Flood Resilience Zoning Text Update

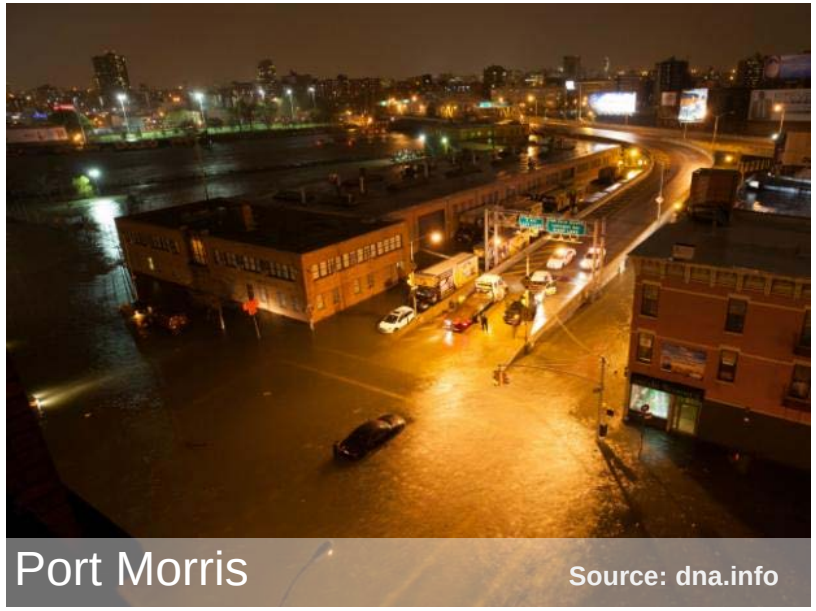
Bronx Community Board 10

Housing & Zoning Subcommittee

May 9th, 2017

NYC PLANNING

Hurricane Sandy

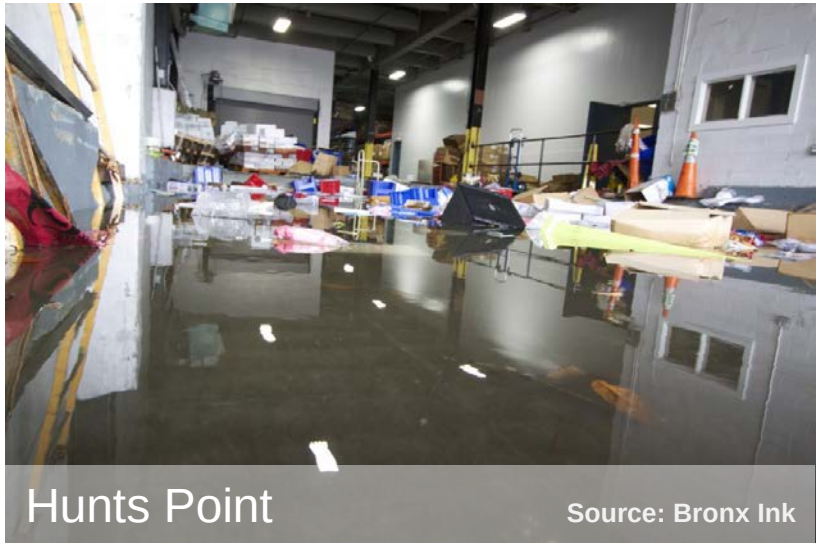


Port Morris

Source: dna.info

Harding Park

Source: Bronx Ink



Hunts Point

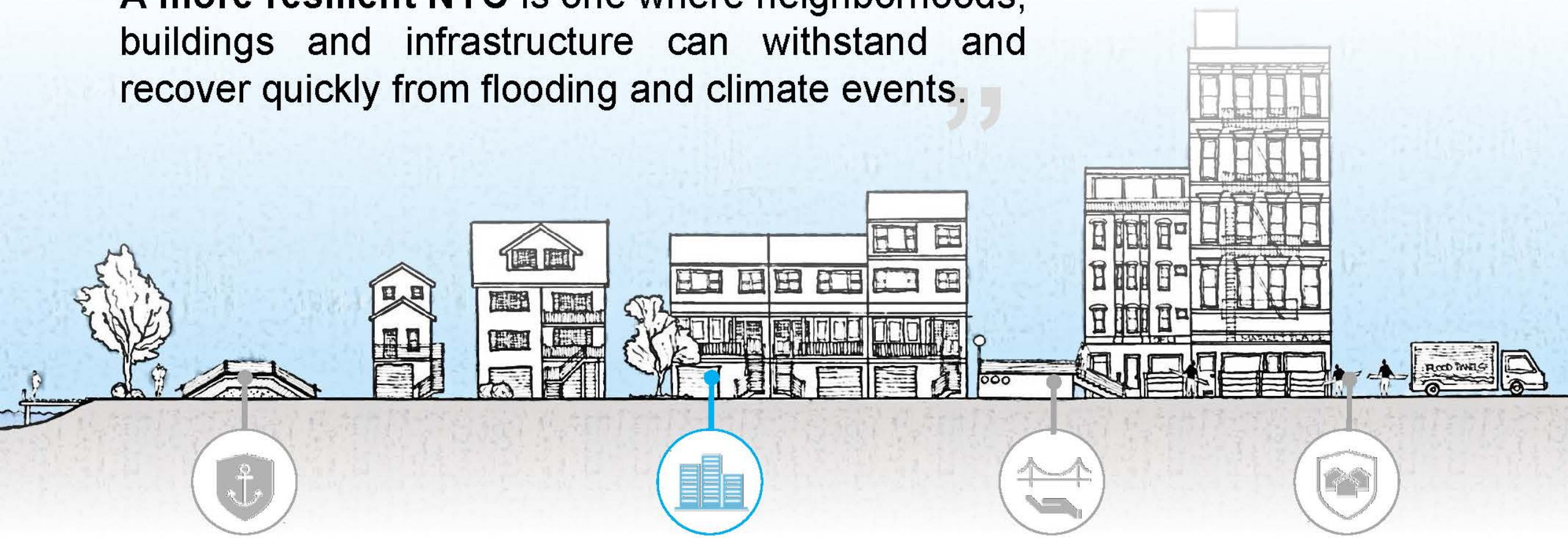
Source: Bronx Ink

Locust Point

Source: Daily News

#ONENYC

"**A more resilient NYC** is one where neighborhoods, buildings and infrastructure can withstand and recover quickly from flooding and climate events."



