



FACT BRIEF

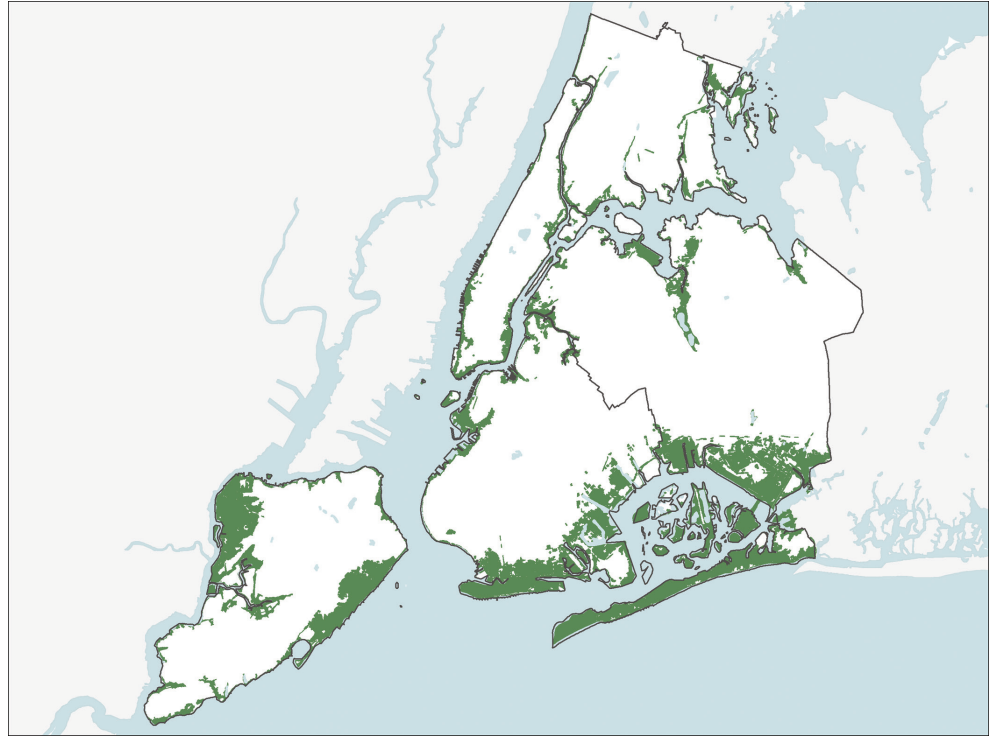
Sandy's Effects on Housing in New York City

Four months after Superstorm Sandy, New Yorkers continue to pick up the pieces and rebuild. Sandy devastated many parts of the city, including boardwalks, beaches, industrial sites, and transportation infrastructure. But for many, the most immediate damage was to their home. This fact brief will summarize information the Furman Center has gathered regarding the characteristics of properties in the areas of the city flooded by Sandy's storm surge and demographic characteristics of households that have registered to receive assistance from FEMA.





Map 1: Hurricane Sandy Surge Area



Sources: FEMA Modeling Task Force, New York City Department of City Planning

I. Extent of the Surge

The storm surge from Sandy flooded land in all five boroughs of New York City, breaching the city's coast along many bodies of water—the Atlantic Ocean, Jamaica Bay, and New York Bay; the Hudson, Harlem, and East Rivers; Arthur Kill and Kill Van Kull; and Long Island Sound. Map 1 shows the extent of Sandy's surge in New York City.

Prior to the most recent storm, the City designated certain parts of the city into three levels of hurricane evacuation zones. Zone A encompasses areas that have a high potential of flooding from any hurricane. Zone B includes areas that are likely to flood from a Category 2 or higher hurricane. Zone C includes areas that would be susceptible to flooding if a Category 3 or 4 hurricane were

to hit New York City. Map 2 demonstrates that the surge area reached beyond Zone A. Before Superstorm Sandy hit, New York City ordered an evacuation of all residences in Zone A. As Map 2 illustrates, almost all of Zone A flooded. However, in some places, most notably along the Jamaica Bay coast, the surge reached Zones B and C. This is particularly notable because Sandy was not even a Category 1 hurricane (the lowest classification) when it made landfall.

Over 270,000 residential buildings containing over 1 million housing units are in the three evacuation zones. While the surge from Sandy reached nearly 76,000 buildings with over 300,000 housing units, more than three times that number of units could be jeopardized by a higher category hurricane.



