

**Building a Resilient NEW YORK CITY**

# Zoning for Coastal Flood Resiliency

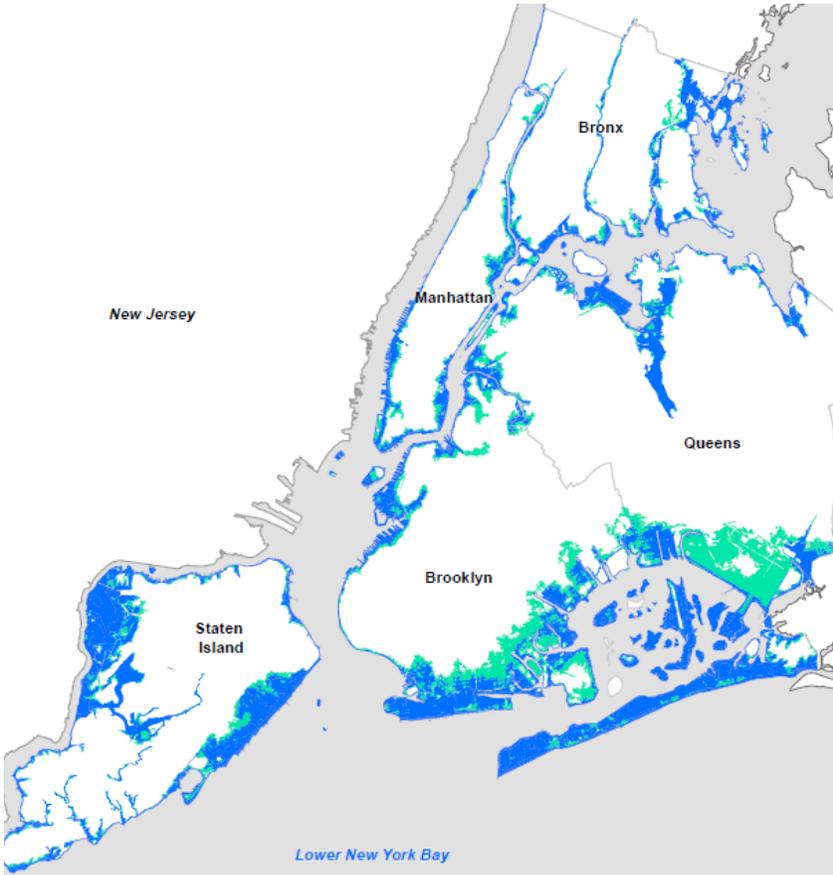
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## Introduction

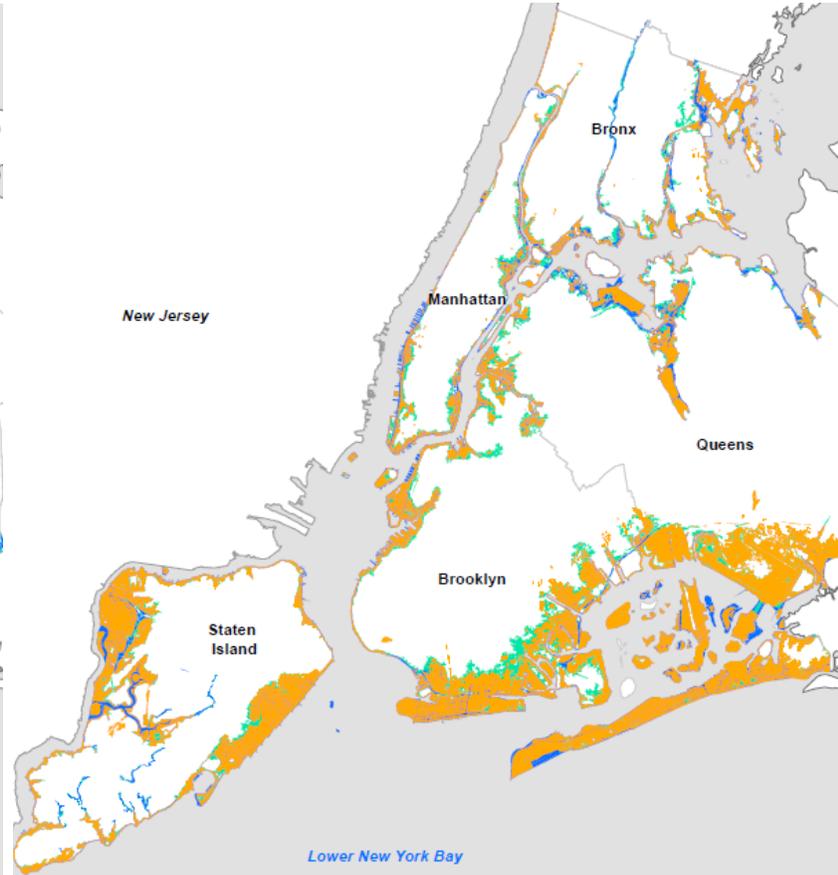
### Overview

Close to a million New Yorkers live in the floodplain today, a risk that Hurricane Sandy awakened us to in 2012. This risk will increase over time with sea levels rising, and will be exacerbated by more frequent and powerful coastal storms.

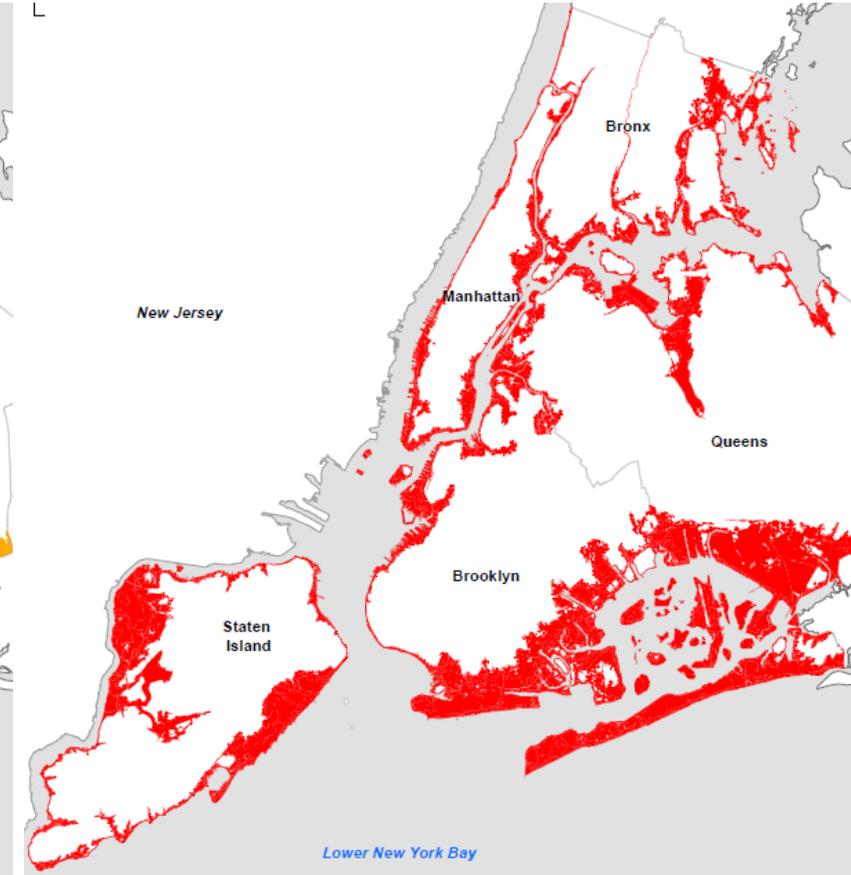
434,500 residents → high-risk zones  
+ 348,000 residents → moderate-risk zones



Hurricane Sandy inundated beyond the high-risk zone (~half of lots in the moderate-risk zone)



