Flood Resilience Text Amendment II

Brooklyn Borough Board

April 4, 2017

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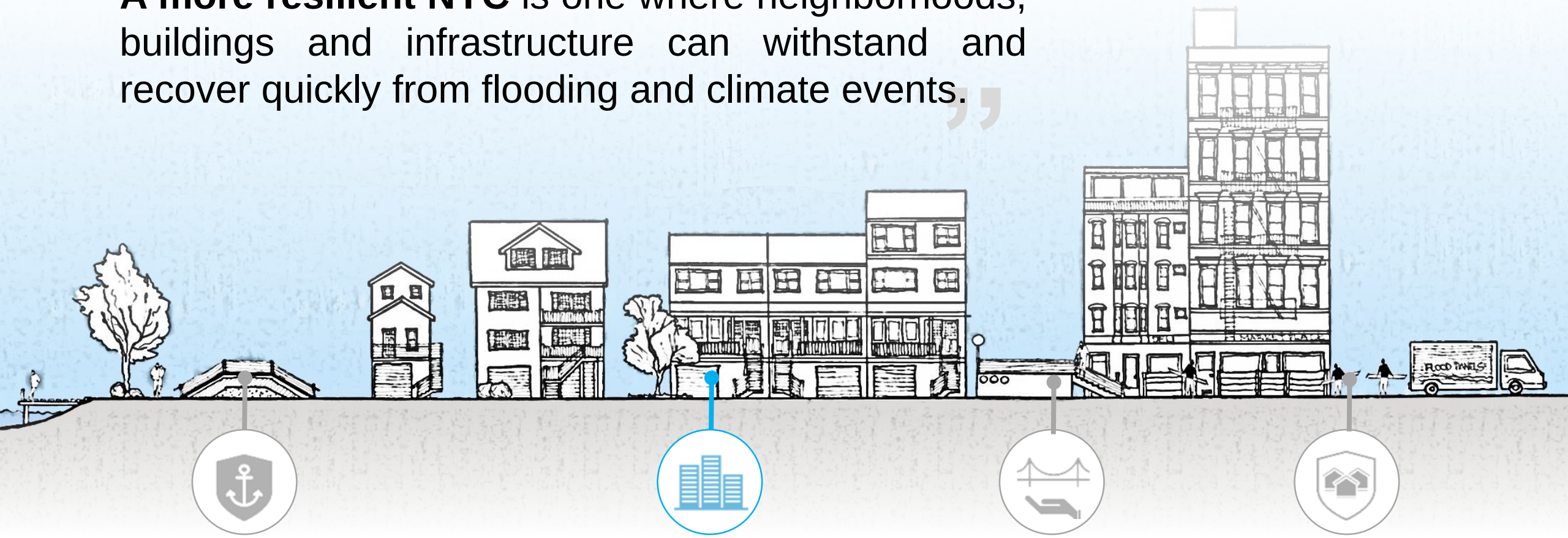
#ONENYC

"**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

FEMA Flood Map
Citywide Flood Risk

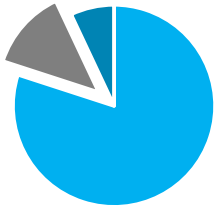
NYC's flood risk is high.

The floodplain affects a large geography and most community and council districts.

100 Year Floodplain
FEMA 2015 PFIRM

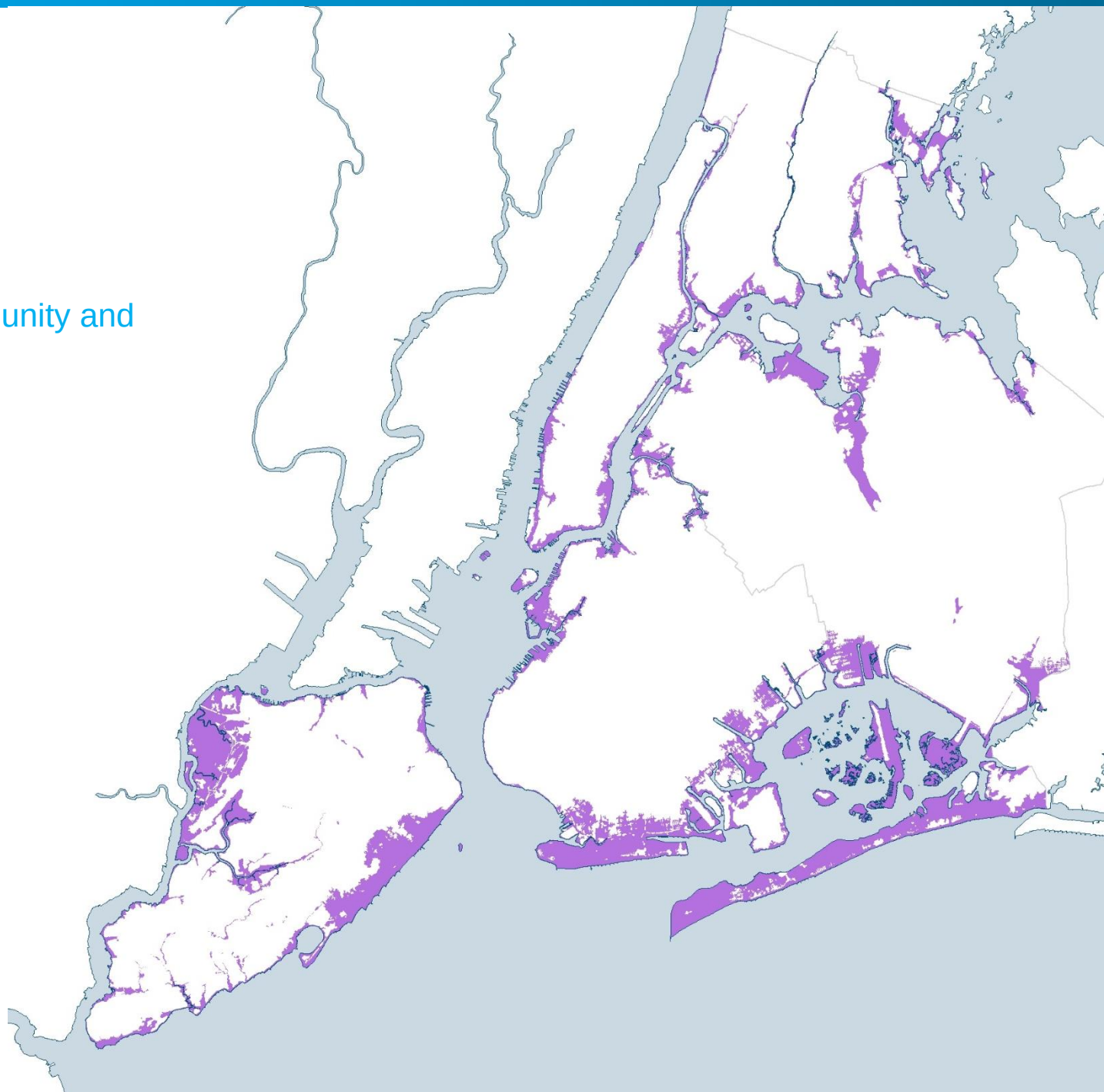
Population: **400,000**
Buildings: **71,500**

