

Flood Resilience Zoning Text Update

City Island Civic Association

September 26, 2017



Hurricane Sandy



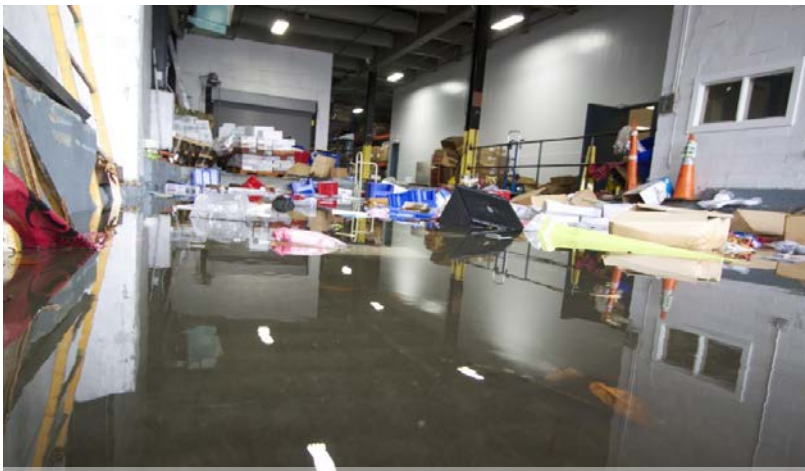
Port Morris

Source: dna.info



Harding Park

Source: Bronx Ink



Hunts Point

Source: Bronx Ink

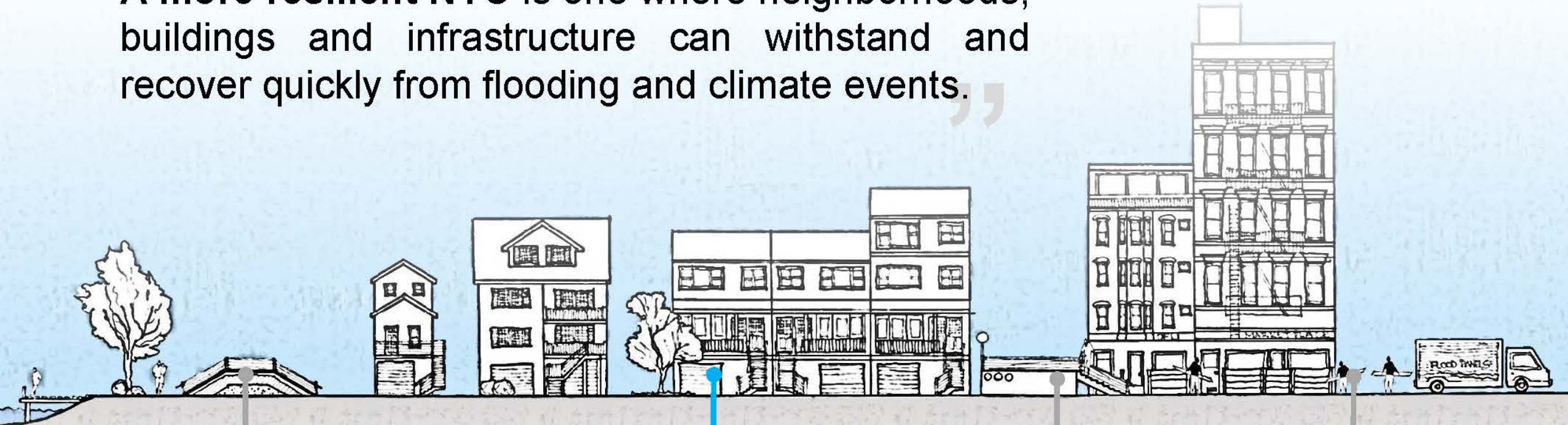


Locust Point

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.”



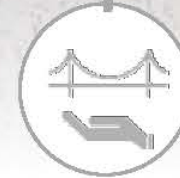
Coastal defenses

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



Buildings

are designed to withstand and recover from flooding



Infrastructure

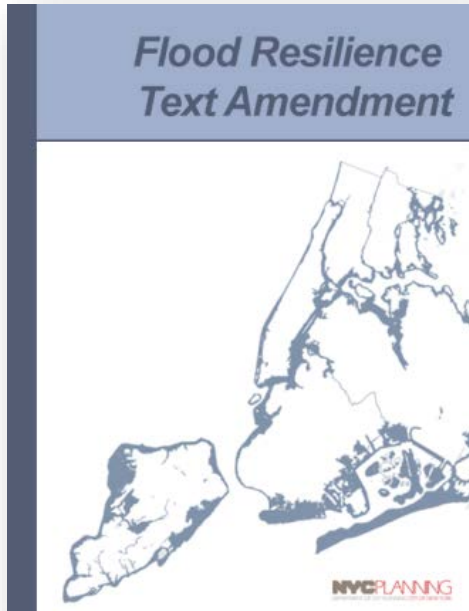
is protected from climate hazards



Residents and businesses

are prepared

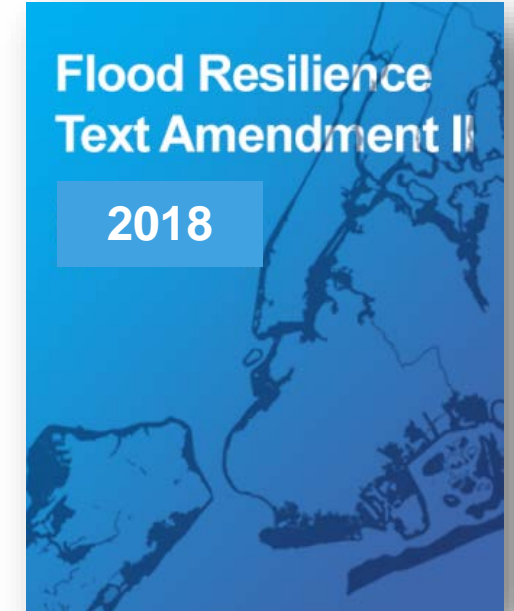
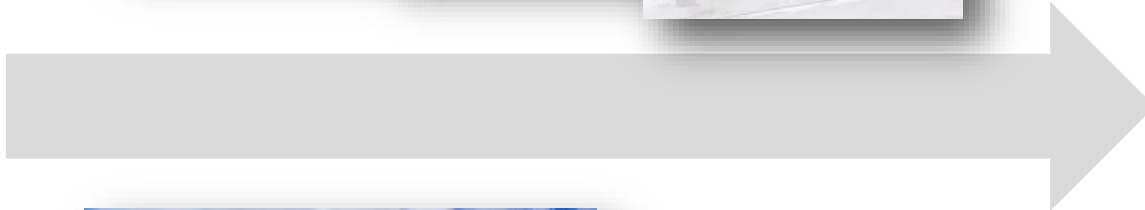
Flood Resilience Zoning Projects at DCP