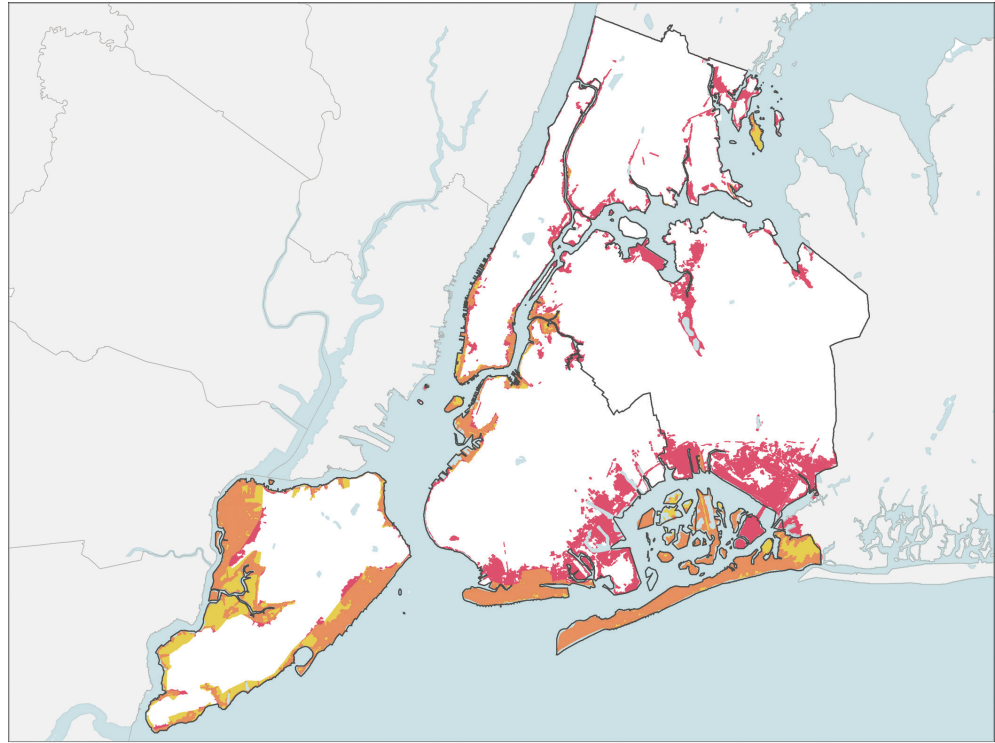
II. Impact of Surge on Residential Properties

The storm surge from Sandy covered 16.6 percent of the land in New York City and the 76,000 buildings it reached contained nearly nine percent of the total

housing units in the city. Table 1 shows that 42 percent of the residential buildings in the surge area are single-family homes (32,137 buildings). Two- to four-family homes make up a similar share of the properties in the surge area, and the

Map 2: Hurricane Sandy Surge Area and Evacuation Zone A

■ Surge Area and Evacuation Zone A Overlap ■ Surge Area Beyond Evacuation Zone A ■ Evacuation Zone A Not in Surge Area



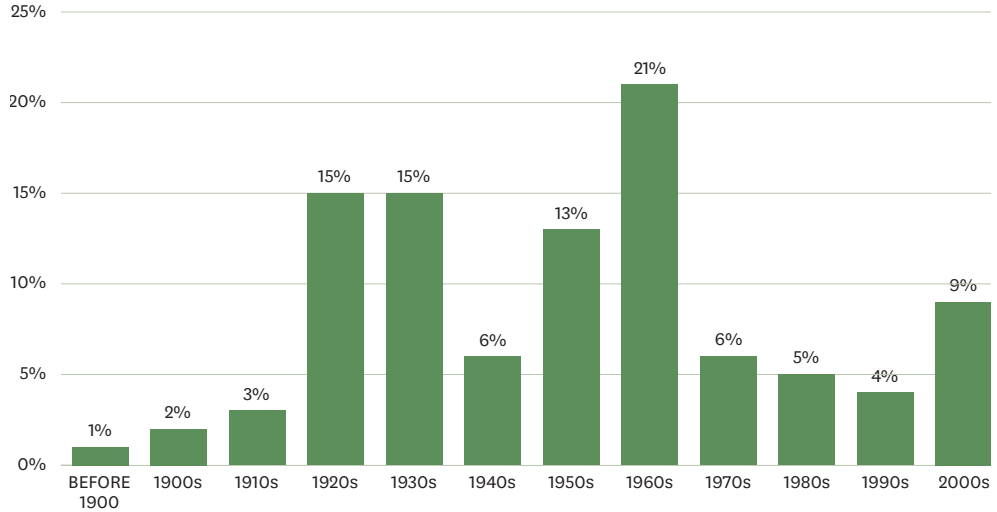
Sources: FEMA Modeling Task Force, New York City Department of City Planning, New York City Office of Emergency Management