50 of 59 Community Boards
45 of 51 Council Districts



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

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



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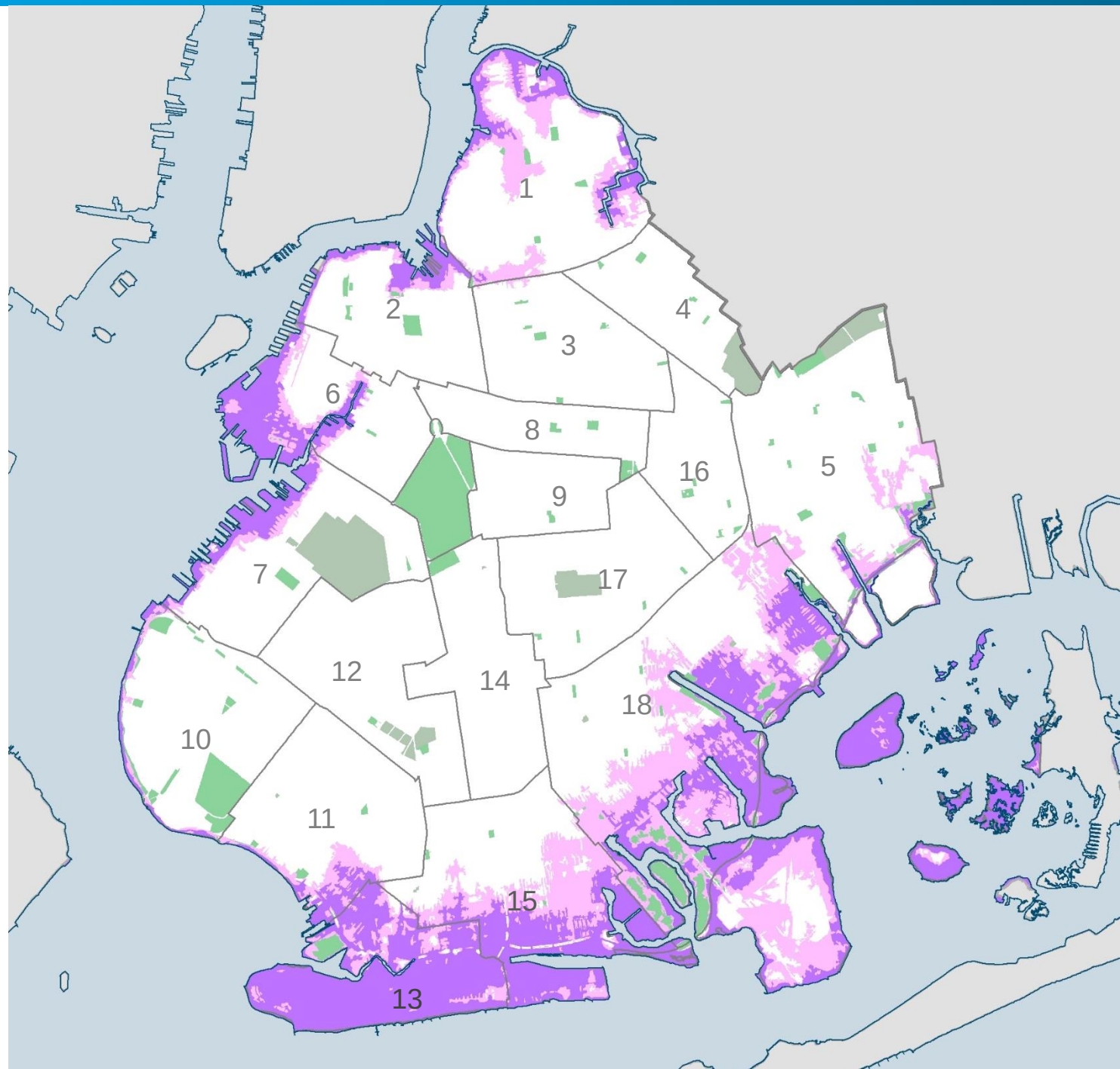
FEMA Flood Map
Flood Risk in Brooklyn