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

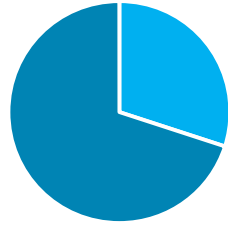
Citywide Flood Risk

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

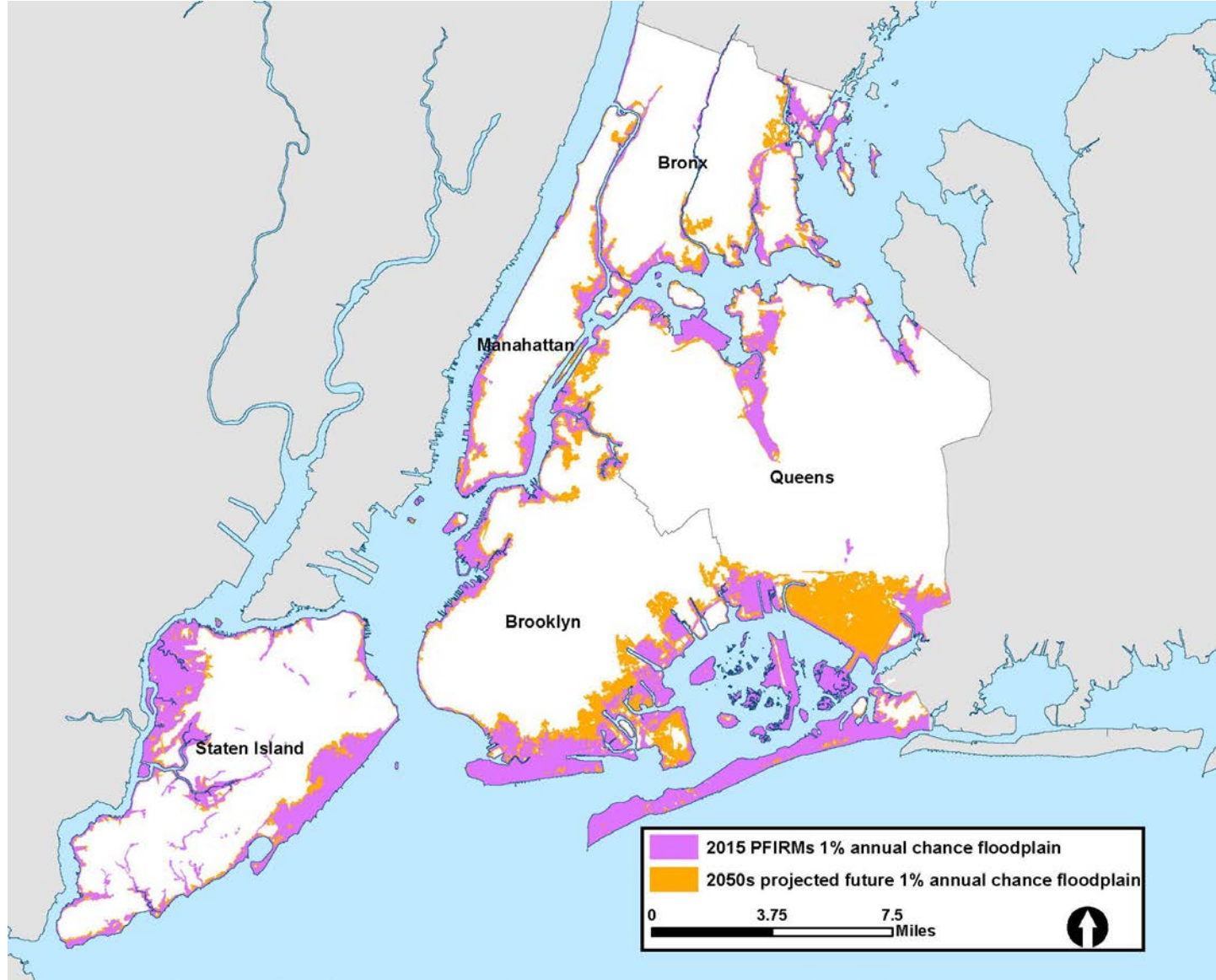


Buildings:
 80% 1-4 units
 7% 5+ units
 13% nonresidential



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

50 of 59 Community Boards
 45 of 51 Council Districts

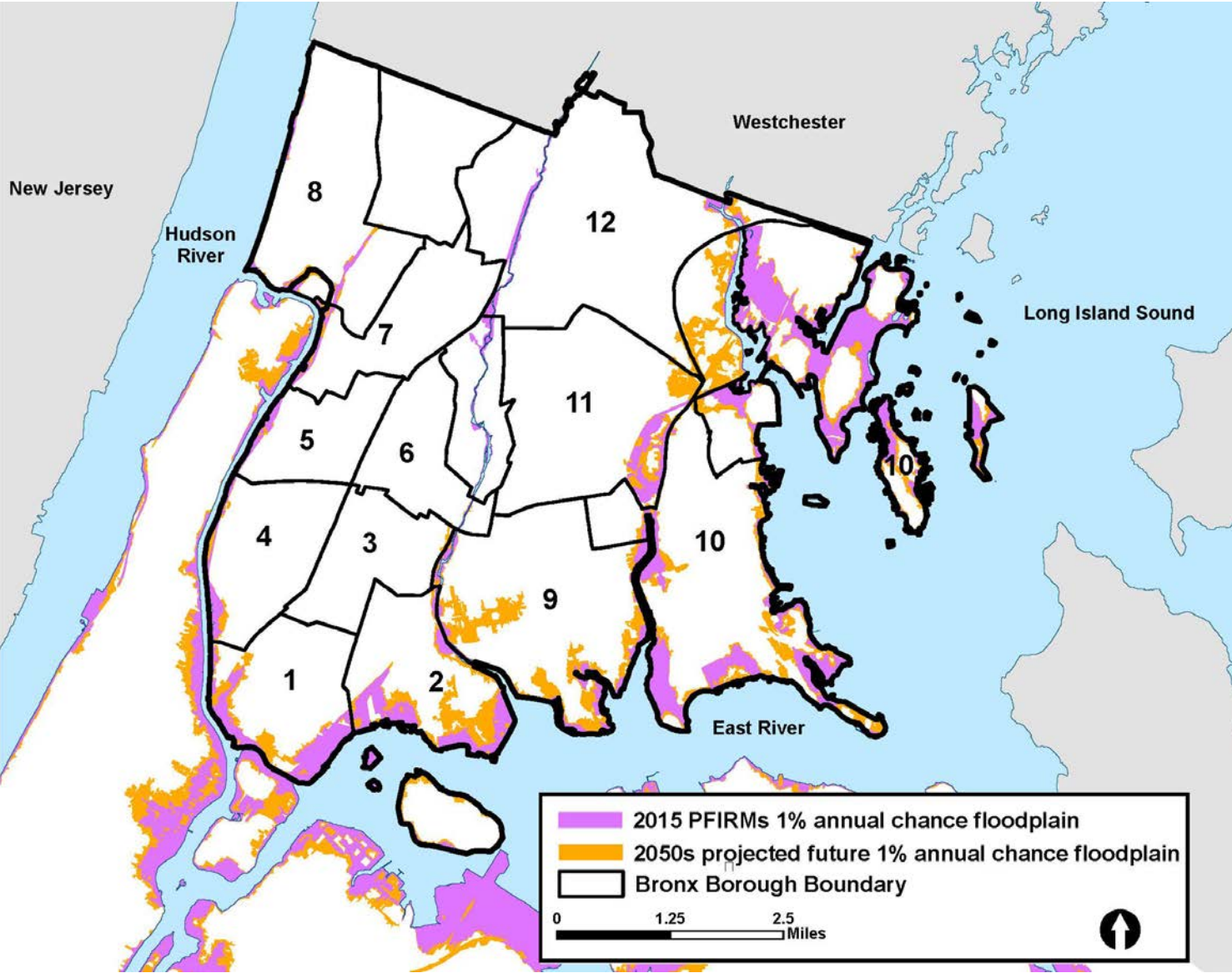


Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
 Future flood zone impacts based on NPCC2 90th percentile sea level rise projections

