



Rising Tides, Rising Costs

Flood Insurance and New York City's Affordability Crisis

SEPTEMBER 2014

A REPORT FROM THE

CENTER FOR NYC NEIGHBORHOODS

About the Center for NYC Neighborhoods

The Center for NYC Neighborhoods was created in 2008 in response to the foreclosure crisis through the collaborative efforts of the mayor, the New York City Council, community advocates, foundations, and corporate leaders. Our mission is to promote and protect affordable and sustainable homeownership in New York City. As the central hub of a diverse network of housing counseling and legal services organizations, we leverage private and public resources to ensure that homeowners citywide have access to high quality foreclosure prevention services. Since our founding, we have assisted over 30,000 homeowners in New York City.

SANDY RECOVERY

The Center's unique model and strong relationships with community groups allowed us to respond quickly and focus on both the short- and long-term needs of homeowners following Hurricane Sandy. Working with our Network Partners, we have assisted nearly 4,000 homeowners recovering from Sandy.



Meeting Emergency Needs

- Our Neighborhood Recovery Fund, set up in the immediate aftermath of Sandy, provided emergency grants and loans to over 275 New York City families, delivering a total of \$1.35 million in funding.
- A majority of Neighborhood Recovery Fund recipients have household incomes below 80% AMI or about \$68,000 per year for a family of four.

Assisting Vulnerable Homeowners

- The Center raised over \$2 million in funding to fund 19 non-profits and coordinate the work of another 8 organizations in order to support a total of 27 community-based organizations responding to Hurricane Sandy across the city. This funding has delivered legal services and housing counseling assistance to nearly 4,000 homeowners to date.

Center for NYC Neighborhoods

A grant from the Neighborhood Recovery Fund helped the Colombo family begin to rebuild in Broad Channel, Queens
COVER Collapsed home on Staten Island after Hurricane Sandy / FEMA News Photo

Fostering Long-Term Resiliency

- Recognizing increasing flood insurance premiums as an emerging long-term challenge for low- and moderate-income homeowners, the Center created the consumer information website FloodHelpNY.org, which provides individualized, accessible information for homeowners about New York City’s new flood maps and changes to the National Flood Insurance Program.
- We organize and lead borough-based collaborations among community-based organizations helping communities recover from Sandy. We provide additional trainings and individualized technical assistance as needed.
- We continue to advocate for resources and policies that will foster resiliency in New York City’s flood-prone neighborhoods in order to preserve a vital source of low- and moderate-income housing, keep our neighbors safe, and reduce the risk of damage from future extreme weather events and climate change.



3,900+ homeowners received direct housing counseling or legal services



1,300+ inquiries responded to by our Homeowner Hotline for Sandy-related assistance



1,500+ views of PSAs/YouTube videos



1,100+ visits to the Sandy-related pages on the Center’s website



500+ people reached at community events



Created Public Service Announcements to warn against contractor fraud and scams, as well as promotional videos to raise awareness about the free services available through our network.

Acknowledgements

The Center for NYC Neighborhoods would like to thank the following individuals for their invaluable assistance in creating this report:

Report Production Credits

Authors

Samuel Stein & Caroline Nagy

Editor

Matthew Hassett

Designer

Leylâ Moore

Research Associate

Joyce Kwon

Photographer

Abe Halpert

Maps

Chris Cardinal

Intern

Lauren Suiter

Lucia Acevedo

Cindy Ayala

Bridget Broadway

Connie Ann Cammilleri

Sean Capperis, NYU Furman Center

Carla Jones Clark

Thomas Cunsolo, Founder, Staten Island Alliance

Rebecca Elliott, University of California, Berkeley

David Gaul, Zone A New York

Carrie Grassi, NYC Mayor's Office of Recovery and Resiliency

Katherine Greig, NYC Mayor's Office of Recovery and Resiliency

Dianne Hague

Zoé Hamstead, Milano School of International Affairs, Management & Urban Policy

Joseph Herrnkind

Alexis Iwanisziw, New Economy Project

Susan M. LaRocca

Erika Lindsey, NYC Mayor's Office of Recovery and Resiliency

Joseph Pupello, Zone A New York

Lawrence Scheiber

Arden Sokolow, New York Governor's Office of Storm Recovery

Mark Treyger, New York City Council Member, District 47

David Troise

Max Weselcouch, NYU Furman Center

Josh Zinner, New Economy Project

We would also like to thank our funders for their generous support of our work on flood insurance education and outreach over the past year:



Durst Family Foundation



JPMORGAN CHASE & CO.



The Center for NYC Neighborhoods is solely responsible for the accuracy of the statements and interpretations contained within this publication. Such interpretations do not necessarily reflect the views of the Center's funders.

Table of Contents

Executive Summary	6
Introduction	8
Who Lives in New York’s Flood Zones?	10
HOUSING CHARACTERISTICS	10
INCOME LEVELS	12
DEMOGRAPHICS	12
FORECLOSURES AND FLOODING	14
How Did the Waterfront Develop?	16
GEOGRAPHY	16
POLITICS	18
What Will This Mean for New Yorkers?	23
HISTORY OF FLOOD INSURANCE	23
RISING COSTS: THE IMPACT ON NEW YORKERS	26
RISING TIDES: CLIMATE CHANGE & NYC’S VULNERABLE FLOOD-PRONE COMMUNITIES	26
RISING COSTS AND RISING TIDES: CHAIN REACTIONS	30
Recommendations	32
Conclusion	34
Appendix	36
Sources	38

Executive Summary

The devastation caused by Hurricane Sandy was immense. Today, as New Yorkers continue to rebuild and recover from the storm's destruction, a new challenge looms on the horizon. The rising tides caused by climate change, along with the rising costs of flood insurance, put the safety, housing affordability, and neighborhood stability of many of New York City's neighborhoods in and around the coast at grave risk.

This report examines the impacts of rising tides and rising costs on communities living along New York City's 520 miles of coastline. We demonstrate how rising flood insurance premiums and the increased risk of flooding threaten the affordability and safety of these communities, and provide recommendations for facing this crisis.

WHO LIVES IN NEW YORK'S FLOOD ZONES?

Compared to the city as a whole, a disproportionately large number of flood zone residents live in owner-occupied 1–4 family homes. Homeowners in New York's flood-prone neighborhoods are largely working and middle class. In large part, these homeowners are civil servants, educators, social workers, transit operators, police, and firefighters—the people who make New York City run.

HOW DID THE WATERFRONT DEVELOP?

Hurricane Sandy revealed a reality of life on New York City's waterfront: while some wealthier enclaves were hit by the storm, most of Sandy's victims were public housing residents and low- to moderate-income homeowners. Why have our most flood-prone areas become the site of so much relatively low cost housing?

Geographical issues such as the distance from the city center and the difficulty of subway construction provide some explanation for why many communities near the New York City shore are relatively affordable; however, other political forces have contributed, as well. Historically, the placement of heavy industry and highways on the waterfront, for example, made these communities less desirable as places to call home. Additionally, many flood-prone communities were heavily impacted by redlining, urban renewal, and the failed city planning experiment of “planned shrinkage.”

WHAT WILL THIS MEAN FOR NEW YORKERS?

Given the reality of rising tides and rising costs, more and more New Yorkers will face an increased flood risk and will be required to purchase flood insurance.

Recent legislative changes to the National Flood Insurance Program will result in increased flood insurance rates for many New Yorkers. New York City will be hit particularly hard by the new flood insurance rules because we have more residents living in high-risk flood zones than any other city in the United States, and also because we have some of the oldest and most valuable buildings in harm's way.

The 2013 Preliminary Flood Insurance Rate Map (expected to take effect in 2016) will more accurately depict New York City's current risk of coastal flooding, and will significantly expand its high-risk floodplain. The new maps, however, reflect only current risk levels and do not take into account future risk from climate change. The higher temperatures, increasingly severe weather conditions, and rising sea levels associated with climate change will drastically increase flood risk and permanently alter life in New York City's coastal communities.

Left unaddressed, rising tides and rising costs could lead to a host of crises, including: displacement, foreclosure, underwater mortgages, short sales, turnover, vacant homes, and declining tax revenue. If the challenge of rising flood insurance rates and the need for greater coastal resiliency is not confronted head-on, the consequences could be dire for many of our city's neighborhoods.

RECOMMENDATIONS

Confronting the stark challenges posed by rising costs and rising tides will require a concerted, long-term effort to arrive at solutions that protect communities in flood-prone areas. This report makes the following recommendations:

- Educate residents in flood-prone neighborhoods about their current flood risk, expected rate increases, and potential future risks caused by sea level rise.
- Conduct additional research on affordability and mitigation efforts that address New York City's particular design challenges.
- Ensure that FEMA develops alternative mitigation standards for dense, urban neighborhoods that face unique challenges in adapting to the effects of climate change.
- Create an elevation fund to provide financing for home elevations and other mitigation measures so that residents can both make their homes safer and keep insurance costs affordable.
- Explore new means-tested flood insurance subsidies for low- and moderate-income homeowners to replace the blanket subsidies currently being phased out.
- Continue and expand targeted buy-out opportunities for individuals or communities that wish to relocate.

Ultimately, protecting New York City's flood-prone neighborhoods, while promoting safety and sustainability, will require significant efforts and investment on the part of government, as well as impacted communities and residents. While the challenges are substantial, meeting them is the only option, in order to protect both our city and the hundreds of thousands of families who call New York's coastal neighborhoods home.

Introduction

Two years after Hurricane Sandy, New Yorkers are still reeling from the storm's destruction. Its damage was immense: 17% of the city was flooded, nearly 90,000 buildings were damaged, and more than 44 people were killed.¹

For most families, the immediate struggle was to return to their neighborhoods and restore their homes. That was hard enough, especially for low- and moderate-income New Yorkers with little savings or access to credit, and thousands of families continue to suffer from displacement to this day.² But now many families are facing a new crisis, which threatens their long-term affordability and their neighborhoods' stability: the threat of rising flood insurance costs.

In recent years, the federal government has issued new flood maps for New York City that, if enacted as expected in 2016, will dramatically expand the number of people who must buy flood insurance. At the same time, recent federal legislative reforms to the National Flood Insurance Program (NFIP) will result in increased flood insurance rates for many New York City homeowners. While the Homeowner Flood Insurance Affordability Act of 2014 has slowed the rate at which prices will rise, serious concerns persist over the long-term financial impact

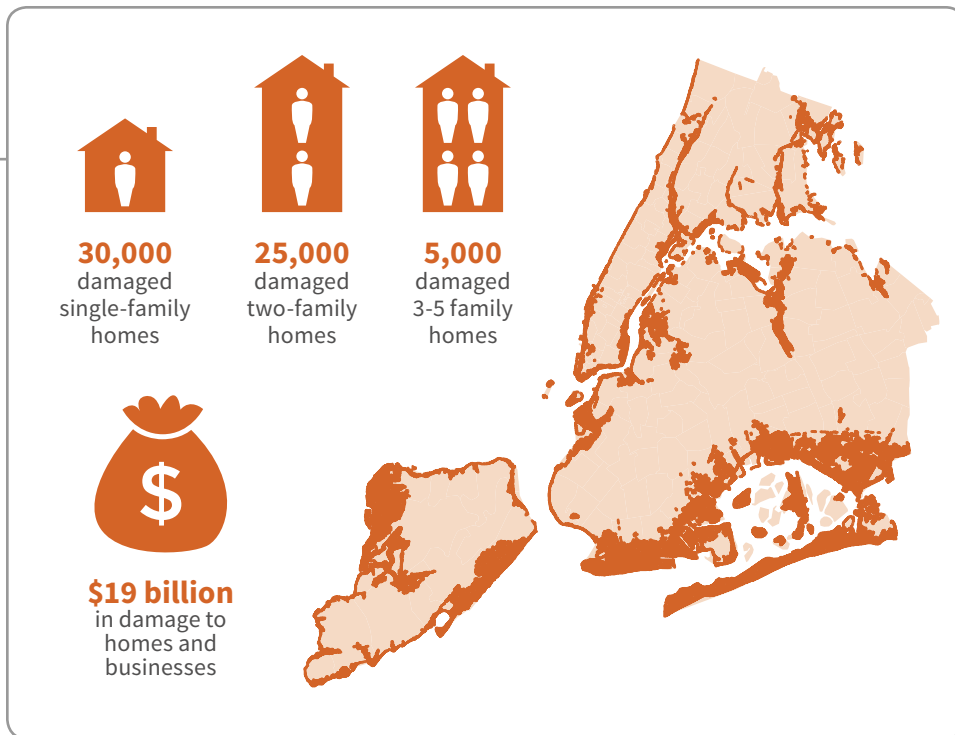
of flood insurance rate increases. Homeowners in New York's flood-prone areas are largely working and middle class; how can they be expected to shoulder these costs? Will this additional cost tip more homeowners into foreclosure? How many will be displaced from their homes and communities?