100 Year Floodplain
FEMA 2015 PFIRM

Population: **164,800**
Projected by 2050s: 331,100

Buildings: **26,900**
Projected by 2050s: 51,600

11 of 18 Community Boards



FEMA 2015 PFIRM
100 Year Floodplain

Projected 2050s
100 Year Floodplain

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Over 1/3 of all the buildings in the City's floodplain are in Brooklyn



Apartment Buildings





Bungalows/1-2 Family Homes




Retail





Industrial/ Manufacturing

Attached/Semi-detached Buildings




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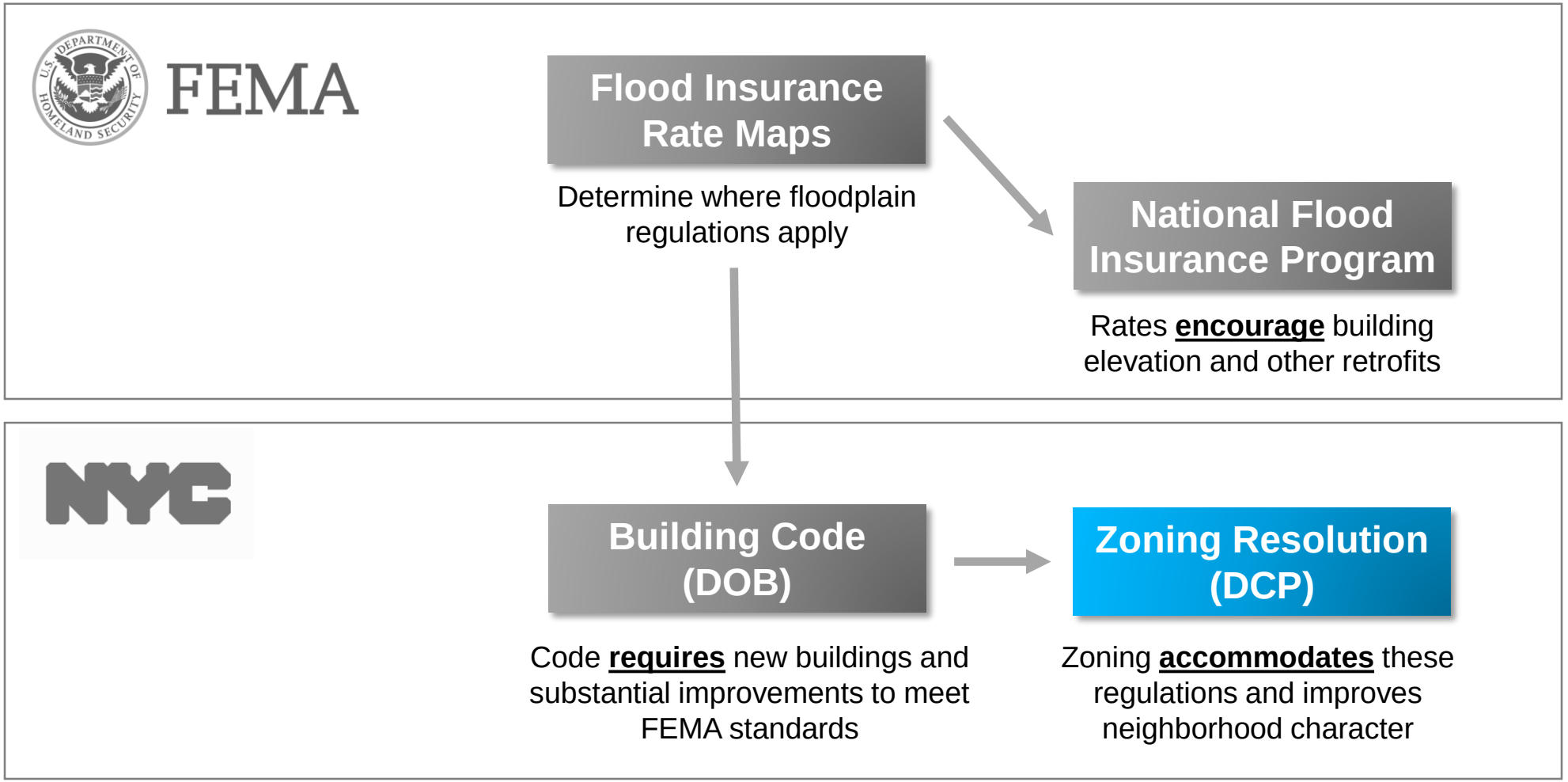
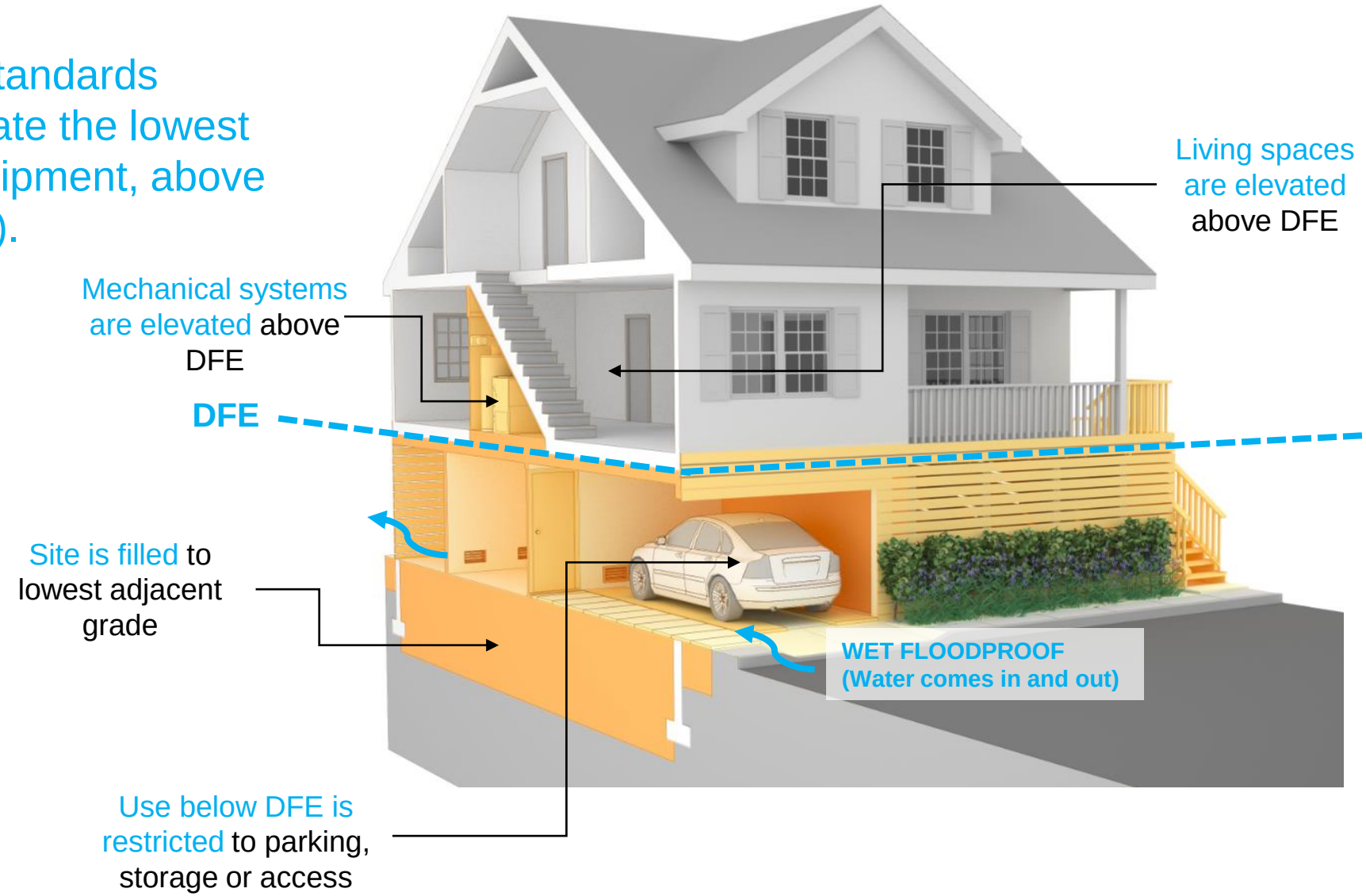
How are buildings in the floodplain regulated?



