



HURRICANE
SANDY

TEN YEARS LATER

HURRICANE SANDY

10-YEAR
ANNIVERSARY

Published October 26, 2022

My Fellow New Yorkers,

This year marks ten years since Superstorm Sandy made its tragic landfall in New York City. For so many of us, it feels like yesterday.

Superstorm Sandy showed us the devastation that storms, supercharged by climate change, can bring to a city. Forty-four of our neighbors were taken from us. We lost grandparents, fathers, sons, mothers, daughters, friends. Our hearts were broken that day.

Our subways were flooded, millions were left without power. 35,000 New Yorkers were displaced. Buildings were destroyed and damaged. And our response was resilient and heroic. But the aftermath and long-term recovery left many of our most vulnerable New Yorkers behind.

Public housing residents faced a lack of heating, running water and power outages for weeks and months after the storm. And many of our coastal communities are still rebuilding a decade later.

We know that climate catastrophe isn't some far off threat. It is here and it is happening. And NYC is not waiting to act. We are working on all fronts to protect our city and prevent future tragedies. That's why we have embarked on the single largest urban climate adaptation project in the nation.

That includes massive physical infrastructure projects like the East Side Coastal Resiliency Project and the Brooklyn Bridge-Montgomery Coastal Resilience Project, a system of massive flood walls and deployable barriers. But this is just the beginning of our resiliency work.

We know that another storm could hit our city at any time. What used to be a once in a hundred-year event is something we must be ready for today, tomorrow and into the future. It will take collaboration among all levels of government, including Federal and State, working together to prepare our city for these new challenges.

Climate change will continue to threaten our city, as it is threatening the entire world. And NYC is going to be ready.

The time to act on climate change is now. It's time to get stuff done.



Mayor Eric Adams

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THE STORM & IMPACTS

What made Sandy so destructive and why?

SIZE

- 1,000-mile-wide wind field, 3 times the size of Hurricane Katrina
- This consequentially produced greater storm surge, which was responsible for most of the damages experienced



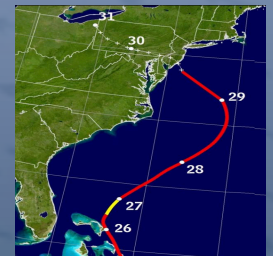
Katrina



Sandy

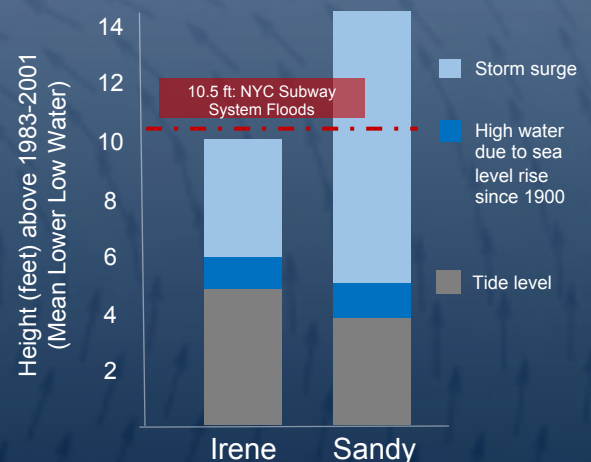
DIRECTION

- Sandy also took a path that included a rare “westward hook,” rather than a more traditional northeasterly path, putting the city in the path of its onshore wind
- This was caused by two other weather systems that steered Sandy back to the coast; one high-pressure system to the north and one low pressure system to the east



TIMING

- Sandy made landfall in NYC on October 29, nearing the end of coastal storm season
- It was high tide in the Atlantic Ocean and in NY Harbor, adding an additional 5 feet of water compared to low tide
- It was also "spring tide" (when there is a full moon and the tide is at its peak of the monthly cycle), which added another 6 inches of water



Source: NOAA/UCAR

IMPACTS

- **44 fatalities & 35,000** NYC residents temporarily or permanently displaced
- **\$19 billion** in damages and lost economic activity across NYC
- **2.5 million** residents left without power & **2.1 million** cubic yards of debris generated
- **51 square miles** of NYC flooded (17% of City's landmass), with nearly 90,000 buildings in the inundation zone
 - Less than 20% of inundated residential buildings had coverage through FEMA's National Flood Insurance Program (NFIP)

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RESPONSE & IMMEDIATE RECOVERY