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	16,700	41,900
Buildings	3,900	8,400

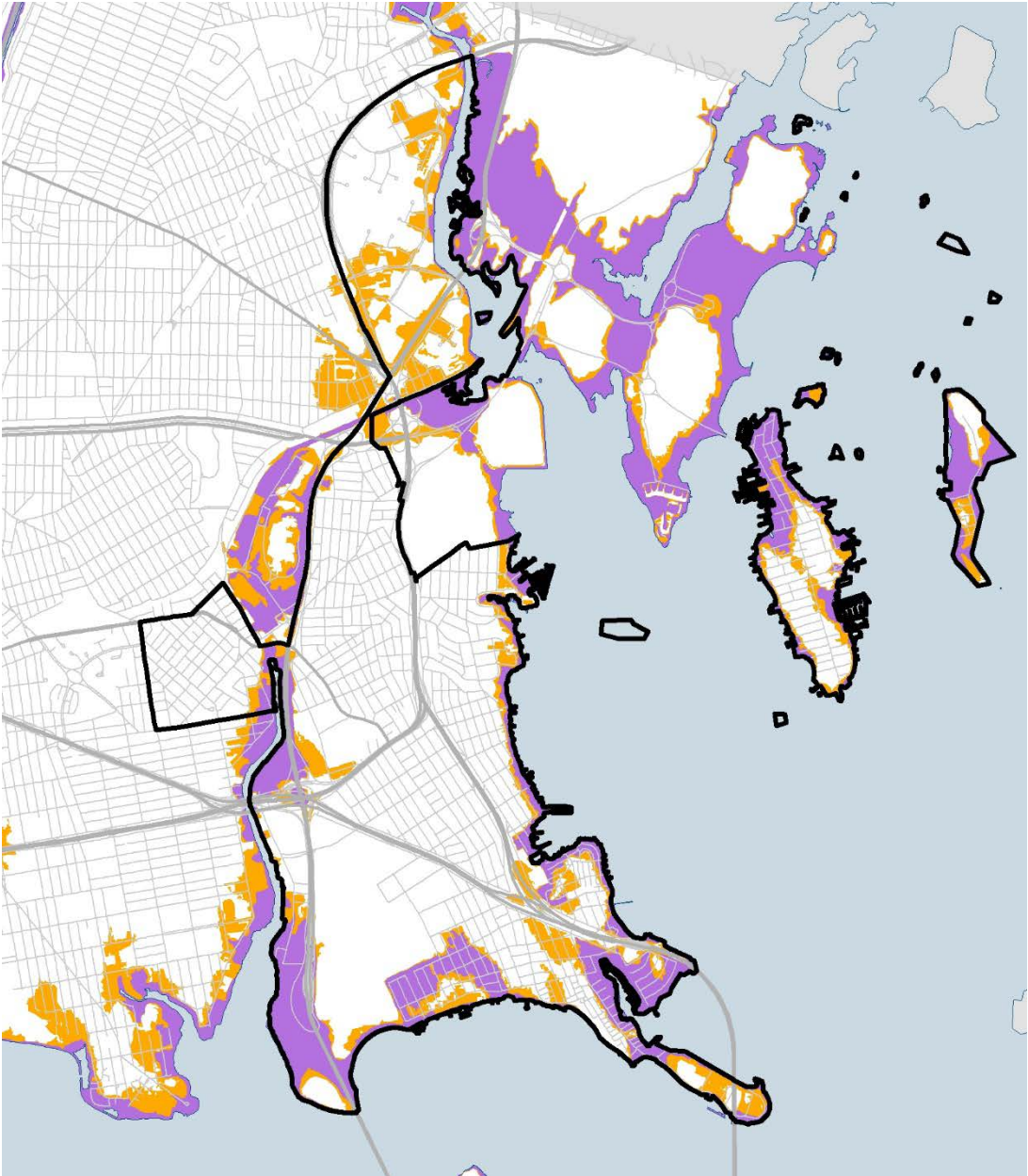


Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
 Future flood zone impacts based on NPCC2 90th percentile sea level rise projections

Bronx CD 10 Flood Risk

Community District 10 is one of the most vulnerable in the Borough with 60% of the Bronx's floodplain population and nearly 80% of floodplain building stock.

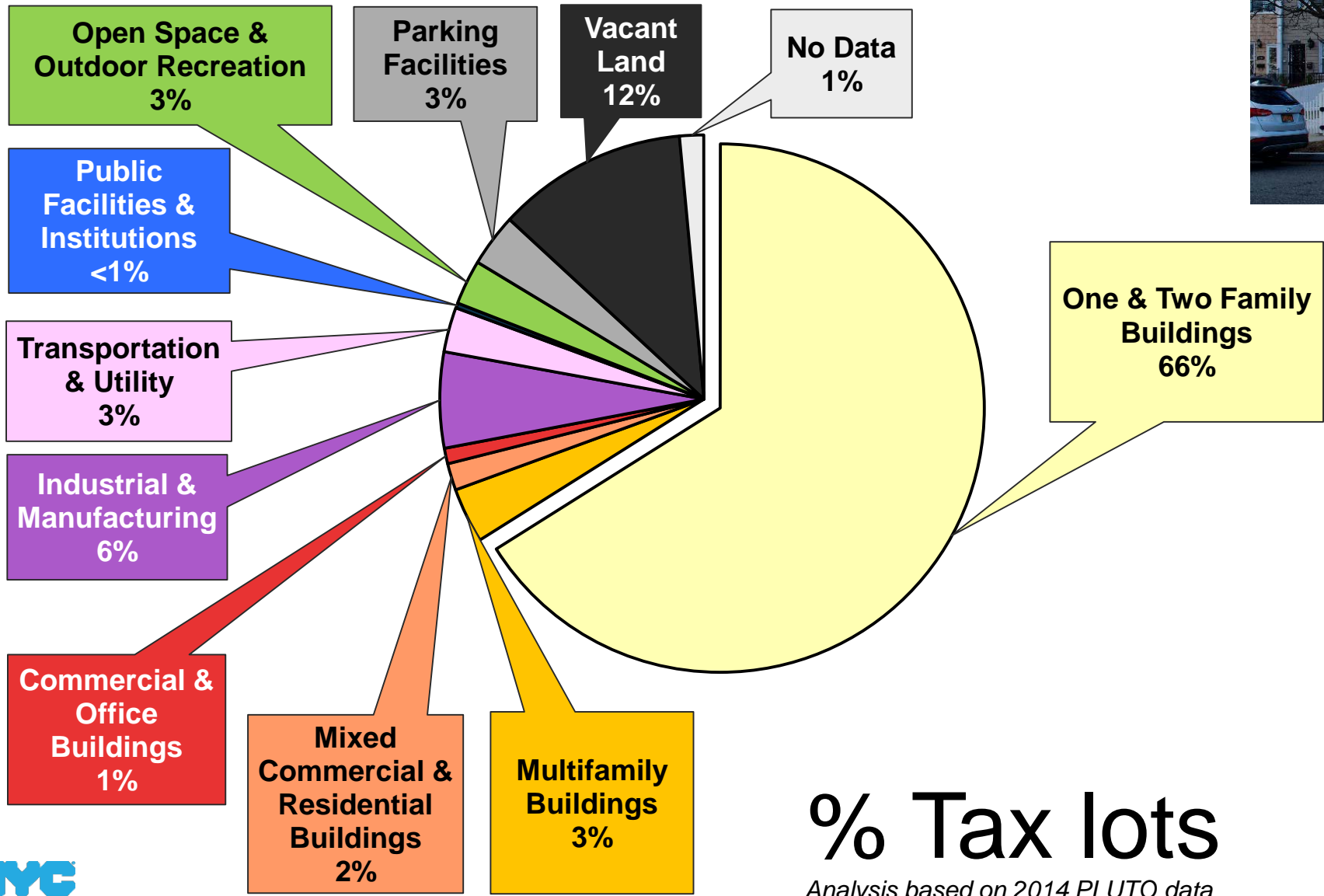
100 year (1% annual chance) floodplain	2015 PFIRMS	2050s Projected FIRMS
Residents	10,100	17,800
Buildings	3,100	5,200