Table 1: Distribution of Residential Building Types in Surge Area

Building Type	Buildings in Surge Area	Share of All Buildings in Surge Area	Housing Units in Buildings in Surge Area	Share of All Units in Surge Area
Single Family	32,137	42.3%	32,137	10.6%
2-4 Family	26,737	35.2%	58,699	19.4%
Condo ¹	2,298	3.0%	24,346	8.1%
Co-op				
Mitchell-Lama Co-ops ²	100	0.1%	22,764	7.5%
Market-Rate Co-ops	602	0.8%	32,789	10.8%
NYCHA ³	402	0.5%	35,476	11.7%
Other Subsidized Housing (SHIP) ⁴	248	0.3%	24,533	8.1%
Rent Stabilized ⁵	839	1.1%	41,102	13.6%
Market-Rate Multifamily	1,208	1.6%	25,603	8.5%
Mixed Uses	1,939	2.6%	4,854	1.6%
Commercial/Other	9,409	12.4%	—	—
Total	75,919	100.0%	302,303	100.0%

Sources: FEMA Modeling Task Force, New York City Department of City Planning, Furman Center Subsidized Housing Information Project, New York City Housing Authority, New York City Rent Guidelines Board

1. Most condo units are in buildings with five or more units. 857 units (3.5%) are in single-unit buildings and 2,551 units (10.5%) are in buildings with 2-4 units. 2. Includes co-op properties with parcels only partially in the surge area. Some very large co-op complexes such as Co-op City (4,458 units in surge area) are included here even though the surge likely did not reach all buildings. 3. Includes all buildings reported by NYCHA as damaged, including those outside the surge area. 4. These properties include properties receiving subsidy or financing from the U.S. Department of Housing and Urban Development, Mitchell-Lama rental properties, and Low-Income Housing Tax Credit properties. 5. Includes all units in buildings with any rent stabilized units. It is possible that some individual units have been deregulated.

**Figure 1: Decade of Construction of Buildings in Surge Area**

Sources: FEMA Modeling Task Force, New York City Department of City Planning

remainder is larger multifamily properties. However, the vast majority of units affected are in larger residential buildings. Of the 302,000 housing units in the surge area, 70 percent are located in multifamily properties with more than 4 units. To see the number of buildings and housing units in the surge area for each Community District in New York City, please see the Furman Center website (www.furmancenter.org/research/publications).

The level of damage the storm inflicted on these residential buildings and units varied, and, of course, not every unit in a building affected by the storm was damaged. Federal, city, and state agencies continue to assess the total amount of damage from Sandy, but as of February 19, 2013, only 281 buildings in New York City were classified as destroyed by the storm.¹

Age of Buildings in the Surge Area

Figure 1 shows that over 80 percent of the buildings in the surge area were built prior to 1983, the year that the most recent flood-related building codes were adopted.

Because they were not built up to modern standards, these older buildings are more likely to have sustained substantial damage. New York City requires that if the cost to repair a damaged building to its pre-damage condition is greater than 50 percent of its market value, any rebuilding must comply with the current flood standards, zoning, and building codes.² As to the buildings not damaged or damaged less than 50 percent of market value, those built before the building code was enacted are grandfathered into the law and will not be required to take steps to comply with the code.