Governor Cuomo and Mayor de Blasio have both already shown a strong commitment to bridging the gap between smart climate policy and affordable housing. At the state level, the Governor's Office of Storm Recovery has incorporated resiliency throughout its work, from infrastructure projects to housing recovery programs. Through the New York Rising Community Reconstruction Program, the State is enabling communities to develop locally appropriate solutions for the many unique resiliency challenges faced by New Yorkers living in the state's many coastal neighborhoods.



Staten Island Legal Services

**Destroyed houses on Staten Island
after Hurricane Sandy**



Sandy Surge Area

NYC land flooded during the Hurricane Sandy storm surge

For its part, the de Blasio administration created an Office of Recovery and Resiliency, tasked with addressing the issue of flood insurance affordability while planning for the city's long-term resiliency. The administration's affordable housing plan, *Housing New York*, includes coastal affordability as one of its key policy priorities and promises to find ways to elevate as many homes as possible and advocate for NFIP policies that will reduce flood insurance premiums for those who cannot elevate.³ This is an important step, and follow-through will be of the utmost importance. Without swift and strong action, the consequences will be dire.

This report looks at who lives in flood-prone communities, how those areas developed historically, and what mounting insurance costs could mean for New York City. By combining personal stories, collective histories, public data, and policy analysis, we hope to shine some light on those most vulnerable to rising tides and rising costs.



MORE TO THE STORY

Watch interviews and discover more online at: cnycn.org/risingtides



“Nobody’s rich. Everybody’s just rubbing two nickels together to make a dime.”

Carla Jones Clark
CANARSIE, BROOKLYN



MORE TO THE STORY
Watch interviews and discover more online at: cnycn.org/risingtides

Who Lives in New York’s Flood Zones?

Over 400,000 New Yorkers reside in the city’s high-risk floodplain, as defined by FEMA’s 2013 Preliminary Flood Insurance Rate Map (FIRM) — a number larger than the entire populations of New Orleans, Cleveland, or Tampa.⁴ Who makes up these communities, and how do they compare to the rest of the city?

HOUSING CHARACTERISTICS

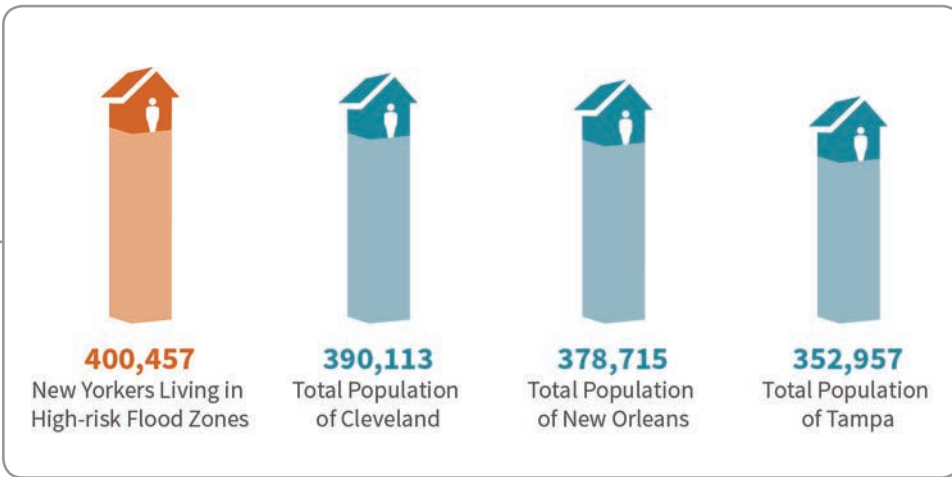
Despite pockets of wealth, New York’s flood-prone neighborhoods are largely working and middle class. They are some of the rare places in the city where middle class families have been able to afford to buy houses. Compared to the city as a whole, a disproportionately large number of flood zone residents live in owner-occupied 1-4 family homes.⁵

This is even truer today than before Hurricane Sandy, as the federal government’s new Flood Insurance Rate Maps will soon include even more middle class homeowners. In New York City, the number of people included within high-risk flood zones will rise 84% from 218,088 to 400,457.⁶ The proportion of renter-occupied homes will drop 11%, while the percentage of owner-occupied homes will rise by a third.⁷ The new high-risk floodplain is also more economically vulnerable than the old; a smaller proportion of homeowners in the high-risk zones will own their homes outright (i.e. without a mortgage), and the share of high-income homeowners will drop as well.⁸



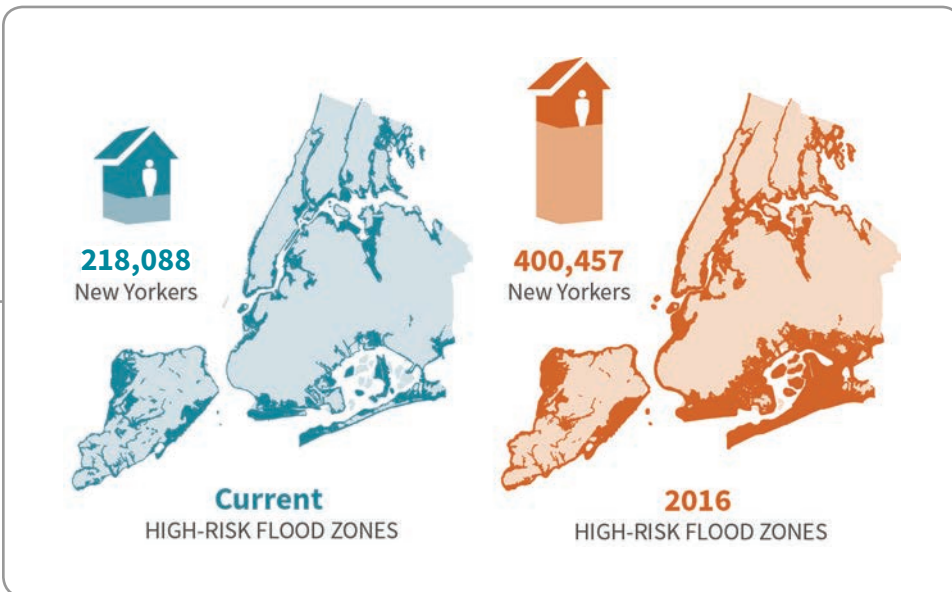
Abe Halpert for Center for NYC Neighborhoods

Attached homes in Canarsie, Brooklyn



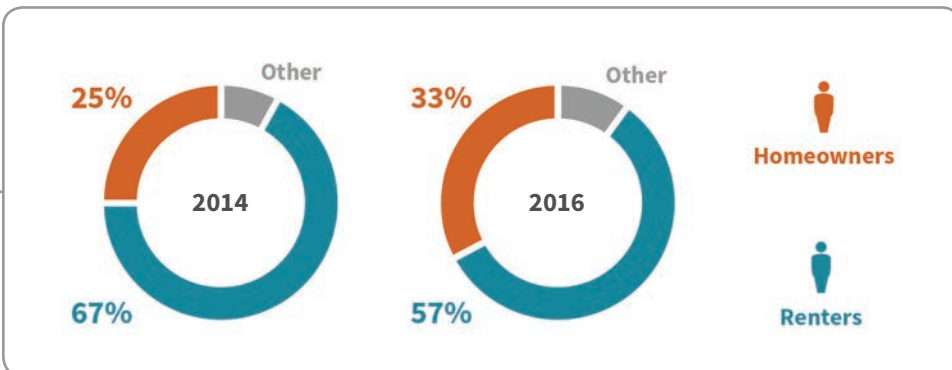
Large Population at Risk

Over 400,000 New Yorkers reside in the city's high-risk floodplain—a number larger than the entire populations of Cleveland, New Orleans, or Tampa



Rising Flood-Risk Population

The 2016 flood map will include 85% more New Yorkers in its high-risk flood zones



More Homeowners Affected

New maps will include more homeowners in high-risk flood zones

Flood-prone homeowners often earn significantly less than their counterparts elsewhere in the city.



Abe Halpert for Center for NYC Neighborhoods

Attached homes in Bensonhurst, Brooklyn

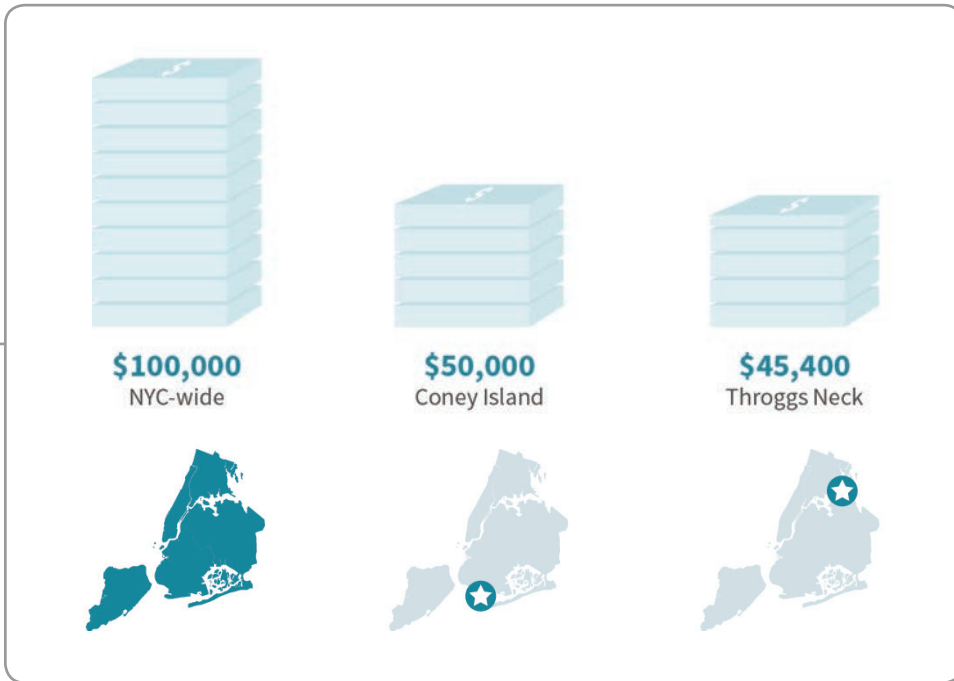
INCOME LEVELS

The average combined income for homeowners in the 2013 Preliminary Flood Insurance Rate Map (expected to take effect in 2016) is \$100,000, with more than a third making under \$75,000.⁹ In large part, they are civil servants, educators, social workers, transit operators, police, and firefighters—the people who make New York City run. Flood-prone homeowners often earn significantly less than their counterparts elsewhere in the city. In both Coney Island and Astoria, for

example, homeowners make about \$50,000—28% less than the citywide average for homeowners. In parts of the Bronx, the difference is even starker; homeowners in Throggs Neck earn 35% less than homeowners citywide.¹⁰ While this area was not devastated by Hurricane Sandy, it sits just along the East River, and is therefore partially subject to new flood insurance requirements.¹¹

DEMOGRAPHICS

The racial demographics of flood-prone areas largely match the city as a whole, with some deviations. According to the US Census, flood-prone New Yorkers are 55% white, 26% black, 10% Asian, and 10% “other.”¹² Education levels also track closely with citywide averages.¹³ One notable difference, though, is the elderly population. Residents of flood zones skew older than the city as a whole, with a greater proportion of people aged 70 and over than the city as a whole¹⁴ and a larger percentage of seniors living alone.¹⁵ Many of these seniors live on fixed incomes, and are not in a financial position to meet rising insurance costs. (See Appendix A.)