This area will likely become the future high-risk zones



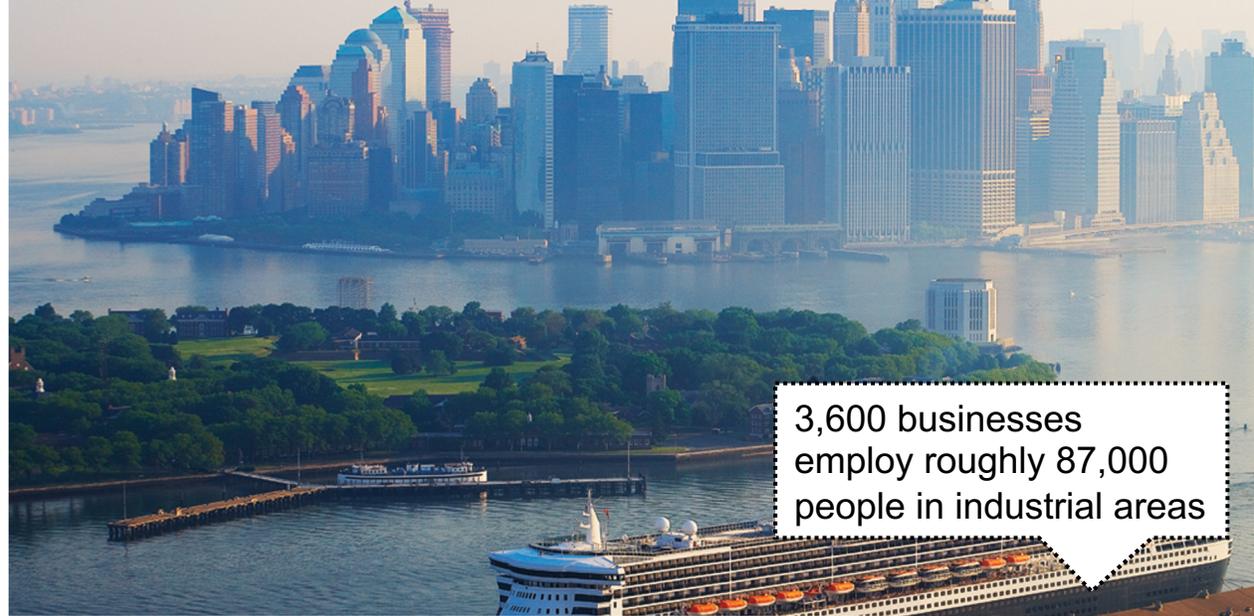
1% annual chance floodplain (FEMA)\*   
0.2% annual chance floodplain (FEMA)\* 

Hurricane Sandy Storm Surge 

2050s 1% Annual Chance Floodplain (NPCC) 



Close to 20% of the city's land area is in the floodplain

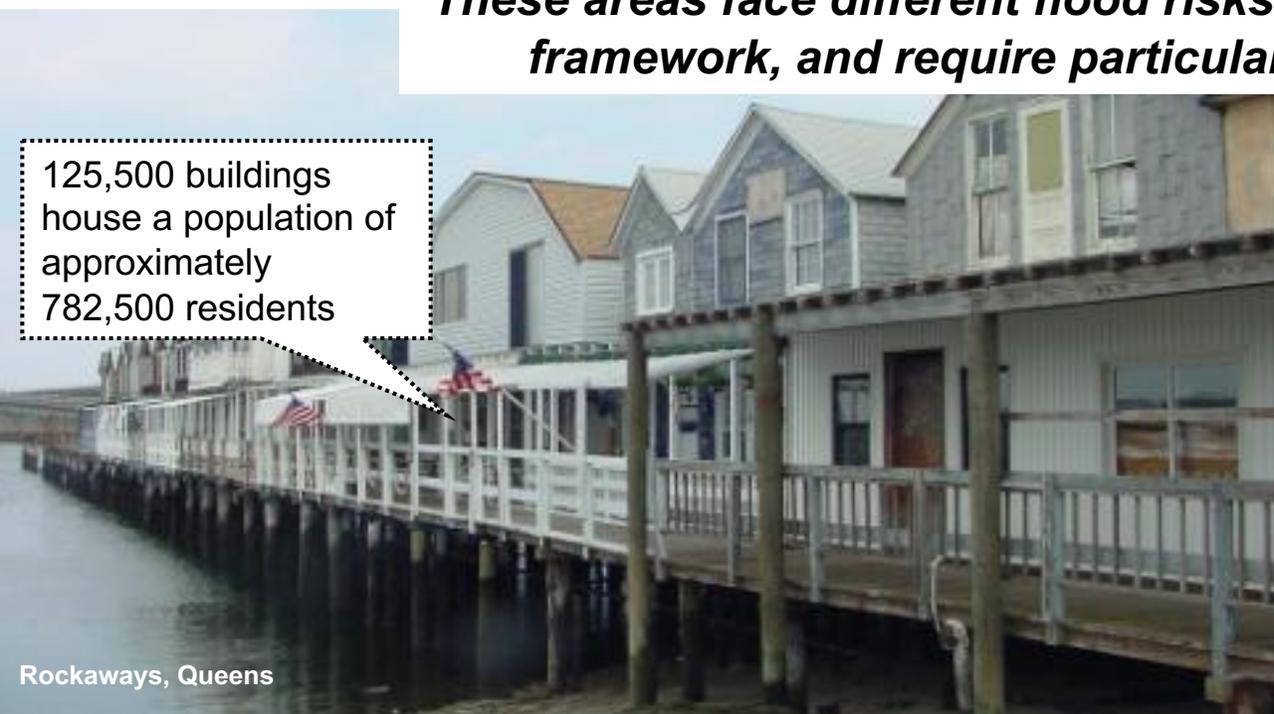


3,600 businesses employ roughly 87,000 people in industrial areas

Alley Pond Creek, Queens

Upper Bay

***The floodplain is diverse. These areas face different flood risks and issues with the current regulatory framework, and require particular strategies to make them resilient.***



125,500 buildings house a population of approximately 782,500 residents

Rockaways, Queens



14,500 businesses employ close to 270,000 people in commercial corridors

Williamsburg, Brooklyn

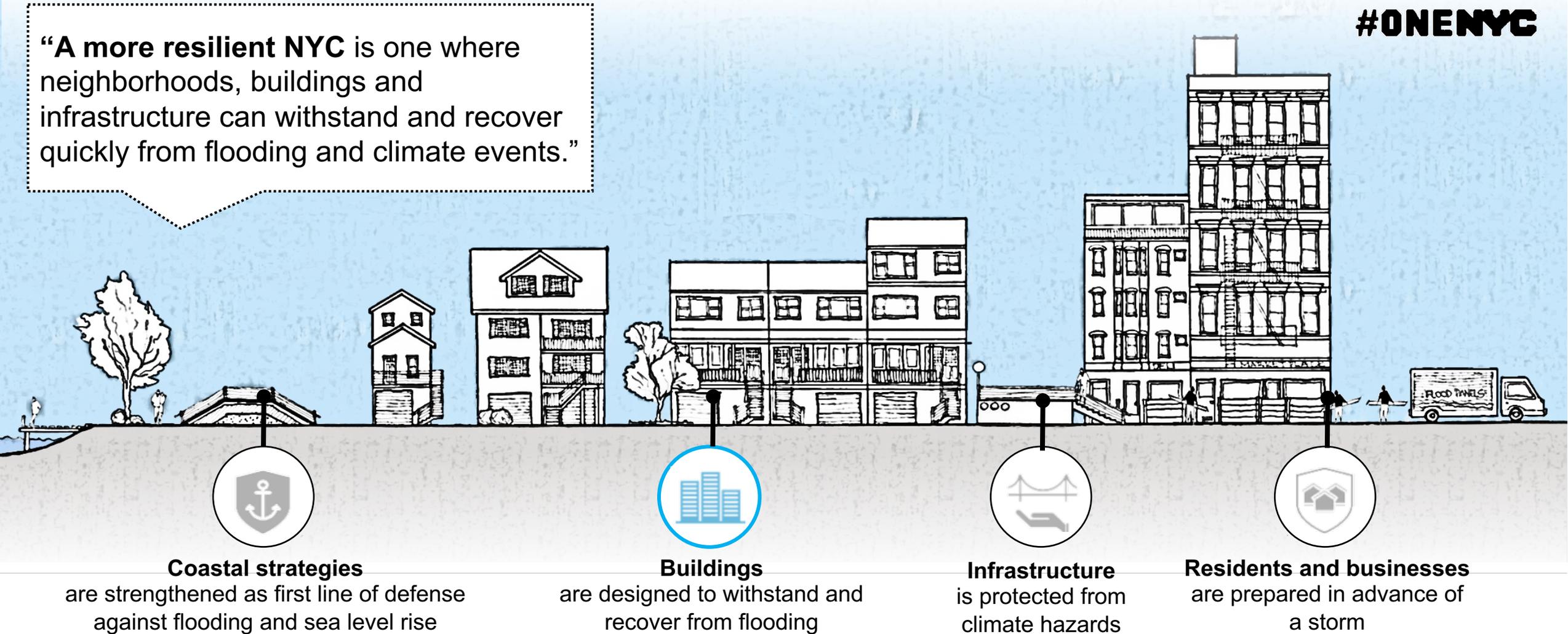
## Introduction

### Overview

The City's overall resiliency strategy will involve a multi-tiered, complementary approach. Zoning for Coastal Flood Resiliency (ZCFR) is a central tool in encouraging resilient buildings.