Public, Subsidized and Rent-Regulated Housing in Surge Area

Sandy's flood waters damaged 402 buildings with over 35,000 units owned by the New York City Housing Authority (NYCHA)³—more public housing units than the entire stock of any other public housing authority in the country (excluding Puerto Rico). Overall almost 20% of NYCHA's 178,000 total units were in buildings that were damaged

² http://www.nyc.gov/html/om/pdf/2013/eo_qa_013013.pdf

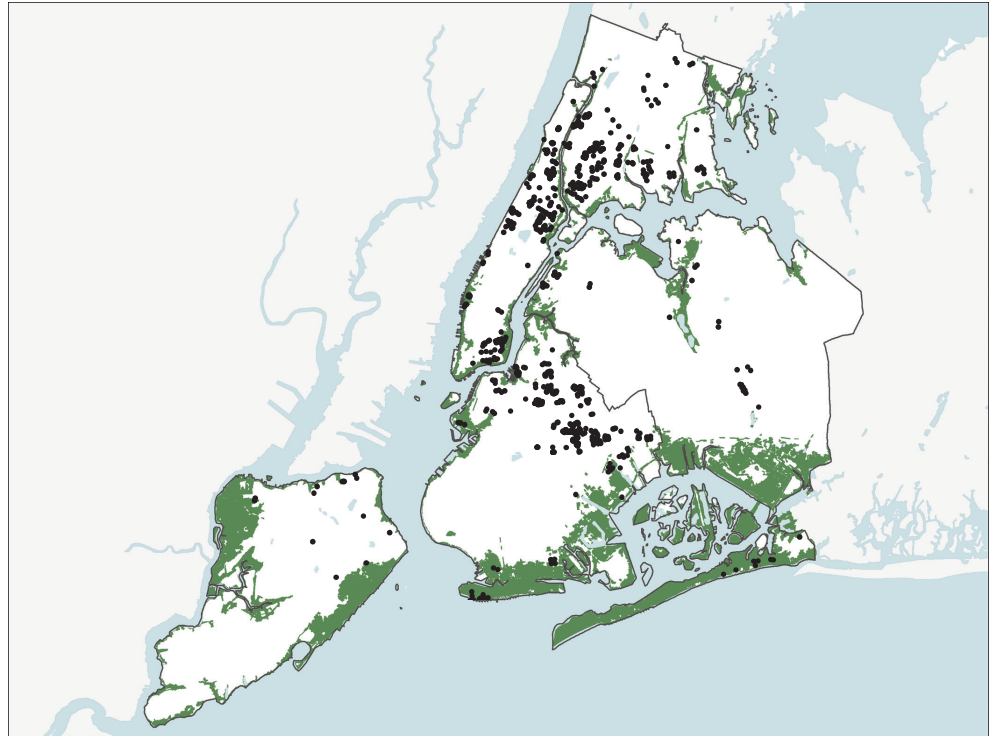
³ <http://www.nyc.gov/html/nycha/html/news/nycha-hurricane-sandy-progress-report.shtml>

¹ City of New York



Map 3: NYCHA Properties and Sandy's Surge Area

• NYCHA Properties ■ New York City Surge Area



Sources: FEMA Modeling Task Force, New York City Department of City Planning, New York City Housing Authority

by Sandy.⁴ Many of the nearly 80,000 residents of these buildings were left without heat or electricity because the basements of the buildings, where the heating and electrical systems are located, flooded. Most of these buildings were built more than 30 years ago and may require substantial renovation to their utility systems and ground floor apartments to withstand future storms. Map 3 shows the location of NYCHA properties in New York City overlaid with Sandy's surge area.

In addition to public housing, New York City has 178,000 units of affordable rental housing that are privately owned and receive government assistance through the U.S. Department of Housing and Urban Development, the Mitchell-Lama program, or the

Low Income Housing Tax Credit program. This stock was similarly affected by Sandy: 248 subsidized buildings, with about 24,500 units, are located in areas reached by the surge. Map 4 shows that subsidized developments are concentrated in some surge-affected areas, such as Coney Island, the Rockaways, Harlem, and the Lower East Side.

Finally, as Table 1 shows, Sandy affected over 800 privately-owned, unsubsidized buildings containing more than 40,000 rent-stabilized units.⁵ If these properties suffered extensive damage and need to be rebuilt, some of the stabilized stock, which is a valuable source of affordable housing, may be lost.