Flood-resistant 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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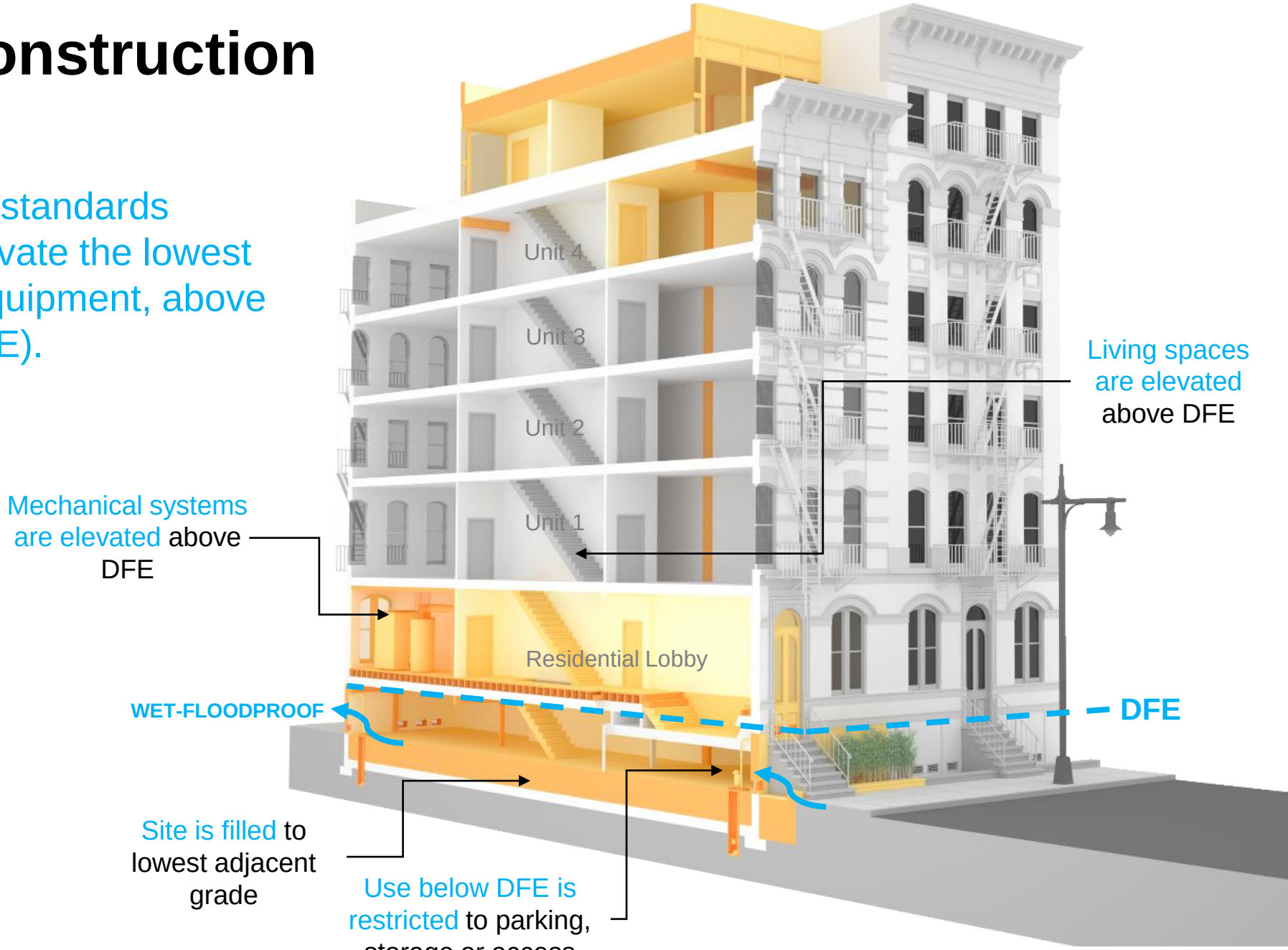
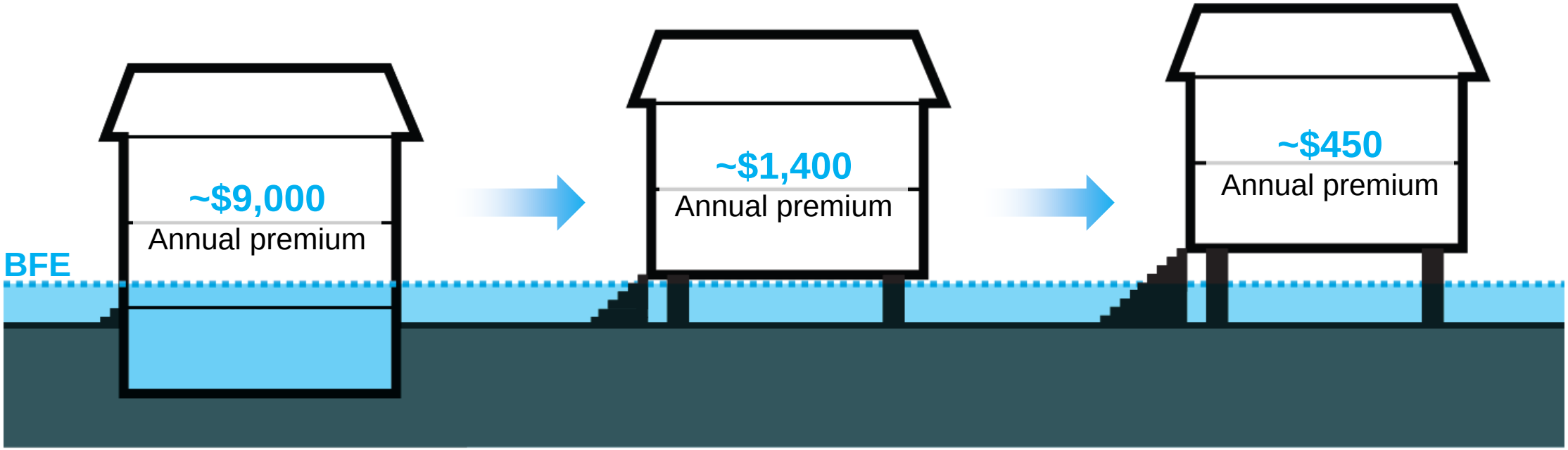


