

Zoning for Flood Resilience



Eastern Bronx Community Workshop

SUNY Maritime

Saturday, October 21st, 11:00 AM – 1:00 PM

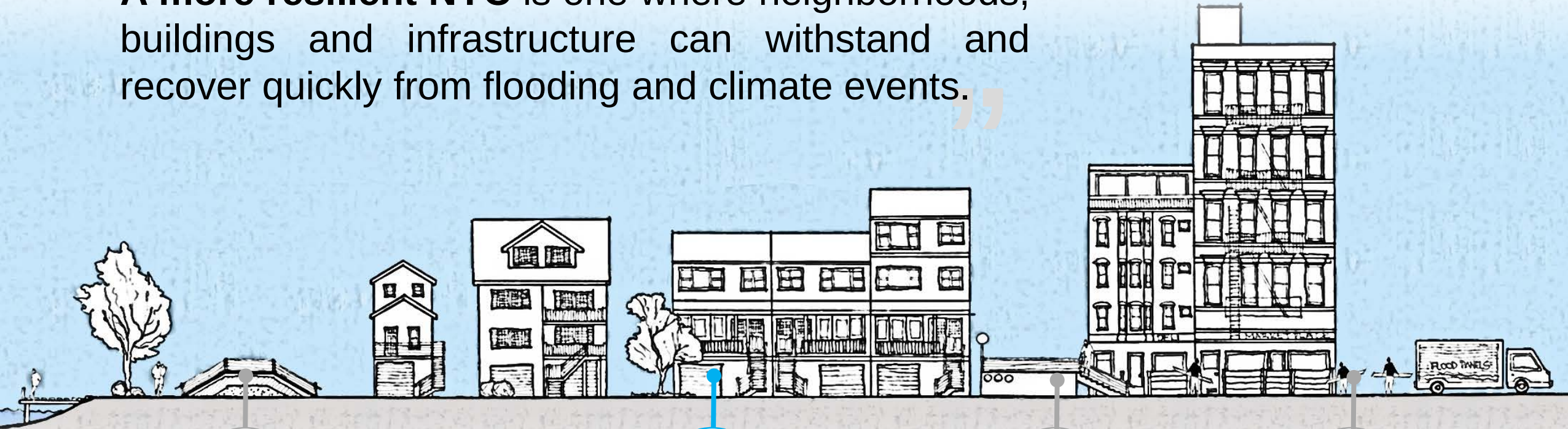
Zoning for Flood Resilience

Workshop Agenda

1. Welcome and Overview – 30 min
 - Flood Risk
 - Flood Insurance
 - Resilient Buildings
 - Zoning for Flood Resilience
 - Q&A
2. Table Activity about building-scale resilience strategies in the Eastern Bronx – 50 min
3. Report Summary of Table Discussions - 20 min

#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

US Army Corps of Engineers, NYS DEC, NYC DPR



Buildings

are designed to withstand and recover from flooding

FEMA, DCP, DOB, HRO, NYCHA



Infrastructure

is protected from climate hazards
DOT, DEP, DDC, Utility Companies, MTA



Residents

and businesses are prepared
OEM

How are buildings in the floodplain regulated?

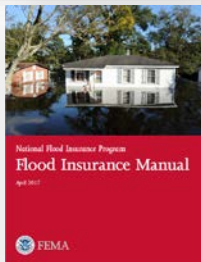


FEMA



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)

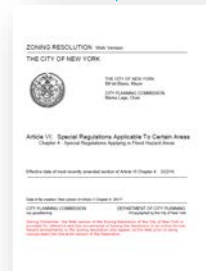
Design minimum construction requirements for flood hazard areas

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



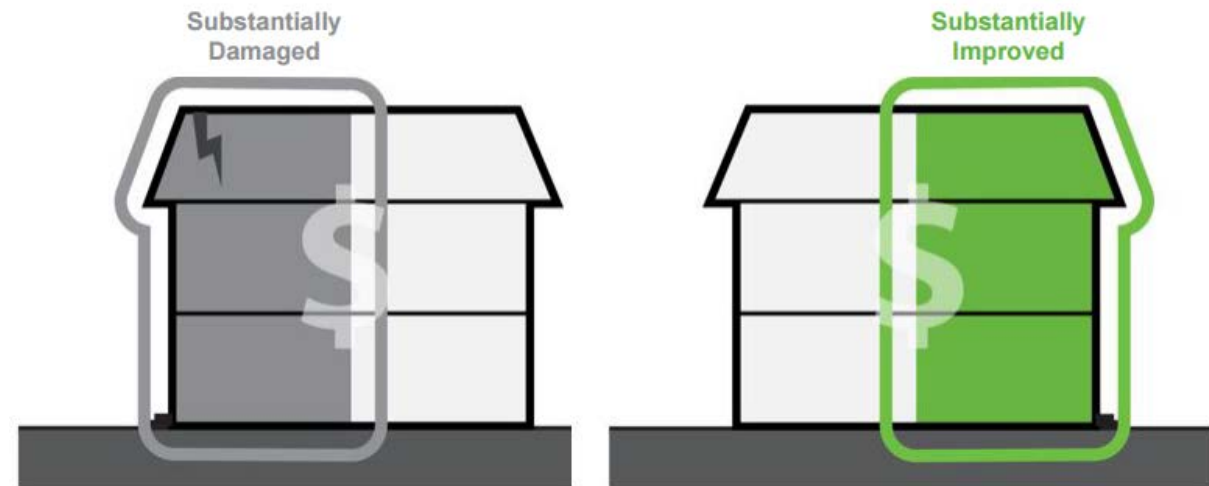
Building Code (DOB)