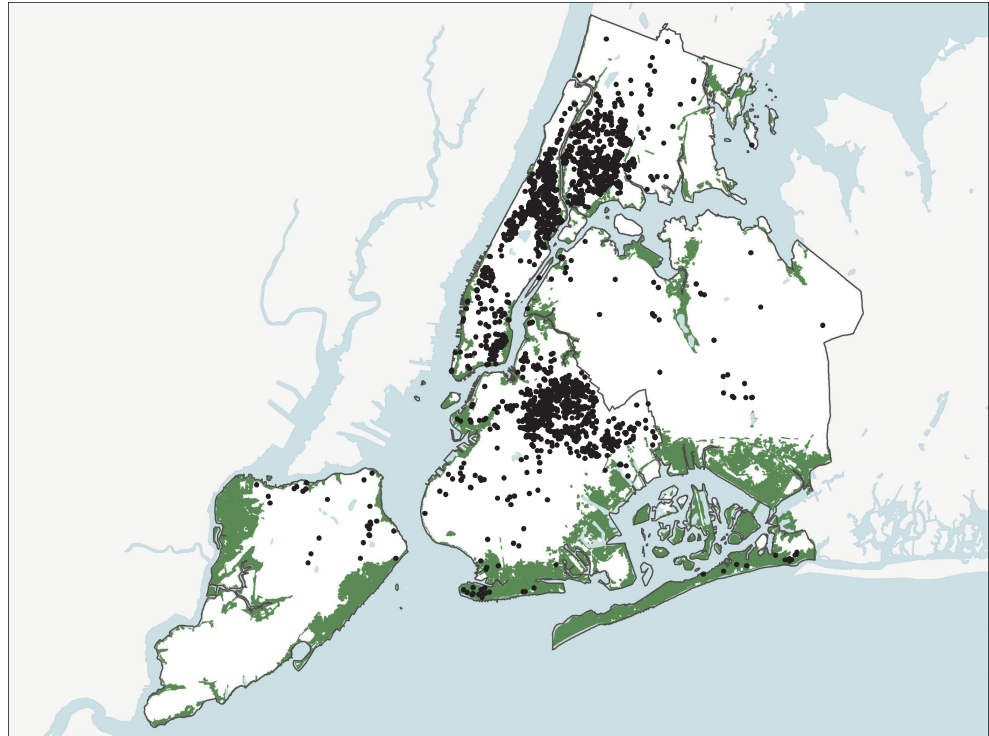
⁴ <http://www.nyc.gov/html/nycha/downloads/pdf/nycha-developments-affected-by-hurricane-sandy.pdf>

⁵ We do not have an exact count of the number of rent-stabilized units. Each of the 839 buildings identified has at least one stabilized unit. The majority of units in each building are likely still stabilized, but some of the 41,102 units in stabilized buildings may have been deregulated.



Map 4: Sandy Surge Area and Subsidized Rental Properties

• Subsidized Rental Properties ■ New York City Surge Area



Sources: FEMA Modeling Task Force, Furman Center Subsidized Housing Information Project, New York City Department of City Planning, New York State Office of Cyber Security

Extent of Damage to Residential Properties

The Federal Emergency Management Agency (FEMA) is responsible for coordinating the federal government’s response to domestic disasters. This includes providing funding for households to live in temporary housing or repair their existing homes, once FEMA has inspected the property. Not surprisingly, FEMA has found that the vast majority of the damage to residential properties caused by Sandy resulted from flooding. Table 2 shows that of the 62,000 damaged properties FEMA had inspected as of early January, 94 percent had damage resulting from flooding. Nearly 25,000 households had more than one foot of flooding in their first floor living areas, indicating that extensive repair work (potentially in excess of the FEMA assistance maximum amount of \$31,900) will be needed.

Table 2: Characteristics of Damage (both renter and owner households)

As of January 2, 2013

Total with Damage	62,230	
Damage without Flooding	3,702	5.9%
Damage from Flooding	58,528	94.1%
Flooding in Basement Only	28,672	46.1%
Basement Flooded < 2 Feet	5,341	8.6%
Basement Flooded ≥ 2 Feet	23,331	37.5%
Flooding in Living Area	29,856	48.0%
Living Area Flooded < 1 Foot	5,181	8.3%
Living Area Flooded 1 - 4 Feet	15,535	25.0%
Living Area Flooded ≥ 4 Feet	9,140	14.7%

Source: HUD analysis of FEMA data

New York City has already announced that it will dedicate \$350 million in federal Community Development Block Grant (CDBG-DR) funding to a grant program for 9,300 homeowners who need additional funding to restore their homes.⁶ While it remains to be seen what the exact level of need will be, additional CDBG-DR funding