At-Risk Homeowner Income

In many flood-prone areas, homeowners' median incomes are significantly lower than average



Abe Halpert for Center for NYC Neighborhoods

Row houses in Coney Island, Brooklyn



Jessica Lin

Staten Island homeowners meeting with attorneys from City Bar Justice Center and Staten Island Legal Services

FORECLOSURES AND FLOODING

Hurricane Sandy came in the midst of an ongoing recession that hit many flood-prone areas with particular severity. Many of these neighborhoods had the precise profile of places that were targeted for subprime, adjustable rate, and private label securitized mortgages: a housing stock of relatively small (1-4 family) buildings; a history of redlining and diminished access to credit; and a population with low- and moderate-incomes. As a result of the national mortgage crisis, many homeowners are now facing foreclosure; even more are on the precipice, and at high risk of displacement. (See Appendix B.)

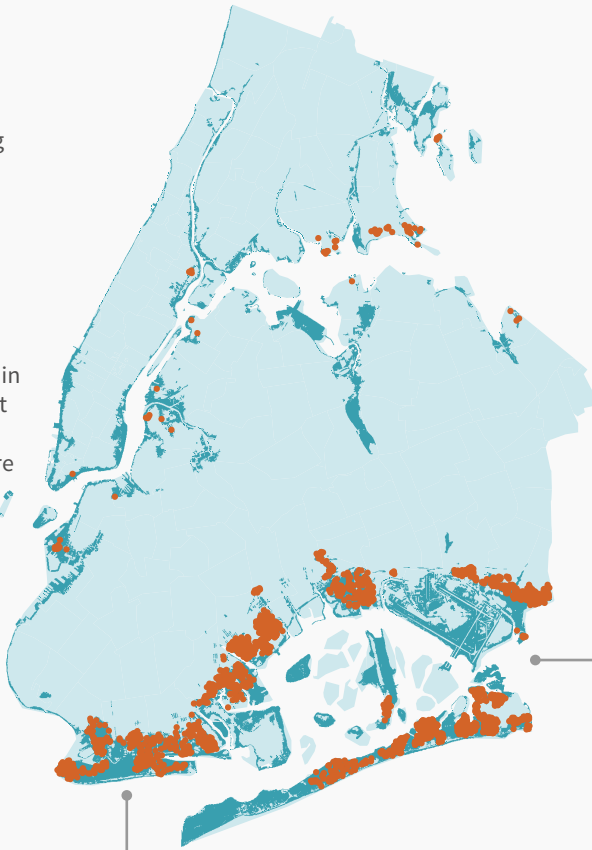
In the two years prior to Hurricane Sandy, 1,800 1-4 family homeowners in the storm surge area had started foreclosure proceedings.¹⁶ By 2013, 4,228 area households had “underwater mortgages,” meaning they owe more on their homes than they are worth.¹⁷ After the storm, most banks held a moratorium on mortgage payments for three months or more. That process, however, forestalled, rather than prevented, foreclosures in areas hit hard by Sandy. After the moratoria ended, many homeowners were told to pay huge lump sums of money they did not have — especially after putting a great deal of their own savings into home repairs, and, in many cases, missing work as a result of the storm.¹⁸ After Sandy, foreclosures spiked in almost every outer-borough flood-prone neighborhood.¹⁹ For those homeowners still holding on, the prospect of increasing insurance premiums threatens to send them over the edge.

STATEN ISLAND

71% of Staten Islanders own their own homes - an extraordinary figure by New York City standards.²⁴ The borough is also increasingly diverse, and had the fastest growing immigrant population of any New York City borough over the past decade.²⁵ In recent years, many Staten Islanders found themselves caught up in the national mortgage crisis. In 2011, over 7% of Staten Island homeowners were in pre-foreclosure, the highest percentage in New York City and the fourth highest in any of the state's counties. More than 1,750 homes in foreclosure were struck by Hurricane Sandy,²⁶ which hit Staten Island hard and took 24 residents' lives.²⁷

Foreclosures in the Sandy Surge Area*

- Flooding Due to Sandy**
- Foreclosure Filing**



QUEENS

No borough has been hit harder by the national mortgage crisis than Queens. Many of the same neighborhoods that were devastated by foreclosure were also flooded by Sandy. By the Jamaica Bay, communities are still struggling to recover from both crises, with some zip codes facing foreclosure rates as high as 17%.²⁰ In the Rockaways, where Sandy's impact was particularly fierce, foreclosure rates in 2013 hit 4.3%, and pre-foreclosure rates reached 12.6%.²¹ The peninsula has nearly 700 homes with underwater private-label securitized mortgages.²²

BROOKLYN

In Brooklyn, as in Queens, many of the neighborhoods hit hardest by Hurricane Sandy were also struck by the foreclosure crisis. The storm devastated Canarsie and Flatlands, and 1-4 family homeowners in both neighborhoods are bracing for severe increases in their flood insurance premiums. In 2011, these two adjacent neighborhoods had the highest pre-foreclosure rates in the entire city, with 5,337 homes subject to foreclosure proceedings.²³

**Foreclosures outside of the Sandy Surge Area are not shown*

How Did the Waterfront Develop?

Hurricane Sandy revealed a reality of life on our waterfront: while some wealthier enclaves were hit by the storm, most of Sandy’s victims were public housing residents and low- to moderate-income homeowners. Why had our most flood-prone areas become the site of so much relatively low cost housing?

There are hundreds of factors that influence who lives where in New York City. In the case of flood-prone homebuyers, some bought their houses because they wanted to be by the beach; others did not think of themselves as “coastal” at all, until Sandy’s storm-surge expanded the idea of what it meant to live within reach of the water—and therefore potentially in harm’s way. One factor that drives nearly everyone’s decision regarding where to live is cost: people need a place they can afford. At the neighborhood level, the key determinant is the cost of land, which is a product of both geography and politics, and represents a long history of government actions.

GEOGRAPHY

Center and Periphery

Land values are lower in flood-prone areas for a number of reasons, but the simplest is real estate’s guiding principle: location, location, location. Most of these neighborhoods lie on the city’s edges, miles away from “core Manhattan.” Manhattan’s central business districts have long been prohibitively expensive, pushing the city’s workforce further and further outwards.²⁸ The outer-borough waterfront therefore acts as an economic outlet for the city, a peripheral place where land values can simmer while they soar in the core.²⁹

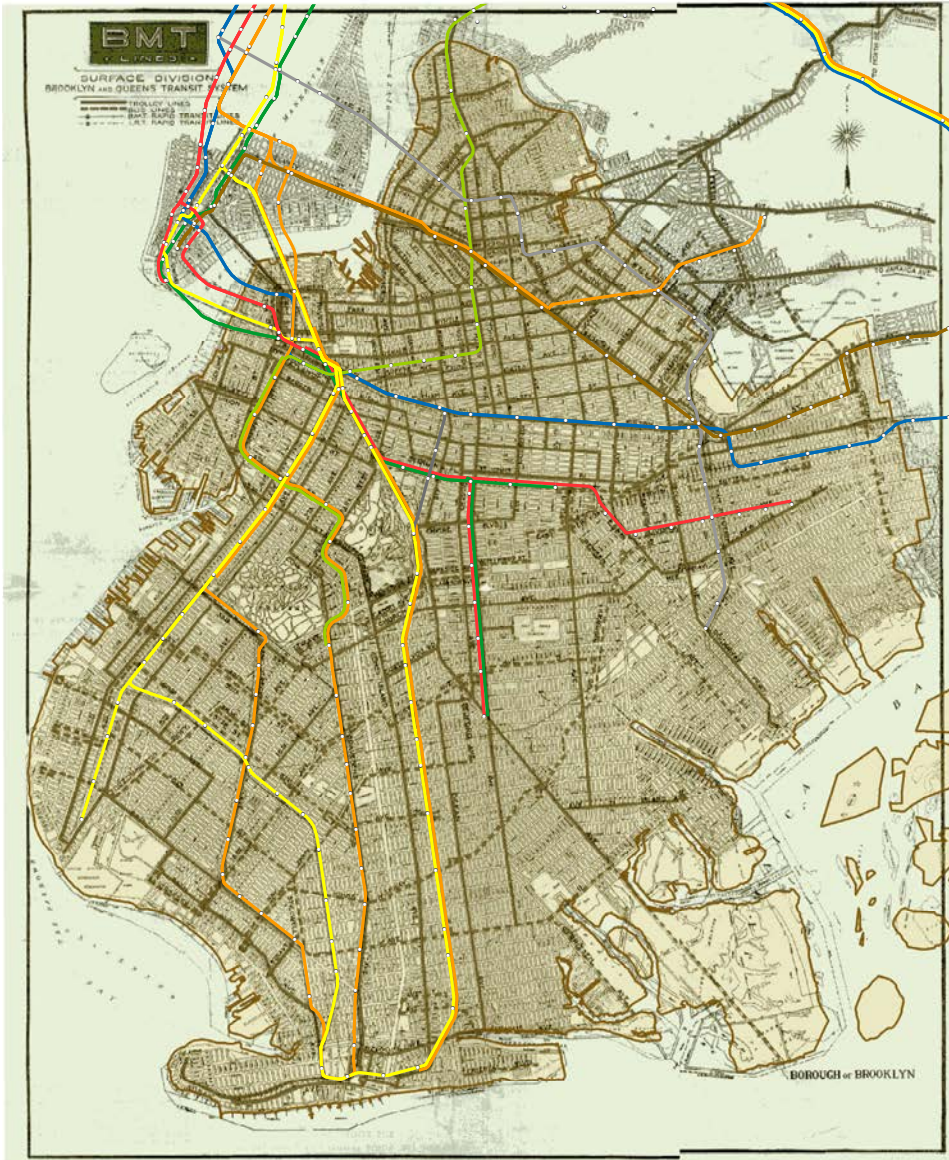
Barriers to Transit

In New York City, subway lines track closely with both density and land values — where there are no subways, land tends to be cheaper and less built-up. Though not impossible, coastal geology makes it significantly harder to build a subway by the water than further inland. Plans have long existed for



Library of Congress

New York City streetcar, 1914



Streetcars and Subways

This map shows Brooklyn's historic streetcar system, overlaid with its contemporary subways. When the streetcar lines were decommissioned, many coastal neighborhoods lost access to railway transit.

waterfront subway expansions, from the 7 line extension now under construction to a planned-but-never-built Brooklyn-Staten Island connection, but much of the waterfront remains underserved by transit.³⁰ This is even more apparent today than in the past, when streetcars reached many parts of the city that the subways could not. In the 1930s and 1940s, however, these streetcar lines were eliminated.³¹ The resulting lack of transit has kept land values relatively low, and has encouraged the construction of small, inexpensive single family homes.