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

Land use + Common Building Typologies

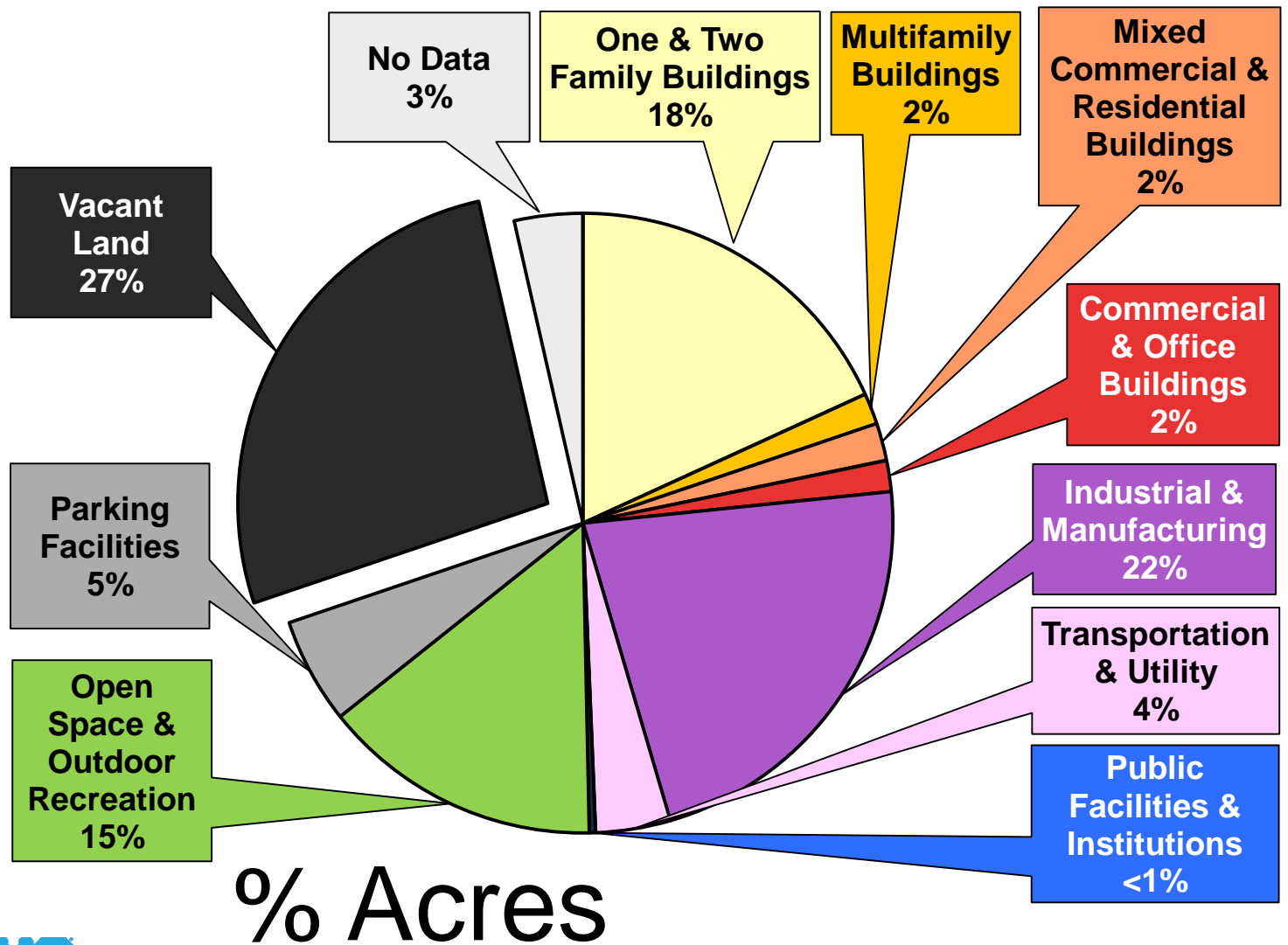


% Tax lots

Analysis based on 2014 PLUTO data

Bronx Flood Risk

Land use + Common Building Typologies



% Acres

Analysis based on 2014 PLUTO data



How are buildings in the floodplain regulated?

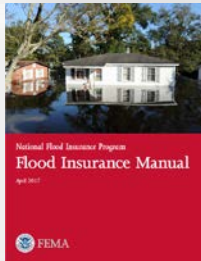


FEMA



Flood Insurance Rate Maps (FIRMs)

Determine where floodplain regulations apply



National Flood Insurance Program

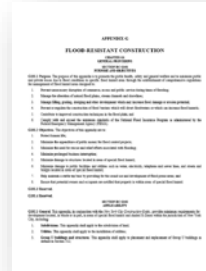
Set up Insurance Rates depending on building elevation and other requirements



Construction Standards (ASCE 24)

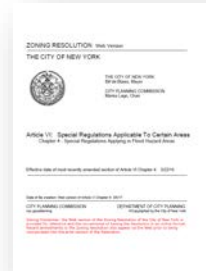
Design minimum construction requirements for flood hazard areas

NYC



Building Code (DOB)

Requires new buildings and substantial improvements to meet FEMA standards



Zoning Resolution (DCP)