Coastal defenses
are strengthened as first line of defense against flooding and sea level rise

Buildings
are designed to withstand and recover from flooding

Infrastructure
is protected from climate hazards

Residents and businesses
are prepared

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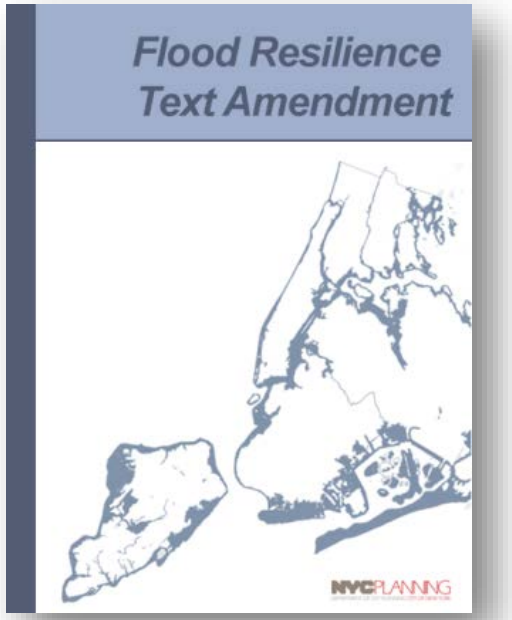
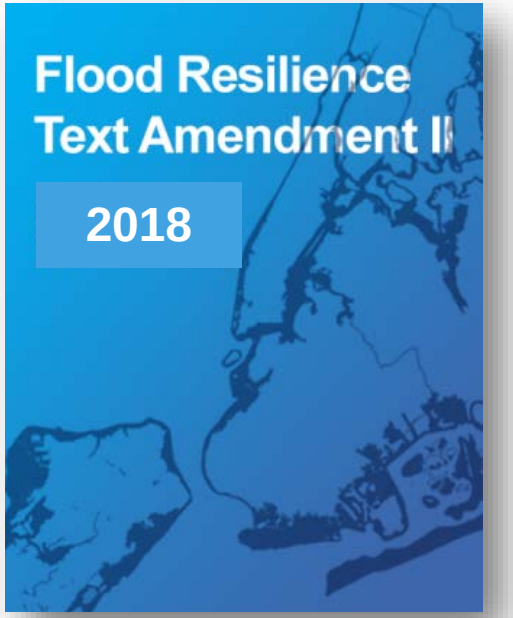
Flood Resilience Zoning

Projects at DCP





2013

“Flood Text”
initial temporary regulations
to facilitate recovery

2018

“Flood Text Update”
improve upon, and make
permanent, the Flood Text

DCP Resilient Neighborhoods Outreach Summary

Late 2013
Kick off of Harding Park and Edgewater Park studies

Early 2014
Engagement of leadership in Harding and Edgewater park and identification of neighborhood-scale challenges

August 2014
DCP coordinates interagency workshops with DCP and the Mayor's Office of Resiliency and Recovery

October 2015
Summary reports are released

Ongoing
DCP coordinates with Edgewater Park and Harding Park stakeholders and leadership to advance resiliency measures on private and public levels

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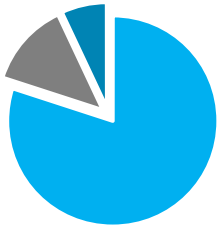
Citywide Flood Risk

NYC's flood risk is high and it will only continue to increase.

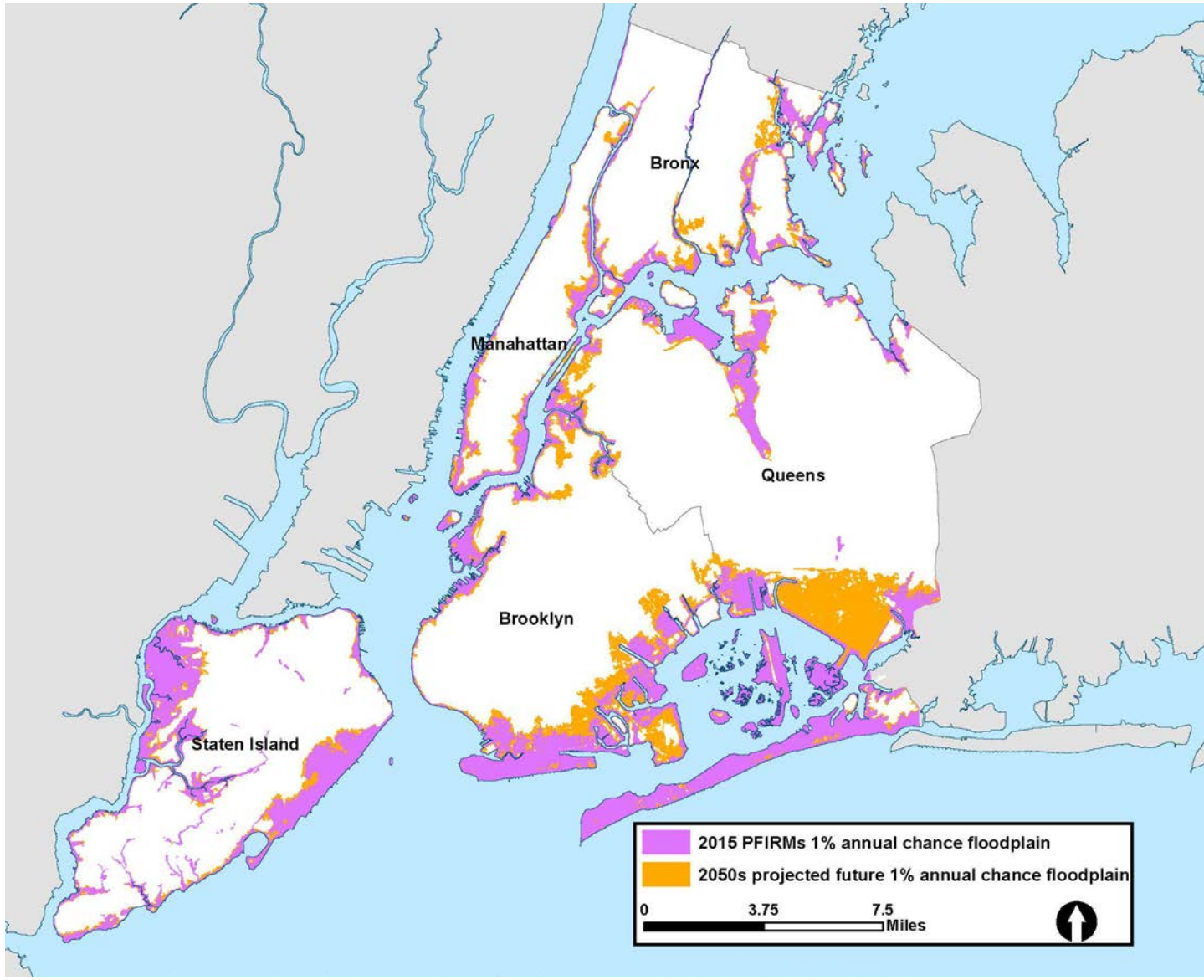
100 year (1% annual chance) floodplain	2015 PFIRMS	2050s Projected FIRMS
Residents	**400,000**	808,900
Buildings	**71,500**	118,000



