

# Mitigation best practices



FEMA

## Beaumont Winning Flood Fight with Help from Texas and FEMA

**BEAUMONT, Texas** — Folks in Beaumont used to call their town “Bayou City” because it was underwater so often.

“We can get more than 100 inches of rain in a year,” said Richard LeBlanc Jr., general manager of Jefferson County Drainage District #6. It’s his job to manage all of that rainwater, for Beaumont and nearly the whole county.

It’s challenging work. LeBlanc and his staff can tick off the years - 1998, 2001, 2002, 2003, 2004 and 2005 - that brought 10 to 15 inches or more of water each time it rained. In 2001, Beaumont got a total of 103 inches of rain. Jefferson County has consistently ranked among the top places in the United States for flood losses, including hundreds of properties that experience severe repetitive losses.

As a result of only two storms, in 2001 and 2002, the National Flood Insurance Program paid out more than \$19 million in claims for widespread residential damage in Beaumont, according to Gilbert Ward, manager of the Flood Mitigation Assistance program for the Texas Water Development Board.

To make matters worse, Jefferson County is almost

entirely flat, so it doesn’t drain naturally. Moreover, Beaumont is an old town, incorporated in the 1800s, and like many U.S. cities it was built without an adequate drainage system.

But Drainage District #6 is making progress on reducing flooding in Beaumont and the greater Jefferson County area, thanks to the district’s strategic work and its partnerships with the State of Texas, the Federal Emergency Management Agency (FEMA) and many other state and federal agencies.

That progress became apparent when Hurricane Ike roared ashore on Sept. 13, 2008.



Detention basins throughout Beaumont collect stormwater and release it slowly downstream to curb flooding. Pictured at Basin 104 Lamar are District Assistant General Managers Betty Holman and Jim Broussard.



It has been about a decade since Drainage District #6 began its crusade to reduce Jefferson County’s chronic flood losses. The program includes several essential elements:

### Prevention:

Helping the community to build in ways that reduce or avert new flooding problems. The drainage district’s recommendations are grounded in years of data collection. Based on that data, the district can make specific recommendations on building elevations.

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Ike delivered a 17.5-foot storm surge on the county’s coastal plain and dropped anywhere from 6 to 20 inches of rain, depending on where it was measured. The surge caused flooding in the county’s sparsely developed coastal areas, though no flooding occurred as a result of rain. “I don’t know of a single house that flooded from the rain in Hurricane Ike,” said Doug Canant, District #6 engineer.

District officials believe the completed projects have reduced or eliminated flooding in nearly 7,500 homes thus far. And they are working to complete many more flood projects, including a new one that should reduce flooding in an additional 1,000 homes.

Ward says he is particularly proud of the Jefferson County drainage district’s record. “Their program is based on sound plans, careful selection of cost-effective projects and prudent management,” he said.

The district is especially appreciative of its partnership with the State of Texas and with FEMA, which has provided more than \$29.1 million in Flood Mitigation Assistance grants to support Beaumont’s efforts.

“Before we developed our relationship with FEMA we were able to do maybe \$1.5 million in projects a year,” said Betty Holman, assistant general manager of Drainage District #6.



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Richard LeBlanc Jr., general manager of Drainage District #6 in Jefferson County.

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“FEMA is often criticized,” LeBlanc said, “but you will never hear that from Drainage District #6. They’ve been an angel of help for solving our citizens’ flooding problems.”

Asked whether he has any advice for other communities working to get a handle on flooding problems, LeBlanc responds matter-of-factly:

“They need to have a master drainage plan that governs the building in their districts and provides a framework for regulation,” he said. “They need to have a database for rainfall that covers the entire jurisdiction so engineers can design projects. Also, create a good communications system with other jurisdictions.”

He also recommends that local communities dedicate themselves to reducing losses through hazard mitigation. “It is the greatest thing that has happened in this area of Texas — these hazard mitigation grants and the relationship we have developed with FEMA and the Texas Water Development Board.”

## Planning and Management:

Several plans guide the drainage district’s actions, including:

- A plan for hazard mitigation, which identifies the major risks and the measures that can be taken to reduce disaster losses.
- A master drainage plan for the largest watershed, with other drainage plans anticipated. The master plan identifies needed projects and guides selection of priorities.
- A Geographic Information System, which tracks historical and projected data to aid decision-making.
- Extensive cost-effectiveness analysis, which provides information for program fine-tuning and project management.

## Projects — Upstream and Downstream:

The district is building a flood-management system that includes underground pipes, open channels and a score of stormwater detention basins. The district has built 16 detention ponds in the past six years, and plans to build more. The ponds allow the district to store water and release it slowly downstream. This strategic approach to stormwater management is one of the secrets of the district’s success.

## Partnerships:

Constant collaboration with Beaumont, State agencies and FEMA, is a key element in the district’s management.