Zoning accommodates these regulations and improves neighborhood character

Flood resilient construction

Required by DOB



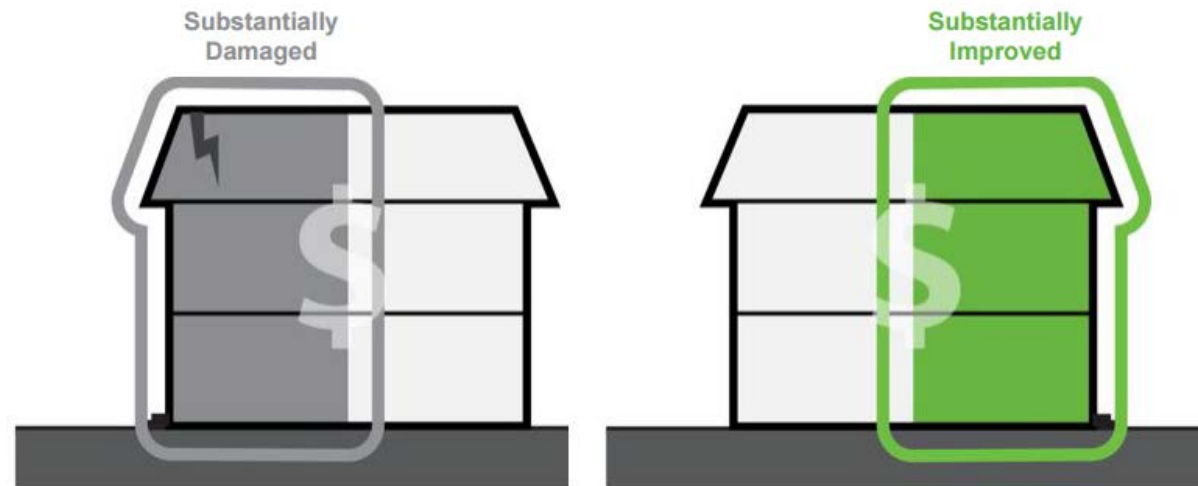
**Building Code
(DOB)**

Requires new buildings and substantial improvements to meet FEMA standards

Required
for all new buildings



Not required for existing buildings
(unless substantially damaged or improved)



Substantially Damaged: Restoring Cost \geq 50% Market Value
Substantially Improved: Improvement Cost \geq 50% Market Value

Flood resilient construction

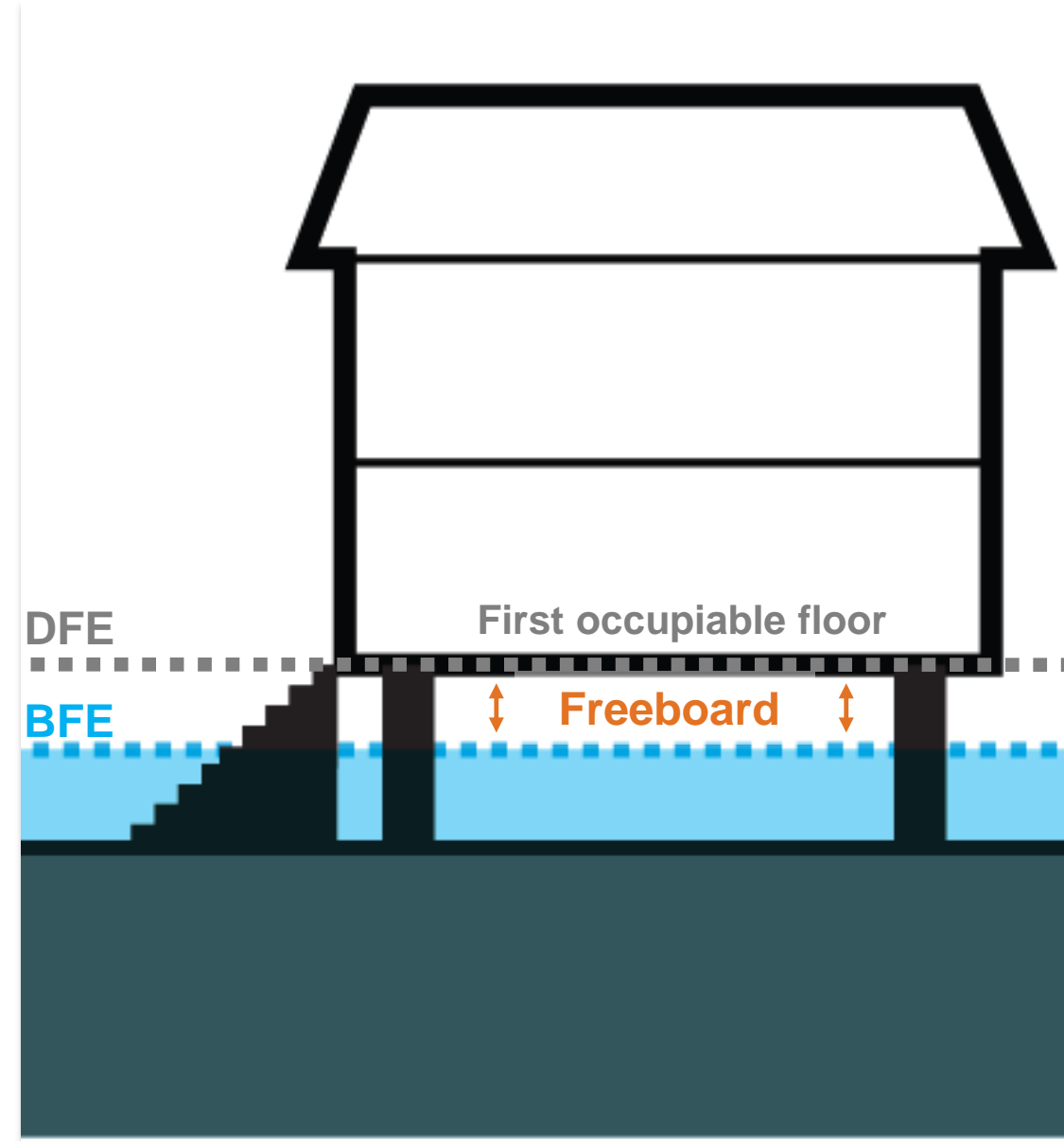
Terms

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.