Buildings:
80% 1-4 units
7% 5+ units
13% nonresidential

Residential Units:
30% 1-4 units
70% 5+ units

50 of 59 Community Boards
45 of 51 Council Districts

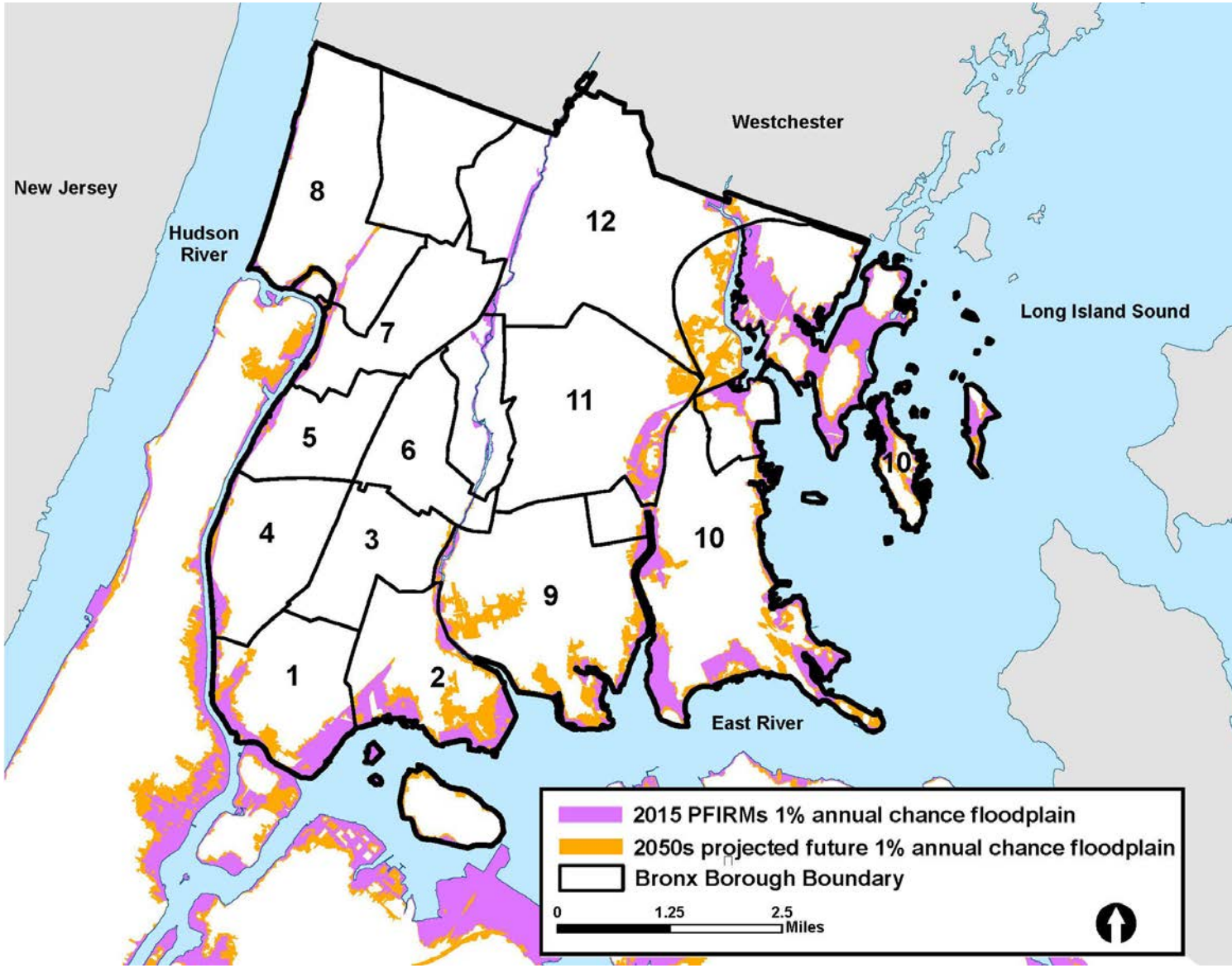


Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
Future flood zone impacts based on NPCC2 90th percentile sea level rise projections

Bronx Flood Risk

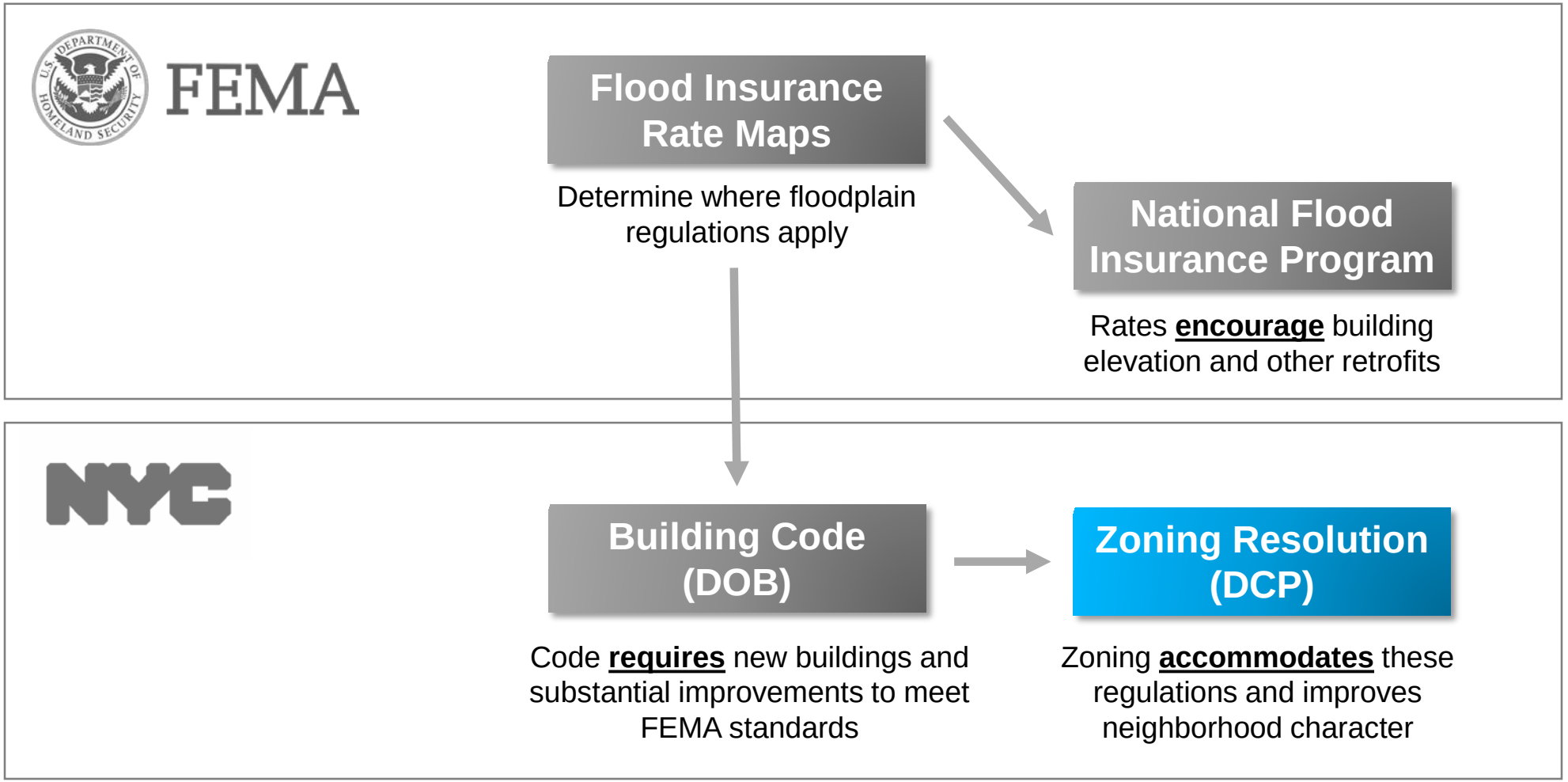
A significant portion of the Bronx's critical infrastructure and institutions, building stock, and population is located in the 100 year floodplain.

