

Mitigation best practices



FEMA

Mayor steers Tiki Island turnabout

Mitigation focus saves community



Tiki is a lacework island between Galveston and the south Texas coast.

TIKI ISLAND, Texas – When Hurricane Ike was bearing down on his town in late summer 2008, Mayor Charlie Everts knew it would be Tiki’s toughest test.

Townpeople had been working for years to prepare for a Hurricane Ike. “We’ve worked hard to build above and beyond the standards for coastal construction,” said Everts. “Hurricane Ike proved we did the right thing.”

Storm winds topping 100 mph blew waters from the Gulf of Mexico across the island, causing surges of 10 to 12 feet. The first blast came from the gulf, across nearby Galveston Island. After the eye passed, a second surge, blown from the opposite direction, soaked the island.

The result? “Everything appeared to work as planned,” Mayor Everts said. “People evacuated when we asked. Nobody died. Nobody was injured during the storm. Nobody is missing from Tiki Island.”

The majority of Tiki’s 950 homes are supported on tall concrete pilings. “We lost the downstairs on most of these houses, as we expected – the breakaway walls broke away with the force of the water, just as we planned,” Everts said. “The breakaway walls on one house took out the breakaway on the next one. We got a lot of debris from the neighboring communities, too. We had to bring in volunteers with front-end loaders to get through the streets. But, overall we did pretty well. I am really proud of how it turned out here.”

At a glance

Tiki Island, off the southern coast of Texas, survived Hurricane Ike better than most of its neighbors. That’s because of the town’s commitment to strong, safe building, said Tiki’s mayor. In contrast, Tiki used to have significant floodplain management problems.

Tiki Island, a town of only 1.5 square miles, is largely a man-made island. It was built in the 1960s, when developers dug canals and used the fill to elevate the land to between 4 and 10 feet above sea level. At first, Tiki was primarily a small fishing camp, though it evolved into a place for weekend homes, then into a village that was incorporated in 1983. It is now home to about 1,250 people whose upscale homes sit mainly on the waterfront.

Building houses that are safe on Tiki requires special care. In the town’s early years, Tiki stayed in hot water with the National Flood Insurance Program (NFIP) over a tangle of floodplain management compliance disputes.

“Tiki had a terrible reputation in floodplain management circles then and probably deserved it,” said FEMA’s Dale Hoff, who worked with the community for years to try to resolve the compliance issues. He credits Everts with turning the situation around.

When Everts took office in 1992, Tiki was on probation with the NFIP, in danger of losing federal flood insurance for its citizens. “We were concerned that we would have no insurance, no mortgages, no future,” recalled Alderman Phil Hopkins.

“We were all pulling in different directions then,” Everts said. “It took years of building community consensus. Now I think we’re all pulling together, everybody has come together.”

The village not only is off probation, it has progressed so far that the NFIP gives Tiki residents a 10 percent break on their flood insurance premiums.

“We’re very proud of our building standard,” said the mayor. “We try to go above and beyond the minimum standard set by FEMA and the standard coastal codes. I think we do it better than a lot of other areas.”

Everts’ experience in Hurricane Ike matched that of others on Tiki.

To show the depth of the surge at his house, Everts stretched his hand high in the air and said, “If I had been standing on my dock, the water would have been over my head.”

The good news is his lowest inhabited floor was above the surge. Rain came through a broken window, damaging a section of wall board, and the garage-level walls broke away as planned, but otherwise his home survived in good shape – like Tiki Village overall.



Tiki leaders include Alderman Phil Hopkins, Emergency Manager Tim Cullather, and Mayor Charlie Everts.

The mayor’s house, built in 2002, is typical of the Tiki building standard in several important respects.

- He built the living area of the house above the Base Flood Elevation, the level of high water that is calculated to have a 1 percent chance of occurring during any given year.
- The building is supported on reinforced concrete columns driven 20 feet below the ground. “If there is erosion, the house will still be there,” Everts said.
- The ground-level floor is not inhabited and its break-away walls were designed to give way to the water’s force without affecting the rest of the building.
- He used extra-sturdy materials, including heavy 7/8-inch rebar, stronger “6-sack” concrete mix and plywood sheathing.
- Metal fasteners and clips hold the house together.

“At every turn, Tiki opts for the higher standard,” the mayor said. “Every house built on Tiki is engineered, from the first thing that goes into the ground to the last nail.”

Tiki is especially glad that FEMA and the state provided funds for shutters over windows in Tiki’s public safety and water district buildings. The funds came from FEMA’s Hazard Mitigation Grant Program. The shutters, installed just before the storm, protected the buildings, allowing Tiki to manage the disaster and launch recovery operations quickly.

“Those hurricane shutters worked!” said Tiki Emergency Management Coordinator Tim Cullather.



Mayor Everts’ house was elevated 17 feet to stay above floods.

Although they know that a larger storm could have caused more damage, Tiki leaders are delighted that their hard work paid off in Hurricane Ike.

“These kinds of building programs demand long-term commitment,” said Cullather. “We hear of the recovery problems other communities are experiencing — having to cut back services and staffing. One of our neighboring towns estimates that they lost one-third of their tax revenue because of the impact of Ike on their community.”

Tiki Island, on the other hand, “won’t have to spend the next decade trying to recover from this storm,” Cullather said.

“When you get right down to it, in any community like this, property value is very important, and people have just about everything tied up in their properties,” Hopkins said. “So whatever we can do to keep this place strong, safe and able to withstand something like Hurricane Ike helps us all. Look what we can do. We can survive.”

Story and Photos by Ann Patton - FEMA