How Did the Waterfront Develop?



Naval Historical Center

New York Navy Yard, Brooklyn, NY,
early 1930s



Vintage New York City

Manhattan's West Side Highway

POLITICS

Geography accounts for some of the waterfront's character, but politics has been a much more powerful force. One contradiction lies at the heart of this history: the City spent decades marginalizing the waterfront and its inhabitants. As a result, land values were low enough for many working and middle class people to buy homes nearby.

The Industrial Waterfront

For most of its existence, New York's 520-mile waterfront was industrial, and was used for the production, warehousing, and distribution of goods.³² It was also — and often still is — the site of noxious facilities like waste water treatment and power plants. As a result, the atmosphere was more grimy than bucolic. As New York City historian Kenneth T. Jackson recounts, "Frankly, it was not a place where you necessarily wanted to have a picnic or a jump in the water."³³

Highway Construction

After World War I, city planners lined the waterfront with highways, starting with the East River (now the FDR) and West Side highways in the 1920s and 1930s, and moving on to Brooklyn, Queens, and the Bronx in the 1950s.³⁴ These roadways were first proposed by the Regional Plan Association in their first master plan, which — in no small part to boost inland and suburban real estate values — imagined a set of highways, bridges, and tunnels to make the city quickly traversable by car.³⁵ Robert Moses enacted many of these plans and created over 400 miles of highway, much of it lining the city's waterfronts.³⁶ While this raised land values in the city as a whole, it drove them down in coastal neighborhoods, which were suddenly beset by the noise, smog, and dangerous speeds of auto travel.

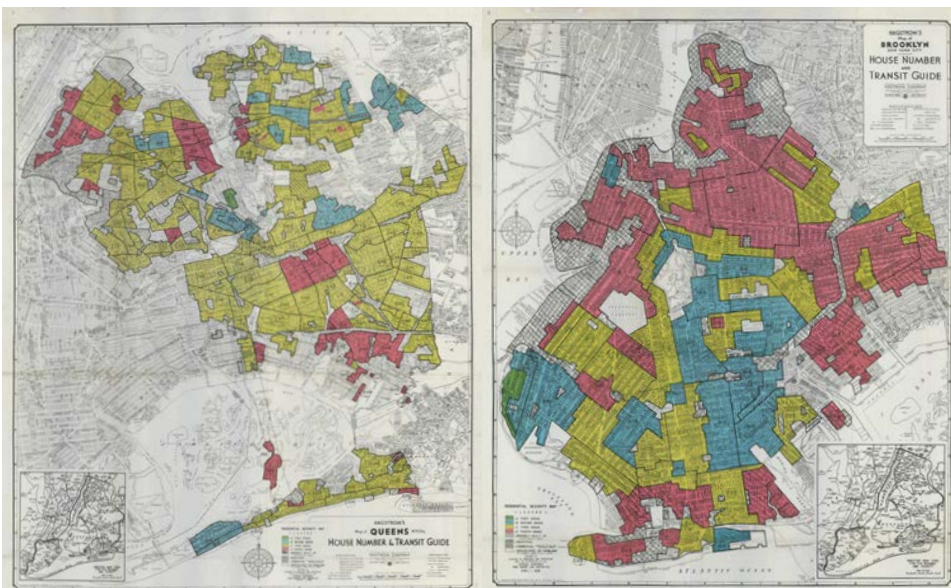
Redlining

Around the same time the City was building its highways, the federal government was setting out on a complex plan to stimulate homeownership. A key piece of this policy was the creation of the Federal Housing Administration (FHA) as a way to expand the availability of credit necessary to purchase a home beyond the reach of only the very wealthy. Not all neighborhoods, however, were eligible for FHA loans. An agency called the Home Owners Loan Corporation (HOLC) was formed to evaluate various neighborhoods and judge how safe they were for investment. The HOLC was notoriously racist and xenophobic, and, as a result, they graded neighborhoods with almost any immigrant or African American presence as unsafe.³⁷ Many of today's flood-prone areas fell into this category, from Broad Chanel and Howard Beach to Coney Island and Sheepshead Bay. The HOLC downgraded Brooklyn's Manhattan Beach, for example, because its surveyors found a "slow infiltration of somewhat poorer class Jewish" residents; they derided Lower Bath Beach for its "low grade Italian population;" no neighborhood with any African American population received a grade over B.³⁸ As a result of this systematic practice, many neighborhoods were cut off from home loans and fell into disrepair, creating a cycle of disinvestment that destroyed countless urban quarters. Land and property values dropped precipitously.



Detroit Times

NAACP protest against housing discrimination



Home Ownership Loan Corporation Security Maps

These maps were created by the HOLC to code Brooklyn and Queens neighborhoods. These codes were largely driven by race, and, quite literally, "redlined" many of today's flood-prone neighborhoods, which led to decades of disinvestment because credit was simply not available.

The Koch plan... created subsidized low density housing in the Rockaways, Jamaica, Sheepshead Bay, Throggs Neck, and Staten Island's North Shore.



New York Times

The effects of “planned shrinkage” in the Bronx

Urban Renewal

In the post-World War II era, New York City began experimenting with “urban renewal” planning, which targeted working class areas (derided as “blighted” or “slum”) for demolition, then built up modernist high-rise projects in their stead. On the waterfront, Robert Moses — the man most commonly identified with urban renewal in New York — used the program to rid beachside neighborhoods of their working class culture. Defending his policies, he told the New York Times,

“Such beaches as the Rockaways and those on Long Island and Coney Island lend themselves to summer exploitation, to honky-tonk catchpenny amusement resorts, shacks built without reference to health, sanitation, safety and decent living.”³⁹ Shoreline neighborhoods became urban renewal targets for three reasons: they were where poor people already lived; their land was easy to acquire; and, in a self-perpetuating cycle, they were near other projects.⁴⁰

So the City cleared neighborhoods and built high-rise housing, hospitals, mental health facilities, and nursing homes. While some of those developments constituted a public good, the surrounding land values dropped as a result of their presence.

Planned Shrinkage

Urban renewal was not only traumatic for the people it displaced and the neighborhoods it disrupted, it was also extremely expensive. In the 1970s, the federal government stopped funding urban renewal projects. Around the same time, New York City plunged into a fiscal crisis. In the immediate aftermath of that crisis, the City’s approach to its working class neighborhoods was crystallized in a phrase coined by Housing Commissioner Roger Starr: “planned shrinkage.”⁴¹ Under this approach, the City would focus its constrained resources on the central city and aim to retain the rich. The city’s poorer and more distant districts, including most of its waterfront, would see a decline in City services — fewer firehouses, less money for housing maintenance, dwindling hospitals, and broken street lights.⁴² The poor were encouraged to pick up and leave, and many did. In the meantime, vacancies rose, fires tore through neighborhoods, and waterfront land values continued to drop.



New York Times

Robert Moses, the man most commonly identified with urban renewal in New York City

New Construction

A few years later, in the second half of the Ed Koch mayoralty, the City created new opportunities for homeownership. Partnering with community development corporations, public officials executed a plan to restore and build new subsidized housing on publicly owned vacant lots and tax-foreclosed properties. Much of this work took place in today's flood-prone areas. In Coney Island, for example, the City and the Astella Development Corporation built about 1,000 single-family owner-occupied homes and sold them at subsidized rates to middle class families.⁴³ While the Koch plan is remembered mostly for its investments in the South Bronx, Harlem, and Central Brooklyn, it also created subsidized low density housing in the Rockaways, Jamaica, Sheepshead Bay, Throggs Neck, and Staten Island's North Shore.⁴⁴



New York Post

In Long Island City, construction of new luxury buildings can hardly keep up with demand

Waterfront Redevelopment

In 1993, the city approved a comprehensive rezoning that increased development capacity along the waterfront. Many of these neighborhoods are now undergoing gentrification; others remain largely affordable.

- ★ Approved Redevelopment Project
- ⊕ Proposed Redevelopment Opportunity



Gentrification

The Koch plan initiated a new era of residential development along the waterfront, geared over time towards increasingly high-income households. In 1993, the City underwent a comprehensive waterfront rezoning to encourage new high-rise construction. Neighborhoods like Long Island City and Williamsburg quickly transitioned from industrial waterfront to seaside enclave. In many New Yorkers' imaginations, this became the reality of the urban waterfront — a place that remained unapproachable, no longer because of its industrial detritus, but rather its blinding glitz. It was where rich people lived, and where gentrification happened.

In some places, this was undoubtedly true. But in others, the waterfront remains a bastion of affordable homeownership, where communities live by choice and by chance amidst rising real estate pressures. The devastation of Hurricane Sandy revealed this reality, but it also imperiled it. The cost of staying put is rising every day, and the looming flood insurance premium hikes could threaten the future of low- and moderate-income homeownership in these parts of New York City.⁴⁵

What Will This Mean for New Yorkers?

With 520 miles of coastline, New York City is extremely vulnerable to both catastrophic flooding and escalating insurance rates.⁴⁶ How will flood prone communities be affected by the coming changes?

HISTORY OF FLOOD INSURANCE

Origins

The National Flood Insurance Program (NFIP), the main source of flood insurance in the United States, grew out of a market failure: starting in the 1960s, insurance companies refused to provide homeowners with flood protection. The industry argued that flooding was a localized, high-cost phenomenon, in which a single disaster could wipe out an entire market. Congress created the NFIP in 1968 to provide affordable flood insurance for property owners while promoting floodplain management at the local level. The NFIP is administered by the Federal Emergency Management Agency (FEMA). To participate in the NFIP, communities must agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. This includes the adoption of a Flood Insurance Rate Map (FIRM), which sets out zones of risk and elevation requirements for new construction.

In 1983, the NFIP was partially privatized and insurance companies took over the administration of flood insurance. Using federal guidelines, private insurers were tasked with determining premiums, selling policies, and servicing claimants. In return, they received an “expense allowance” equal to 30% of premiums. At the same time, FEMA released its first set of flood maps, which defined what areas were at risk and set the parameters for insurance rates and construction standards. Like many regions, New York City adopted its first FIRM that year. The system held together until Hurricane Katrina, which drove the NFIP \$16 billion into debt. Since then, its debt has increased to \$24 billion.

With 520 miles of coastline, New York City is extremely vulnerable to both catastrophic flooding and escalating insurance rates.

“It’s a colossal problem, and the City is doing all that it can to understand and respond to it.”