100 year (1% annual chance) floodplain	2015 PFIRMS	2050s Projected FIRMS
Residents	16,300	31,200
Buildings	4,500	8,200



Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
Future flood zone impacts based on NPCC2 90th percentile sea level rise projections

How are buildings in the floodplain regulated?



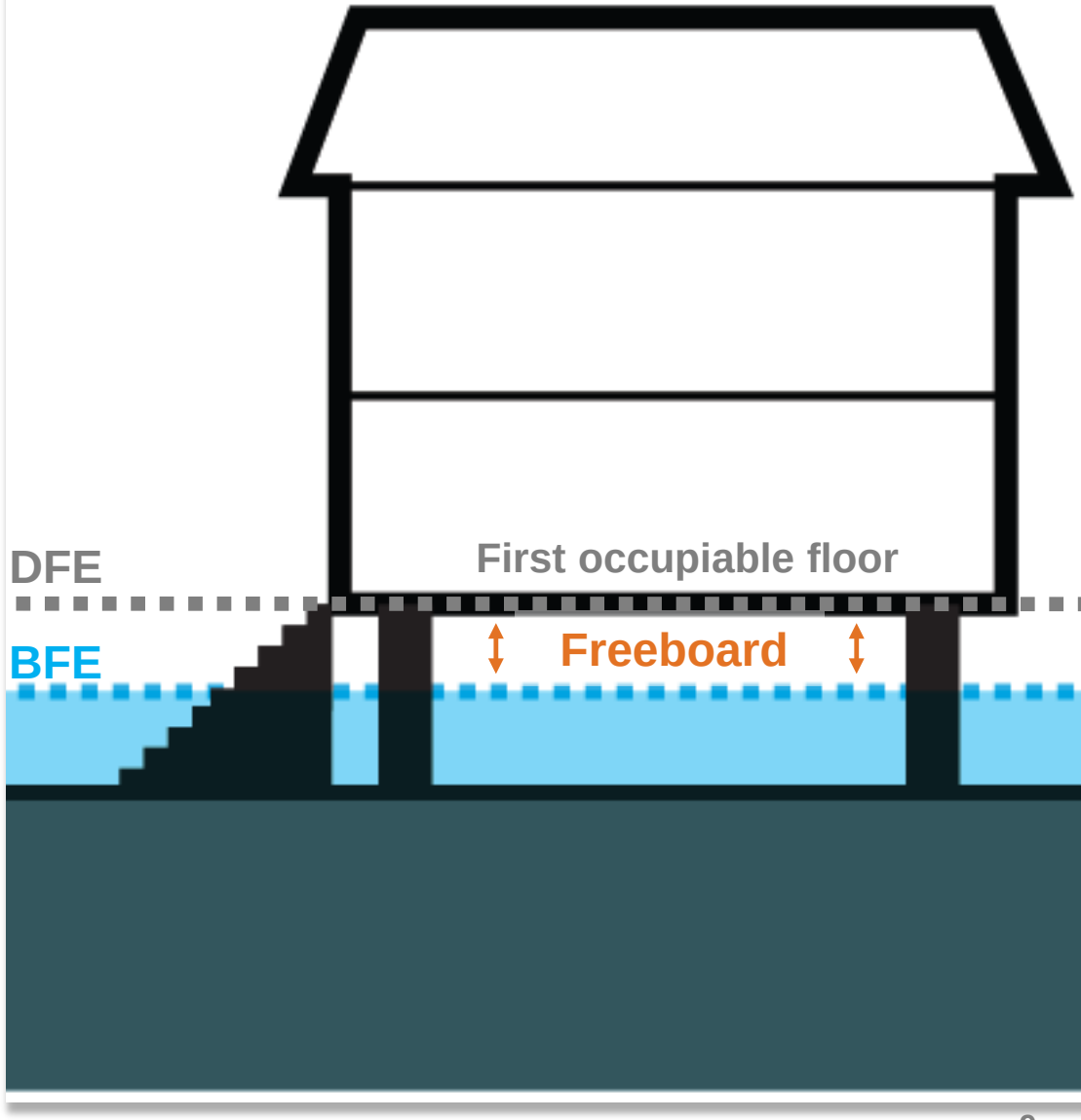
Flood resilient construction
Terms

A building's Base Flood Elevation (BFE) and **Design Flood Elevation (DFE)** affect the regulatory and building code requirements and may have an impact on flood insurance premiums.

The expected height of flooding from the 1% annual chance flood for each flood zone, is known as the **Base Flood Elevation (BFE)**.