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

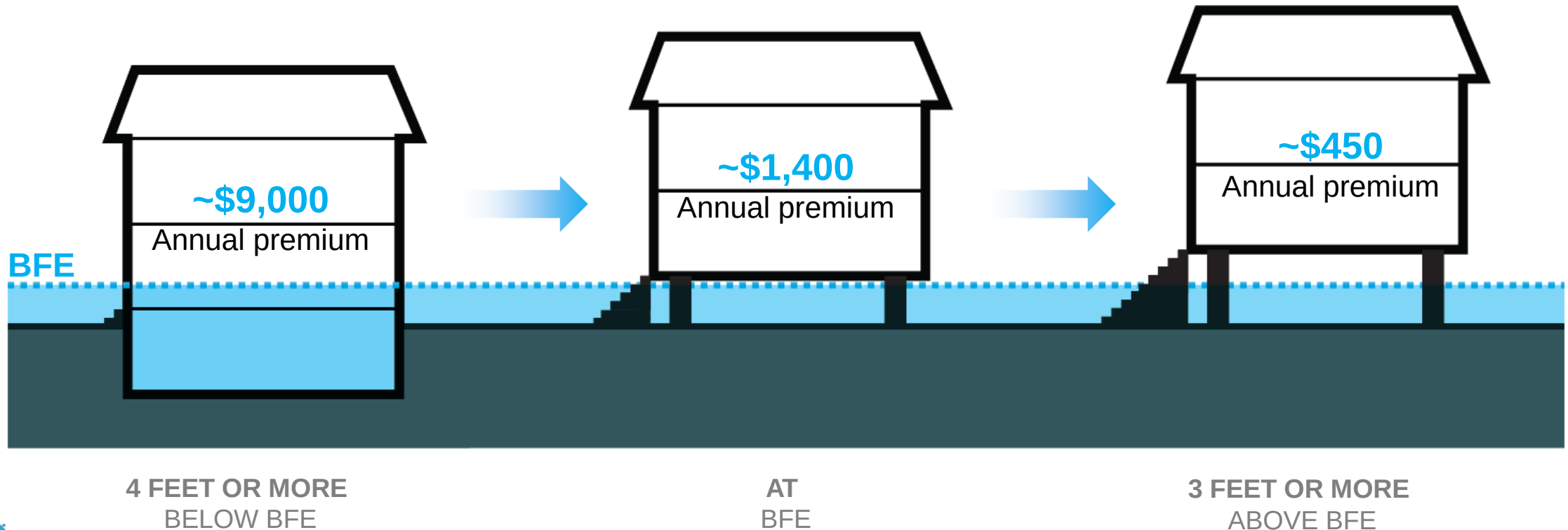
Flood insurance rates

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)**.

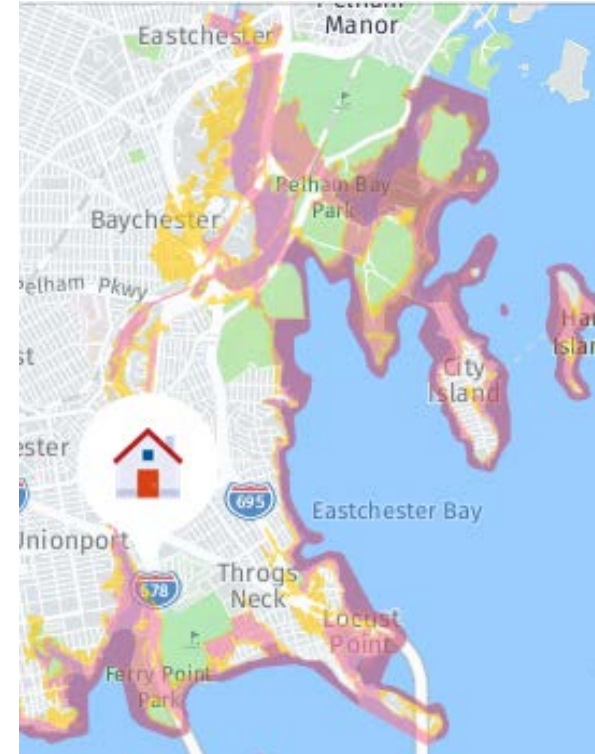


Resources for Homeowners

#ONENYC

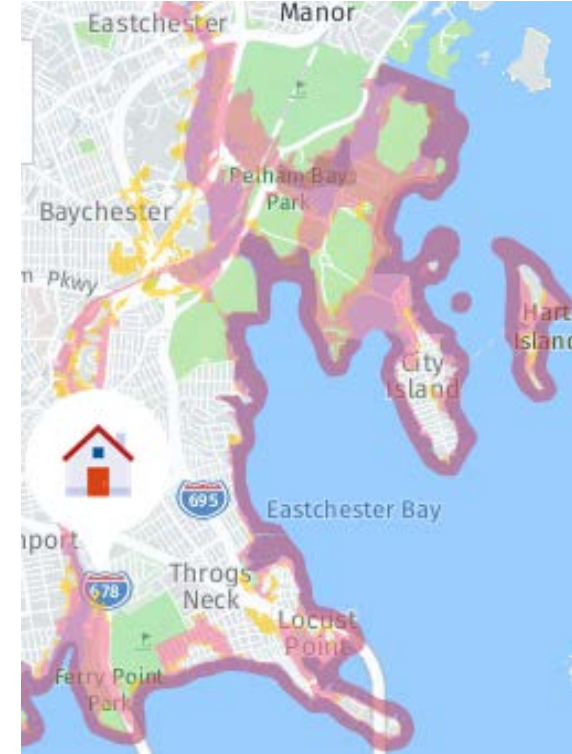


- FloodHelpNY.org
- NFIP Preferred Risk Policy (PRP)



KEY: ● Moderate risk ● High risk ● Highest risk

FIRMs
(used for flood
insurance purposes)



Preliminary FIRMs
(used for building code/
zoning)

NYC Federal Priorities

#ONENYC



The Cost and Affordability of Flood Insurance in New York City

Economic Impacts of Rising Premiums and
Policy Options for One- to Four-Family Homes

Lloyd Dixon, Noreen Clancy, Benjamin M. Miller, Sue Hoegberg,
Michael M. Lewis, Bruce Bender, Samara Ebinger, Mel Hodges,
Gayle M. Syck, Caroline Nagy, Scott R. Choquette



- Ensure NFIP Affordability
- Expand Mitigation Options and Premium Credits
- Increase availability of mitigation funding for all building types
- Improve communication to agents, real estate, property owners