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

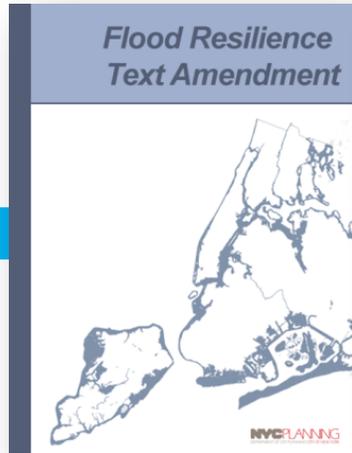
**#ONENYC**



## Introduction

### Overview

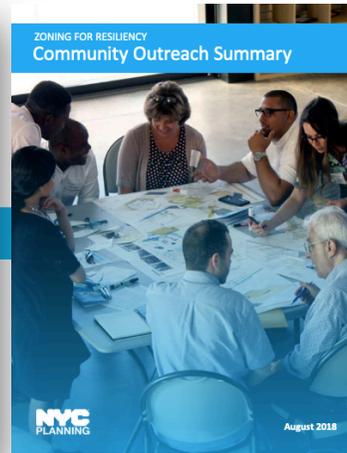
ZCFR would make temporary zoning rules adopted post-Sandy permanent, to help buildings meet the flood-resistant construction requirements in Appendix G of the Building Code. It would also improve upon such rules, based on lessons learned during outreach.



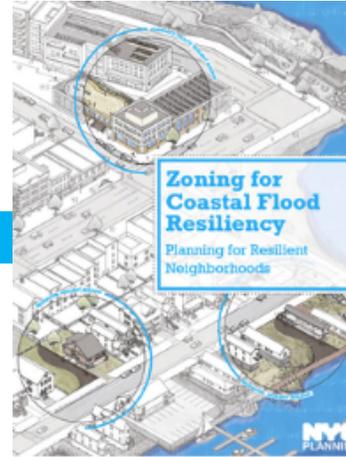
**2013  
Flood Text**  
*Expires 1 year  
after the adoption  
of the new FIRMs*



**2015  
Recovery  
Text**  
*Expired on  
July 23, 2020*



**2016-2018  
Outreach  
Summary**  
*Released on  
August, 2018*

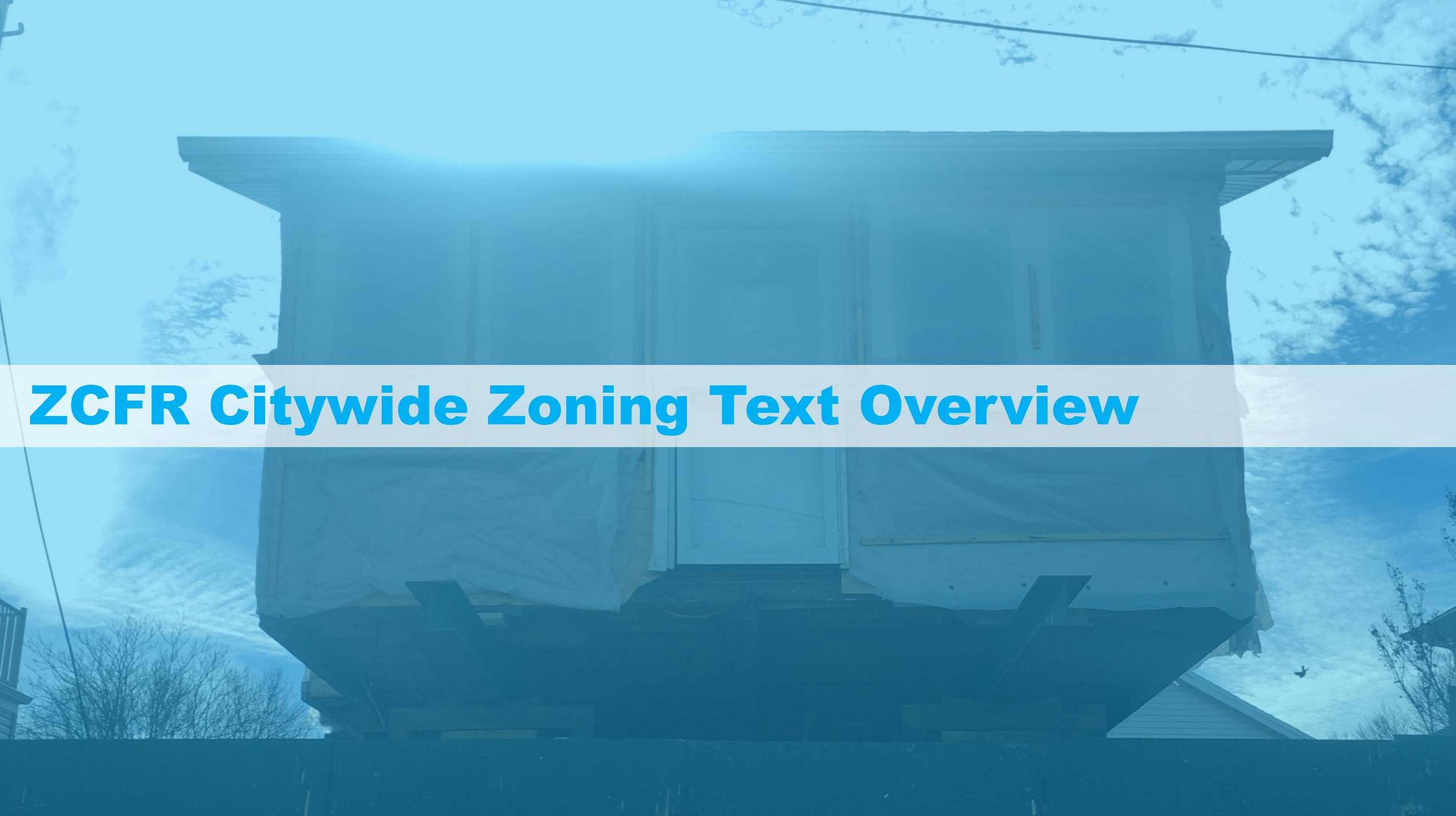


**2019  
Preliminary ZCFR  
Recommendations**  
*Released on  
May, 2019*

**ZCFR would provide the option to design or otherwise retrofit buildings to:**

- Reduce damage from future coastal flood events
- Be resilient in the long-term by accounting for climate change
- Potentially save on long-term flood insurance costs

