

# Hurricane Harvey's Total Damage Will Be Shockingly Expensive to Repair

The fallout from Tropical Storm Harvey could cost hundreds of billions of dollars.

Hurricane Harvey, which has been downgraded to a tropical storm, has flooded Houston and its surrounding areas, disaster relief efforts are currently focused on getting area residents to safety. Local first responders have been overwhelmed by cries for help, with thousands of calls for rescue. The storm's death toll has reached 38 people, and it will almost certainly climb.

At the same time, the storm has wreaked havoc on the city's buildings and infrastructure, destroying homes and businesses and even causing a chemical plant explosion. In a region with such a heavy chemical and petrochemical footprint, many residents worry that the safeguards at other facilities will fail as well.

Analysts agree on one point: it will cost an enormous amount of money to repair and rebuild from Harvey.

"Let me put some stuff in perspective," said David Shapiro, president of DMS Disaster Consultants. "New Orleans got hit, and prior to the storm the population was about 450,000. Houston gets hit, and its population is eight or nine times what New Orleans was."

Damage estimates are currently all over the map. An early assessment from the risk modeling firm RMS suggests losses of potentially \$70 to \$90 billion, while some members of Congress have suggested that Texas will need \$150 billion or more in aid. Shapiro himself believes the numbers will get even larger.

The recovery from Katrina cost about \$160 billion, but he expects the repair from Harvey to run a \$200 billion tab. That would be the largest disaster ever to hit the U.S., he said.

Property Damage

Houston is the fourth largest city in the United States with more than 7 million individual properties that have a collected \$1.5 trillion in value. That estimate only includes the city proper, not factoring in all of the communities up and down the Texas coast that have also been submerged by Harvey.

As Brookings Institute Fellow Andre Perry writes, “Brick by brick, local folk will rebuild. As residents toil drying out, salvaging mementos and determining if they’re covered by insurance, they must prepare for the manmade storms that could follow.”

That process of digging out and rebuilding will take a long time and it will cost billions of dollars.

Much of this will come from water and wind damage. Flooding can cause irreparable harm to buildings and infrastructure. It can erode foundations, even to the point of degrading and destroying roads outright. Water damage ruins building materials like wood and drywall, and salt water in particular can destroy infrastructure such as machinery, electrics and boilers.

Few homeowners have insurance to cover these losses. Estimates suggest that approximately 80% of homeowners in the affected areas lack flood insurance, which does not typically come with homeowner’s or renter’s coverage. As a result, many residents will have to rely on federal aid or their own resources to rebuild and future flood victims may lack even that, as the Trump administration has openly discussed canceling the federal program through which most homeowners purchase flood protection.

Then there will be the losses beyond real estate. Some estimates suggest more than half a million vehicles alone will have to be scrapped, along with innumerable high-value items such as electronics, jewelry, clothing and more. Those losses still have yet to be calculated.

For many families, as was the case in post-Katrina New Orleans, replacing it all will simply not be an option.

### Infrastructure and Buyouts

It also will not be enough to simply rebuild Houston. The city must be made safer with infrastructure not only repaired but also upgraded to help prevent future

disasters. That, too, will cost an enormous amount of money.

It will, however, be one of the first post-recovery issues for Houston to consider.

“You have infrastructure,” said Shapiro. “You have schools damaged, public facilities, electric distribution and roads that are damaged. You have a whole slew of problems. But they have to fix the drainage system or else.”

“They said it was a 1,000 year event,” he added. “But I’ve seen more [of those] events happen multiple times than any of the statistics would allow you to believe. It happens, so they’re going to have to fix it.”

Houston already sits in a flood-prone area, with geography that has always created problems for the city. Building drainage and water-management systems that prevent this kind of disaster from happening again will be a major concern for the city and, as America learned while rebuilding New Orleans’s levees, that can cost billions of dollars. The expense doesn’t make it any less necessary, however.

And many parts of the city simply may not be saved.

In the wake of Hurricane Sandy the states of New York and New Jersey earmarked \$700 million for buying properties in high-risk zones, choosing to take over the land rather than spend enormous amounts of money making the area safe. Texas may have to face the same choice as it weighs its infrastructure needs.

Lost taxes

Houston will have to do all of this while earning far less money.

In a state without income tax, this city relies on two main sources of revenue: sales and property taxes. Harvey will cripple both.

As the storm drives out residents, making thousands of Texans refugees in their own land, it will grind economic activity to a halt across large sections of the city. Not all of Houston will or has shut down, but enough will do so to cause a very serious interruption in the city’s sales tax revenue.

At the same time the damage from Harvey will erase a large section of Houston’s property tax base.

It is frankly impossible to know right now just how much property damage Houston will suffer. Estimates vary widely, but right now they're little more than best guesses. What forecasters can know is that the value of local properties will plummet to a significant but unknown degree. Homes and buildings will be damaged, some beyond repair, and some amount of physical real estate will suffer permanent damage from the flood waters and erosion. The value of hundreds of thousands of cars will vanish into junkyards, either permanently or until the owners file insurance claims.

All of this will gut Houston's property tax base. The question is for how long and how much.

Some property owners will repair the damage, either through insurance claims or self-financing, returning the land to its full value. Others won't, leaving reduced or blighted properties sitting on the tax rolls. It will take weeks, if not months, to estimate the full impact this will have on the city's tax rolls.

In the meantime, however, the recovery will have to begin. It will be expensive but, as Perry pointed out, not wasted.

"When the floodwater is in front of you," he wrote, "it's hard to look ahead, but the framing of recovery dictates its pursuits... No one should shy away from pursuing opportunities to improve upon the city's strengths, but everyone must envision job prospects, training and capacity building for the people who need it most."

Houston has a long road to recovery ahead, but after the waters recede there may be room to shoulder the burden with optimism and build a better city for everyone.

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