⁶ <http://www.nyc.gov/html/om/html/2013a/pr052-13.html>



Table 3: FEMA Registrants in New York City vs. All Residents (As of February 15, 2013)

	Registrants		New York City (All Residents)	
	Owners	Renters	Owners	Renters
Total Registrations	67,802	84,279		
Share of Total	44.6%	55.4%	32.1%	67.9%
Median Income	\$82,000	\$18,000	\$80,898	\$37,891
Income between \$0 and \$15,000	16.6%	42.4%	6.5%	22.8%
Income between \$15,001 and \$30,000	13.3%	22.4%	10.4%	18.8%
Income between \$30,001 and \$60,000	24.6%	20.3%	19.3%	24.3%
Income between \$60,001 and \$90,000	18.9%	7.7%	18.2%	14.6%
Income > \$90,000	26.6%	7.1%	45.7%	19.5%
Race and Ethnicity (Imputed from 2010 Census)				
% White	62.1%	45.3%	54.0%	35.0%
% Black	20.3%	25.4%	18.6%	24.0%
% Hispanic	8.3%	19.1%	11.7%	29.1%
% Asian	7.4%	8.0%	13.2%	9.6%

Source: FEMA, 2010 Decennial Census, American Community Survey

will be forthcoming from the federal government and could help to fill potential needs.⁷

III. Types of Households Impacted By Sandy and Seeking FEMA Assistance

New data released by FEMA last week reveals that as of February 15, 2013, over 150,000 households in New York City had registered with FEMA, an indication of the total number of households whose housing was damaged by the storm (though there are likely still households that were affected but have not registered). This is four percent of all households in New York City and nearly half of the households in the surge area (though some homeowners outside of the surge area may have registered because of damage from wind or fallen trees). As Table 3 shows, 45 percent of registered households are owners and 55 percent are renters. Both renters and owners are eligible for assistance from FEMA to cover losses up to \$31,900, which can be used to pay for temporary housing, homeowner repairs or replacement housing, or other expenses caused by the disaster such as personal

Table 4: Value of Damage

As of February 15, 2013

Total Owners with FEMA Inspected Damage	47,721
Damage between \$0 and \$10,000	51.3%
Damage between \$10,001 and \$20,000	24.2%
Damage between \$20,001 and \$30,000	13.0%
Damage > \$30,000	11.6%
Share of owner households with insurance covering all damage	63.5%
Share of owner households that have already received the maximum grant from FEMA (\$31,900)	5.3%
Total Renters with FEMA Inspected Damage	22,054
Moderate Damage	44.3%
Major Damage	25.8%
Substantial Damage	29.9%

Source: FEMA

property replacement, moving and storage expenses, or medical expenses.⁸

After a household registers with FEMA, FEMA inspects their unit and personal property to assess damage and then can assist the household with any damage not covered by insurance. Table 4 shows that 47,721 owner households and 22,054 renter households have been inspected by FEMA. Of those, 5,529 owner households had over \$30,000 in damage and 2,507 owner households had already received the maximum \$31,900 grant from FEMA. Renters do not

⁷ http://portal.hud.gov/hudportal/HUD?src=/press/press_releases_media_advisories/2013/HUDNo.13-014

⁸ http://www.fema.gov/pdf/assistance/process/help_after_disaster_english.pdf



receive a full home inspection as they are only eligible for coverage of items that they own. 5,779 renter households had “substantial” damage, the highest damage level assessed by FEMA for renters.

For losses not covered by FEMA, both homeowners and renters affected by Sandy (as well as business owners) may apply for an additional loan from the Small Business Administration (SBA). The low-interest rate loans can provide up to \$200,000 to repair or replace real estate and \$40,000 to repair or replace personal property such as clothing, furniture, automobiles or appliances. Households must first register with FEMA before they can apply for an SBA loan.

The diversity of New York City’s housing stock may complicate efforts by affected households who suffered damage in the hurricane to pursue relief from FEMA. Many of FEMA’s recovery programs are geared specifically toward single-family homes. But, as Table 1 shows, only about one out of ten of the households affected by Hurricane Sandy live in single-family homes; fewer than two in ten live in two- to four-family homes; and, the rest live in larger properties. FEMA’s programmatic focus on single-family homes makes sense in the national context, where 67.5% of households live in single-family homes. But this focus limits FEMA’s ability to respond to the full range of needs created by Sandy.