**ZCFR would also set a framework for emergency situations—whether they be like Hurricane Sandy, or COVID-19.**



# **ZCFR Citywide Zoning Text Overview**

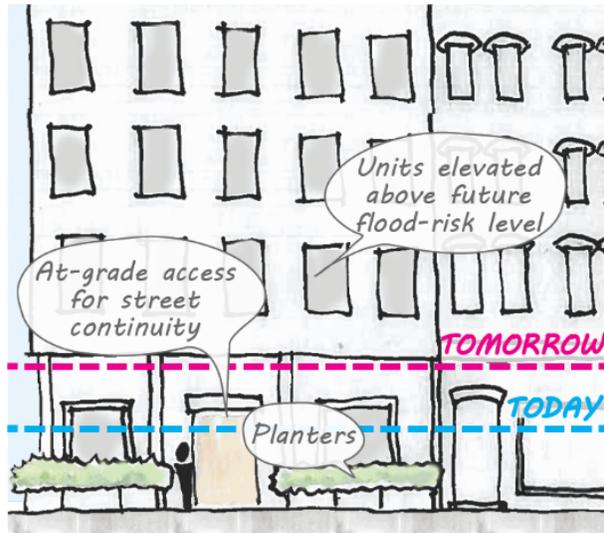
## Proposal

### Overview

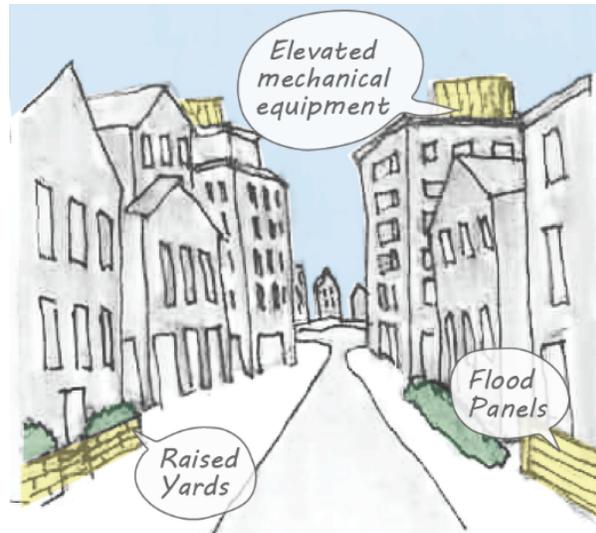
ZCFR would provide permanent relief to floodplain properties, focusing on long-term resiliency by removing impediments for buildings to exceed minimum flood-resistant construction requirements, and by allowing neighborhoods to be adapted over time.



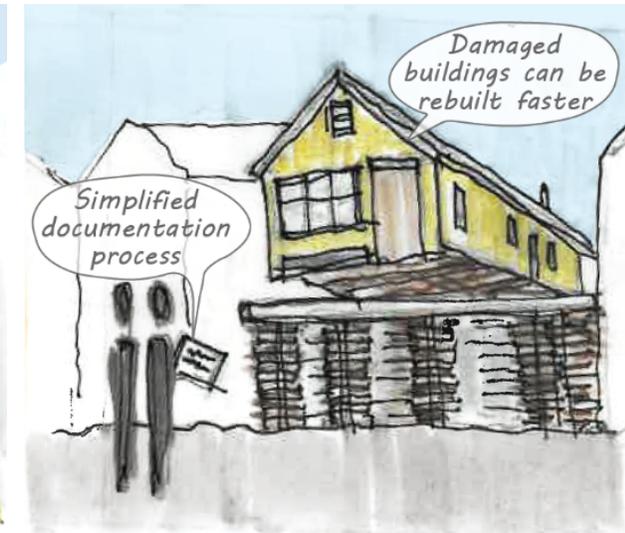
Encourage resiliency throughout the current and future floodplains



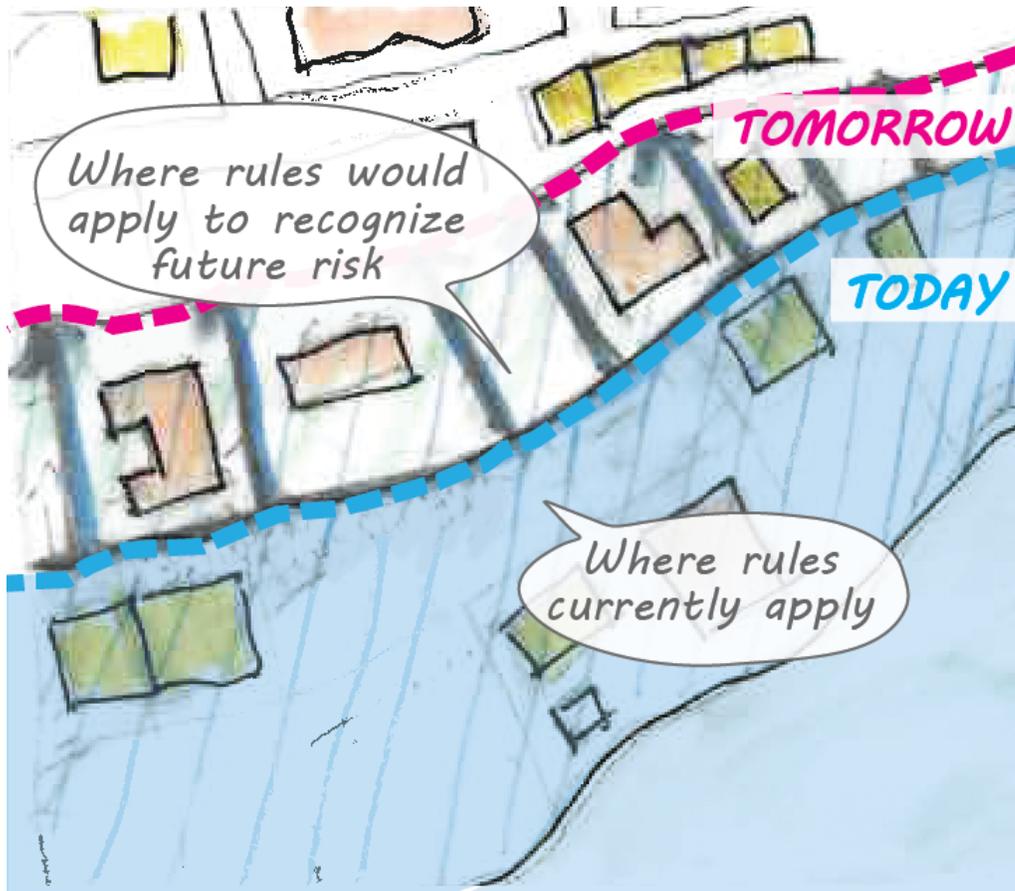
Support long-term resilient design of all building types



Allow for adaptation over time through incremental retrofits



Facilitate future recovery by reducing regulatory obstacles



# Goal 1

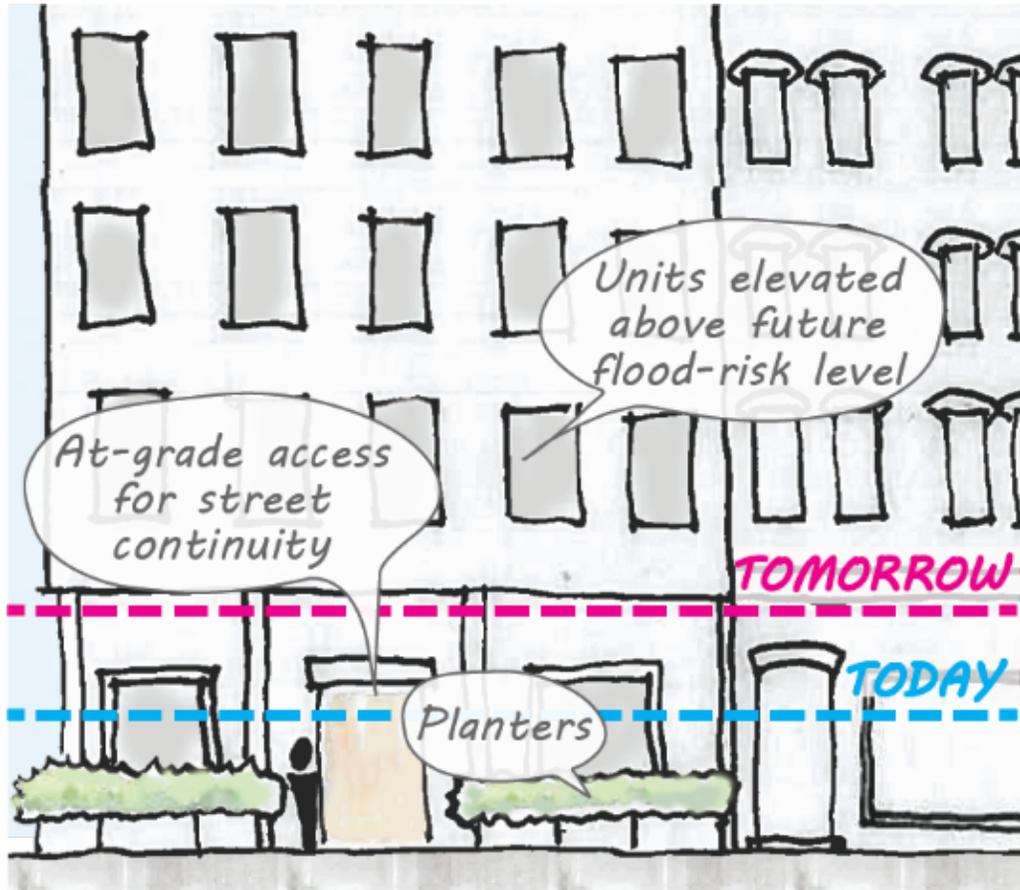
Encourage resiliency throughout the current and future floodplains

Applicability.....