Flood insurance rates
Set by FEMA

Raising or retrofitting your 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).

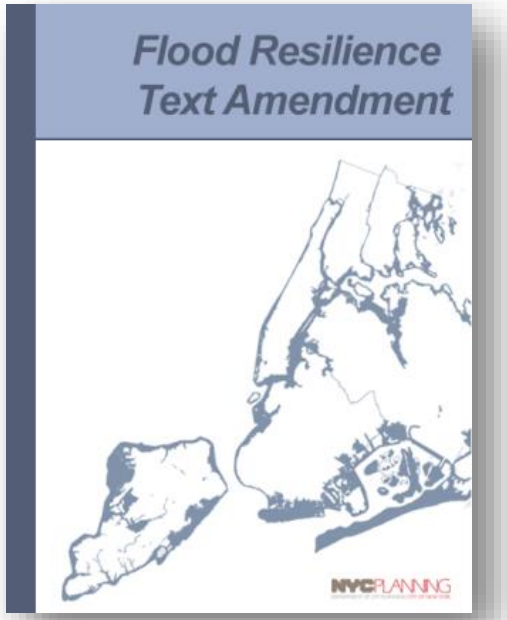


4 FEET OR MORE
BELOW BFE

AT
BFE

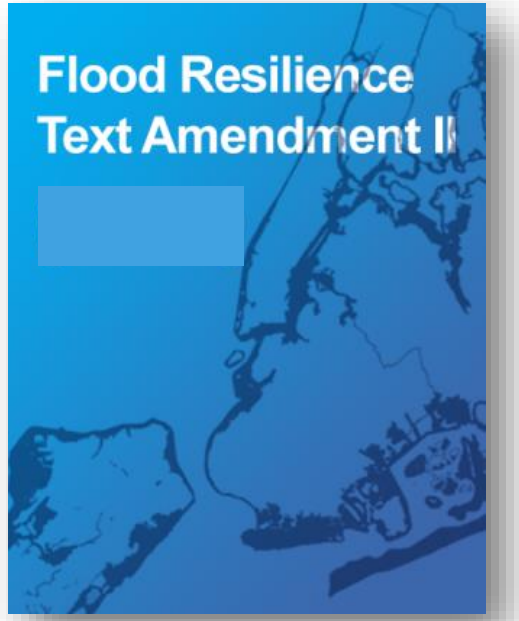
3 FEET OR MORE
ABOVE BFE

Flood resilience zoning
Projects at DCP



2013
“Flood Text”
initial <u>temporary</u> regulations
to facilitate recovery

2015 **“SRNR”**
additional zoning relief
to expedite recovery

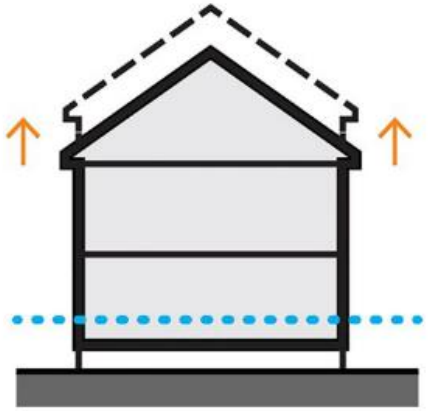


2018
“Flood Text II”
improve upon, and make
permanent, the Flood Text

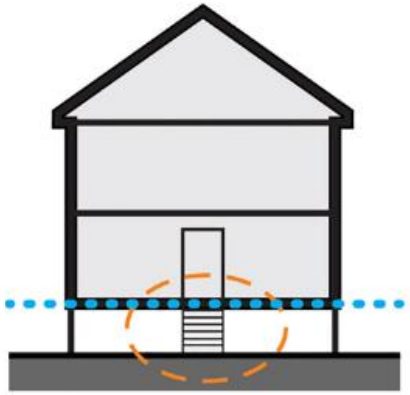
2013 Citywide Flood Text

Amended zoning in six key areas

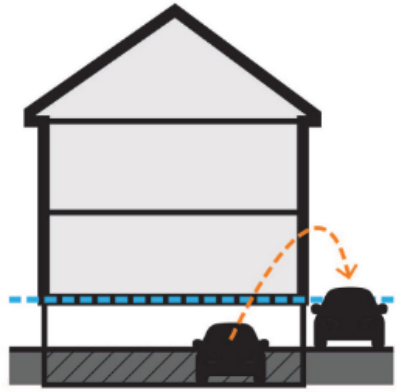
1
Height
Measured from flood elevation



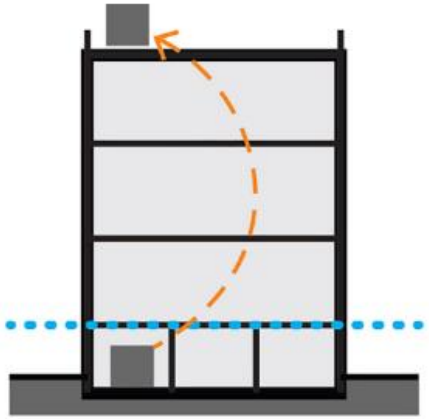
2
Access
Flexibility for stairs, ramps, lifts



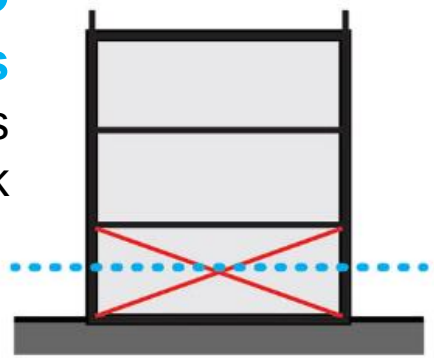
3
Parking
Flexibility to relocate parking



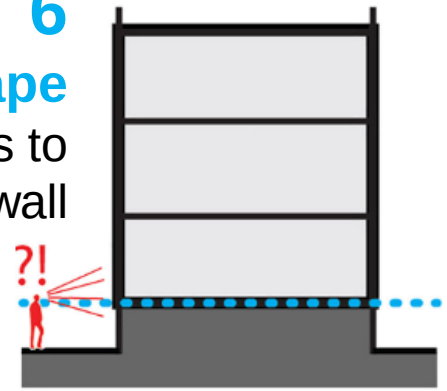
4
Systems
Flexibility to relocate/elevate



5
Ground Floors
Account for costs of new flood risk



6
Streetscape
Require features to mitigate blank wall



2015 Special Regulations

Accelerate recovery in Sandy-damaged neighborhoods

Temporary regulations, expiring in 2020, in limited areas of Brooklyn, Queens, and Staten Island

