Strong Building Code Protects Louisiana Town

Full Mitigation Best Practice Story

Saint Tammany Parish, Louisiana

Mandeville, LA - Wayne J. Berggren is a busy man – and a happy one. Mr. Berggren is the building inspector and floodplain manager for the City of Mandeville, a small community on the other side of Lake Ponchatrain across from New Orleans. Wayne is happy because his city fared reasonably well during the Hurricane Katrina disaster – partially due to their stringent building regulations that promote proper flood mitigation.

On the Gulf of Mexico, Southeastern Louisiana has always faced the risk of hurricanes coming ashore and causing a great deal of damage. This fear has been met in the past but never with such catastrophe as when Hurricane Katrina came ashore on August 29, 2005, just 55 miles to the southeast of New Orleans. Southeastern Louisiana did suffer a direct hit and much of the area received major flooding from the accompanying storm surge due to the low land elevation, in addition to the flooding of New Orleans and surrounding parishes from damaged levees.

The City of Mandeville was not caught off guard during Katrina. Mr. Berggren and the Mandeville city government were aware of the city's vulnerability to hurricanes and flooding and took steps to diminish damage before disaster struck.

Mandeville has been a member of the National Flood Insurance Program (NFIP) since 1979. Not only does this program provide residents with an opportunity to protect themselves from financial loss during flooding, but it also required that Mandeville raise its building standards to reduce the flood risk in their town. These standards state that all new construction must be built at or above the Base Flood Elevation (BFE) shown on the city's flood maps. The BFE represents the average floodwater elevation for a 100-year flood event, meaning that floors of buildings constructed to this standard will sit above the floodwater and avoid damage during all but the most severe flood events.

Since the town has been in the program for more than 25 years, they've had ample opportunity to bring many buildings up to these standards. In 1993, the city voted to go one step further than the NFIP requirements to raise their elevation standard to one foot above the BFE. Thus, their newest buildings have added protection, and their owners enjoy a 30 percent reduction in the cost of their flood insurance.

Some historical construction in town has also been preserved by these strict building regulations. When a home or business owner located in the regulatory floodplain wishes to make improvements to their building, and the cost of that improvement is more than 50 percent of the current value of the structure, this is called a "substantial improvement." When a substantial improvement is made to a building, the building owner is required to comply with the building code as though constructing a new building. The owner must elevate the structure to the current standard of one foot above BFE. The higher standard does add to the cost of the work, but, in the long-term, it's in the best interest of the community because the effort will protect that building during a future flood event.

The Justine Plantation Home is one such example. The home was built during the 1820's in Franklin, Louisiana, and was recently moved by barge in 2003 to Mandeville to serve as an office space for a local company. Many people are concerned that elevating older homes can destroy their appearance. As the photo above illustrates, elevating old homes doesn't have to spoil their authenticity. The architect that designed this project, Lynn Mitchell, said, "Elevating a historical home is certainly harder than leaving it alone. It does alter the look a little, but it doesn't ruin the character. We were very aware of style and structure during this project."

One of the biggest mistakes people make when elevating homes is designing the support columns poorly. Ms. Mitchell said, "Column proportion is very important in home elevation or the structure just looks awkward." The diameter of the columns needs to be large enough to look like they belong with the house. All too often people elevate their homes with thin columns. Although structurally sound, they just don't look right. Not only does the Justine Plantation look good, but it also functions properly as well. The photo above was taken just one month after Hurricane Katrina struck. There was virtually no damage to the home.

Mandeville's mitigation efforts proved their worth during Hurricane Katrina. This storm was the first real test of the city's floodplain building standards. Lakeshore Drive, which runs along Lake Ponchatrain in Mandeville, presents some pretty clear evidence of the effectiveness of home elevation. Along Lakeshore Drive, virtually every elevated home suffered little or no flood damage. The homes that were not elevated were substantially damaged. Some are completely gone. Mr. Berggren and the city's residents are passionate about flood mitigation. They've always known their efforts would be worthwhile someday. That day finally arrived and proved them right.