Key Takeaways for Homeowners

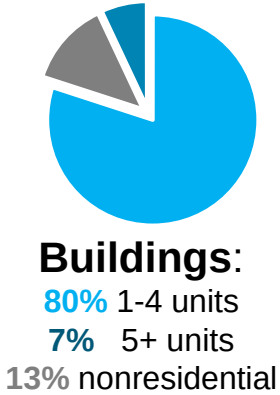


- NYC's flood risk is rising; homeowners insurance does not cover floods
- Until the new maps are issued, flood insurance rates will continue to be based on the 2007 Effective FIRMs
- When revised maps are adopted, new flood insurance requirements will go into effect
- For those outside the high-risk floodplain, flood insurance is inexpensive
- Flood insurance policy is tied to the property

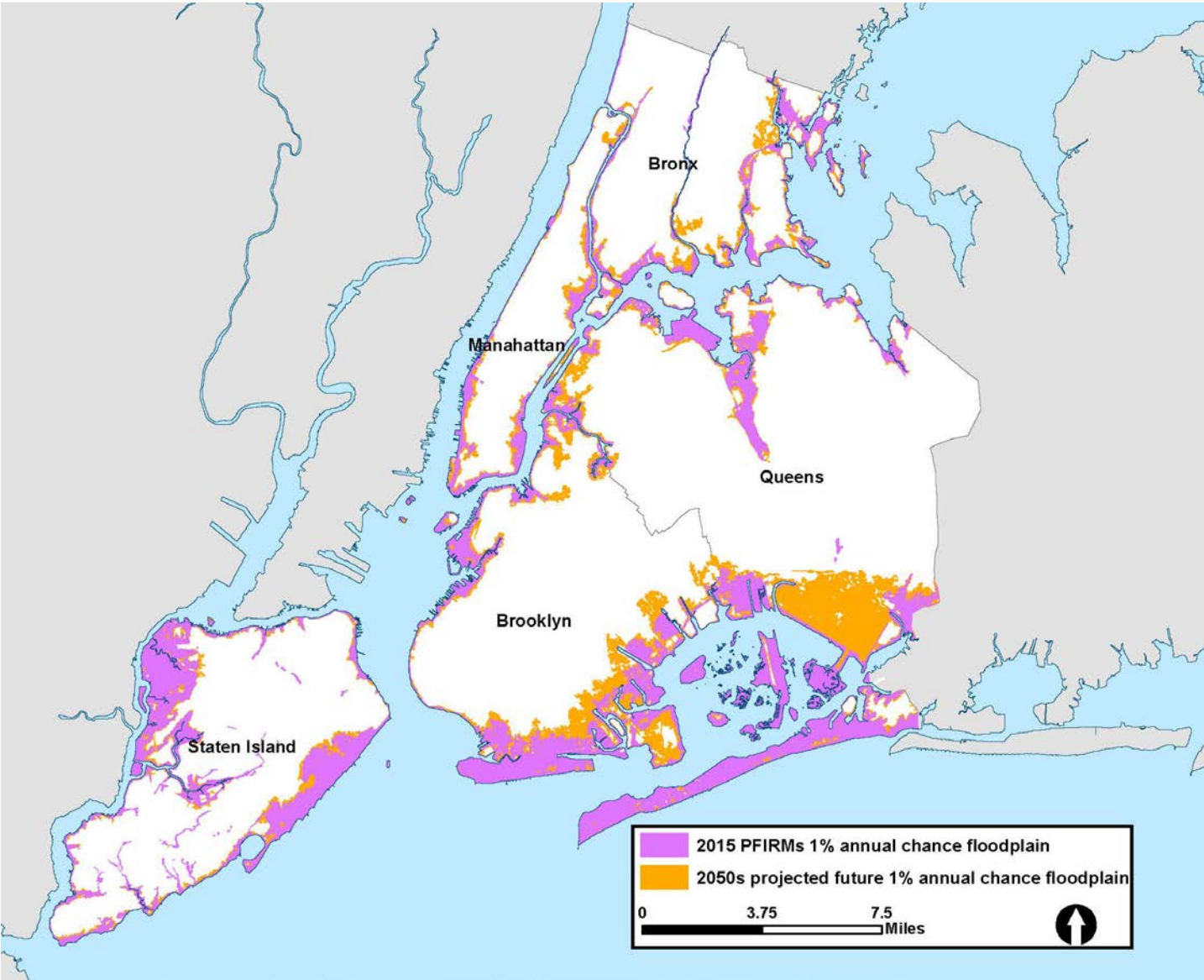
Flood Risk: Citywide

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