Katherine Greig
SENIOR POLICY ADVISOR
MAYOR’S OFFICE OF RECOVERY AND RESILIENCY

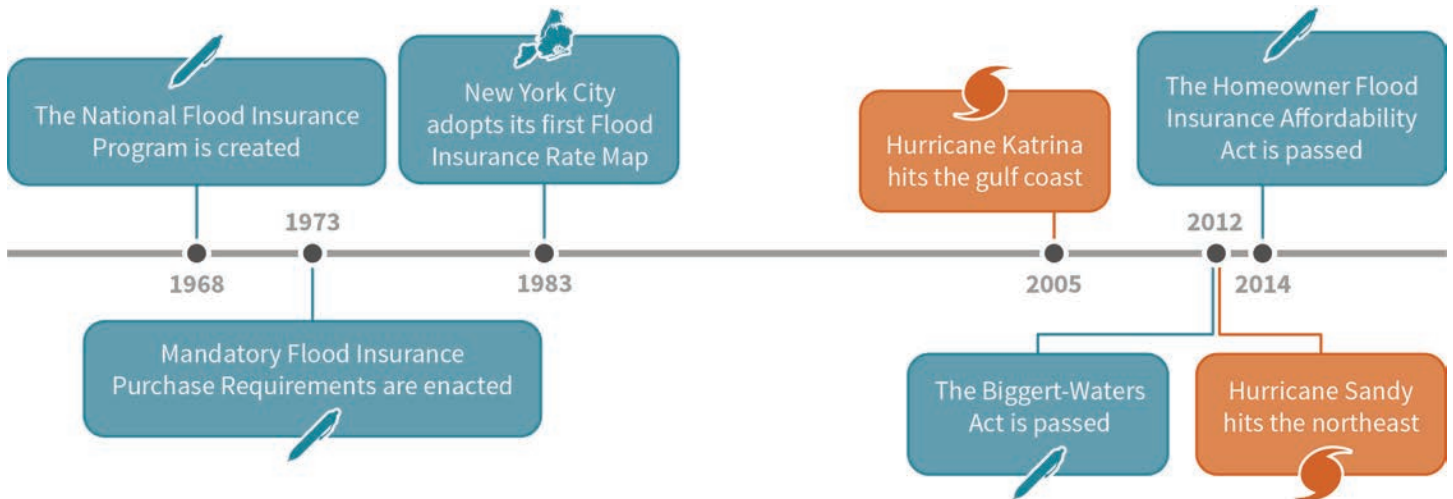


MORE TO THE STORY
Watch interviews and discover more online at: cnycn.org/risingtides

Recent Revisions

In 2012, prior to Sandy, the Biggert-Waters Flood Insurance Reform Act (Biggert-Waters) significantly restructured the NFIP with the goal of making it more financially sustainable. Biggert-Waters sought to increase rates substantially for new flood insurance policies, for commercial and vacation properties, and for homeowners whose properties were remapped into a higher risk zone. It also sought to phase out subsidized rates for properties, known as “pre-FIRM,” that were built before their community entered the NFIP and adopted a FIRM. Because these properties were built before the locality adopted NFIP floodplain management standards, they are often built at a lower elevation than would be required for new construction. The vast majority (about 80%) of the homes in New York City’s high-risk flood zones are pre-FIRM.

History of Flood Insurance





Picture Database

New York City's coastline measures 520 miles; as a point of comparison, Boston's coastline spans 47

The rate increases imposed by Biggert-Waters would have severely impacted owners of older homes in flood-prone communities, with some homeowners seeing the possibility of their rates increasing from hundreds of dollars annually to several thousand over the course of a few years. Responding to the need for a more gradual approach, the Homeowner Flood Insurance Affordability Act of 2013 revised the law to slow its economic impact. Under the current legislation, premiums will still go up, with increases capped at 18% per year for owner-occupant policy holders. Homeowners buying new policies can start out at preferential rates, and phase up to the full price, with annual increases also capped at 18%.⁴⁷

While this slower rise is preferable to a sudden leap, it still means many low- and moderate-income homeowners are living on borrowed time; without significant reforms, they will not be able to stay in their homes and communities. The changes will be especially challenging for many seniors living on fixed incomes, for whom an 18% annual increase could be extraordinarily difficult to afford.

RISING COSTS: The Impact on New Yorkers

New Yorkers will be hit particularly hard by the new flood insurance rules. New York City has more residents living in high-risk flood zones than any other city in the United States. New York City also has some of the oldest and most valuable buildings of any flood-prone city in the country, with \$7 trillion of property insured — a trillion and a half more than the next highest state.⁴⁸ Unlike most other coastal communities, the vast majority of New York City’s waterfront homes were built long before the flood maps were established and the guidelines for construction were set. As mentioned, nearly 80% of homeowners were grandfathered in to the National Flood Insurance Program at rates that are now set to spike.⁴⁹



Abe Halpert for Center for NYC Neighborhoods

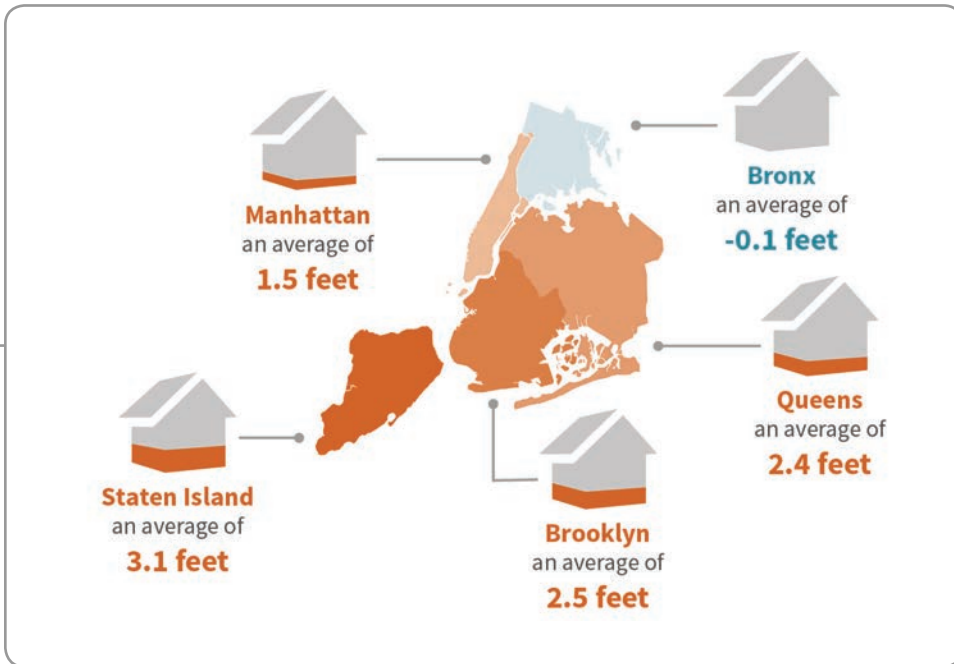
Coney Island homeowner.
Brooklyn, New York

The City of New York is very concerned about the impact of these changes on housing affordability and commissioned RAND to do a study, which was published in October 2013. From that study, we know that today just 55% of 1-4 family homeowners in New York’s 100-year floodplain have flood insurance. Average premiums range from \$1,000 for newer, “post-FIRM” buildings to \$1,800 for pre-1983 homes.⁵⁰ If the rates rise as planned, homeowners who are currently paying grandfathered rates will see their rates jump significantly over time, with increases of up to 18% per year. Few will be able to afford these leaps, with over 30% of homeowners in the floodplain earning less than 60% of the New York City Area Median Income, currently calculated at \$85,900 for a family of four (see Appendix C).⁵¹ Just how high their rates will rise depends on obtaining an elevation

certificate that compares the elevation of a home’s lowest living level to its Base Flood Elevation as indicated on the FIRM. For some households, the new rates could be as much as \$10,000 more per year than they are currently paying.⁵²

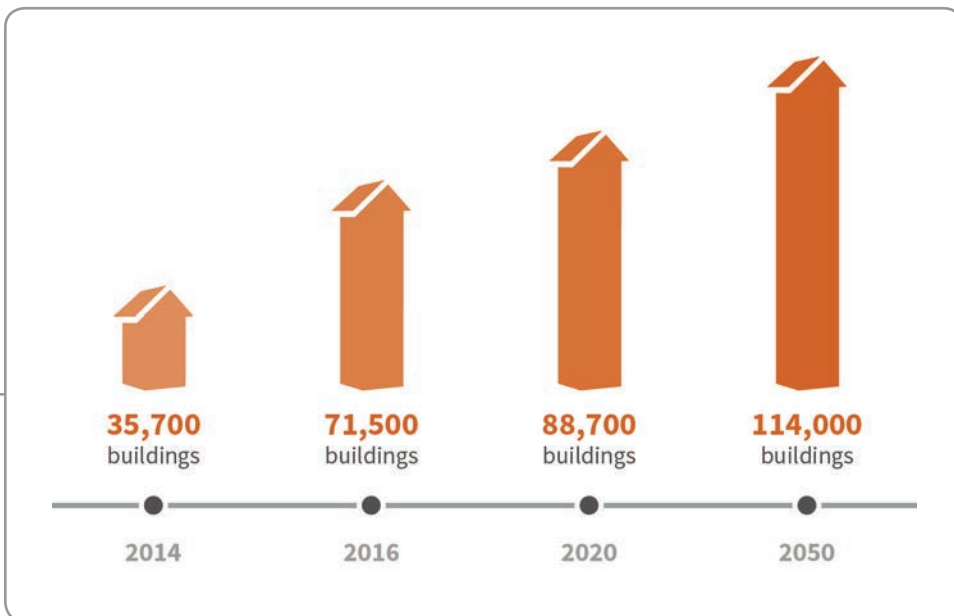
RISING TIDES: Climate Change & NYC’s Vulnerable Flood-Prone Communities

The 2013 Preliminary Flood Insurance Rate Map (expected to take effect in 2016) will more accurately depict the current risk of coastal flooding in New York City, and, as a result, will significantly expand NYC’s high-risk floodplain. The new maps, however, reflect only current risk levels and do not take future risk from climate change into account. The higher temperatures, increasingly severe weather conditions, and rising sea levels associated with climate change will drastically increase flood risk and permanently alter life in New York City’s coastal communities. By 2050, New York City sea levels are expected to rise by a foot, making today’s “100 year storms” two or three more times as likely to occur.⁵⁴ Given this reality, more and more New Yorkers will face an increased flood risk and will be required to purchase flood insurance.



Rising Flood Risk

One of the biggest drivers of flood insurance premiums is the difference between a home's lowest living elevation (the lowest level on which people live) and its Base Flood Elevation (BFE), which is determined by the property's location on the Flood Insurance Rate Map. When the new maps are adopted, the City expects BFEs to increase by an average of 2.3 feet. Expected average BFE increases by borough are shown at left.⁵³



Growing Floodplain

The number of buildings in New York's 100-year floodplain is projected to rise substantially in the coming decades.

The Challenge of Elevation

In other parts of the country, homeowners have been able to minimize their flood risk by elevating their homes with relative ease. In New York City, however, almost 40% of buildings would be extremely challenging to lift.⁵⁵ Attached and semi-attached buildings cannot be boosted like single family structures, which typically have ample maneuvering room on all sides. Basements pose additional engineering problems, as do narrow lots.⁵⁶ With extensive and expensive remediation, some homeowners may be able to eliminate their finished basements and reduce their insurance premiums. Many of them, however, rely on their basements for additional space, and even as rental units to offset mortgage costs.⁵⁷ And while some New York City structures could be elevated, such as beachside bungalows and small single-family homes, the cost of doing so is prohibitively expensive for many of these homeowners.