EVACUATION, SHELTERING, & FEEDING

- **375,000** residents living in Zone A were required to evacuate
- **2,236 evacuees** arrived at 8 Special Medical Needs Shelters
- At peak, **6,769 New Yorkers** arrived at 73 shelters for up to **24 days**
- **4,001** shelter staff supported 24/7 sheltering operations
- **6,341** patients evacuated from 37 healthcare facilities
- NYC distributed 2.1 million meals, ready-to-eat (MRE) and 926,000 bottles of water



OPERATIONS & COMMUNICATIONS

- Emergency Operations Center activated for **107 days**, staffed by up to **72 agencies**
- **3 Wireless Emergency Alerts** were issued – the first time this tool was used by the City
- **4 million** unique visitors to nyc.gov during the storm, from residents seeking additional information about the storm

CANVASSING

- 30,000 homes were contacted through door-to-door canvassing
- More than 12,000 volunteers served communities

GOVERNMENT

- City Council passed nine legislative bills that codified and ensured lessons learned from Sandy were integrated into the City's recovery and future preparedness capabilities
- Community Recovery Directors (CRD) were deployed with teams to each borough to liaise with local communities and elected officials and review requests and allocations of resources. This program is now a key component of recovery for coastal storms.

LESSONS LEARNED



RESILIENCY

- Too much of New York's infrastructure was constructed without enough emphasis on ensuring its resiliency. For example, nearly 80,000 residents in 423 NYCHA buildings were affected by lost power, heat, and/or hot water as a result of Sandy; many of these buildings had boilers and electrical facilities in basements.



COORDINATION

- New York can't prepare for or respond to the next Sandy alone. In order to save lives, protect livelihoods, and build the next generation of coastal infrastructure, we need close partnership with federal and state authorities.



CONSTRUCTION

- Sandy had a devastating, unprecedented impact on New Yorkers' homes, and too often, construction and repairs took too long and too much money. As New York prepares for future storms, Superstorm Sandy and Build it Back taught us many best practices to best shape how the city will respond to future flood events, ensuring people can safely shelter in their homes or return home as quickly as possible.



AWARENESS

- New York needs to prepare every New Yorker – and particularly those in coastal areas – for the eventuality of another life-threatening storm. In 2012, too many New Yorkers lacked flood insurance, didn't know their evacuation route or zone, or didn't have basic supplies prepared in a "go-bag", because New York City didn't do a good enough job preparing New Yorkers ahead of the storm.



A CHANGING WORLD

- Storms are growing stronger, more frequent, and more unpredictable as our climate crisis continues to imperil the planet. Sandy's devastation also serves as a stark warning: it was not the first major storm to hit New York, and it will not be the last. New York needs to be prepared for this next generation of storms.

RECOVERY

RECOVERY FUNDING

- \$9.9 billion awarded in FEMA Public Assistance
- \$710 million awarded in other federal emergency relief
- \$4.2 billion awarded in HUD Community Development Block Grants Disaster Recovery (CDBG-DR) and \$176 million in National Disaster Resilience (CDBG-NDR)

HOUSING

Rapid Repairs



First-of-its-kind emergency shelter-in-place program to provide essential repairs to thousands of homeowners left without heat, power, or hot water following Hurricane Sandy

Buildings served: 11,700
(20,000 dwelling units; 54,000 New Yorkers)

FloodHelpNY



Consumer education program and website that has helped increase National Flood Insurance Protection (NFIP) enrollment by about 50% since Hurricane Sandy

NYCHA's Recovery and Resilience Program:

NYCHA has invested over \$2.7 billion of the \$3.26 billion awarded in the developments most severely damaged by Sandy, protecting over 100 multifamily buildings at 18 developments from storm surge to date. By the end of the program, it will be over 200 buildings. This includes installing full backup power generators for 10,000 apartments and new, energy-efficient heat and hot water systems for nearly 3,500 apartments. Public housing is one of the most critical elements of New York City's affordable housing stock and preserving this asset for future generations of New Yorkers is a top priority.

SMALL BUSINESS

- **Business PREP** (\$7.5 million): managed by SBS to help small businesses better prepare for emergencies and enhance the resiliency of their operations, assets, and physical space
- **RISE:NYC** (\$30 million): RISE is a technology competition managed by NYCEDC to support Sandy impacted small businesses improve resiliency of their business-critical infrastructure through innovative building, energy, and telecom systems.