Mandeville will continue to enforce high building standards. Recently, Mr. Berggren received a phone call from a resident of Mandeville asking if they were going to waive some of the flood mitigation building requirements in the wake of Katrina. Wayne's reply was an emphatic no. He said, "Why would we relax the rules only to cause future damage to people's homes or property? We will eventually have another storm of the same magnitude."

There is help for those who have suffered substantial flood damage and, as a result, are required to elevate their homes. This help comes in the form of the Increased Cost of Compliance (ICC) coverage, part of the Standard Flood Insurance Policy. If community officials determine the home has been substantially damaged by flood, and the home is located within a Special Flood Hazard Area, the owner may qualify to receive up to $30,000 in addition to their regular flood insurance claim to help bring their home into compliance when rebuilding through the ICC coverage option. Since many of the homes in Mandeville that were not elevated suffered substantial damage during Katrina, many residents who had flood insurance will have the chance to take advantage of ICC coverage for the first time. Homes that receive a claim for the maximum statutory limit of $250,000 are not eligible for the ICC benefit.

Mr. Berggren is excited to see even more homes in his city elevate to reduce future flood damage.

Photo Caption: The Justine Plantation sits undamaged just a few weeks after Hurricane Katrina. Photo courtesy of Jeff Markham of FEMA.

Activity/Project Location

Geographical Area:	**Single County in a State**
FEMA Region:	**Region VI**
State:	**Louisiana**
County:	**Saint Tammany Parish**
City/Community:	**Mandeville**

Key Activity/Project Information

Sector:	**Public**
Hazard Type:	**Flooding; Hurricane/Tropical Storm**
Activity/Project Type:	**Elevation, Structural; Floodplain Management**
Activity/Project Start Date:	**04/1979**
Activity/Project End Date:	**Ongoing**
Funding Source:	**National Flood Insurance Program (NFIP)**

Activity/Project Economic Analysis

Cost:	**Amount Not Available**

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster?	**Unknown**
Value Tested By Disaster?	**Yes**
Tested By Federal Disaster #:	**No Federal Disaster specified**
Year First Tested:	**2004**
Repetitive Loss Property?	**Unknown**

Reference URLs

Reference URL 1:	**http://www.fema.gov/business/nfip/**
Reference URL 2:	**http://www.ohsep.louisiana.gov**

Main Points

- Mandeville's mitigation efforts paid off before, during, and after Hurricane Katrina tested their limits.
- Mitigation efforts work with home and business owners to ensure that historical character is preserved throughout the process.
- ICC helps people that qualify to rebuild safely, within the standards adopted by the community for floodplain management.
- Mandeville, LA is a small city nestled alongside Lake Ponchatrain outside New Orleans. An NFIP community since 1979, the city has long recognized its vulnerability to hurricanes and flooding and has been adopting and enforcing sound floodplain management standards and building codes since it joined the NFIP.
- However, knowing that it could do better, the city voted in 1993 to raise building elevation standards for all structures to one foot above the Base Flood Elevation - that's a foot above what the program requires.
- This conscious decision to literally "raise the bar" on homes and businesses in the area has been paying real dividends. While surrounding communities have struggled with high flood claims in the aftermath of storms, Mandeville has managed to keep both its total losses and average paid claim amounts down.
- Compared to its neighbor, Slidell, LA, Mandeville's average paid claims were a full 2/3 lower after Tropical Storm Allison in 2001, half as much after Tropical Storm Isadore in 2002, and again only half as much when Hurricane Lili hit a month later in 2002.
- But, as we all know, there was nothing to compare to Katrina. And, in the wake of the most catastrophic storm to hit the Gulf, Mandeville's average paid claims after Katrina were significantly lower than Slidell's and roughly half that of the Parish as a whole.
- These numbers are powerful - they're a testament to the all that flood-prone communities can save when they make an investment: an investment in building higher, better and safer.
- Communities save money, yes. The amount needed to repair and rebuild can be dramatically lowered and community residents can get discounts on flood insurance coverage. But it's about more than financial savings. By taking proactive steps to mitigate future damage, towns and cities like Mandeville help to save themselves the emotional trauma and real human suffering that occurs when homes and properties are devastated by natural forces.

Unelevated Structure

Elevated Historic Structure

Destroyed Home