In Brooklyn: Seagate, Brighton Beach, Sheepshead Bay, Gerritsen Beach, Canarsie

Simplified process

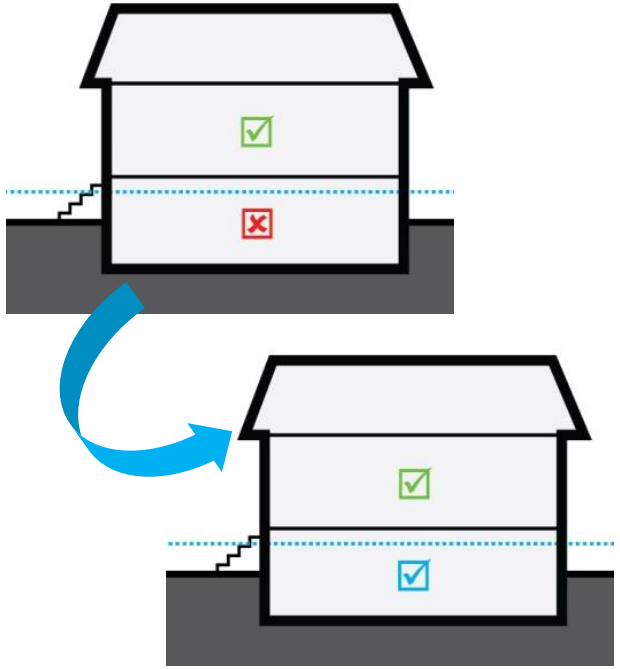
for documenting old homes

Home in Gerritsen Beach

1931 Sanborn Map

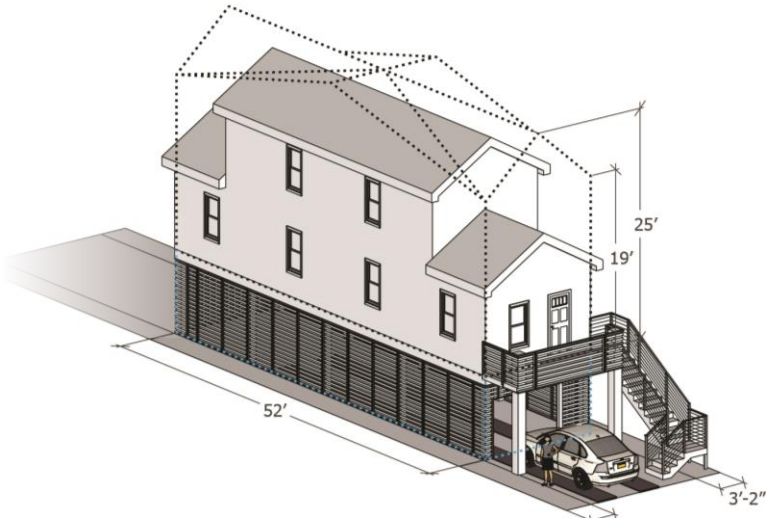
Removed disincentives

such as loss of basements



Established new envelope

for rebuilds on small existing lots



Ongoing studies and research

Lessons learned since 2013

Citywide DCP studies:

Brooklyn-specific DCP studies:

DCP Brooklyn
Resiliency Outreach

- Community Boards
- City Council
- Borough President's Office
- Resilient Neighborhoods Advisory Committees
- Civic Groups and Public Events

Summer 2014
- Community Board 15
- Councilmember Deutsch + Advisory Committees

Fall 2014-Spring 2015
- Canarsie Advisory Committee – x 2
- Gerritsen Beach Advisory Committee – x 4
- Sheepshead Bay Advisory Committee – x 4

Summer 2015
- Gerritsen Beach Homeowners Association

Fall 2015
- Community Board 15

Summer 2016
- Fresh Creek Civic Association

Fall 2016
- Councilmember Greenfield
- Councilmember Lander
- Councilmember Treyger

Winter 2017
- Councilmember Deutsch
- Councilmember Menchaca
- Councilmember Treyger
- Deputy Borough President
- CB 13 Resource Night
- Manhattan Beach Community Group
- Science & Resilience Institute at Jamaica Bay Climate Forum: Canarsie

Spring 2017
- Borough Board
- Community Board 18 (April 19)
- Community Board 15 (April 25)

Upcoming
- Community Boards 1, 2, 6, 7, 13
- Community Groups, Civic + Homeowner Assoc's
- **… and more: please reach out to us!**

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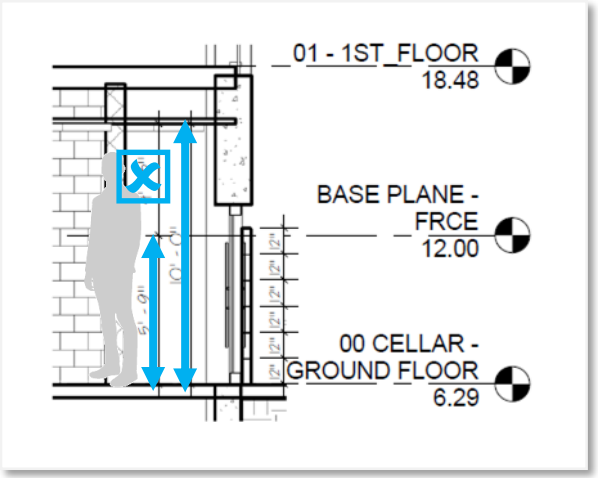
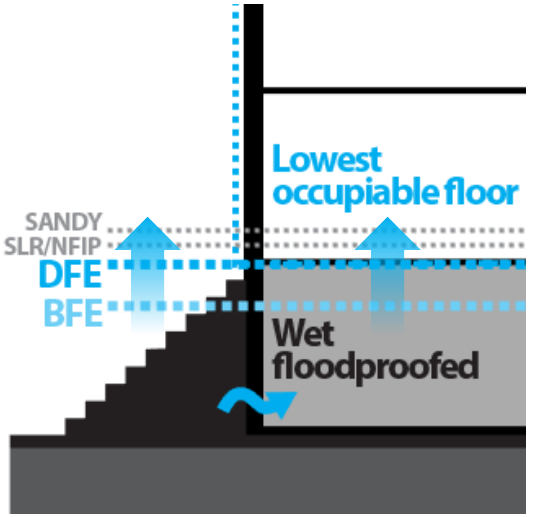
Flood Text II

