, the Congress directly funded the project and relaxes rules to speed up the construction. That could happen here, there is movement outside of the Corps process. During its last session, the Texas Legislature has set up a joint Senate/House committee to study a coastal barrier and passed a resolution asking The US Congress to advance the concept nationally. Recently, Texas Land Commissioner George P. Bush has sent a letter to President Donald Trump, cosigned by 63 mayors, county officials and prominent citizens from the Galveston Bay region, proposing that such a coastal spine be included in the President's Infrastructure Initiative.

Should an event trigger a rapid response or national infrastructure funding be specified, the construction of a Texas barrier could proceed quickly. A well-thought-out and publically vetted Texas-preferred plan would be even more important to a successful outcome.