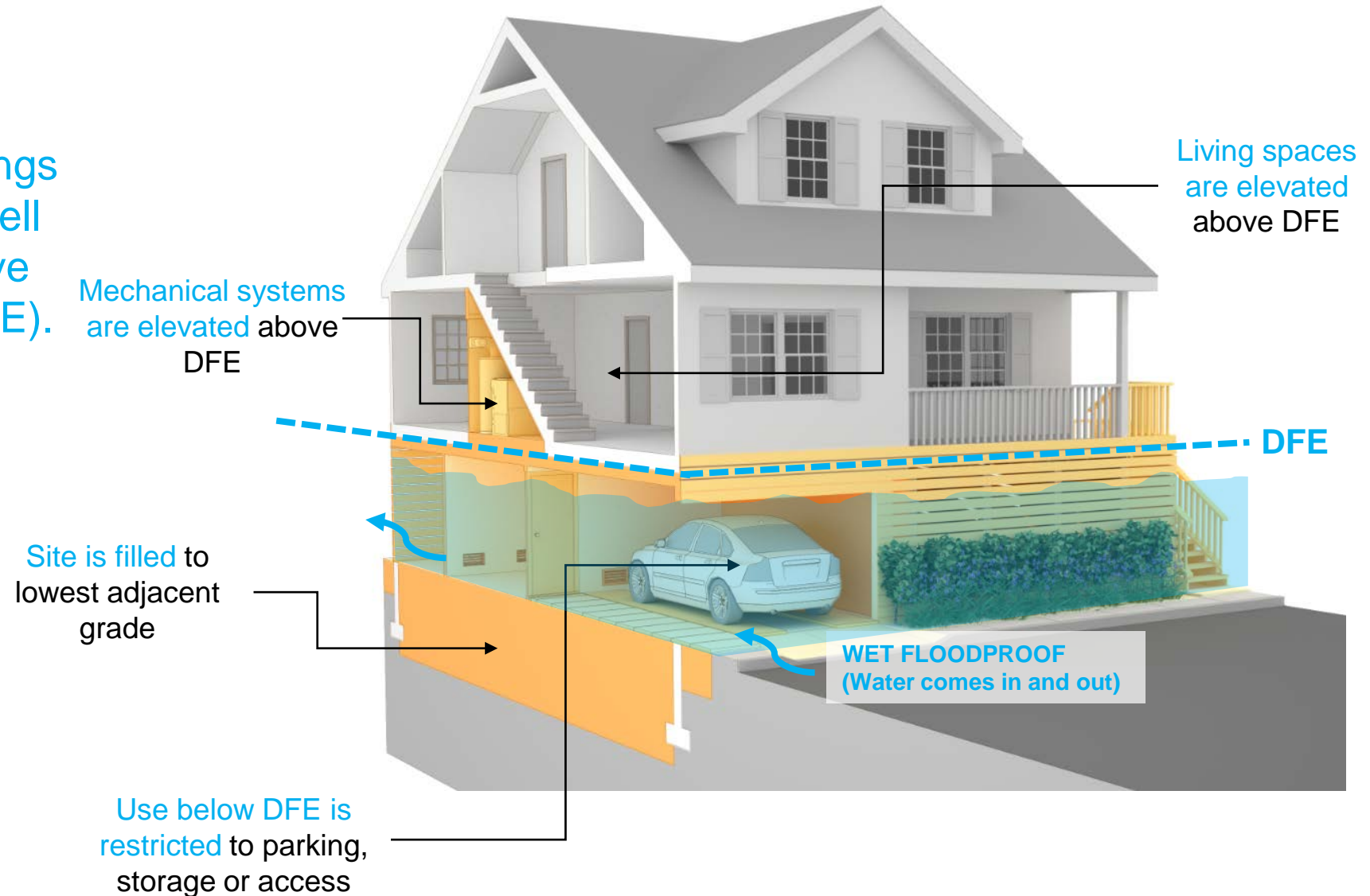
Additional height between the BFE and the DFE is known as **freeboard**.



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).



Flood resilient construction

Required by DOB

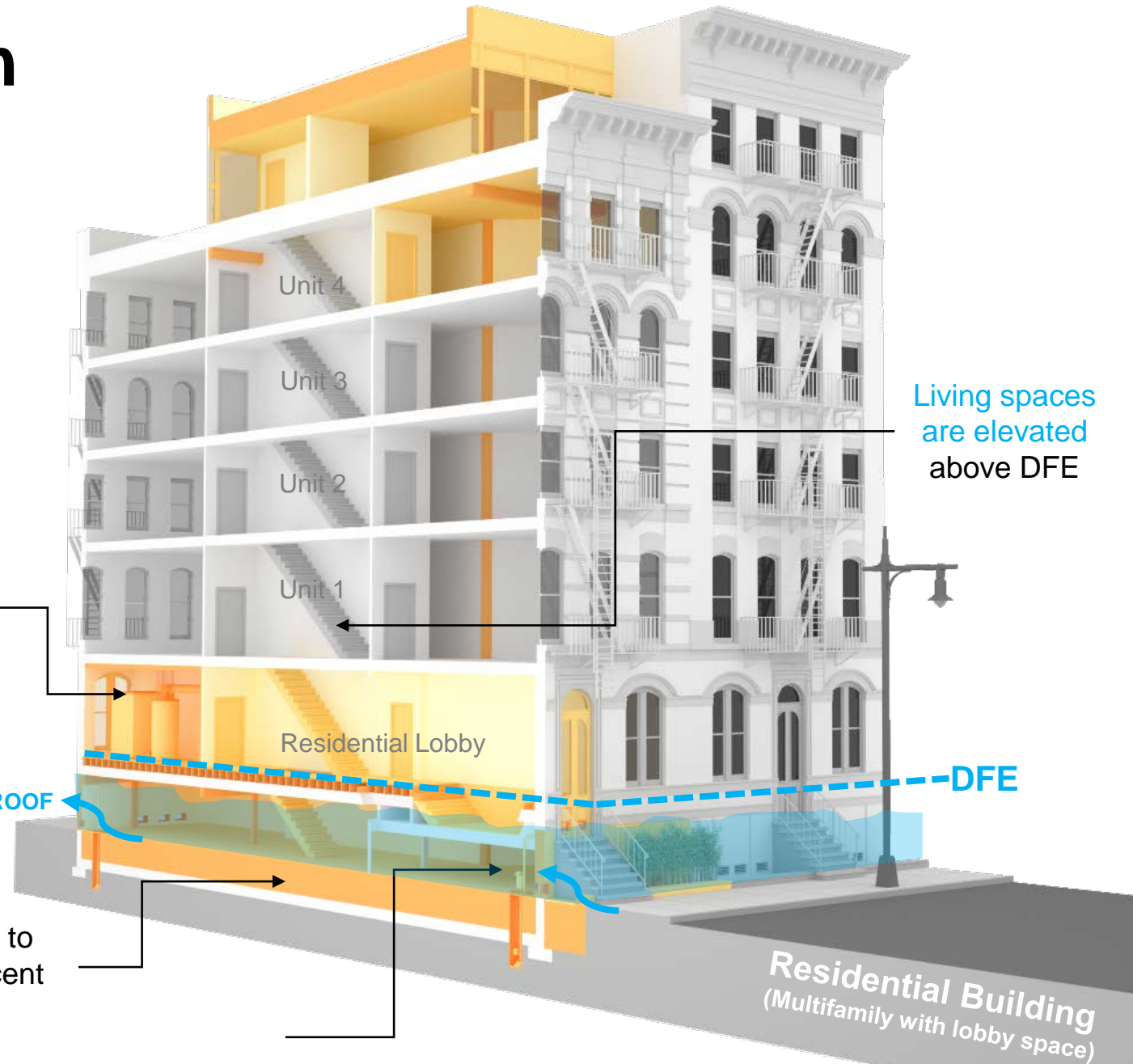
Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).

