

# Researchers aim to resolve inequity in Miami's flood preparation

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*Threat is real to all as sea levels rise, but most mitigation funding has gone to protect expensive coastal property*

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Miami is the U.S. city considered most economically vulnerable to sea level rise. Joe Raedle/Getty Images

MIAMI — The peninsular town of Sewall's Point juts into Florida's coastal river of St. Lucie. Many of the 2,000 residents have homes with a boat dock and a picturesque view. Last year, the median list price of a home for sale was over \$1 million.

Ten years ago, residents endured two devastating hurricanes — three weeks apart. Audrey and Kelley Winslow's home was hard hit. But two flood insurance claims later, the Winslows were able to bring their previously condemned home back to life.

This spring, if all goes according to plan, they will be moving into a modernized, four-bedroom version of their waterfront home. It will be elevated 14 feet with 30 columns for support. They've added a garage surrounded by permeable, infrangible walls to withstand future flooding. They've done it all with the help of a \$300,000 Federal Emergency Management Agency (FEMA) grant. Theirs was one of 12 properties in the ritzy community awarded a total of \$3.2 million from FEMA for flood-proofing.

"We get a lot of looks when people hear we got that much money, but what people don't realize is that it would cost the flood insurance program a lot more if we had to file two more claims," Audrey Winslow said.

Farther south is the historically black section of Fort Lauderdale, which bears the name of Broward County's first black surgeon, Dr. James Franklin Sistrunk. Even though the Sistrunk neighborhood is miles from the beach, this urban area is in FEMA's designated high-risk zone for flood hazard, but 41-year-old Joseph Robeson, who lives in the area, is unfazed.

"Why am I going to worry about water if I have somebody jumping in my back window stealing my stuff?" he said. "I don't think it needs to flood like it does, but mostly people learned to accept it 'cause there's other issues like crime."

Bobby Hankerson is a homeowner who has lived in Sistrunk for more than 60 years. He said the flooding problem is serious on streets near his home when it rains.

"What happens is, when the drainage system is not large enough to accommodate all the water, the drains fill up," Hankerson said. "Sometimes folks in the city say they are going to fix the flooding, but it never happens."

Flood mediation and response has long been focused on the pricey property in the coastal areas of Miami, which the World Bank listed as the [second most economically prone city](#) on the planet (following Guangzhou, China) to sea level rise. Now researchers are aiming to bridge the disparity gap by overlaying socioeconomic, age, population density and flood-potential data to help predict which areas are at the greatest risk for damage as sea levels rise and flooding incidents become more frequent.

"Up until now, talk about sea level rise focused on property and economic values, but when you change it around and think about how people are at risk, it creates a different picture," said Nicole Hernandez Hammer, assistant director of the Florida Center for Environmental Studies (FCES) at Florida Atlantic University.

## New outlook

FEMA's Flood Insurance Rate Maps, which determine flood risk factors, provide information for [today's flood risk](#), but addressing a future that will see an increased frequency and severity of losses estimated with sea-level rise is a work in progress. Conservative estimates are that sea levels will rise 2 to 4 feet by the end of the century. FEMA, in partnership with the National Oceanic and Atmospheric Administration and the U.S. Army Corps of Engineers, has created a set of map services to help communities consider risks in the wake of Hurricane Sandy.

The new research is throwing a wrench in how planners should consider risk. When maps are superimposed where sea level rise will affect communities with a high density of older residents, in low-income areas and at very low elevation, the risk areas are broader.

"It's not going to be simple," said Leonard Berry, director of FCES. "We will find areas that are fairly affluent and other areas fairly poor that are going to be equally prone to flooding."

Mention Hurricane Katrina and no one needs to hear more to remember the poorest residents of New Orleans who were immobilized and left in squalor following the hurricane and subsequent flooding. Although the city has rebuilt significantly since the storm struck in August 2005, the disproportionate impact on low-income, mostly black communities was a lesson that officials in Florida took to heart.

"When you look at some of these low-income communities in South Florida, you imagine what \$3 million could do to retrofit their homes or neighborhoods," said [Keren Bolter](#), a researcher from FCES who is creating sea-level vulnerability maps of Broward and Miami Dade counties. "But it's tough. How much do you want to invest into a home that is such low value? But at the same time, the people who live there, they need to be safe."

FEMA awards flood mitigation grants to property owners who have filed a previous flood insurance claim on a benefit-cost basis. FEMA essentially calculates the financial award as an investment that must be offset by the amount of a future loss in the case when an owner files a new claim.

This process is long and involved and favors property owners who have the means to pony up the cost of more than half the work — sometimes in the tens of thousands of dollars — before they get federal reimbursement funds. Not everyone can do that.

“In some cases, they have to have an alternative living situation while their home is being repaired,” said John Adams, Sewall’s Point’s building manager, who oversees the Winslows’ project. “And the town has skin in the game, too, because the city administers and disburses the working capital from FEMA, but we’re given only about 75 percent for the job until the job is complete.”

## Changing priorities

But poorer residents might have some hope.

“We understand there are some communities where the homeowner might not be able to make that kind of contribution, but we have other projects that provide money to communities for drainage projects, so it’s not a single resident but a community getting assistance,” said Quinton Williams, planning manager for Florida’s Division of Emergency Management, Non-Disaster Unit, which is the state agency that works with FEMA.

But that, too, depends on the economic health of the city and where priorities lie. Williams said that with the downturn in the economy, a lot of communities didn’t have the general revenues available to put toward mitigation activity.

“In some cases, they were unwilling to do so,” he said.

In Sistrunk, after years of political pressure, \$15 million in federal and state grants went to add new bus shelters, on-street parking, landscaping and decorative streetlights to the main boulevard to attract more business to the economically depressed area. The boulevard was widened and the residents are happier, but the focus was on bringing business to the boulevard. There haven’t been funds for drainage projects in the community.

“There’s an information-action gap, and there needs to be a policy change to assist areas that won’t have the ability to respond in a big flood event,” said Bolter, the FCES researcher.

This spring, FCES researchers will begin a rollout of their work, and there are plans for “information exchanges” with elected officials — especially those in very vulnerable areas.

“We’ll be developing training for local leaders so they can start thinking how to make their communities more resilient,” Berry said. “This know-how could mean developing a new drainage system, or look at permeable roadways, things that will make solutions accessible to the folks who are going to need it.”