Abe Halpert for Center for NYC Neighborhoods

An elevated home in the Rockaways, Queens

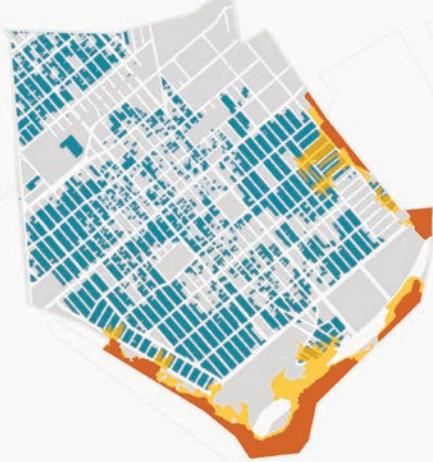


Abe Halpert for Center for NYC Neighborhoods

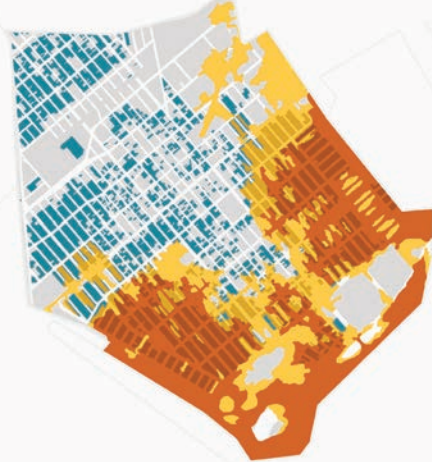
Attached row houses in Coney Island, Brooklyn

Canarsie BROOKLYN

TODAY



2016



Attached Homes in High Flood Risk Areas

A significant portion of Canarsie and the Rockaways will be located in high- and moderate-risk flood zones once the 2013 Preliminary Flood Insurance Rate Map is adopted in 2016. Many homes in Canarsie are attached or semi-attached structures, which are particularly difficult to elevate.

- High Flood Risk**
- Moderate Flood Risk**
- Attached or Semi-Attached Structure**

Rockaways QUEENS

TODAY



2016





“It’s not good for the neighborhood, it’s not good for the city, it’s not good for the economy.”

Lawrence Scheiber
ROCKAWAY, QUEENS



MORE TO THE STORY
Watch interviews and
discover more online at:
cnycn.org/risingtides

RISING COSTS AND RISING TIDES: Chain Reactions

Without action, the impact of rising flood insurance prices could ricochet through the city’s economy. First, rising costs will make a serious cut into homeowners’ budgets. For a household making a combined total of \$75,000 per year, for example, a \$5,000 insurance premium would comprise 6.6% of their total income. By comparison, an average homeowner pays just 1.7% of their annual income for insurance, maintenance, and repairs combined.⁵⁸ If premiums rise and wages continue to stagnate, that cut will become increasingly deep. New Yorkers today are still suffering from the results of the recession; from 2012 to 2013, real wages in the city rose just 1.2%, and they remain down 10% from 2007.⁵⁹

As costs swell, home values could drop. According to New York City’s insurance study, a \$500 flood insurance increase could lead to a \$10,000 decrease in home value.⁶⁰ As those costs keep rising and home values keep falling, many more homeowners will find themselves “underwater” (with a home that is worth less than the mortgage held against it) and teetering closer to foreclosure.

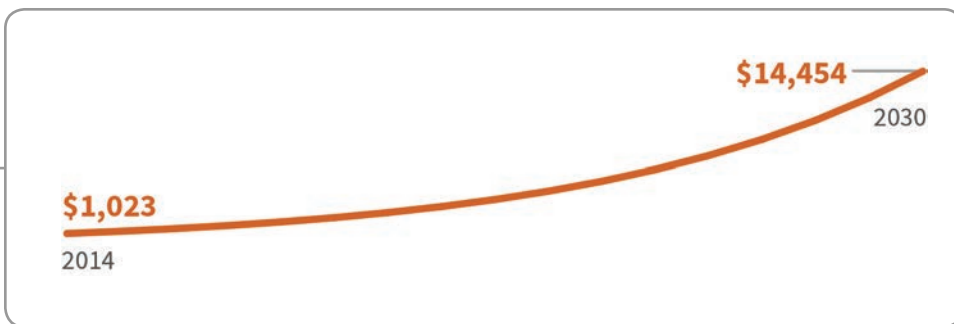
Many small businesses could also be displaced. While homeowners were granted some insurance relief in 2014, commercial buildings remain completely vulnerable to the 2012 cost increases. Businesses that can afford the high insurance costs are likely to be national or international chains, leading to a decline in locally owned small businesses that are often long-time, much relied-upon fixtures of a neighborhood.

All in all, the rising flood insurance costs could lead to displacement, foreclosure, underwater mortgages, short sales, turnover, vacant homes, and declining tax revenue.⁶¹ If the problem of rising flood insurance premiums and the need for greater coastal resiliency is not addressed, the flood insurance program could spur a slow exodus of working and middle class people from large swaths of New York City.

Unfortunately, the challenges associated with climate change will further exacerbate the problems of coastal affordability and resiliency in the coming decades. Sea level rise and more frequent severe weather events will threaten not only the habitability, but also the economic diversity, of neighborhoods in New York City’s flood-prone neighborhoods — both because of the increasing cost of more frequent flood damage and the expanding number of community members required to purchase flood insurance.



Recent Wage Stagnation
Average real wages for employed residents of New York City.



Potential Flood Insurance Rates
Projected rate increases for a typical policy, assuming no changes to federal law and an annual increase of 18%.



Abe Halpert for Center for NYC Neighborhoods

Local businesses by the water across the city, like this one on Staten Island, face the possibility of displacement due to rising flood insurance costs

Recommendations

Confronting the stark challenges posed by rising costs and rising tides will require a concerted, long-term effort to arrive at solutions that protect communities in flood-prone areas.

The first critical step is for FEMA to clearly communicate to residents in the floodplain why their rates are increasing, and will continue to increase, due to the phasing out of subsidies, as well as significant increases in Base Flood Elevation requirements (an average of over two feet citywide). FEMA should also communicate future flood risk so current and potential homeowners understand what may lie ahead. The more informed current and potential homeowners in the floodplain are, the better they can prepare and plan in order to protect both their personal safety and the safety of their most valuable asset, their home.



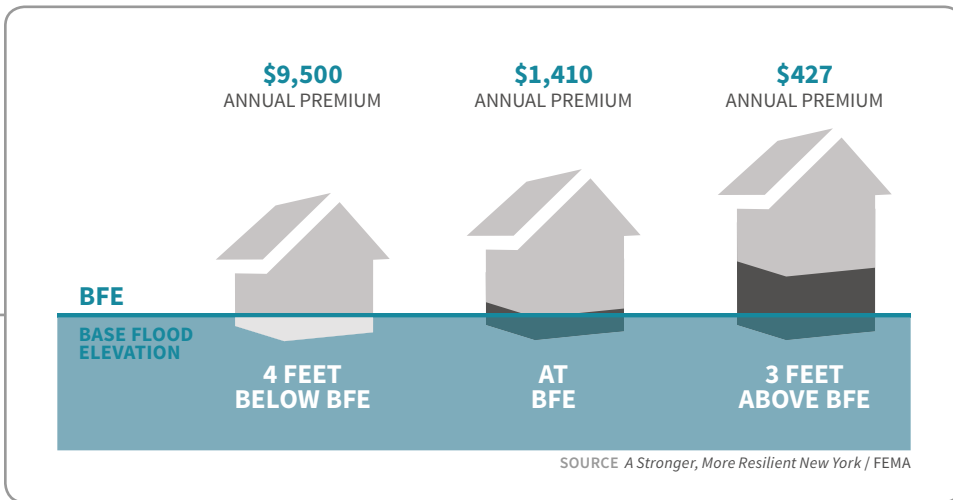
New York State

Construction advisers from NY Rising consult with homeowners on how to rebuild resiliently

For homes that are able to be elevated, increasing affordable financing options for property elevation is one tool that will enable low- and moderate-income homeowners to raise their homes out of harm's way. Not only is an elevated home safer and more resistant to damage from flooding, but, because of the reduced risk recognized by the NFIP, elevation will also result in lower flood insurance premiums. With low or no-interest financing in the form of loans or grants, homeowners would be able to afford home elevations that would otherwise be prohibitively costly.

However, in cases where elevation is impossible or impractical, as outlined in the City's resiliency agenda, *A Stronger, More Resilient New York*, other mitigation options are necessary. Thanks to an amendment from New York Senator Kirsten Gillibrand, the Homeowner Flood Insurance

Affordability Act of 2013 called on FEMA to develop alternative mitigation standards for homes in dense, urban areas that cannot be elevated. While FEMA is responsible for developing these new standards, ensuring that they are responsive to the needs of communities like Canarsie and Midland Beach requires advocacy efforts on the part of the City, the State, and other key stakeholders.



Base Flood Elevation and the Cost of Insurance

The difference between a home’s lowest living elevation (the lowest level on which people live) and its Base Flood Elevation (BFE) is currently the primary determinant of the cost of flood insurance for properties in high-risk zones (the premiums above are an example only; actual rates are based on the individual characteristics of the home and its flood risk).

Conducting additional research on affordability and mitigation efforts that confront New York City’s particular design challenges is also critical. The City is already off to a strong start, and has engaged prominent research institutes to study the issue of flood insurance affordability in New York City’s 1-4 family and multi-family housing stock. This will not only help to fully size the scope of the problem, but will also point to solutions. Likewise, the State’s NY Rising Community Reconstruction Plan program is engaging communities statewide in determining locally-appropriate, long-term resiliency investments to mitigate risk that will be funded with federal Community Development Block Grant resources.

While promoting long-term resiliency is essential, it is also necessary to reconsider the elimination of flood insurance subsidies from the National Flood Insurance Program. Recent federal legislation will gradually roll back existing subsidies for older homes, straining the budgets of low- and moderate-income homeowners and putting them at serious risk of displacement. To prevent this, as suggested in the City’s initial flood insurance study, a new round of smart, means-tested subsidies for low- and moderate-income homeowners’ flood insurance should replace the blanket subsidies currently being phased out.

Finally, for individuals, or even whole communities, that wish to relocate, targeted buy-outs at fair prices must be an option. Working together, the City and State are currently collaborating with certain high-flood-risk communities and individuals through the State’s NY Rising Buyout and Acquisition Programs and the joint City/ State Acquisition for Redevelopment Program. Given the scale of the challenge, additional federal funding will be needed to fully meet the relocation needs that will continue to grow as sea levels rise.

Conclusion

Climate change is already reshaping New York City; even without another storm, sea level rise will undoubtedly impact the next generation of New Yorkers, who could see as much as six feet of increase by 2100. The city will have to reckon with dramatic changes and find new ways to keep our coastal neighborhoods safe, not only from the effects of nature, but so too, from changes in federal flood insurance policies. After decades of planning and public policy turned flood-prone land into affordable housing, rising flood insurance rates and the associated increased risk of flooding have the potential to permanently displace low- and moderate-income

New Yorkers from these neighborhoods. Without a concerted intervention, rising insurance premiums could lead to a future where the city's coasts are affordable only to its wealthiest residents. This displacement would only worsen New York's housing crisis and counteract the City's extensive investments in affordable housing development and preservation.

While rising tides do not discriminate, their impacts on homeowners are not uniform. Those with less access to credit, savings, job replacement, or generational wealth will have a much harder time bouncing back and staying safely in their communities than those with greater resources and privilege.⁶² This was true of Sandy's initial blow, but it is equally true today as New Yorkers confront the immense challenges of building a more resilient city. Without significant reforms, as well as investments in resiliency and flood mitigation, the rising tides caused by climate change, along with the rising costs of flood insurance, put the safety, housing affordability, and neighborhood stability of many of New York City's neighborhoods in and around the coast at grave risk.