50 of 59 Community Boards
45 of 51 Council Districts

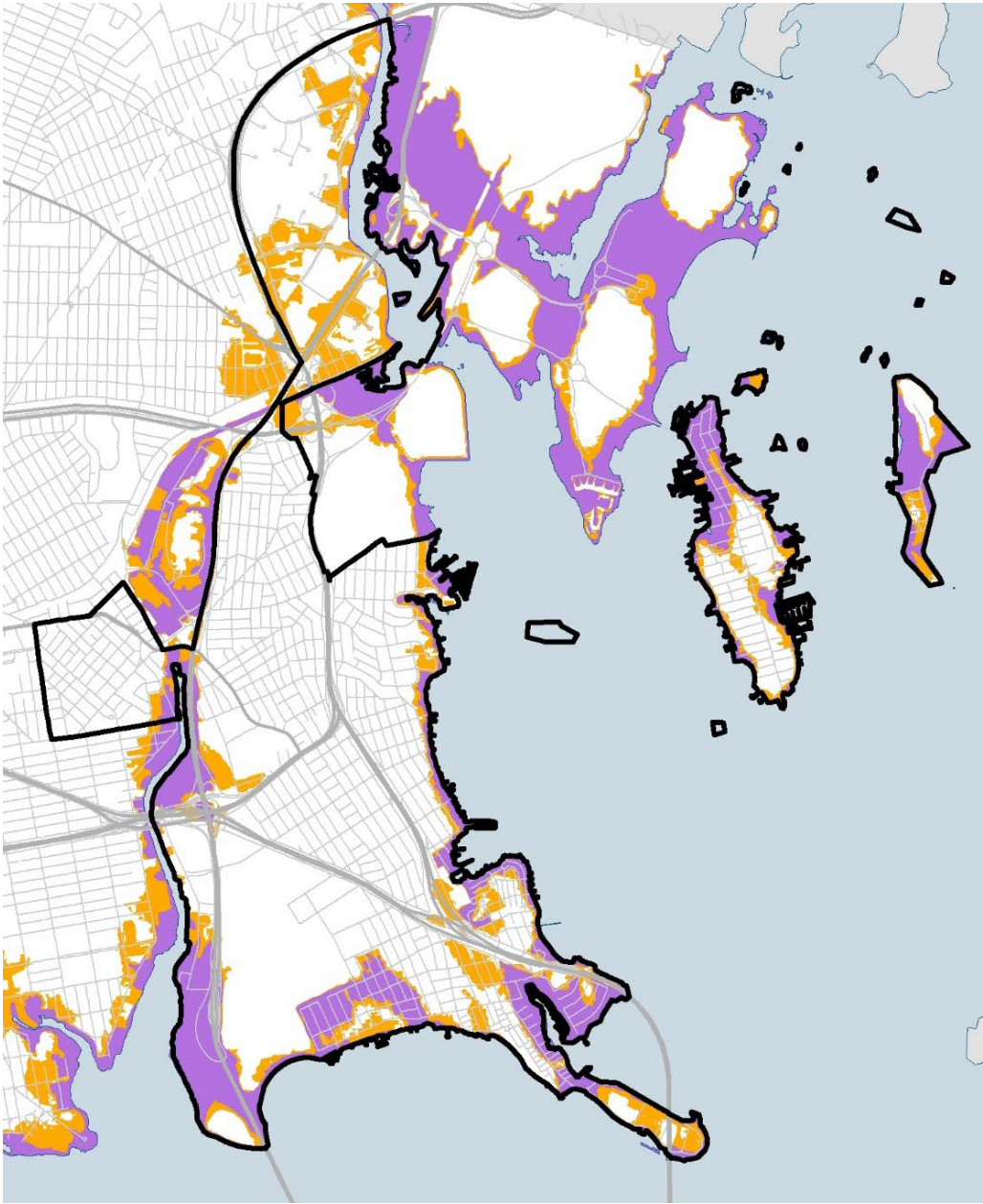


Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
Future flood zone impacts based on NPCC2 90th percentile sea level rise projections

Bronx CD 10 Flood Risk

Bronx CD 10 accounts for nearly 60% of the Bronx's floodplain population and 80% of its floodplain building stock.

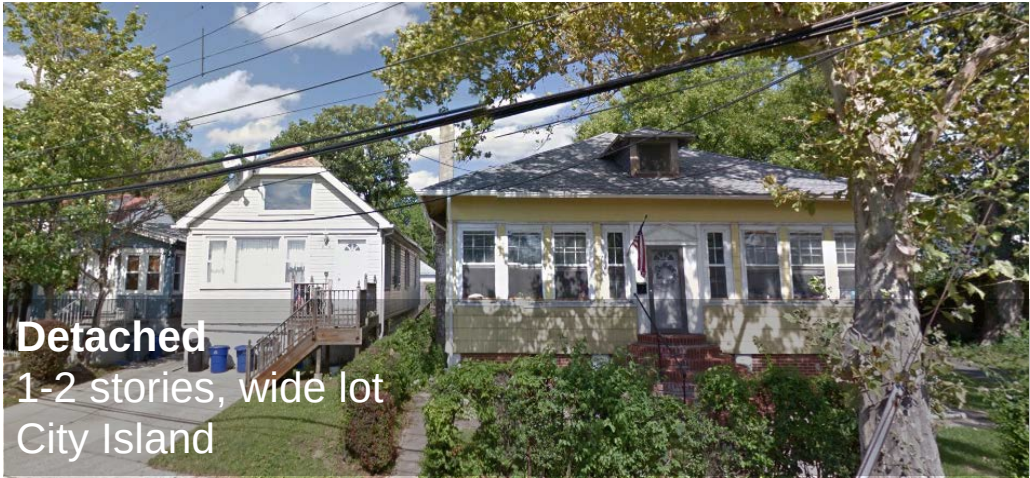
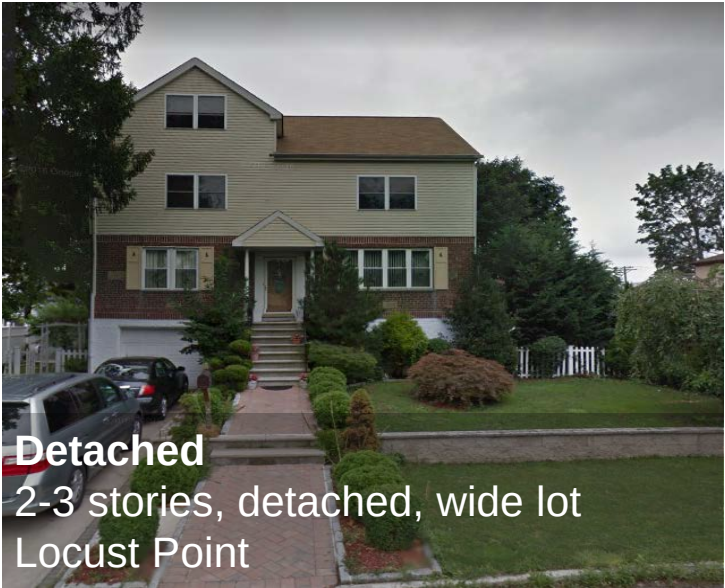
100 year (1% annual chance) floodplain	2015 PFIRMS	2050s Projected FIRMS	
Residents	10,100	17,800	76%
Buildings	3,100	5,200	68%