Mechanical systems are elevated above DFE

Living spaces are elevated above DFE

WET-FLOODPROOF

Site is filled to lowest adjacent grade



DFE

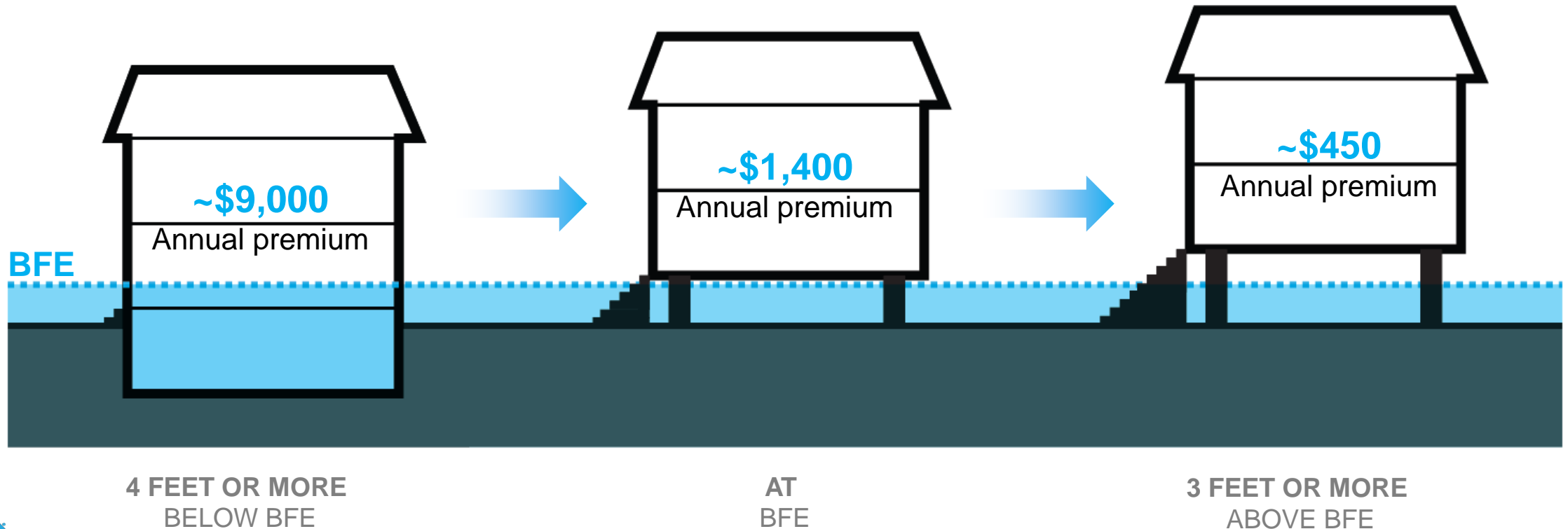
Residential Building
(Multifamily with lobby space)

Flood insurance rates

Set by FEMA

Raising or retrofitting your building or home will reduce costs

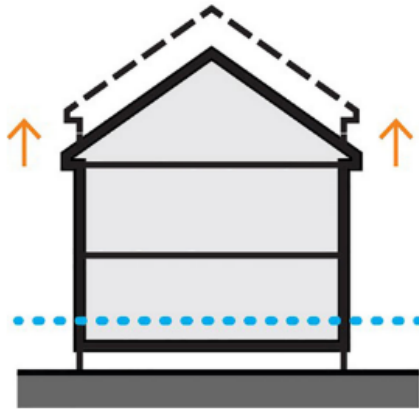
FEMA's flood insurance premiums are lowest when the lowest inhabited floor (any area not used solely for storage, access or parking) is elevated above the **Base Flood Elevation (BFE)**.



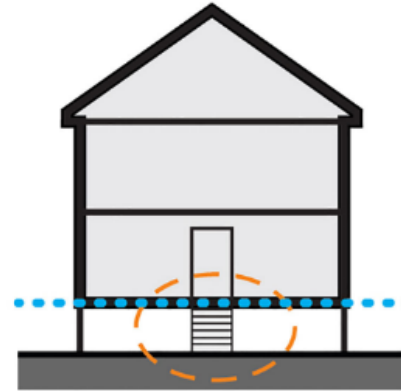
2013 Citywide Flood Text

Amended zoning in six key areas

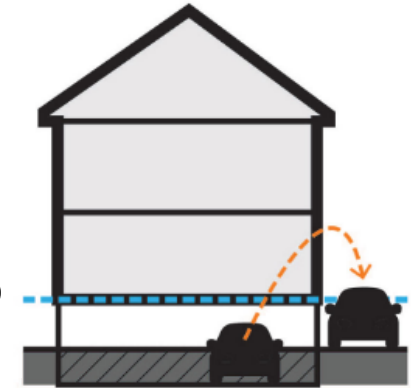
1
Height
Measured from
flood elevation



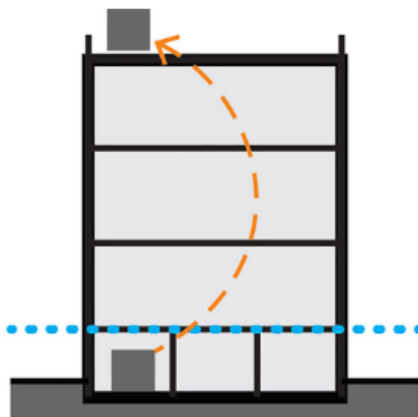
2
Access
Flexibility for
stairs, ramps, lifts



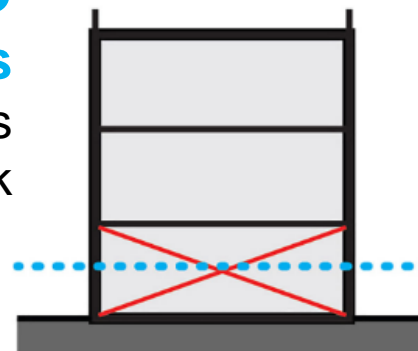
3
Parking
Flexibility to
relocate parking



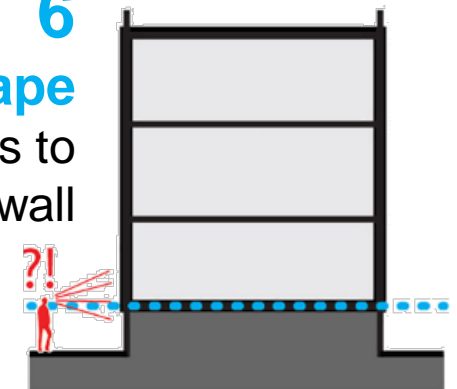
4
Systems
Flexibility to
relocate/elevate