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 and lessons learned

3

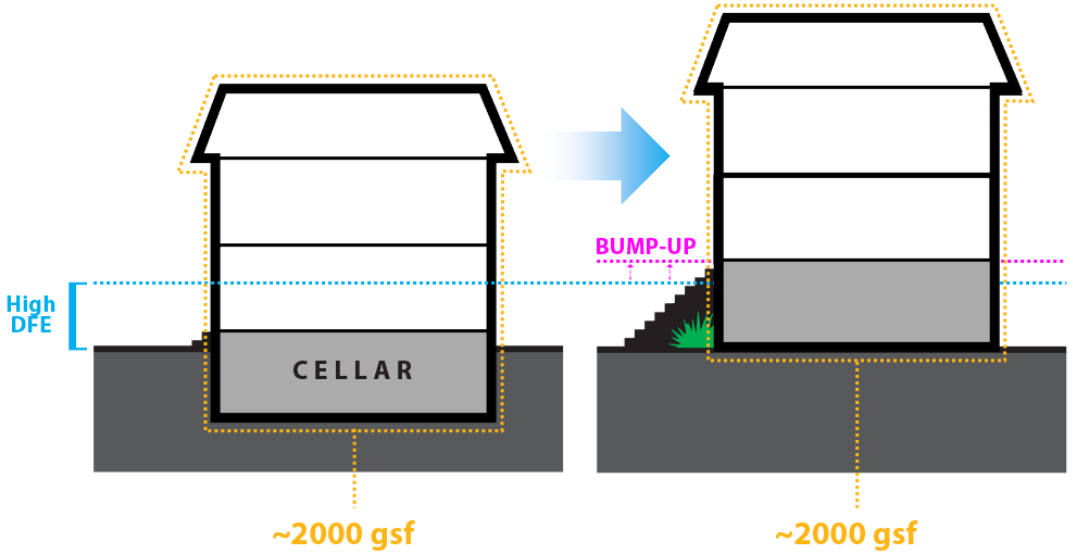
Begin to **promote** new development + proactive retrofitting to high resiliency standards

Flood Text II
Improvements and lessons learned

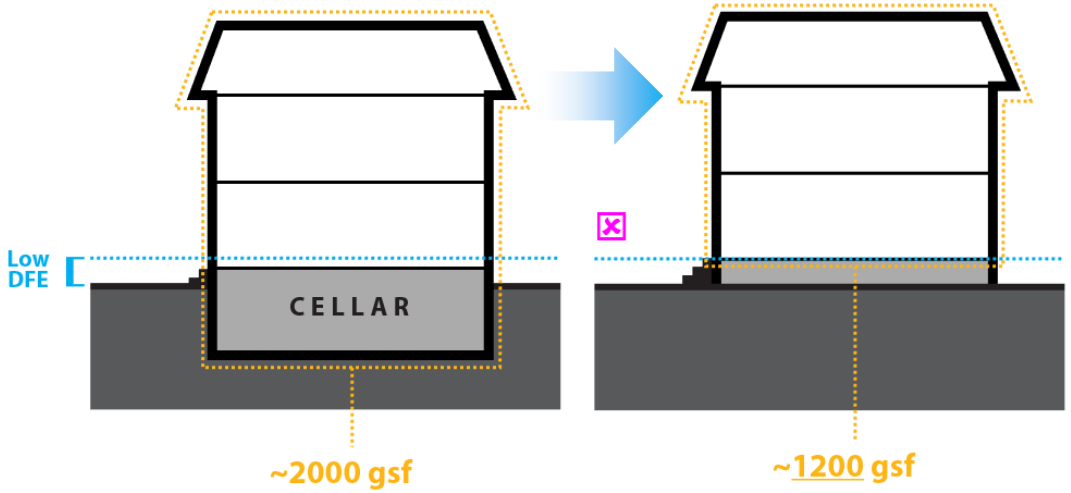
EXAMPLE ISSUE

The 2013 Flood Text allowed for adjustment of “zoning envelopes” to facilitate the retrofitting and replacement of living space above the DFE, out of harm’s way, but this flexibility applies unevenly:

Case study 1: Replacement of ‘cellar’ story in a high-DFE retrofit

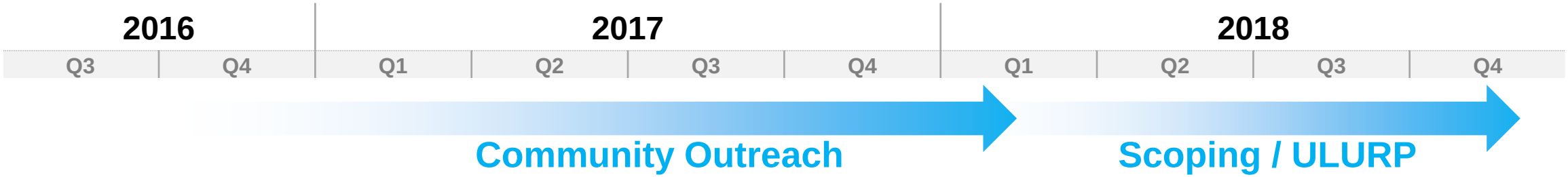


Case study 2: Loss of living space in a low-DFE retrofit



Flood Text II
Outreach

Given the difficult issues involved, DCP plans 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.

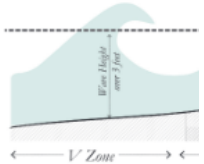
Flood Risks

Hurricanes, tropical storms, nor'… 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 durin… event that has a 1% annual chan… occurring. This height is denotec… Flood Elevation (BFE) on the ma…
- The 1% annual chance floodplai… 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 Management… (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 adopte… 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 Code… some provisions, such as elevation c… spaces, are available to all buildings … the floodplain, even if not fully compl… Appendix G.

For more information about the Flood… www.nyc.gov/resilientneighborho…

*Per the more restrictive of the 2007 FIRMs … PFIRMs.

NYC Planning | March 2017 | Flo…

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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.

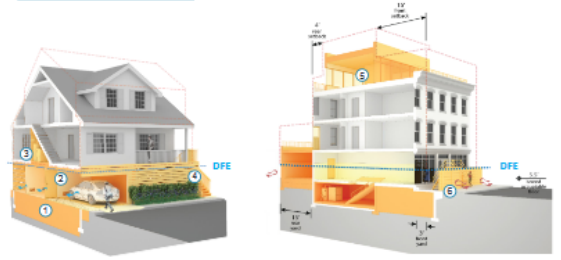
Overview

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

NYC Planning | November 2016 | Flood Resilient Construction

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Thank you!

For more information, and to stay involved, email

resilientneighborhoods@planning.nyc.gov