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

Common Building Typologies



49.9% of buildings in the Bronx CD 10 flood plain are 1-2 family homes

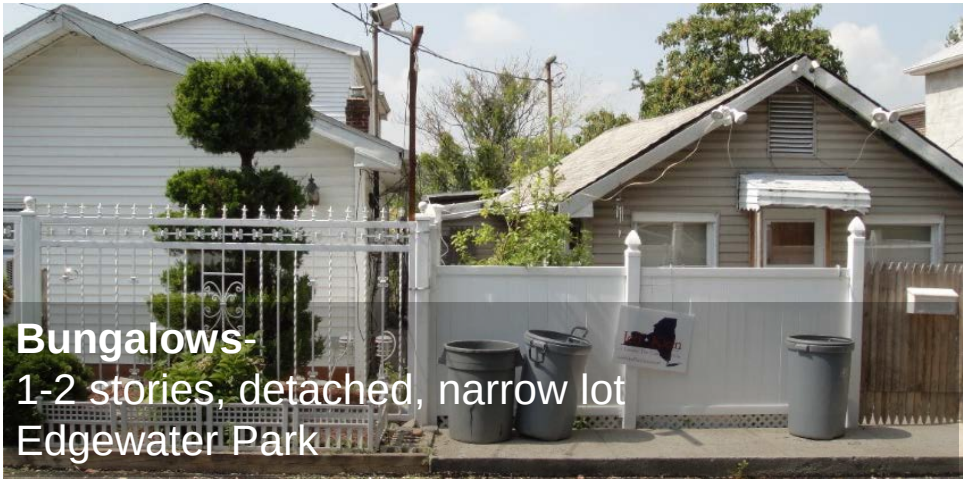
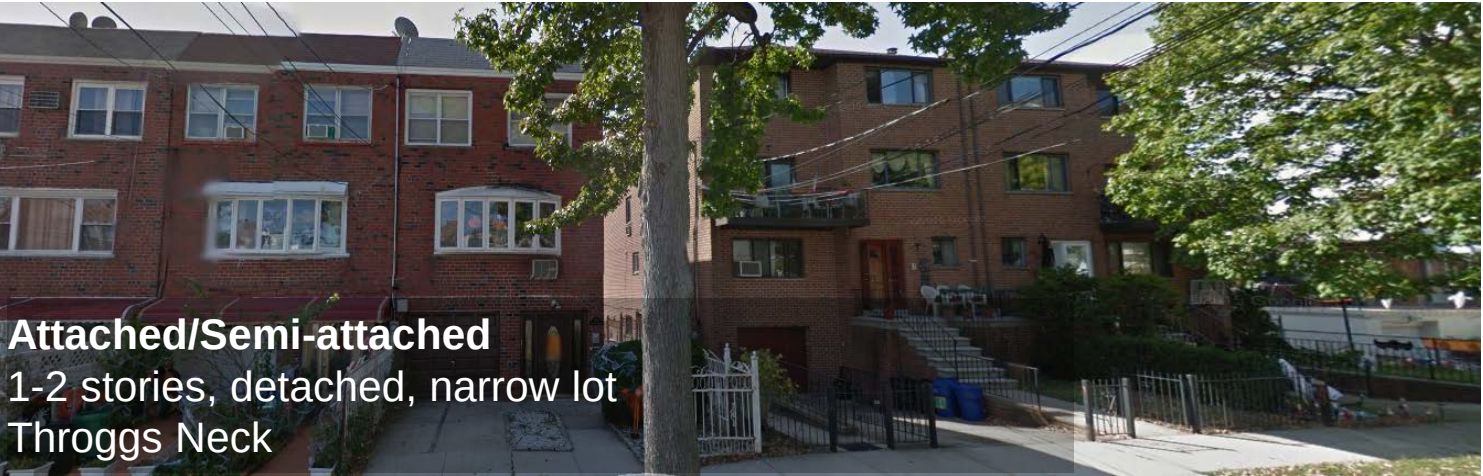
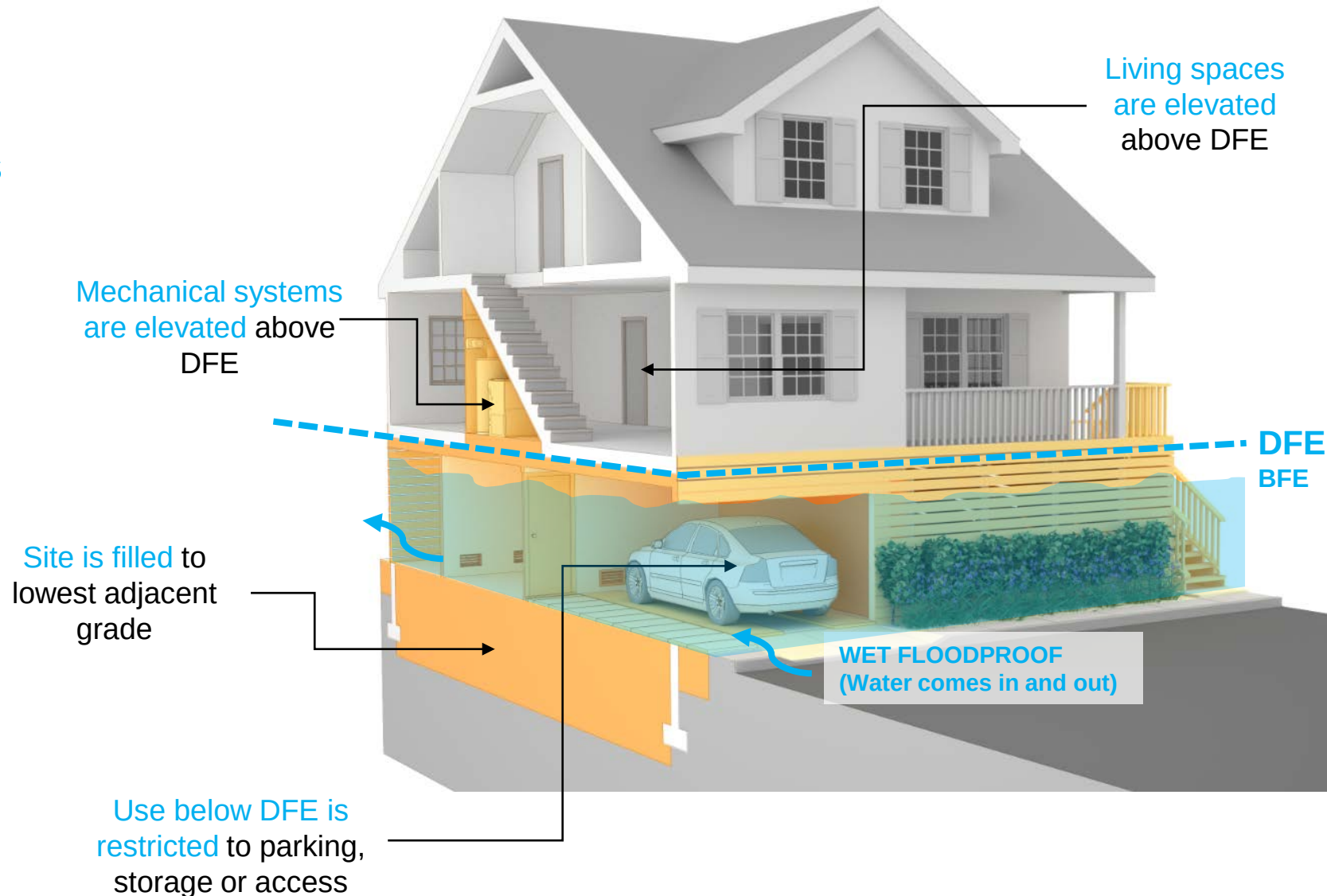


