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## Low-income New Yorkers face an outsize risk from extreme weather

By Brian Pascus

Low-income residents are disproportionately vulnerable to climate change, thanks in large part to the city's decaying stock of affordable housing. The homes are often in flood-prone waterfront areas that once were considered undesirable.

More than 1 million people live in floodplains across the city, and that figure is expected to double as sea levels rise, urban planners and environmentalists warn. The New Yorkers most at risk are disproportionately people of color.

The conditions pose a significant risk for the New York City economy, with employers facing the prospect of a significant portion of their workforce living in housing [vulnerable to superstorms](#). The city, already known for its high cost of living, can ill afford to lose more affordable units.

There are more than 1 million New York workers living in affordable housing now, said Esther Toporovsky, executive vice president of the New York City Housing Partnership, a nonprofit that works as an intermediary between the affordable housing industry and public agencies.

"I would say probably a lion's share of the workforce in New York, to some degree, lives in market-dictated affordable housing and regulated affordable housing," Toporovsky said. "That is the number one way to ensure productivity, and I think it's huge if [workers are] impacted by climate change and they can't necessarily be in their units."

For people living in vulnerable buildings, the climate crisis is not just an economic concern but an existential one.

"What scares me the most is we're going to have to break up our communities and families," said Frank Avila-Goldman, vice president of the co-op board at Gouverneur Gardens, a six-building Mitchell-Lama cooperative on the Lower East Side that was built in the early 1960s and sits by the East River. "Where can people go if they don't have flood protection? What neighborhood will make room for us?"

For a city with [520 miles of coastline](#), two interconnected problems are at work, said Robert Freudenberg, vice president of energy and the environment at the Regional Plan Association, an urban planning research group: The city's aging stock of affordable units needs to be [retrofitted to withstand extreme weather events](#)—elevating boilers, building backup generators and placing electric equipment on roofs—and something must be done either to relocate the thousands of low-income residents living in flood-prone areas or to upgrade their homes.

"Affordable housing and the climate crisis are on a collision course," Freudenberg said. "Climate change and its impact finds people living in conditions that aren't up to quality or up to code."

### Leaking walls

An average rainstorm is not a cause for concern for most New Yorkers, but it disrupts the lives of others.

"When it rains, to this day it pours in my apartment," said Nilsa Owens, a six-decade resident of the Jacob Riis Houses in the East Village, a 13-building public housing complex built in 1949. "The walls bubble up because of the moisture. The ceiling leaks every time it rains. The whole complex is like that."

Rainwater flowed into Owens' apartment when [Hurricane Ida](#) hit New York last month, and she said maintenance work done seven years ago to seal the bricks hasn't made much of a difference.

The main work done to improve the Jacob Riis houses has been dedicated to floodwater protection on the ground floor, said Owens, who can see drilling and digging outside her apartment, where she has lived for 38 years. Crews are at the complex to perform a two-part, \$130 million renovation. They're [repairing damage from Superstorm Sandy](#) and installing resiliency measures such as building backup generators and replacing electrical equipment and sump pumps, according to the New York City Housing Authority, which manages the complex.

"They just destroyed the whole complex. It looks like a war zone," said Owens, a 66-year-old retired secretary who lives in a three-bedroom unit with three grandchildren. "It's tiring to see your development look like World War III."

When Superstorm Sandy hit New York in October 2012, the city's affordable housing stock absorbed a chunk of the damage. Almost 20% of the city's 178,000 public housing units were damaged by Sandy, according to figures from the NYU Furman Center, a research lab on housing and urban policy. Nearly 80,000 low-income residents were left without heat or electricity because of the flooding, including Nancy Ortiz, a third-generation resident of the Vladeck Houses on the Lower East Side, a collection of 20 public housing buildings completed in 1940.

"Sandy is our reminder every time a storm is coming," said Ortiz, 63, who lives in a three-bedroom unit with her daughter, son and two grandchildren. Ortiz, who is retired, had been her building's resident association president for 18 years. In that role she mediated tenant disputes and lobbied the city for more funding on capital projects.

"We still get flooded," she said, "which is why we've fought so hard for flood protection."

Ortiz said the Vladeck Houses did not receive any flood protection or upgrades after Sandy, though the city is expected to begin work this year on an East River flood-protection barrier from Montgomery Street, near her apartment, up to East 14th Street.