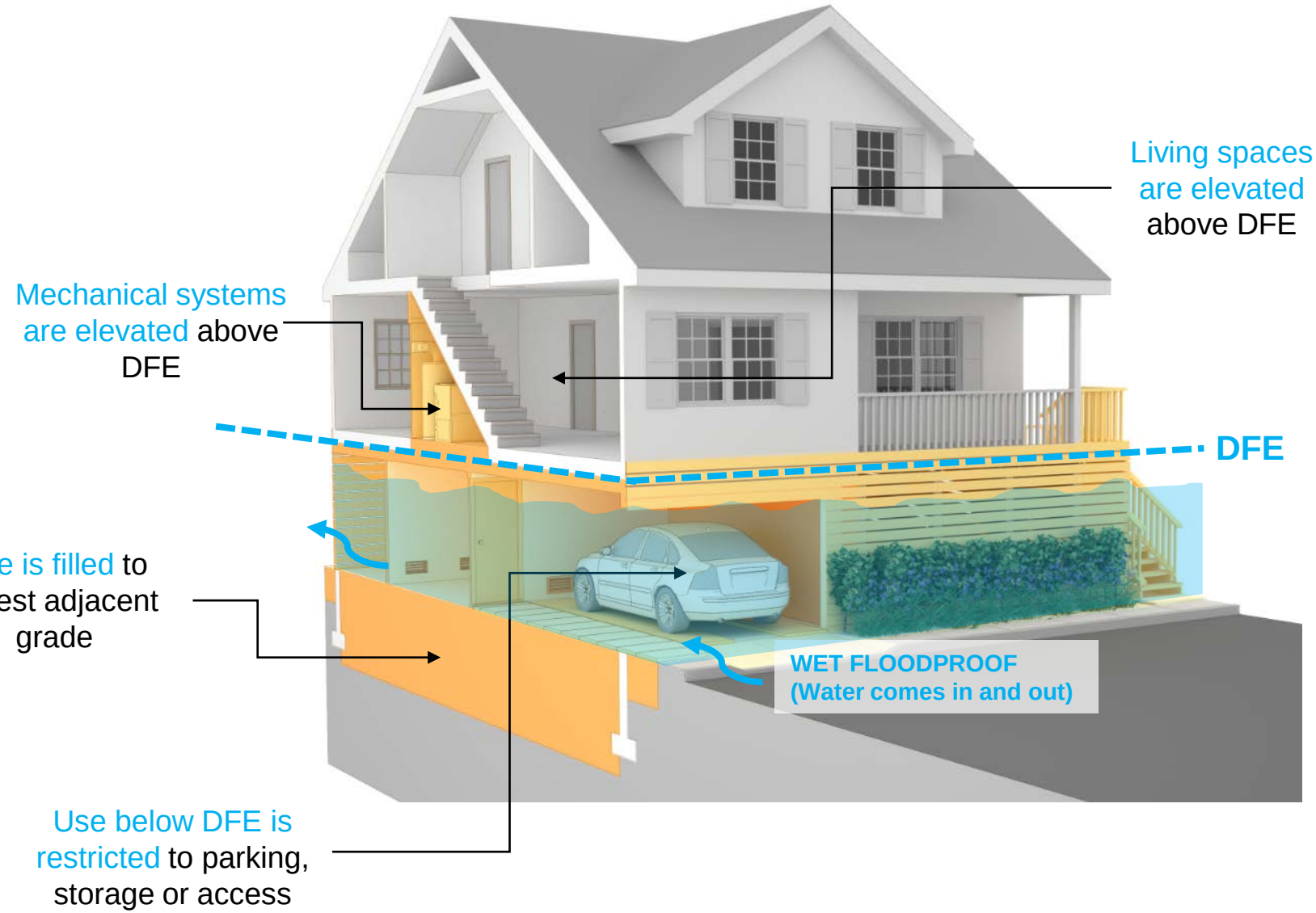
The **Design Flood Elevation (DFE)** is the height of the lowest inhabited floor.

Additional height between the BFE and the DFE is known as **freeboard**.



Flood resilient construction
Required by DOB

Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).



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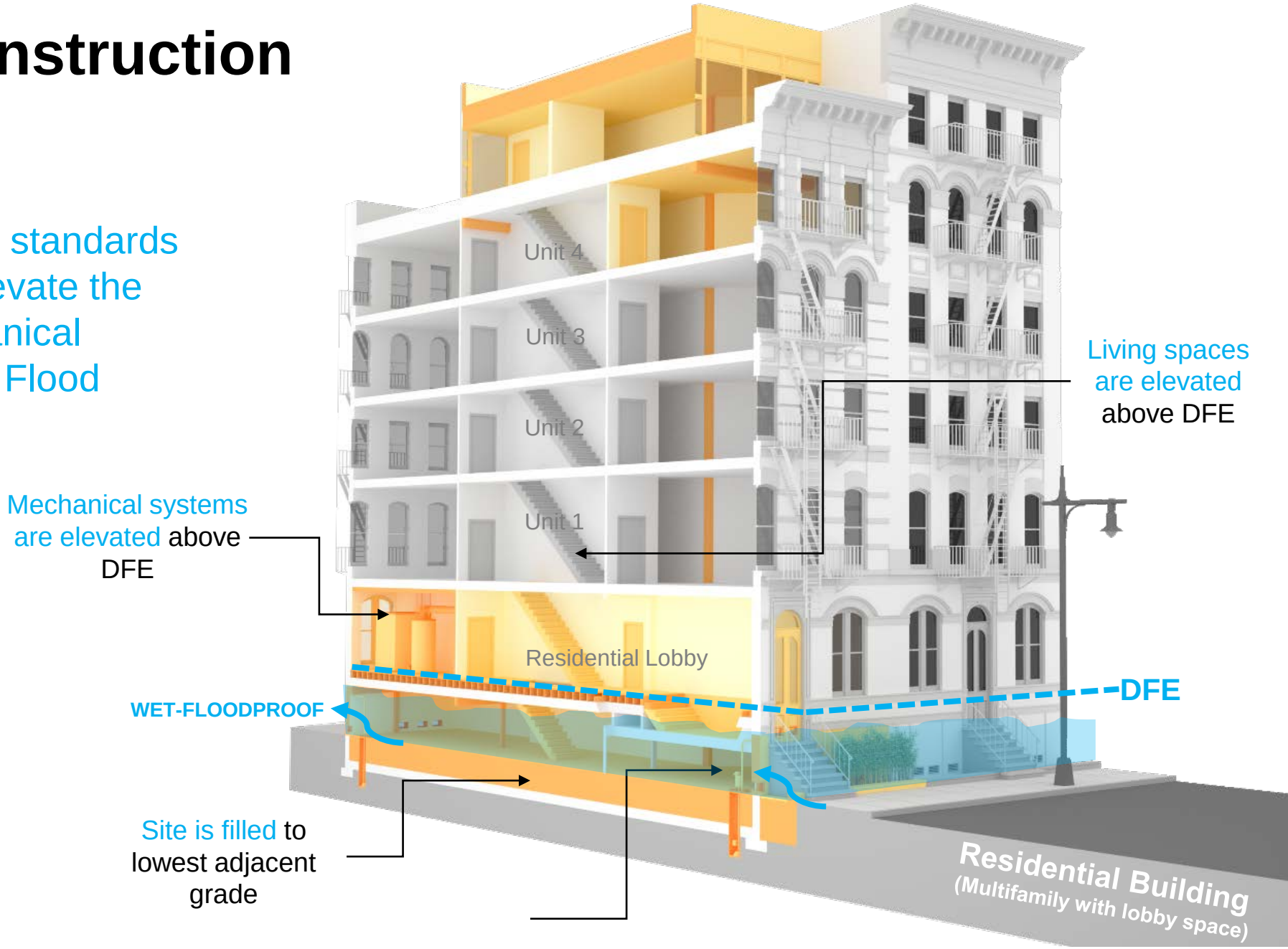
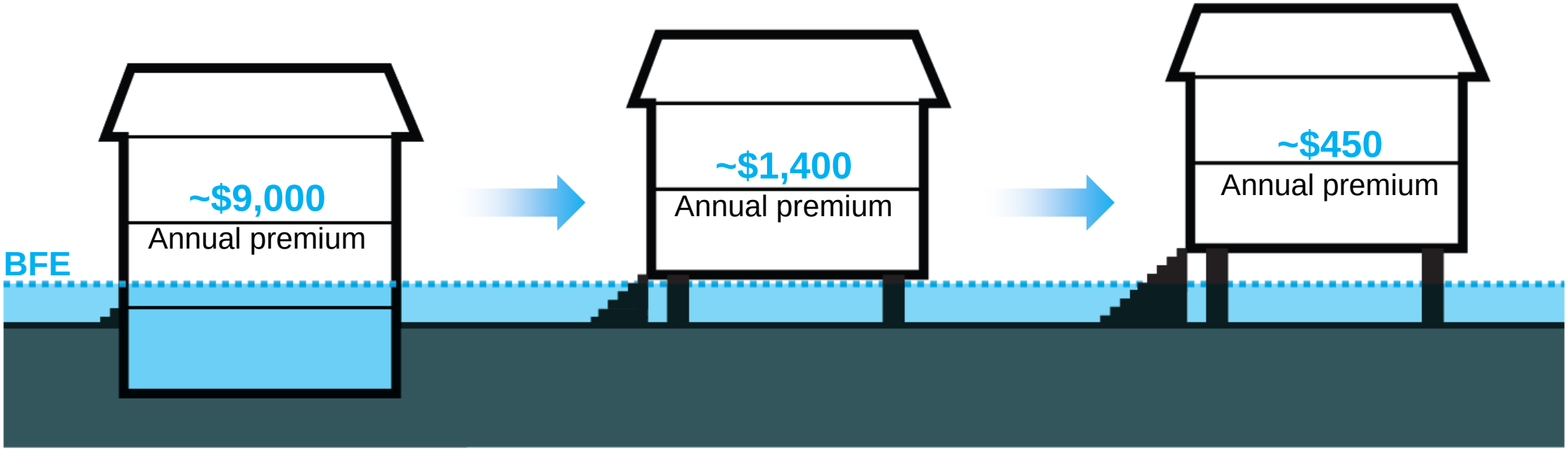