Image Source: Google Street view

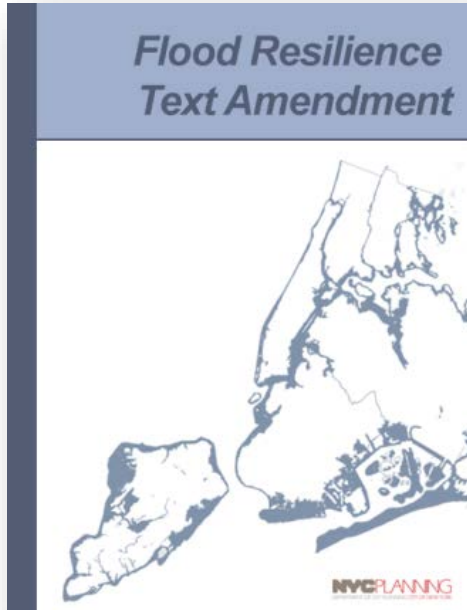
Flood resilient construction Required by DOB

Building Code
(DOB)

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



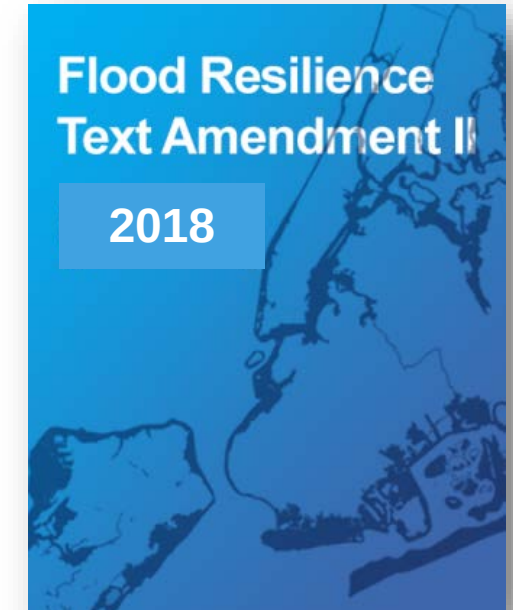
Flood Resilience Zoning Projects at DCP



2013

“Flood Text”