## Applicability

Where rules currently apply

By **expanding the applicability** of the optional rules, building owners throughout the floodplain **would be able to proactively incorporate resiliency improvements in their buildings**



## Goal 2

Support long-term resilient design of all building types

Building Envelope.....

Ground Floors.....

Streetscapes.....

Special Conditions.....

Discretionary Actions.....

## Building Envelope

Optional zoning regulations would allow building owners to **physically elevate habitable spaces and other building support features** above expected flood elevations



Habitable spaces are elevated

Flood Elevation



## Ground Floors

Ground-floor regulations would incentivize the floodproofing of ground floors, encourage active uses to be kept at the street level and promote internal building access



Internal access is provided & the ground-floor is floodproofed

## Streetscape

When these allowances are used, buildings would have to comply with “flood-resistant construction standards” and a new set of streetscape requirements



The design is improved



The building is flood-resistant

Flood Elevation

## Special Conditions

Additional flexibility would be available to **special conditions common in older neighborhoods**, so that those buildings can also become resilient

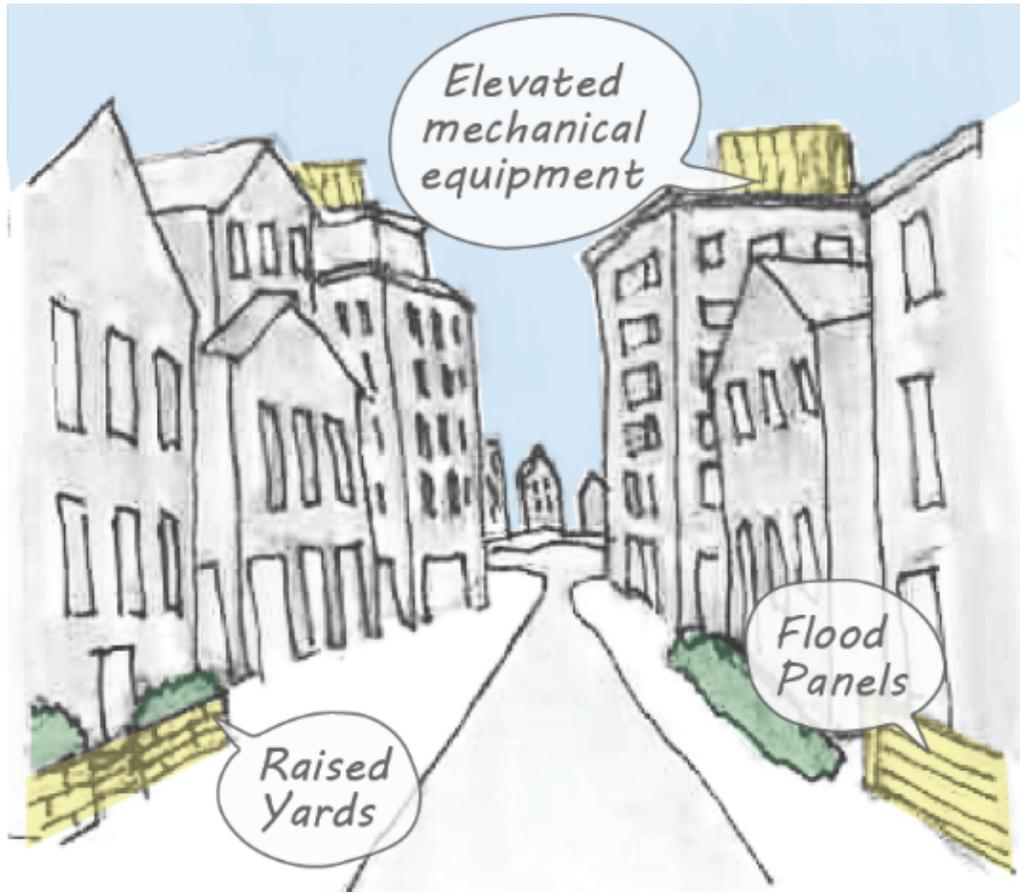
✓ Homes on small lots can be resilient

## Discretionary Actions

Discretionary options would be available to address **unique situations to ensure that all buildings and neighborhoods can be resilient**



**All neighborhoods can be resilient**



# Goal 3

Allow for adaptation over time through incremental retrofits

- Mechanical Equipment.....
- Support Spaces.....
- Flood Protection Measures.....
- Waterfront Sites.....

## Mechanical Equipment

Mechanical equipment would have more options to be placed above flood levels either on open areas or on roofs in lieu of basements or cellars (which make them more vulnerable)

Building owners that face regulatory obstacles or cost constraints to make their buildings fully comply with “flood-resistant construction standards” would still have the option to make them more resilient

## Support Spaces

Key spaces that are often located within basements or cellars, especially those that help support businesses such as offices or storage rooms, would be able to be located above flood levels



**Flood  
Protection Measures**

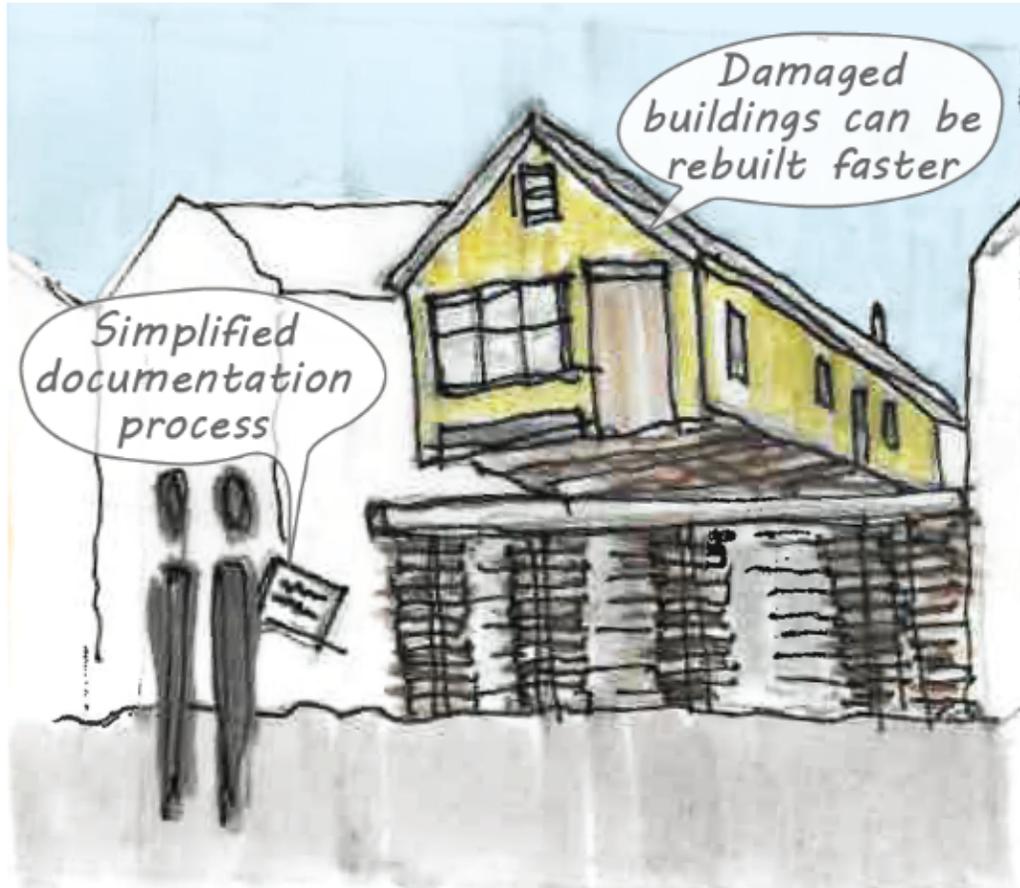


Flood protection measures would be able to be as installed either when they are required for compliance with flood-resistant construction standards or where alternate flood protection strategies may be warranted

## Waterfront Sites

Waterfront sites would be able to better accommodate contemporary resiliency measures and address sea level rise





## Goal 4

### Facilitate future recovery by reducing regulatory obstacles

Power Systems.....