HEALTH

- Construction of the Ruth Bader Ginsburg Hospital building on the NYC Health + Hospitals/South Brooklyn Health campus is nearly completed. The new 11-story building is designed to protect all critical mechanical, electrical, and plumbing infrastructure above 500-year event flood elevations.
- In the next 8 years, NYC Health + Hospitals will spend over \$300 million on improvements to critical infrastructures to heighten the resiliency of the Metropolitan, Coler, and Bellevue Hospital campuses to 500-year event flood elevation. Metropolitan and Bellevue Hospitals will be protected by floodwalls, and Coler Hospital will be protected by a landscaped berm.

Build It Back - Single Family



Program designed to assist 1–4-unit property owners affected by Sandy

- 8,319 homeowners served citywide
- 838 homes elevated
- 492 homes completely rebuilt
- 3,914 homes repaired
- 247 homes acquired through buyouts and acquisition for redevelopment
- \$135M total reimbursed

Build It Back - Multi-Family (5+ Units)



- 141 developments (19,156 dwelling units) were financed + 160 projects in individual condominium and cooperative units were assisted with recovery

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SELECT LONG-TERM CITYWIDE COASTAL RESILIENCY PROJECTS

East Side Coastal Resiliency (ESCR)



Jointly funded by the City of New York and the federal government, ESCR aims to reduce flood risk due to coastal storms and sea level rise on Manhattan's East Side from East 25th Street to Montgomery Street.

Rockaway Beach



NYC Parks partnered with NYCEDC to reconstruct over 5 miles of the Rockaway Boardwalk, including a more resilient concrete boardwalk. The Army Corps of Engineers is currently constructing a reinforced dune, new and extended groins, and sand replenishment to protect Rockaway communities.



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Manhattan Waterfront Greenway



Closing the gaps in the Manhattan Waterfront Greenway Loop will fortify shorelines and link over 1,000 acres of open space

East Harlem Coastal Resiliency



Investing in social infrastructure improvements to support robust public spaces that help reduce climate change vulnerability, particularly in the face of heat and flooding risks.



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SELECT LONG-TERM CITYWIDE COASTAL RESILIENCY PROJECTS

Financial District and Seaport Climate Resiliency



The Financial District and Seaport Climate Resilience Master Plan is a shared City-community vision for a resilient 21st-century waterfront. This vision responds to the increasing hazards posed by climate change, while transforming the waterfront to better serve all New Yorkers for generations to come.

Coney Island Creek Raised Shorelines

NYC EDC is implementing the Coney Island Creek project, designed to reinforce the shoreline to prevent erosion and mitigate tidal flooding from sea level rise. Bulkheads will be strengthened and extended to provide consistent flood protection.



LOOKING AHEAD

The threat that climate change and the next generation of stronger, more frequent storms poses to New York has only grown in the past 10 years. Agencies across the city have launched a wide range of innovative, first-in-the-nation resiliency projects – large, complex efforts being implemented in a unique, dense urban environment. But in order to complete and expand upon these projects, and protect New Yorkers, we need significant investments and key policy reforms.

F E D E R A L

- Create a **new and consistent formula funding program for coastal resiliency projects** that would enable New York City to complete a suite of critical projects.
- Ensure FEMA forms a **new program that supports construction for immediate sheltering after disasters** as well as temporary home repairs to minimize displacing residents, long-term hoteling, and congregate sheltering.
- **Increase the maximum amount of funding** allowed for projects under FEMA’s Building Resilient Infrastructure and Communities program, where funding is currently capped at \$50M.
- Implement a **uniform Benefit Cost Analysis (BCA) method** to streamline how projects are funded through various grants
- Reform the National Flood Insurance Program to **ensure flood insurance remains accessible and affordable for all**

S T A T E

- State lawmakers should pass legislation allowing city agencies to use **Progressive Design Build** – a faster, more efficient way of selecting vendors to complete key infrastructure projects. This would facilitate early-stage collaboration to investigate existing conditions, examine engineering and construction challenges, and agree on solutions before determining a final scope and price. Further, it would result in fewer disruptions for residents, fewer changes for contractors while projects are underway, money spent more efficiently, and better projects for New Yorkers.

C I T Y

- We’re launching Climate Strong Communities (CSC), a community engagement and project development program that will help create the next pipeline of resiliency projects that target multiple types of hazards, focused areas that have been left unaddressed by Sandy recovery funding and historically face deeper impacts as a result of climate change. The city will invest in this program with the hopes of unlocking billions of additional dollars of federal funding through the Inflation Reduction Act and the Infrastructure Investment and Jobs Act.