Flood insurance rates
Set by FEMA

Raising or retrofitting your building or home will reduce costs

FEMA's flood insurance premiums are lowest when the lowest inhabited floor (any area not used solely for storage, access or parking) is elevated above the **Base Flood Elevation (BFE).**



4 FEET OR MORE
BELOW BFE

AT
BFE

3 FEET OR MORE
ABOVE BFE

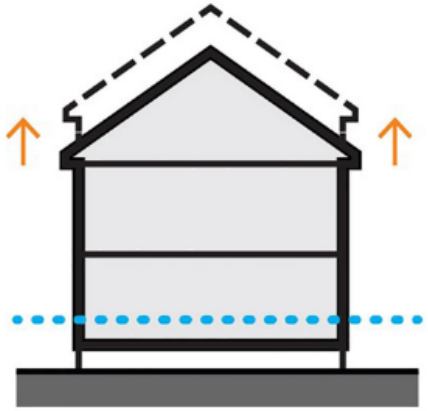
2013 Citywide Flood Text

Amended zoning in six key areas

1

Height

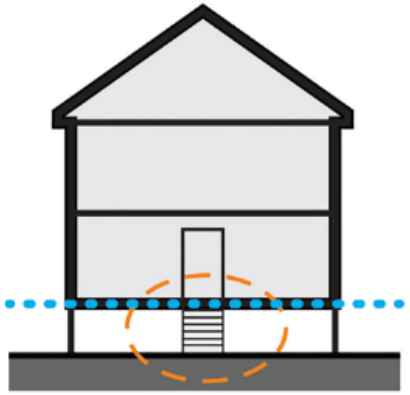
Measured from flood elevation



2

Access

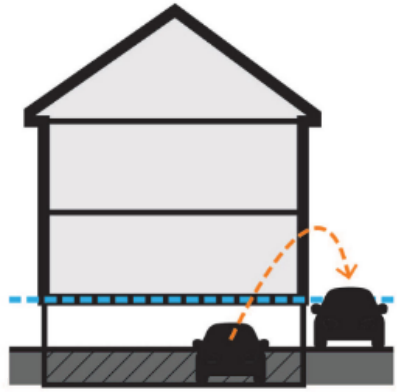
Flexibility for stairs, ramps, lifts



3

Parking

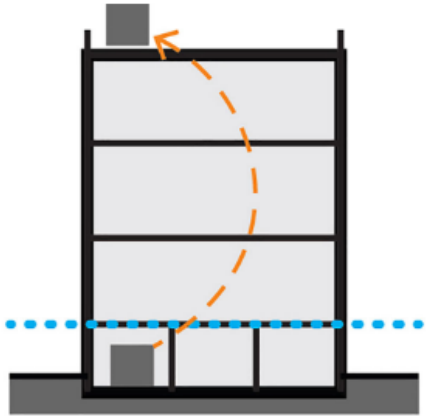
Flexibility to relocate parking



4

Systems

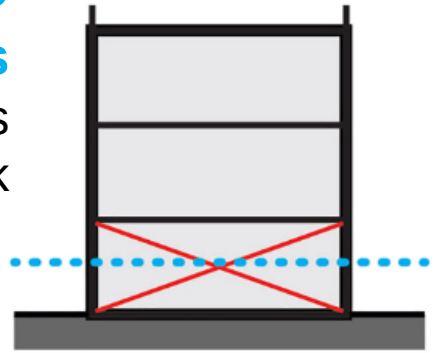
Flexibility to relocate/elevate



5

Ground Floors

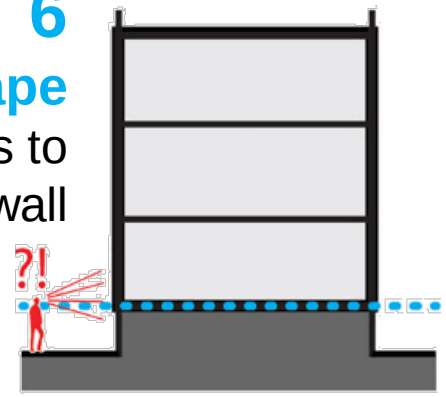
Account for costs of new flood risk



6

Streetscape

Require features to mitigate blank wall



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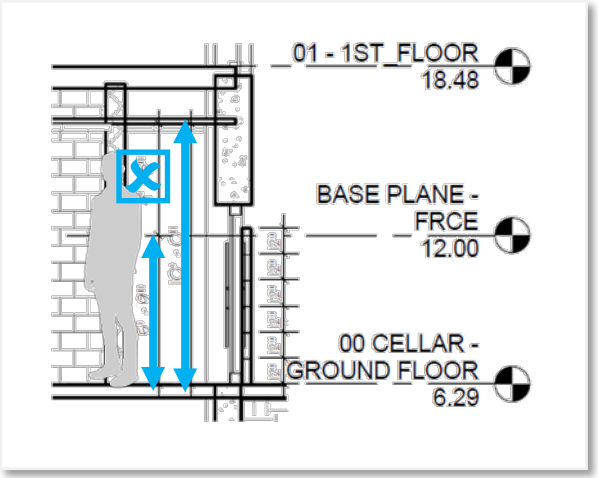
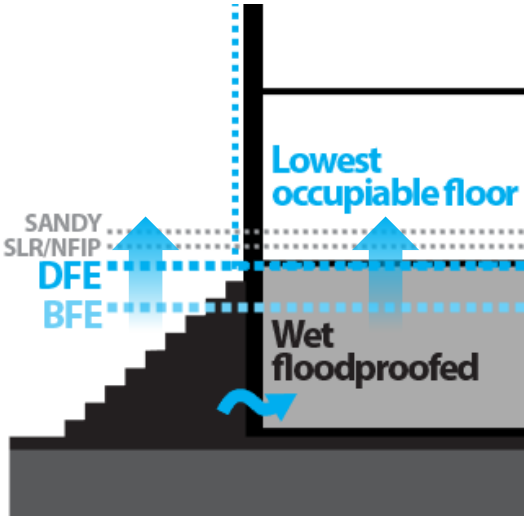
Flood Text Update

Need for a new citywide text amendment





1

Make the provisions of the current, temporary 2013 Flood Text **permanent**

2

Fix and **improve** provisions based on studies, lessons learned, and outreach

3

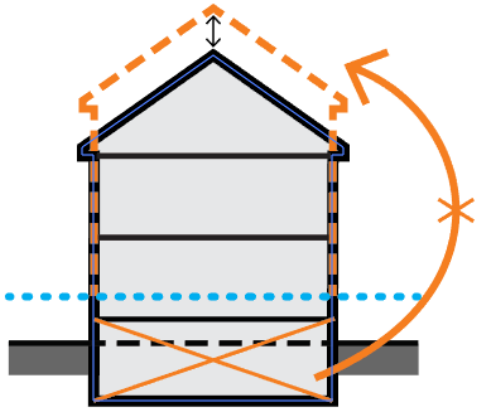
Begin to **promote** new development + proactive retrofitting to high resiliency standards

Flood Text Update

Fix and improve provisions based on lessons learned

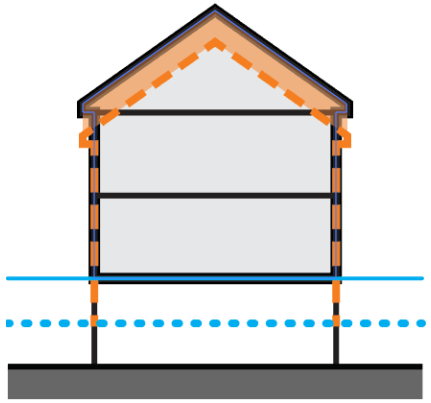
1 Height

Homeowners may face the loss of subgrade spaces when retrofitting



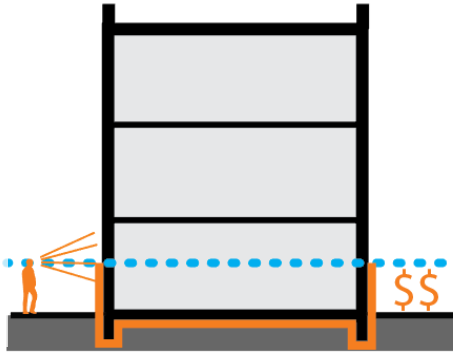