Accessibility.....

Vulnerable Populations.....

Disaster Recovery .....

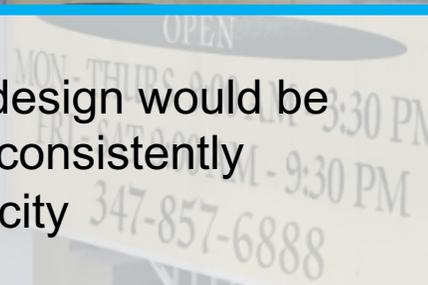
## Power Systems

Hurricane Sandy showed that areas affected by the storm went beyond the floodplain and that the regulations which would facilitate recovery would be useful for other types of disasters

More options to locate power systems on lots throughout the city would make it easier for properties to provide back-up energy, especially in the event of a disaster

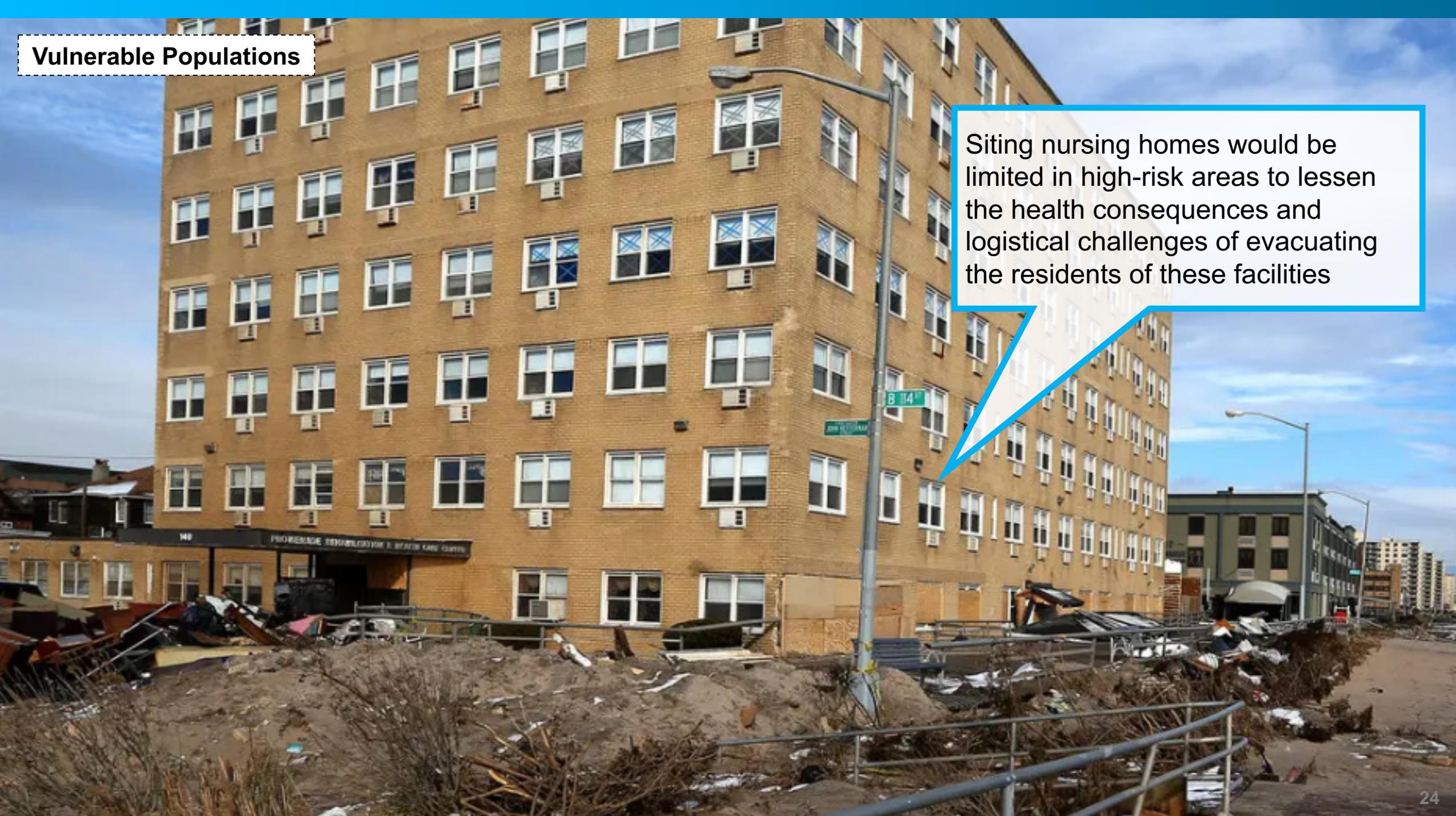
## Accessibility

An accessible design would be better enabled consistently throughout the city



## Vulnerable Populations

Siting nursing homes would be limited in high-risk areas to lessen the health consequences and logistical challenges of evacuating the residents of these facilities



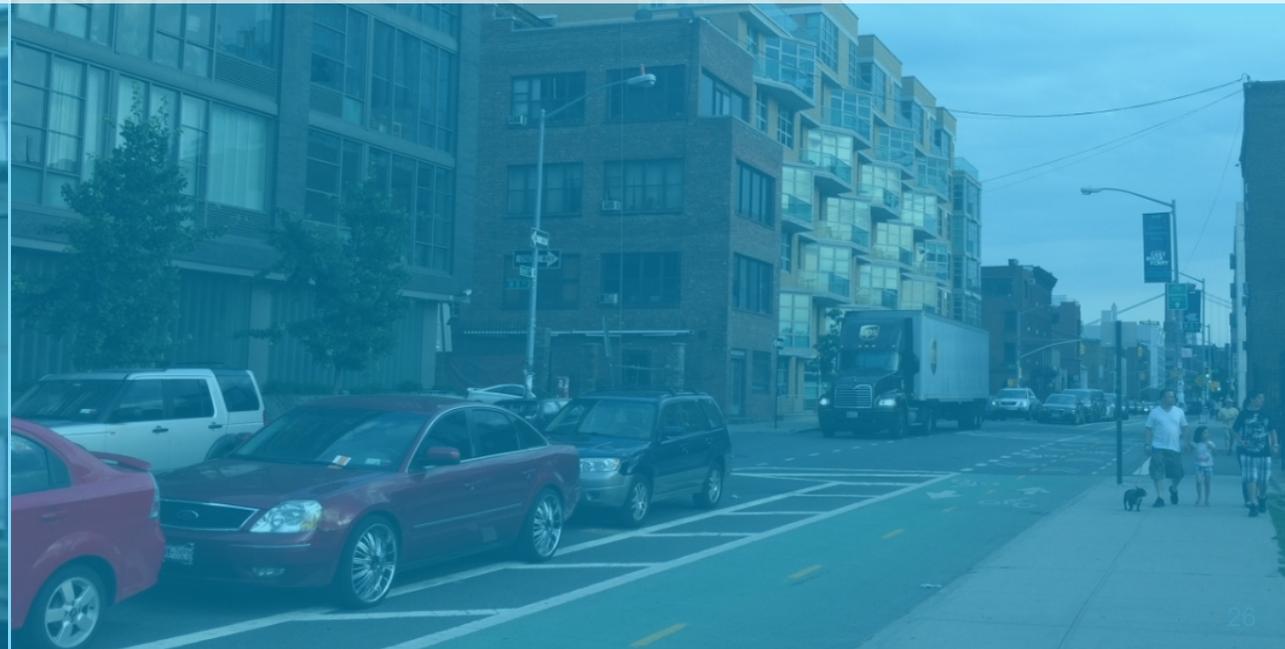
## Disaster Recovery

Rules that could be made available to facilitate the recovery process from future disasters would be included, some of which would be implemented now to help address the COVID-19 pandemic and its associated economic effects

Hurricane Sandy demonstrated that a lengthy process to update zoning regulations can present obstacles to the necessarily fast-paced disaster response



# Summary of Recommendations



## Public Review

### Timeline

The citywide text amendment is a non-ULURP item, and it was referred out on October 19, 2020 to all Community Boards, Borough Boards and Borough Presidents. However, it followed the ULURP timeline alongside the three resiliency local actions.