'A slow-moving disaster'

More than 1.3 million people live in or are adjacent to New York's floodplain, the area most likely to flood based on historical data, according to Rebuild by Design, an environmental and urban planning nonprofit. The distance of the floodplain from sea level and the annual risk vary depending on location. The [Rockaways beaches in Queens](#), for instance, face a heightened risk of flooding because of their location along the ocean, the Regional Plan Association said.

"This is a slow-moving disaster that is picking up a lot of speed in a city like New York," said Amy Chester, managing director at Rebuild by Design. She added that the number of New Yorkers living in the floodplain is expected to rise to 2 million by the end of the century.

There are major inequalities at work when it comes to flood risk. Of those 1.3 million people living in a floodplain, more than half are considered low-income, according to Rebuild by Design, meaning they have a median income of less than \$75,120 for a family of three.

One-third of New York City residents living in rental units in high-risk flood zones earn less than \$25,000 per year, according to a 2013 Rand study. The poverty threshold for a two-adult family with two children is \$26,246, according to 2020 federal data.

The threat of climate change is no longer merely a theory. Sea levels are expected to rise by 6 to 12 inches by midcentury, according to a recent U.N. report. The resulting atmospheric changes are likely to make events such as Superstorm Sandy regular occurrences in the coming decades.

When the [remnants of Hurricane Ida pounded New York](#) in September with record rainfall, it caused up to \$24 billion in property damage across the Northeast and contributed to the drowning deaths of 11 people in Queens and two in Brooklyn. Videos of outer-borough streets left completely underwater revealed the extent of the crisis in those neighborhoods.

"We are the living wall," Ortiz said. "We are the barrier to everybody behind us."

Particularly vulnerable

Many of those most at risk live in government-subsidized affordable housing, such as Mitchell-Lama cooperatives, where residents own shares, and the public housing communities overseen by the New York City Housing Authority. A Rebuild by Design report last October estimated that half the residents living in the city's floodplain are people of color.

More than 55,000 rent-regulated affordable housing units are in the floodplain, according to the City Planning Commission. That figure excludes 178,000 NYCHA units.

The areas most susceptible to flooding include Red Hook, Far Rockaway and the Lower East Side—each with thousands of affordable units. The communities were built along the coast in the mid-20th century, when the land was inexpensive and the industrial waterfront was considered an undesirable location to live.

"For most of human history, the waterfront was not where you built housing. The waterfront was where you put your nasty stuff: infrastructure and [shipping](#)," said Eddie Bautista, executive director of the New York City Environmental Justice Alliance, a nonprofit advocacy group. "It wasn't considered prime real estate until deep in the 20th century."

Residents now living in affordable developments face an ugly choice, said Moses Gates, vice president for housing and urban planning at the RPA, and so do the city and state agencies that manage their buildings.

"You either have to make significant investments to harden properties to make them resilient or you have to transition out," Gates said. "And you have lots of residents who don't have comparable housing options. There aren't many opportunities to buy the same unit for the same amount of money."

Avila-Goldman, 44, said that an ominous alternative is already being whispered by his neighbors at Gouverneur Gardens.

"The words you hear are 'managed retreat' or 'housing mobility,'" he said. "We have residents who have been here 60 years, and no one expected the possibility they would have to uproot you."

#### Pricey solutions

Mayor Bill de Blasio's administration has [launched multiple initiatives](#) to address climate change. NYCHA has invested almost \$2.3 billion toward climate resiliency upgrades such as building ground-floor storm-surge guards and reinforced exteriors, and has moved heating systems, power lines and generators away from lower floors and basements. Properties in Coney Island and Gravesend, Brooklyn, and in Far Rockaway completed nearly \$300 million in upgrades and renovations last year.

The de Blasio administration also has begun constructing the East Side Coastal Resiliency project, a roughly \$1.5 billion initiative to [build flood protections](#) along a stretch of land that's home to 28,000 public housing residents, including those in Gouverneur Gardens.

Avila-Goldman has been watching construction on the resiliency project, which is expected to include a floodwall at Pier 42, near his home. He breathes easier knowing others are paying attention.

"All I can say is, 'Thank God,'" said Avila-Goldman, who manages intellectual property rights for an artist's estate. "I'm very grateful the city is doing this for us, because we have nowhere else to go. This is one of the things that can protect our neighborhood in the decades to come."