The Sacramento Bee

Partial reconstruction in New Orleans' Lower Ninth Ward, five years after Katrina

Disasters like Hurricane Sandy can often spark social change. They can either bring citizens together in progressive action or they can serve as an opportunity to re-make a place along inequitable lines, whether by choice or by inaction. In the wake of Hurricane Katrina, many Louisiana politicians leapt at the opportunity to refashion

“We should not punish working families and the most vulnerable of our population for the poor planning that was done in the city decades ago.”

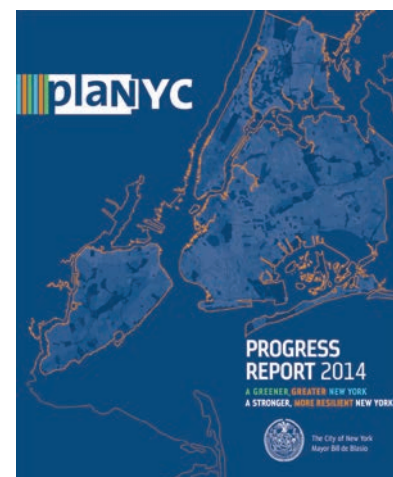
Mark Treyger

NEW YORK CITY COUNCIL MEMBER
DISTRICT 47, CHAIR OF THE COMMITTEE ON RECOVERY AND RESILIENCY

New Orleans with considerably less room for working and middle class residents who were already struggling to make ends meet before the storm. Just one week after the levees broke, Congressman Richard Baker told the *Washington Post*, “We finally cleaned up public housing. We couldn’t do it, but God did.”⁶³ A wave of storm- and policy-induced dislocation decimated New Orleans’ working and middle class population; the city became a wealthier place after Katrina less because of economic development than mass displacement.⁶⁴

New York City is fortunate to have leaders in government at all levels who understand the immensity of the challenges of rising tides and rising costs, not only in terms of the infrastructure that will need to be built to protect the city, but also in terms of setting equitable social policies that protect all of the city’s people. While the city has some of the most daunting resiliency challenges of anywhere in the country or, indeed, the world, it also has the ability to leverage incredible resources and become a model for how to build resiliently. The steps that New York’s political leaders at the city, state, and federal levels have already taken are encouraging and confirm that the fates that have befallen other cities following major disasters need not be the case in New York.

The proposals recommended in this report constitute only a small portion of the actions required to confront the challenges of rising tides and rising costs. Ultimately, protecting New York City’s flood-prone neighborhoods, while promoting sustainability, will require significant efforts and investment on the part of local, state, and national government, along with impacted communities and other key stakeholders. While the challenges are substantial, meeting them is the only option, in order to protect both our city and the hundreds of thousands of families who call New York’s coastal neighborhoods home.



City of New York

A PlaNYC Progress Report from March 2014 outlines the many resiliency initiatives already underway in New York City

APPENDIX A Population Demographics in NYC and its High-Risk Flood Zones

Characteristic	NYC	1983 FIRM	High-risk zones of the Preliminary Working Map*
Population	8,078,471	233,489	429,957
Households	3,047,249	93,057	165,757
Housing units (occupied and unoccupied)	3,343,424	101,774	181,195
Age	(% of population)		
≤ 17 years	22	21	21
18-69	69	67	68
70+	8	12	11
Race	(% of population)		
White	44	53	55
Black	25	25	26
Asian	13	10	10
Other	18	12	10
Households below poverty line %	18	21	18
Education	(% of population greater than 25 years old)		
Less than high school degree	21	21	20
High school degree	26	26	27
Some college	20	20	21
Bachelor's degree or above	33	34	32
Occupancy status	(% of housing units)		
Owner-occupied	30	25	33
Renter-occupied	61	67	59
Unoccupied	9	9	9
Mortgage status for owner-occupied housing units	(% of owner-occupied housing units)		
has a mortgage	64	62	64
does not have a mortgage	36	38	36
Annual income of households living in owner-occupied housing units %			
< \$25,000	13	7	7
\$25,000 - \$50,000	17	16	16
\$50,000 - \$75,000	17	13	14
\$75,000 - \$100,000	15	12	13
\$100,000 - \$150,000	19	18	19
≥ \$150,000	20	35	31
Annual income of households living in rental housing units %			
< \$25,000	36	33	32
\$25,000 - \$50,000	25	20	21
\$50,000 - \$75,000	16	14	15
\$75,000 - \$100,000	9	10	10
\$100,000 - \$150,000	8	10	10
≥ \$150,000	7	13	12
Household size of households living in owner-occupied housing units %			
1	25	24	22
2	29	30	30
3	17	18	18
4	16	14	17
≥ 5	14	12	13
Household size of households living in rental housing units %			
1	36	39	39
2	27	30	30
3	16	14	15
4	11	9	9
≥ 5	9	7	7

SOURCE RAND Corporation Center for Catastrophic Risk Management and Compensation, Flood Insurance in New York City Following Hurricane Sandy.

Borough	Neighborhood	Homeowner median income	% difference than borough	% difference than city	% of high cost home purchase loans, 2012	% of high cost refinance loans, 2012	% of residential properties with tax delinquencies ≥ 1 year, 2010	Notices of foreclosure rate, 2013 (1-4 families and condos)
Brooklyn	Coney Island	\$50,000	-23.08	-28.57	2.30%	2.5%	2.3%	13
	East New York/ Starrett City	\$42,000	-35	-40	3.7%	15.7%	4.7%	45.3
	Flatlands/ Canarsie	\$71,490	+10	+2	1.1%	5%	1.6%	28.6
	Sheepshead Bay/ Gravesend	\$67,300	+4	-4	1.3%	2.2%	1.7%	10.7
	Sunset Park	\$42,116	-2	-9	0.6%	1.7%	1.6%	8
	Williamsburg/ Greenpoint	\$62,000	-5	-11	0.8%	1.6%	2.2%	6.6
Bronx	Highbridge/ South Concourse	\$11,095	-0.78	-84%	2.1%	0%	9.3%	54.5
	Kingsbridge Heights/ Moshulu	\$57,600	+15	-18%	1.9%	4.2%	7.3%	40.6
	Mott Haven/ Hunts Point	\$50,000	0	-29%	0.7%	11.4%	4.5%	26.1
	Soundview/ Parkchester	\$45,400	-9	-35	2.5%	10.2%	4.4%	18.6
	Throggs Neck/ Co-op City	\$45,400	-9	-35%	1.3%	3.9%	2.3%	21.5
	University Heights/ Fordham	\$60,288	+21	-14%	6.9%	0%	8%	38.9
Queens	Williamsbridge/ Baychester	\$59,288	+19	-15%	1.9%	9.4%	3.5%	41.5
	Astoria	\$50,000	-0.22	-29%	0%	2.3%	1%	7.9
	Flushing/ Whitestone	\$60,000	-0.07	-14%	0.6%	2.1%	0.9%	9.1
	Rockaways	\$65,000	+1	-7%	0.4%	3.3%	2.6%	43.1
Staten Island	South Ozone Park/ Howard Beach	\$60,000	-7	-14%	0.4%	4%	1.7%	23.9
	Mid-Island	\$80,000	+3	14	1%	2.4%	1%	12.1
	North Shore	\$68,022	-13	-3	1.6%	2.6%	2.4%	24.1
	South Shore	\$83,050	+6	19	1%	1.9%	1.2%	13.5

SOURCE (HOMEOWNER'S INCOME) The Furman Center, Data Search Tool, <http://datasearch.furmancenter.org/>

SOURCE (HOME FINANCE) Association for Neighborhood Housing and Development, Housing Risk Chart 2014, <http://www.anhd.org/wp-content/uploads/2011/07/ANHD-Housing-Risk-Chart-2014.pdf>

*This table (opposite page) analyzes high-risk flood zones as defined by FEMA's Preliminary Work Map for New York City. Since this analysis, a more finalized flood map, the Preliminary Flood Insurance Rate Map, has been released. The Preliminary Flood Insurance Rate Map demarcates a slightly smaller high-risk area, with a population of 398,000.


Total registrants	67,802
Median income	\$82,000
% with income \$0 - \$15,000	16.6%
% with income \$15,001 - \$30,000	13.3%
% with income \$30,001 - \$60,000	24.6%
% with income \$60,001 - \$90,000	18.9%
% with income over \$90,000	26.6%
Race and Ethnicity	
% White	62.1%
% Black	20.3%
% Hispanic	8.3%
% Asian	7.4%

SOURCE Furman Center for Real Estate & Urban Policy, Sandy's Effects on Housing in New York City.

Sources

- 1 City of New York. A Stronger, More Resilient New York. 2013. http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf.
- 2 Wall Street Journal, "Many Displaced by Superstorm Sandy Still Wait for Housing Help." June 17, 2014.
- 3 Beck, Graham T. "De Blasio's New Housing Plan Is All About Storm Protection." Next City. June 18, 2014. <http://nextcity.org/daily/entry/de-blasios-new-housing-plan-is-all-about-storm-protection>
- 4 429,957 people are covered by the 2016 flood insurance map. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 5 While the majority of people impacted by Sandy were renters, the largest group of buildings struck were 1-4 family homes. Koepnick, Becky and Max Weselcouch. Sandy's Effects on Housing in New York City." Furman Center for Real Estate & Urban Policy. <http://furmancenter.org/files/publications/SandysEffectsOnHousingInNYC.pdf>. According to the 2008 federal flood maps, there are 25,800 1-4 family homes in the floodplain. These 25,800 1-4 family structures sit on 191,000 parcels, and hold approximately 31,400 units of housing. The vast majority of them- 17,500 structures- are single family homes; 6,600 are 2 family homes; 1,700 are 3-4 family homes. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 6 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 7 The proportion of owner-occupied units rose from 25% to 33%, while the proportion of renter-occupied units dropped from 67% to 57%. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 8 The proportion of owner-occupied homes owned outright fell from 64% to 62%. The proportion of high income households dropped from 35% to 31%, the biggest change of any homeowner income group. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 9 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 10 Homeowners in Throggs Neck/ Coop City earned an average of \$45,400 in 2008, according to the Furman Center's Data Search Tool, July 8, 2014. <http://datasearch.furmancenter.org/>
- 11 All homeowner income statistics accessed via the Furman Center's Data Search Tool, July 8, 2014. <http://datasearch.furmancenter.org/>
- 12 Comparatively, the city as a whole is 44% white, 25% black, 13% Asian and 18% other. Data from US Census and FEMA's 2016 flood maps. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 13 There is barely any variation between the city as a whole and residents of flood-prone areas. Citywide, 21% earned less than a high school degree, 26% earned a high school degree, 20% have some college experience, and 33% have a Bachelor's degree or above. In the 2016 floodplain, 20% earned less than a high school degree, 27% earned a high school degree, 21% have some college experience, and 32% have a Bachelor's degree or above. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 14 People 70 or older make up 11% the new flood zone, and 8% of the general New York City population. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. Flood Insurance in New York City Following Hurricane Sandy. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 15 Seniors living alone make up 9.8% of the city as a whole and 12.1% of people living in the Sandy surge area. Koepnick, Becky and Max Weselcouch. Sandy's Effects on Housing in New York City." Furman Center for Real Estate & Urban Policy. <http://furmancenter.org/files/publications/SandysEffectsOnHousingInNYC.pdf>
- 16 Koepnick, Becky and Max Weselcouch. Sandy's Effects on Housing in New York City." Furman Center for Real Estate & Urban Policy. <http://furmancenter.org/files/publications/SandysEffectsOnHousingInNYC.pdf>
- 17 New York Communities for Change, New York Communities Organizing Fund, and the Mutual Housing Association of New York. 2014. Thousands of Homeowners Still Drowning in Underwater Mortgages: How Toxic Loans Keep Fueling Foreclosures and the Need for Eminent Domain. <http://www.nyccommunities.org/sites/default/files/How%20Toxic%20Loans%20Keep%20Fueling%20Foreclosures%20and%20the%20Need%20for%20Eminent%20Domain.pdf>
- 18 This problem could and should have been avoided, especially after a very similar set of circumstances hurt homeowners in New Orleans after Hurricane Katrina. Romeo, Franklin and Jennifer Ching. 2013. Homes Underwater: Forebearance Alternatives for Sandy-Affected Homeowners. Queens Legal Services . <http://www.legalservicesnyc.org/storage/lsny/PDFs/homes%20underwater.pdf>