initial temporary regulations
to facilitate recovery



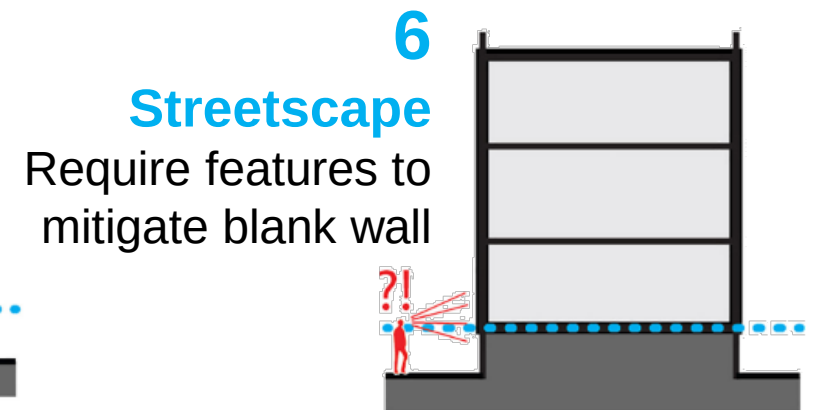
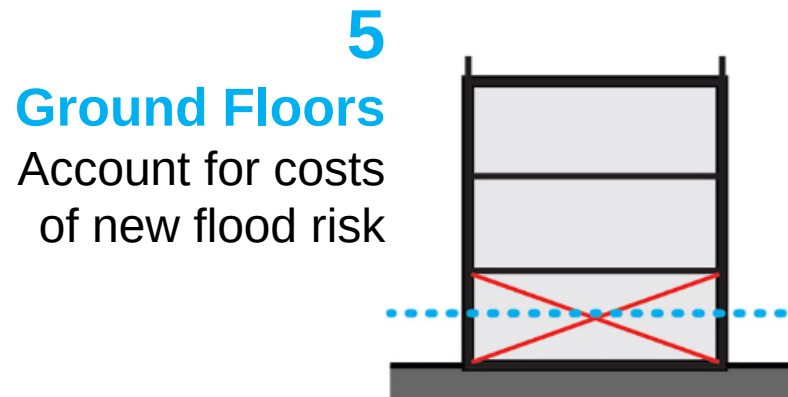
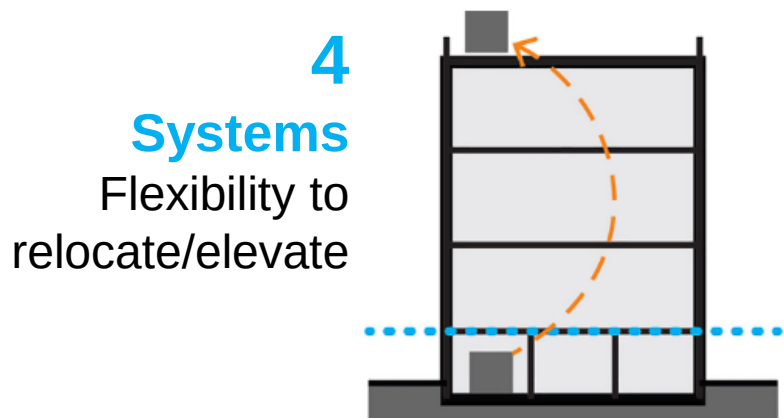
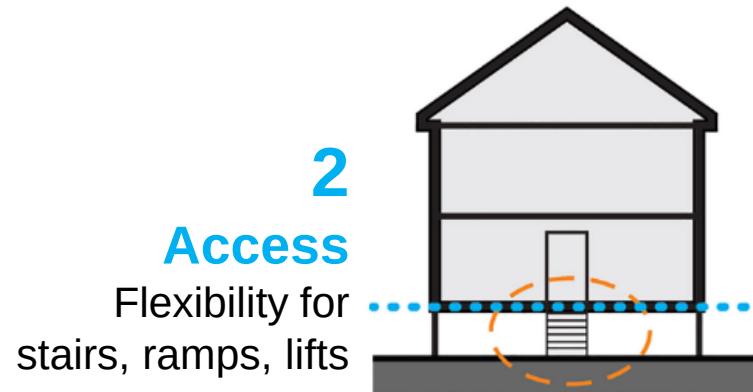
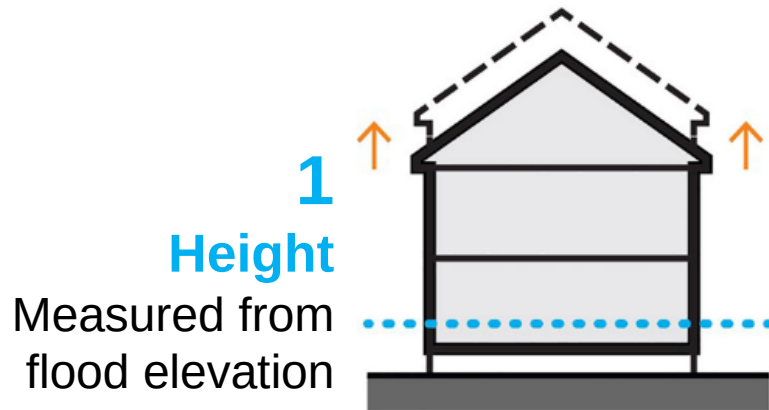
2018

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

2013 Citywide Flood Text

Amended zoning in six key areas

Zoning Resolution
(DCP)



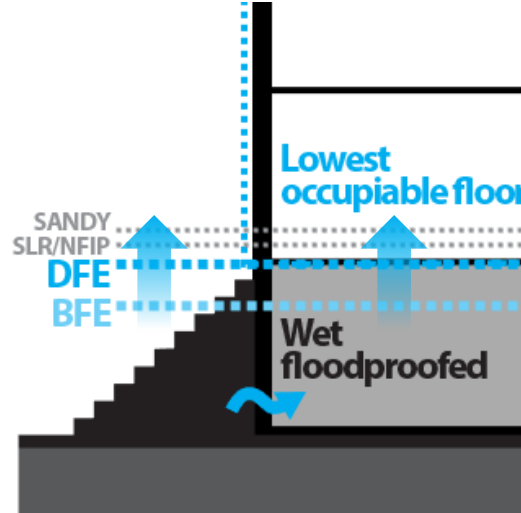
Flood Text Update Permanent Rules

Zoning Resolution
(DCP)



Goal 1

**Facilitate Recovery
from Future Storms**
by making the provisions
of the temporary Flood
Text **permanent**



Goal 2

**Promote Long-Term
Resiliency**
by encouraging proactive
retrofitting and development
that is **safe in the long run**



Goal 3

**Enhance Neighborhood
Character**
By encourage good resilient
design within **coastal
communities**

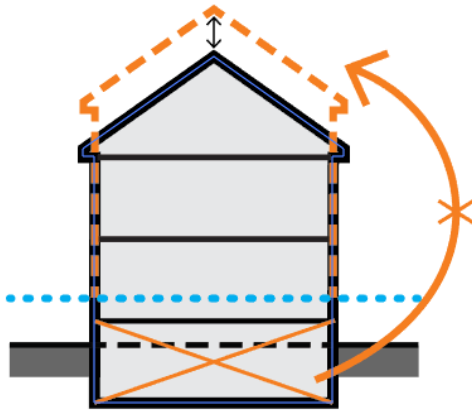
Zoning for Flood Resilience Update

Issues identified by DCP and coastal communities

Zoning Resolution
(DCP)

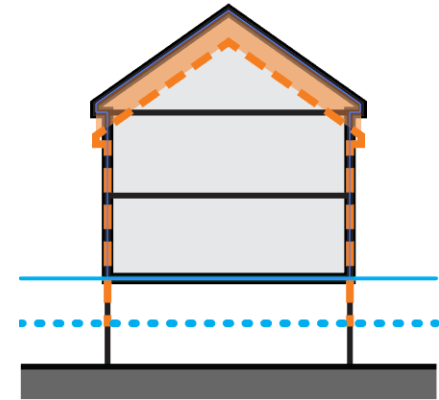
1 Subgrade Spaces

Homeowners may face the loss of subgrade spaces when retrofitting



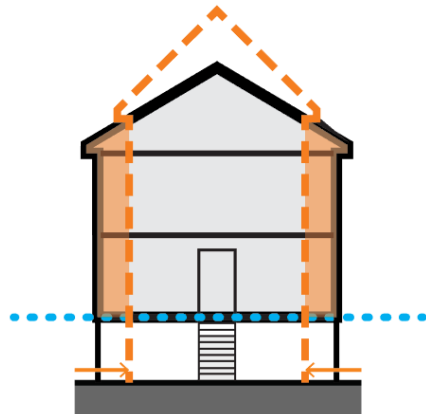
2 Future Flood Risk

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



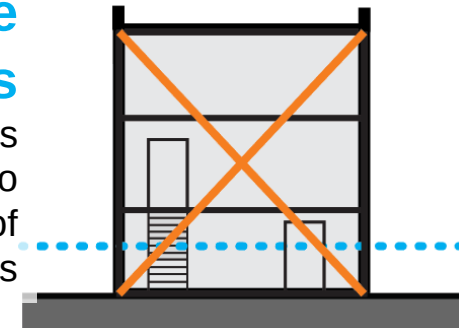
3 Old neighborhoods

Old buildings may need more flexibility to rebuild, elevate, or retrofit to resiliency standards



4 Active Streetscapes

Design requirements may be needed to mitigate the effects of elevated buildings





STEP 1

Pick a building in your neighborhood. It can be the place you live, work or are interested in!