2 Height

Property owners may want to address future risk by over-elevating



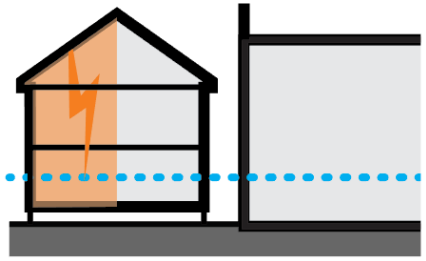
3 Ground Floors

Current incentives to keep active ground floors may not be enough



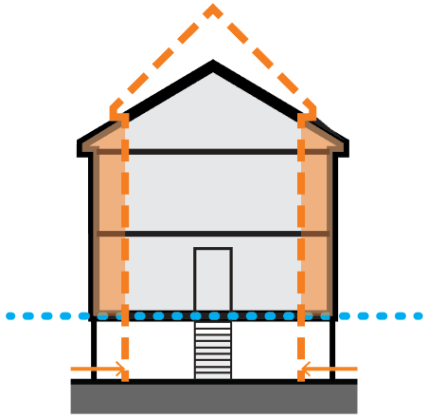
4 Homes in M Districts

Existing homes in M. Districts, if damaged, may not be able to rebuild



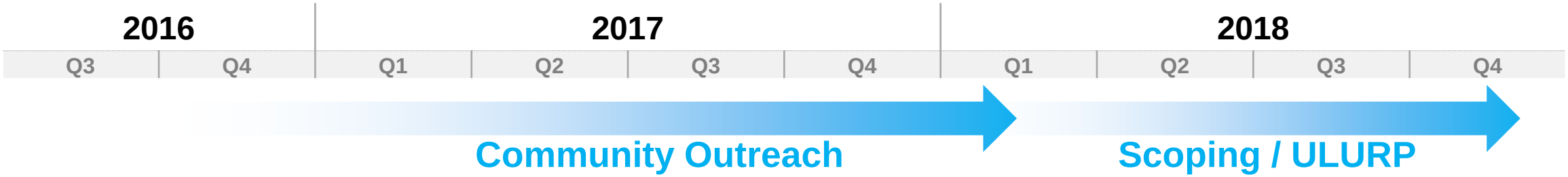
5 Old Homes on Small Lots

Old bungalow homes on small lots may need more flexibility to rebuild in the future



Flood Text Update
Outreach

DCP has planned a robust public engagement process:



As part of this outreach process, DCP will:

- **Partner with stakeholders** to educate and promote awareness of flood risk and resiliency issues
- **Explain how zoning tools** relate to resiliency
- **Explore unique neighborhood issues** through in-depth public presentations and workshops
- Develop a proposal through an **iterative process** that is shaped by feedback

*** Schedule is tentative and subject to change**

Outreach Resources

NYC Flood Hazard Mapper

www.nyc.gov/floodhazardmapper

Info briefs on Flood Resilience Zoning, Flood Risk, Flood Resilient Construction, and Flood Insurance

www.nyc.gov/resilientneighborhoods

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Info Brief

Flood Insurance

Flood insurance covers damages to property or personal contents from flooding caused by excessive rainfall, tidal flooding, or wind-driven storm surges. Changes to flood maps and reforms to the National Flood Insurance Program will lead to increases in flood insurance rates over time. In addition to flood resilient construction, insurance is another strategy for reducing flood risk.