- 19 The only exception was Coney Island. Capperis, Sean, Jorge De la Roca, Kevin Findlan, Ingrid Gould Ellen, Josiah Madar, Shannon Moriarty, Justin Steil, Max Weselcouch, Mark Willis. 2014. State of New York City's Housing and Neighborhoods in 2013. The Furman Center. http://furmancenter.org/files/sotc/SOC2013_HighRes.pdf
- 20 Romeo, Franklin and Jennifer Ching. 2013. Homes Underwater: Forebearance Alternatives for Sandy-Affected Homeowners. Queens Legal Services. <http://www.legalservicesnyc.org/storage/lsny/PDFs/homes%20underwater.pdf>
- 21 Capperis, Sean, Jorge De la Roca, Kevin Findlan, Ingrid Gould Ellen, Josiah Madar, Shannon Moriarty, Justin Steil, Max Weselcouch, Mark Willis. 2014. State of New York City's Housing and Neighborhoods in 2013. The Furman Center. http://furmancenter.org/files/sotc/SOC2013_HighRes.pdf
- 22 New York Communities for Change, New York Communities Organizing Fund, and the Mutual Housing Association of New York. 2014. Thousands of Homeowners Still Drowning in Underwater Mortgages: How Toxic Loans Keep Fueling Foreclosures and the Need for Eminent Domain. <http://www.nycommunities.org/sites/default/files/How%20Toxic%20Loans%20Keep%20Fueling%20Foreclosures%20and%20the%20Need%20for%20Eminent%20Domain.pdf>
- 23 Romeo, Franklin and Jennifer Ching. 2013. Homes Underwater: Forebearance Alternatives for Sandy-Affected Homeowners. Queens Legal Services. <http://www.legalservicesnyc.org/storage/lsny/PDFs/homes%20underwater.pdf>
- 24 Romeo, Franklin and Jennifer Ching. 2013. Homes Underwater: Forebearance Alternatives for Sandy-Affected Homeowners. Queens Legal Services. <http://www.legalservicesnyc.org/storage/lsny/PDFs/homes%20underwater.pdf>
- 25 http://www.nyc.gov/html/dcp/pdf/census/nny2013/nny_2013.pdf
- 26 Romeo, Franklin and Jennifer Ching. 2013. Homes Underwater: Forebearance Alternatives for Sandy-Affected Homeowners. Queens Legal Services. <http://www.legalservicesnyc.org/storage/lsny/PDFs/homes%20underwater.pdf>
- 27 Yates, James. "Remembering 24 Killed by Hurricane Sandy on Staten Island." Staten Island Advance, October 29, 2013.
- 28 Smith, Neil. *The New Urban Frontier: Gentrification and the Revanchist City*. New York: Routledge, 1996.
- 29 These dynamics are not universal. Brooklyn Heights, for example, has long been a wealthy neighborhood, and is located on the East River, directly across from Manhattan's downtown central business district (which is itself waterfront adjacent.) Lees, Loretta. "Super-gentrification: The case of Brooklyn heights, New York city." *Urban studies* 40.12 (2003): 2487-2509. Manhattan's downtown waterfront is a complicated case. Its coasts were heavily industrial, and quite apart from the world of nearby Wall Street and City Hall. The process of deindustrialization, however, opened up these areas to both urban renewal (in the case of the Lower East Side) and luxury expansion (in the case of the expanding financial district).
- 30 Raskin, Joseph B. 2013. *The Routes Not Taken: A Trip Through New York City's Unbuilt Subway System*. Bronx: Fordham University Press.
- 31 Greenwald, Richard. "A Very Brief History of Why It's So Hard to Get From Brooklyn to Queens." *The Atlantic: Citylab*. May 30, 2013. <http://www.citylab.com/commute/2013/05/very-brief-history-why-its-so-hard-get-brooklyn-queens/5738/>
- 32 According to planning scholar Ann L. Buttenwieser, "New York City's waterfront developed in a pattern similar to that in most North American cities...: dock building augmented by warehouses for shipping (1647 - 1980s), followed by peripheral railroad lines and factories (1846 - 1911), highways constructed over or replacing railroad tracks (1898 - 1950s), and housing and recreational facilities (1980 to the present) supplanting or reusing abandoned piers, warehouses and factories." Buttenwieser, Ann L. "Waterfront Development" in Kenneth T. Jackson, Lisa Keller and Nancy Flood (eds). *The Encyclopedia of New York City: Second Edition*. New Haven: Yale University Press, 2010.
- 33 Interview with Kenneth T. Jackson on PBS' *New York Voices*. Transcript available at <http://www.thirteen.org/nyvoices/transcripts/jackson.html>
- 34 Buttenwieser, Ann L. "Waterfront Development" in Kenneth T. Jackson, Lisa Keller and Nancy Flood (eds). *The Encyclopedia of New York City: Second Edition*. New Haven: Yale University Press, 2010.
- 35 Fitch, Robert. 1996. *The Assassination of New York*. New York: Verso.
- 36 Caro, Robert A. *The Power Broker*. New York: Vintage.
- 37 Wilder, Craig. 2001. *A Covenant with Color: Race and Social Power in Brooklyn*. New York: Columbia University Press.
- 38 Wilder, Craig. 2001. *A Covenant with Color: Race and Social Power in Brooklyn*. New York: Columbia University Press, pp. 190 – 193.
- 39 Mahler, Jonathan. "How the Coastline Became a Place to Put the Poor." *New York Times*, December 3, 2012.
- 40 Mahler, Jonathan. "How the Coastline Became a Place to Put the Poor." *New York Times*, December 3, 2012.
- 41 Starr, Roger. 1976. "Making New York Smaller." *New York Times*, November 14, 1976.
- 42 Flood, Joe. 2010. *The Fires*. New York: Riverhead Books.
- 43 Mironova, Oksana. "West of Nathan's: Planning Coney Island's Residential Communities." *Urban Omnibus*, January 22, 2014.
- 44 Schill, Michael H., Ingrid Gould Ellen, Amy Ellen Schwartz, and Ioan Voicu. 2002. "Revitalizing Inner-City Neighborhoods: New York City's Ten-Year Plan." *Housing Policy Debate* 13(3), pp. 529 – 566.
- 45 Halbfinger, David M. "Post-Storm Cost May Force Many From Coast Life." *New York Times*, November 28, 2012.
- 46 Maantay, Juliana, and Andrew Maroko. "Mapping Urban Risk: Flood Hazards, Race, & Environmental Justice in New York." *Applied Geography* 29.1 (2009): 111-124.
- 47 Nagy, Caroline. "Coping with Big Flood Insurance Changes in NYC, Part II: Community Collaboration." Center for NYC Neighborhoods, June 9, 2014. <http://cnycn.org/2014/06/coping-with-big-flood-insurance-changes-in-nyc-part-ii-community-collaboration/>
- 48 Gaul, David. "Flood Insurance Sagas, Part 1: Why Elevate Now?" *Zone A New York Blog*, March 24, 2014. <http://zoneanewyork.org/blog/entry/flood-insurance-sagas-part-1-why-elevate-now>
- 49 78% of one- to four-family homes in the high risk areas of the 2007 flood maps were built before 1983. Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. *Flood Insurance in New York City Following Hurricane Sandy*. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 50 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. *Flood Insurance in New York City Following Hurricane Sandy*. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 51 Sandy Redevelopment Oversight Group. 2014. "Equitable Re-Development of Land Acquired by New York City and New York State." *Opportunities for a New New York*. Planners Network NYC. <http://opportunitiesfornyc.org/opnyc.pdf>
- 52 Nagy, Caroline. "Coping with Big Flood Insurance Changes in NYC, Part II: Community Collaboration." Center for NYC Neighborhoods, June 9, 2014. <http://cnycn.org/2014/06/coping-with-big-flood-insurance-changes-in-nyc-part-ii-community-collaboration/>
- 53 City of New York. *A Stronger, More Resilient New York*. 2013. http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf
- 54 City of New York. *A Stronger, More Resilient New York*. 2013. http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf
- 55 City of New York. *A Stronger, More Resilient New York*. 2013. http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf
- 56 City of New York. *A Stronger, More Resilient New York*. 2013. http://s-media.nyc.gov/agencies/sirr/SIRR_singles_Lo_res.pdf
- 57 Nagy, Caroline. "Coping with Big Flood Insurance Changes in NYC, Part II: Community Collaboration." Center for NYC Neighborhoods, June 9, 2014. <http://cnycn.org/2014/06/coping-with-big-flood-insurance-changes-in-nyc-part-ii-community-collaboration/>
- 58 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. *Flood Insurance in New York City Following Hurricane Sandy*. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 59 New York City Rent Guidelines Board. 2014 *Income and Affordability Study*. April 10, 2014. http://www.nycrgb.org/downloads/research/pdf_reports/ia14.pdf
- 60 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. *Flood Insurance in New York City Following Hurricane Sandy*. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 61 Dixon, Lloyd, Noreen Clancy, Bruce Bender, Aaron Konfer, David Manheim, and Laura Zakaras. *Flood Insurance in New York City Following Hurricane Sandy*. RAND Corporation Center for Catastrophic Risk Management and Compensation, 2013. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR328/RAND_RR328.pdf
- 62 Turner, Billie L., Roger E. Kasperson, Pamela A. Matson, James J. McCarthy, Robert W. Corell, Lindsey Christensen, Noelle Eckley et al. 2003. "A framework for vulnerability analysis in sustainability science." *Proceedings of the national academy of sciences* 100(14), pp. 8074-8079.
- 63 John Arena, "Black and White, Unite and Fight?" in Cedric Johnson (ed), *The Neoliberal Deluge: Hurricane Katrina, Late Capitalism, and the Remaking of New Orleans*. Minneapolis: University of Minnesota Press, 2011.
- 64 Bellafante, Ginia. "Paying to Rebuild, and Rebuild Again", *New York Times*, November 16, 2012.



“When we moved here, we weren’t required to have flood insurance. This was not a flood area. I never thought this would have happened to us.”

— Carla, Brooklyn

IMPORTANT  INFO ABOUT
Flood Insurance
— FOR HOMEOWNERS —

Is your home in a high-risk flood zone?
You may be required to
purchase flood insurance.

To learn more, visit:

FloodHelpNY.org

A project of the
CENTER FOR NYC NEIGHBORHOODS