

The Importance of Accurate Up-to-date Elevation Data: Flooding from Hurricane Ike

In September 2008, Hurricane Ike caused devastating flooding around Galveston Bay, coastal east Texas, and southwest Louisiana. One particular subdivision in LaBelle, Texas suffered about four feet of flooding in houses that were built in the past two decades. Most homeowners possessed Elevation Certificates (required by FEMA for flood insurance purposes) showing elevations above the flood stage. A post storm investigation revealed that the original elevation leveling survey (conducted in 1982) to establish elevation control for the subdivision was based on a National Spatial Reference System benchmark with a published elevation that was established in 1954. A Texas Water Commission study of the area in the 1970s revealed that the area where the National Spatial Reference System benchmark was located was subject to approximately three feet of subsidence. Recent surveys of adjoining benchmarks show up to four feet in subsidence in the same area, indicating that the area has experienced another foot of subsidence since the Texas Water Commission report. This example demonstrates the importance of having accurate and up-to-date elevation information, especially for regions undergoing rapid dynamic changes in land elevation.



Flooding caused by Hurricane Ike in LaBelle, Texas. This house has since been demolished. Photo courtesy of Caroline Miller.