Why is Flood Insurance Important?

- Floods can cause significant d to your most valuable asset: you business.
- Even properties far from the coas risk of flooding.
- Homeowner and property insura cover damage by flooding. You n separate policy.
- Federal assistance is not guaran event of a flood.
- Many property owners are requi federal law to purchase and m insurance if the property is locat risk flood zone of the 2007 FIRM to right), has a federally backed has received federal disaster ass

How Much Flood Insura Must a Homeowner Pur

Properties with a federally backed in a high-risk flood zone and thos received federal disaster assistan maintain flood insurance up to the N limits, or the outstanding mortgage b whichever is lower. Failure to do so mortgage servicers to purchase a po property—possibly at a higher price- on the cost through monthly mortgag

Homeowners without a federally-b mortgage or outside a high flood carry up to the maximum policy limit with additional contents coverage av $100,000 for owners or renters. Co- multifamily buildings and business p be covered up to $500,000. Busines and tenants can also purchase up to contents coverage.

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Info Brief

Flood Risk in NYC

New York City is highly vulnerable to flooding from coastal storms due to its intensively used waterfront and its extensive coastal geography. Floods have the potential to destroy homes and businesses, impair infrastructure, and threaten human safety. With climate change and sea level rise, these risks are expected to increase in the future, but will most adversely affect low-lying neighborhoods.

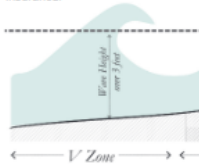
Flood Risks

Hurricanes, tropical storms, nor'e intense rain storms, and even ext tides are the primary causes of fl NYC.

For building code, zoning, and pl purposes, flood risk in NYC is rep on FEMA's 2015 Preliminary Floo Rate Maps (PFIRMs).

- PFIRMs show the extent to whic waters are expected to rise duri event that has a 1% annual cha occurring. This height is denotec Flood Elevation (BFE) on the ma
- The 1% annual chance floodpla sometimes referred to as the 10 floodplain. However, this term is since these floods can occur mu within 100 years. In the 1% annu floodplain, there is a 26% chanc over the life of a 30-year mortga

For flood insurance purposes, rel 2007 Flood Insurance Rate Maps property owners of buildings in the 1 chance floodplain with a federally in mortgage are mandated by law to p insurance.



The 1% annual chance floodplain is divided different degree of flood risk. V and Coastal flooding but not wave damage. The maps al which has a lower annual chance of flooding

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Flood Resilience Zoning

www.nyc.gov/resilientneighborhoods

City Planning is working with communities throughout the floodplain to identify zoning and land use strategies to reduce flood risks and support the city's vitality and resiliency through long-term adaptive planning. The Flood Resilience Zoning Text is one part of a wide range of efforts by the City to recover from Hurricane Sandy, promote rebuilding, and increase the city's resilience to climate-related events.

Overview

The Flood Text enables and encou resilient building construction thr designated floodplains.

The Flood Text modified zoning to re regulatory barriers that hindered or p the reconstruction of storm-damaged by enabling new and existing buildin with new, higher flood elevations issu the Federal Emergency Managemen (FEMA), and to comply with new req the New York City Building Code.

It also introduced regulations to mitig negative effects of flood resilient con the public realm. The text was adopt on a temporary, emergency basis. Th future update of this text, guided by input, will aim to make the text perma incorporate lessons learned during th and rebuilding process.

Where is the Flood Text Applicable?

The Flood Text is available to build located entirely or partially within annual chance floodplain*.

These rules can be found in Article V of the Zoning Resolution and, if utiliz require the building to fully comply w resilient construction standards foun G of the New York City Building Cod some provisions, such as elevation d spaces, are available to all buildings the floodplain, even if not fully compl Appendix G.

For more information about the Floo www.nyc.gov/resilientneighborho

*Per the more restrictive of the 2007 FIRMs PFIRMs.

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NYC PLANNING

Info Brief

Flood Resilient Construction

Flood resilient construction reduces potential damages from flooding and can lower flood insurance premiums. New buildings in the floodplain are required to meet flood resilient standards. Existing buildings can reduce their risk by retrofitting or rebuilding to meet these standards, or can take partial, short-term measures to address safety concerns.

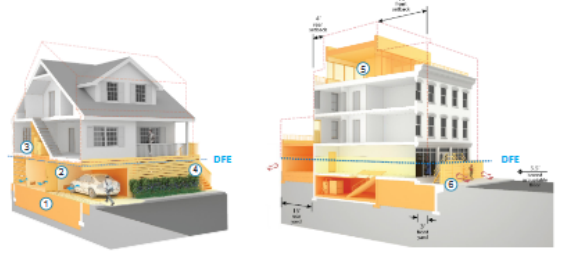
Overview

There is a wide range of accepted flood resilient construction practices for buildings to better withstand floods and reoccupy more quickly following a storm. These include:

- Elevating the lowest floor.
- Elevating mechanical equipment such as electrical, heating, and plumbing equipment.
- Wet floodproofing by utilizing water resistant building materials and limiting uses below the Design Flood Elevation (DFE) to parking, building access, and minor storage. This allows water to move in and out of uninhabited, lower portions of the building with minimal damage.
- Dry floodproofing sealing the building's exterior to flood waters and using removable barriers at all entrances below the expected level of flooding in mixed-use and non-residential buildings.

Examples of Flood Resilient Construction

Visit www.nyc.gov/resilientneighborhoods to see more examples in the *Retrofitting for Flood Risk* report.



Wet floodproofed residential building

1. Site is filled to the lowest adjacent grade
2. Space below the DFE is for parking, building access or minor storage
3. Mechanical systems are above the DFE
4. Plants and stair turns improve the look of the building from the street

Dry floodproofed mixed-use building

5. Rooftop addition replaces lost below grade space
6. Commercial space is dry floodproofed with removable barriers

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Thank you!

For more information, and to stay involved, email

resilientneighborhoods@planning.nyc.gov

ccamilleri@planning.nyc.gov