## Zoning for Coastal Flood Resiliency

Citywide Text Amendment

+

## Local Actions

Gerritsen Beach, BK  
Sheepshead Bay, BK  
Old Howard Beach, QN

**Referral**  
October 19, 2020

**Community Boards**  
**Borough Presidents & Boards**

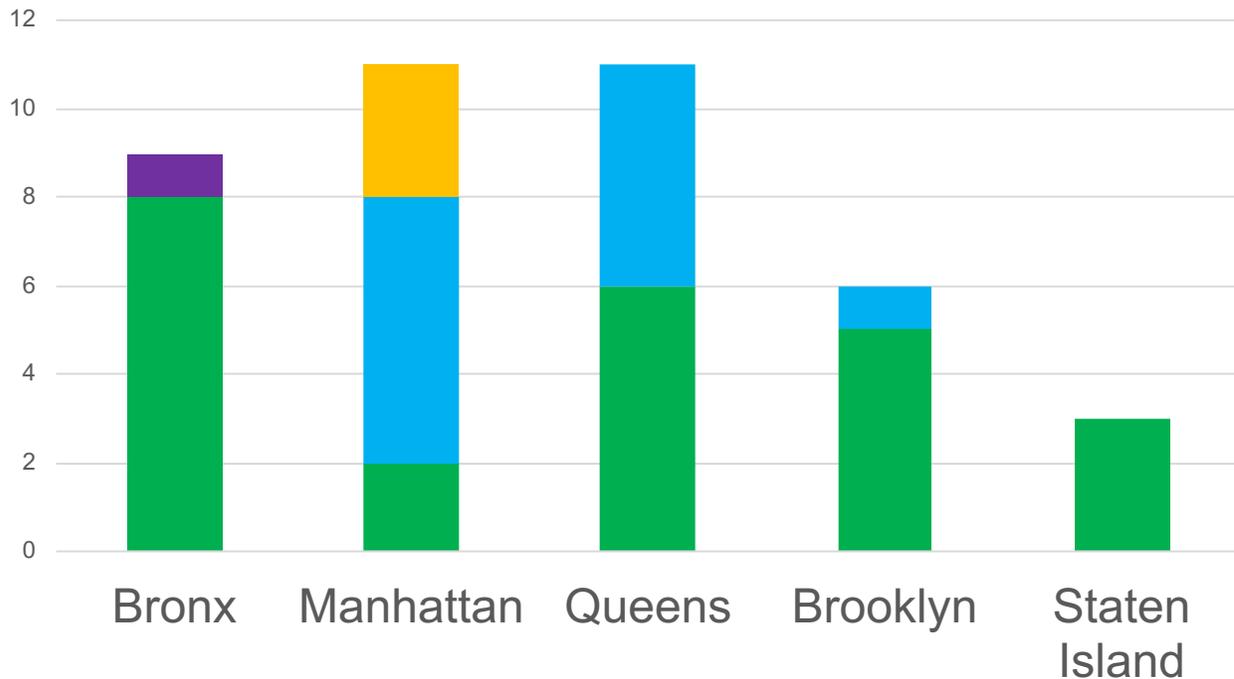
**City Planning Commission**

**City Council**

**Mayor**  
(Spring 2021)

CPC Public Hearing - Feb 3, 2021

## Community Boards



## Borough Presidents

- **The Bronx:** *No vote*
- **Manhattan:** “Favorably with Conditions”
- **Queens:** “Favorably with Conditions”
- **Brooklyn:** *No vote (Deferred to the Borough Board)*
- **Staten Island:** “Favorably”

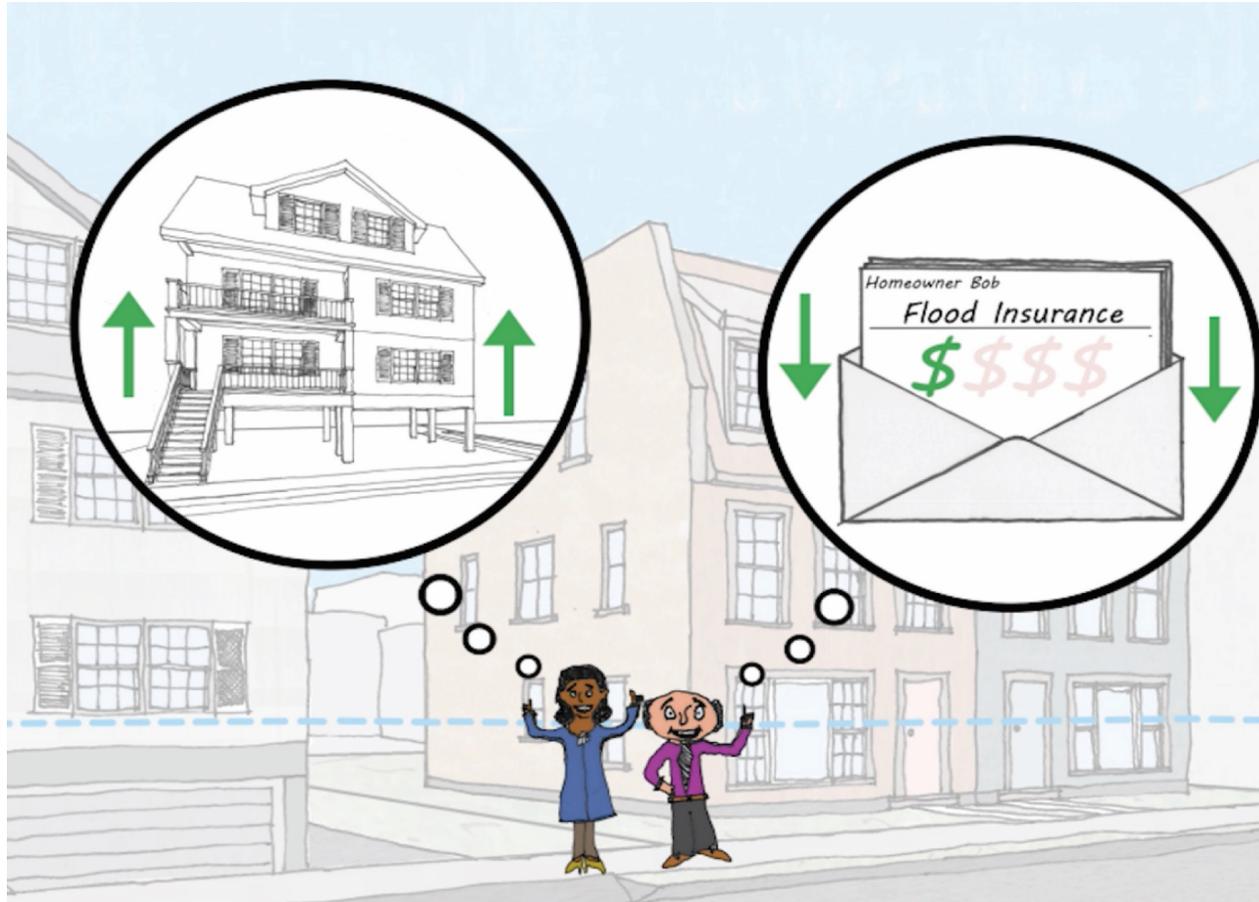
## Borough Boards

- **The Bronx:** “Favorably”
- **Manhattan:** “Favorably with Conditions”
- **Queens:** “Favorably with Conditions”
- **Brooklyn:** “Favorably”
- **Staten Island:** *No vote*

Votes

Overview

Several recommendations include statements in support of the citywide text amendment, recognizing that the proposed changes are one helpful piece of the overall strategy to tackle climate change and that they help address coastal flooding.



- ✓ Businesses and residents will have more flexibility to prepare for future storm surge;
- ✓ Example of collaboration between City Agencies;
- ✓ Proposed rules will allow for a more flood-resistant community
- ✓ Changes in the community due to resiliency improvements are outweighed by the benefits for those that are most vulnerable to flooding.

**Conditions**

**Overview Non-Zoning**

Many conditions received during the Public Review process do not directly relate to zoning. Much of the conditions that cut vastly across the Boroughs in fact highlight that zoning is key but not the sole tool required to achieve resiliency.