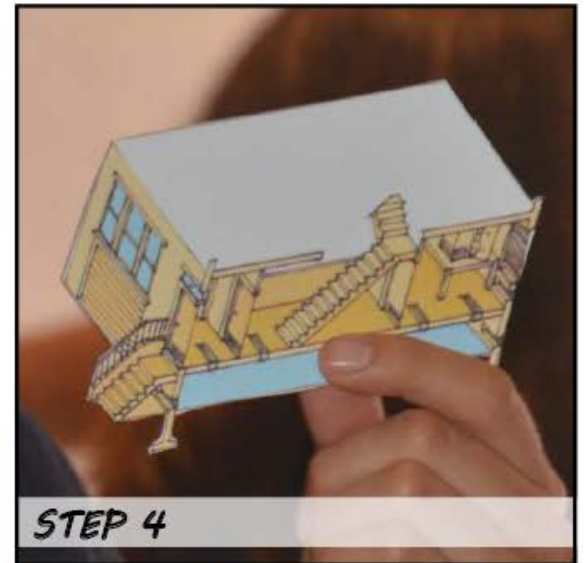
STEP 2

Build the existing conditions of your building with available cut-out cards (black and white).



STEP 3

Place your flood elevation (low, medium or high) above existing building and check your risk!



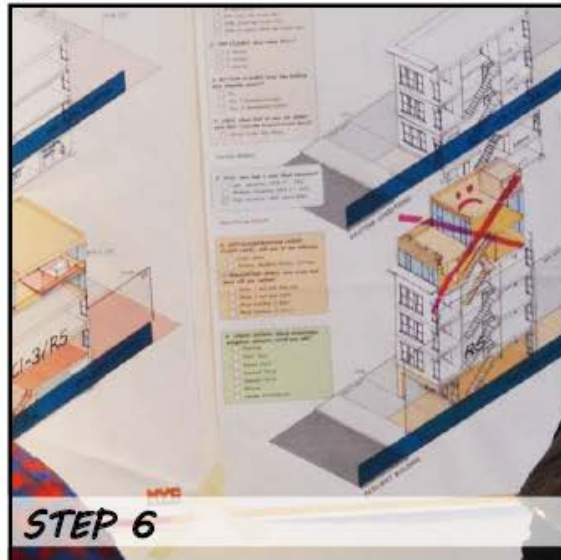
STEP 4

Retrofit your building to become resilient by using available cards (colored).



STEP 5

Add the zoning envelope that reflects your neighborhood's zoning above the flood level.



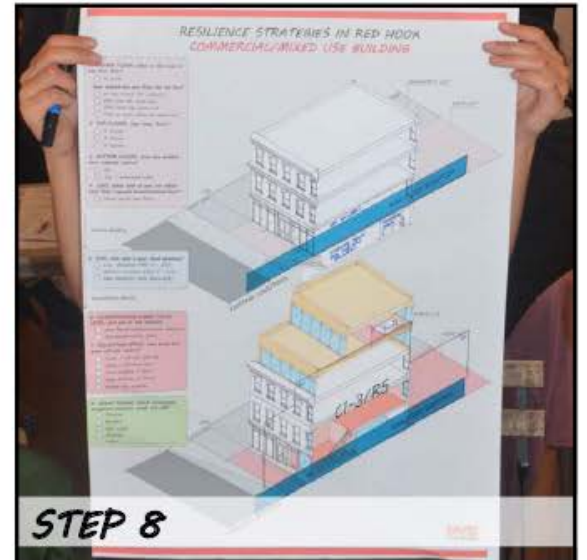
STEP 6

Check if there are any zoning conflicts. Does the retrofitted building fit within the envelope?



STEP 7

Add your building to the wall and imagine how your neighborhood could look like!



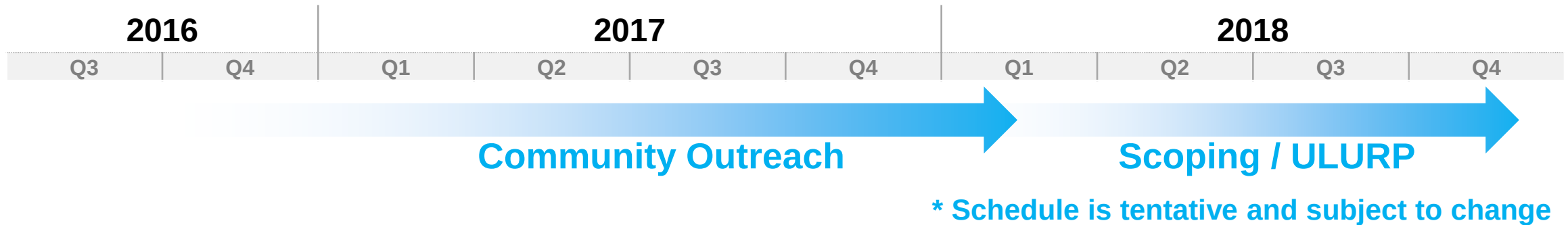
STEP 8

What do you think about the results? Add a post-it with your thoughts on the wall!

Zoning for Flood Resilience

Overview of DCP's Timeline

DCP plans a robust public engagement process:



As part of this outreach process, DCP has been:

- **Partnering 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