Low-income households—both renters and owners—may be especially hard-pressed to cover losses, despite the availability of FEMA assistance. The median household income reported on FEMA registrations was \$82,000 for owners and \$18,000 for renters. Nearly one-third of owners (29.9%) and two-thirds of renters (64.9%) have household incomes of less than \$30,000 per year (roughly 60 percent of the median income in New York City). For both owners and renters, this is a higher share of low-income

Table 5: Demographic Characteristics of Households Living in the Surge Area

	Surge Area	NYC
Households with Children	28.8%	30.7%
Households with Seniors	27.3%	24.0%
Seniors Living Alone	12.1%	9.8%

Source: FEMA, U.S. Census Bureau

households than throughout New York City (16.9% of owners and 41.6% of renters).

Given the extremely low incomes of the renters claiming damages, they are particularly at-risk of being unable to locate new housing that is affordable to them. In normal times, the overall amount of housing affordable to these households is limited – indeed, just 22 percent of rental units in New York City are affordable to households whose annual income is below \$30,000. Finding replacement housing for these families is likely to be a long-term challenge for New York City if they cannot stay in their homes.

Because of the concentration of older housing stock and subsidized housing for seniors, some of the neighborhoods hit hard by Sandy have a high share of their population over 65 years old. Table 5 shows that about 27 percent of the households in the surge area include seniors, three percentage points higher than throughout New York City. Further, seniors living alone—an especially vulnerable population during an emergency—make up 12.1 percent of all households in the surge area. For both low-income renters and the elderly, New York City may need to devise longer-term strategies for evacuating and re-housing these populations in future storms.

While low-income renters are particularly vulnerable to housing instability after Sandy, there were also many homeowners affected by Sandy who were already facing the threat of foreclosure, and who may now face an even tougher struggle to retain their homes. 1,800 owners of one- to four-family homes



in the surge area had foreclosure proceedings started against them in the two years prior to the storm. Since the storm, the Federal Housing Administration (FHA) and Fannie Mae and Freddie Mac (the GSEs) have placed a moratorium on foreclosure filings and foreclosure sales on damaged homes until April 30, 2013.⁹ Some, but not

all, private lenders have also voluntarily suspended foreclosure proceedings in areas hit by Sandy. The expiration of these moratoriums could interfere with the ability of households and neighborhoods to recover and rebuild from this devastating event and will need to be a focus for policymakers leading recovery efforts.

⁹ <http://www.sba.gov/sites/default/files/NY%2013365%20Fact%20Sheet%201-24-13.pdf>

The analysis for this report was based on data compiled from several sources. This is the Furman Center's own analysis of these data. The Federal Government cannot vouch for the data or analyses derived from these data sets after the data have been retrieved.

FEMA Housing Assistance Data for New York and New Jersey (published February 20, 2013)
<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=6963>

FEMA's Modeling Task Force (Surge Area)
<http://www.arcgis.com/home/item.html?id=307dd522499d4a44a33d7296a5da5ea0>

Furman Center's Subsidized Housing Information Project (Subsidized Units)
<http://datasearch.furmancenter.org/>

HUD Analysis of FEMA Registrations (published January 26, 2013)
<http://bit.ly/15QmITJ>

New York City Department of City Planning's MapPLUTO database (Property Characteristics)
<http://www.nyc.gov/html/dcp/html/bytes/applbyte.shtml>

New York City Housing Authority (Damaged NYCHA Properties)
<http://www.nyc.gov/html/nycha/downloads/pdf/nycha-developments-affected-by-hurricane-sandy.pdf>

New York City Rent Guidelines Board (Buildings with Rent Regulated Units)
<http://www.housingnyc.com/html/resources/zip.html>

US Census Bureau's Decennial Census 2010 and American Community Survey 2011 (Demographics)
factfinder2.census.gov

About the Furman Center and the Moelis Institute for Affordable Housing Policy

The Furman Center for Real Estate and Urban Policy is a joint center of the New York University School of Law and the Robert F. Wagner Graduate School of Public Service at NYU. Since its founding in 1995, the Furman Center has become a leading academic research center devoted to the public policy aspects of land use, real estate development, and housing. The Furman Center launched the Moelis Institute for Affordable Housing Policy to improve the effectiveness of affordable housing policies and programs by providing housing practitioners and policymakers with information about what is and is not working, and about promising new ideas and innovative practices.

furmancenter.org