5
Ground Floors
Account for costs
of new flood risk



6
Streetscape
Require features to
mitigate blank wall



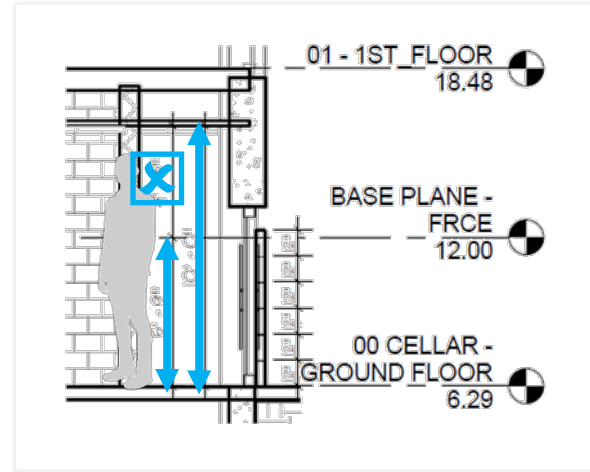
Flood Text Update

Need for a new citywide text amendment



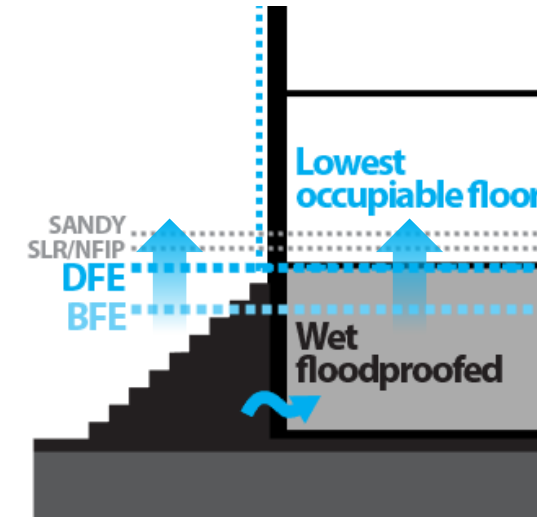
1

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

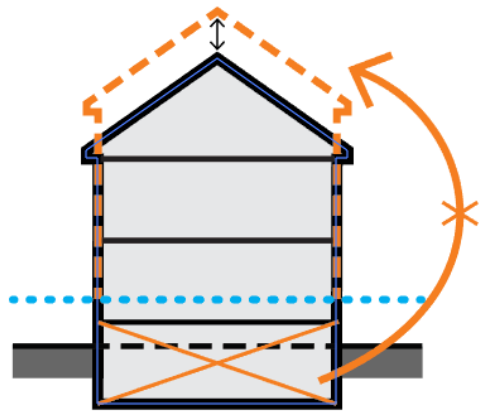
Flood Text Update

Fix and improve provisions based on lessons learned

1

Height

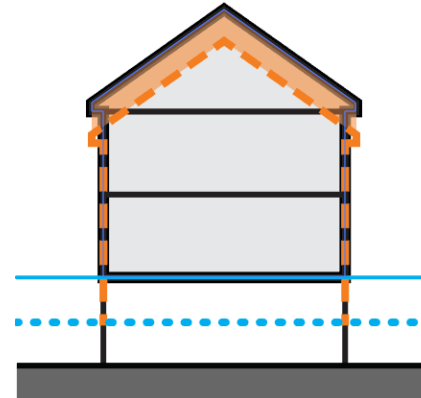
Homeowners may face the loss of subgrade spaces when retrofitting



2

Height

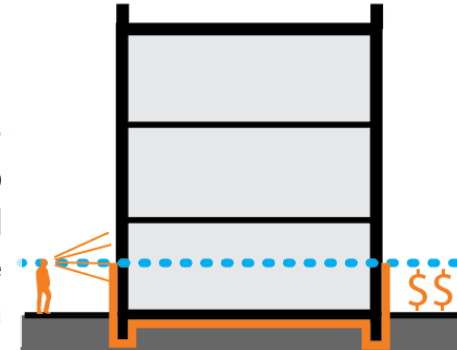
Property owners may want to address future risk by over-elevating



3

Ground Floors

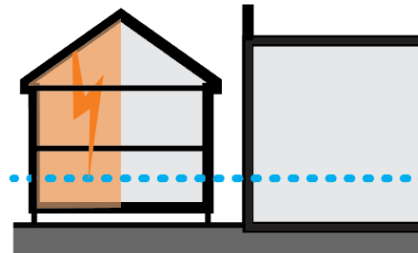
Current incentives to keep active ground floors may not be enough



4

Homes in M Districts

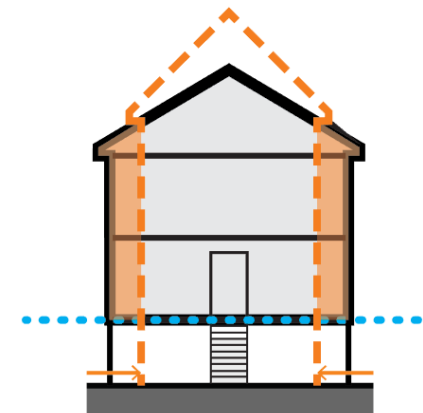
Existing homes in M. Districts, if damaged, may not be able to rebuild



5

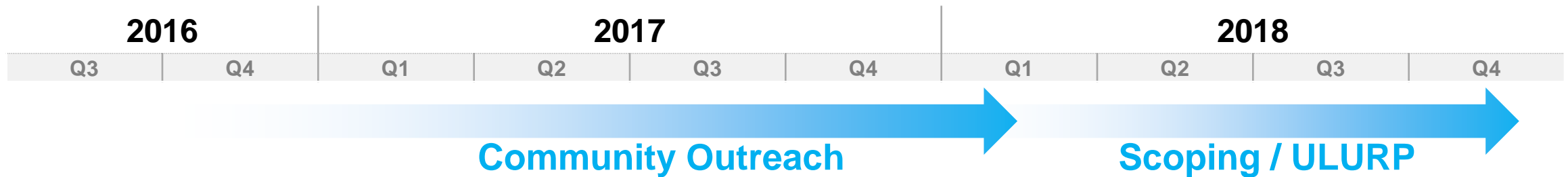
Old Homes on Small Lots

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



Zoning for Flood Resilience: Community Workshop

Do you live or work in the Eastern Bronx floodplain?
Come to our workshop to learn how zoning changes can help
make your neighborhood more resilient to flooding!

Saturday, October 21 @ SUNY Maritime, 6 Pennyfield Avenue
11:00 am - 1:00 pm Maritime Academic Center, Room 110
Bronx, NY 10465 (Parking available)

NYC Department of City Planning is holding an informational meeting and workshop about design and development in the floodplain.

Co-sponsored by: Bronx Community Board 10

Following a short presentation on zoning rules that were adopted after Hurricane Sandy to facilitate resilient buildings, participants will have the opportunity to share their ideas on how to shape a future update to these city rules to advance resiliency in the Bronx and across the city.

Workshop Goals:

- Learn about strategies to floodproof your home and protect it from future floods;
- Find out how zoning can make promote floodproofing strategies and make neighborhoods more resilient to flooding;
- Establish urban design priorities for the Eastern Bronx and other coastal neighborhoods;
- Help shape a future change to the special zoning rules that govern development in the floodplain.

RSVP: northeastbronxresilienceworkshop.eventbrite.com

Questions?: Call 718-220-5268

resilientneighborhoods@planning.nyc.gov

www.nyc.gov/resilientneighborhoods



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

Our video, “Planning a Resilient NYC,” is now live and ready for you to watch and share at

www.nyc.gov/resilientneighborhoods

Thank you!

For more information, and to stay involved, email
resilientneighborhoods@planning.nyc.gov
ccamilleri@planning.nyc.gov