\*Staten Island did not submit conditions

## Conditions

### Overview Zoning

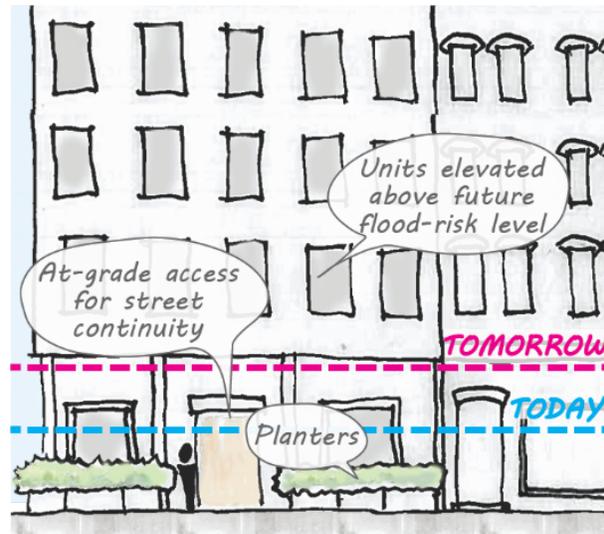
The most commonly raised issues in public review that more directly relate to the zoning proposal are listed below and organized by the project's goals and main categories of rules.

## Summary of zoning items



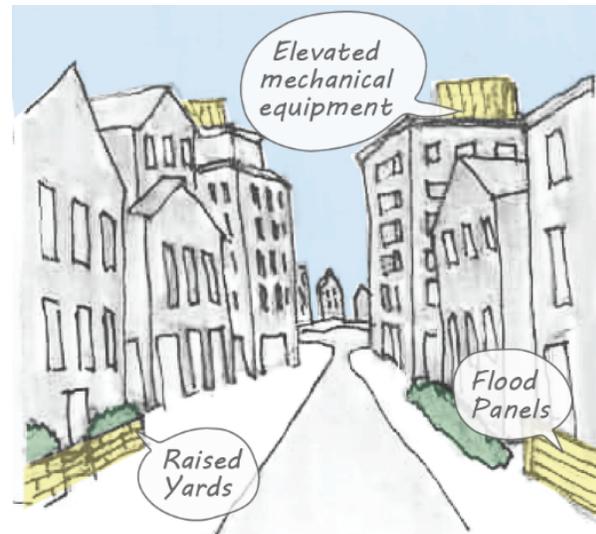
**Encourage resiliency throughout the current and future floodplains**

- Applicability



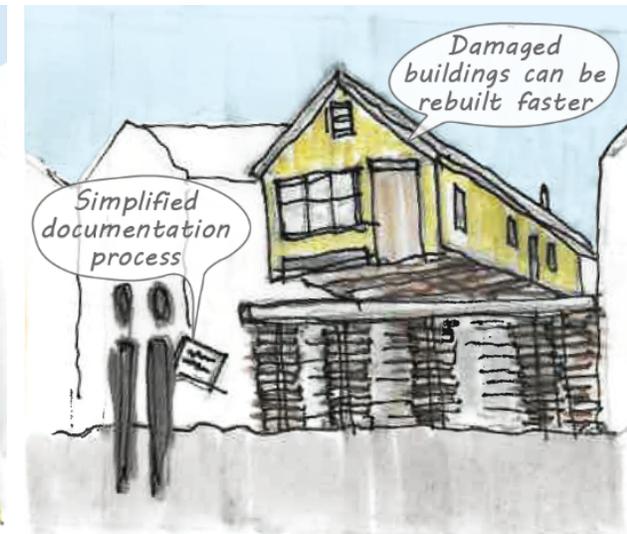
**Support long-term resilient design of all building types**

- Building Envelope
- Ground Floors
- Streetscapes
- Parking
- Special Conditions
- Discretionary Actions



**Allow for adaptation over time through incremental retrofits**

- Mechanical equipment
- Support Spaces
- Flood Protection Measures
- Waterfront Sites



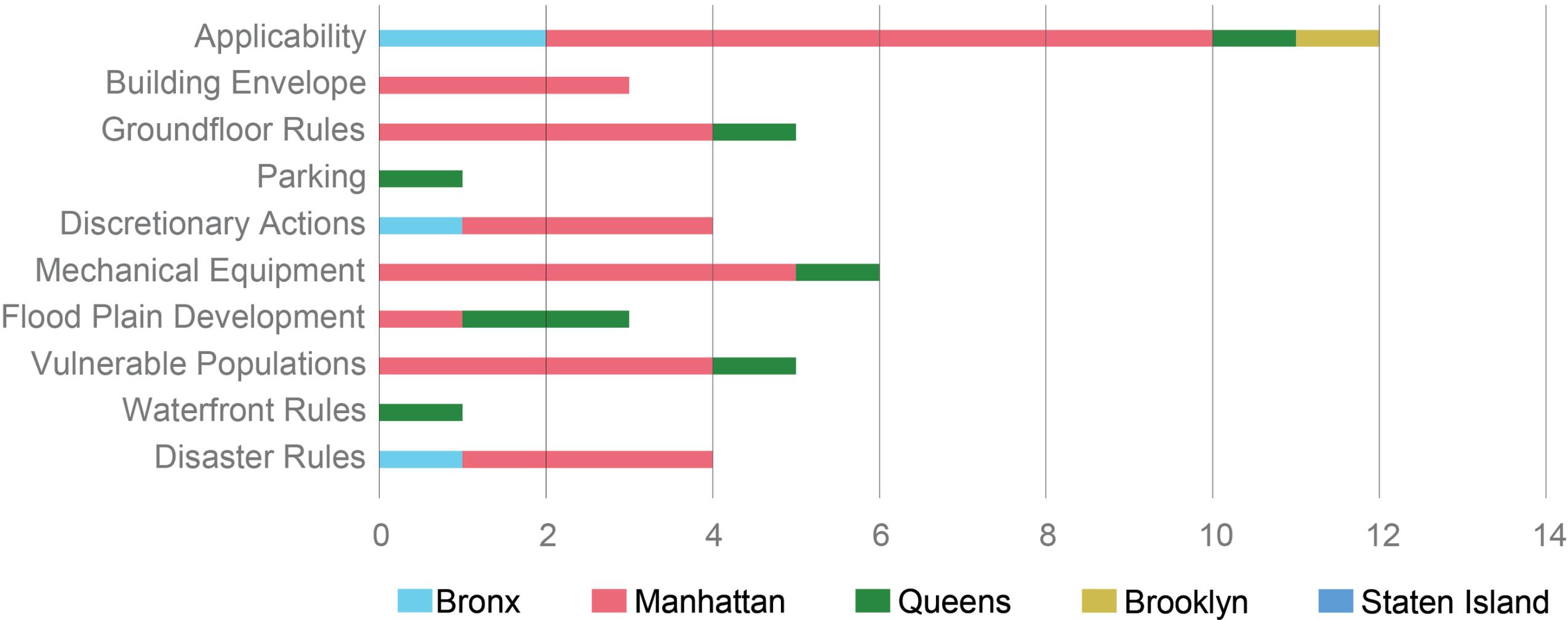
**Facilitate future recovery by reducing regulatory obstacles**

- Power Systems
- Accessibility
- Vulnerable Populations
- Disaster Recovery

**Conditions**

**Overview Zoning**

Most conditions come from Manhattan, and relate to “Applicability” of the text amendment and those that relate to the “Ground Floor Regulations”, “Building Envelope” and “Mechanical Equipment” rules.



## RECOMMENDATIONS

22

## CB'S/BB'S/BP'S

BK CB 10  
BX CB 8  
BX CB 10  
MN BB  
MN BP  
MN CB 2  
MN CB 3  
MN CB 4  
MN CB 6  
MN CB 7

MN CB 11  
QN CB 14

## TOPICS

1 ABOUT FEMA MAPS CHANGING  
4 ABOUT SPECIAL DISTRICTS  
4 ABOUT HISTORIC DISTRICTS/LANDMARKS  
1 ABOUT FLOOR AREA  
3 ABOUT NEW/EXISTING BUILDINGS  
2 ABOUT POLICY CONSISTENCY  
1 ABOUT DEVELOPMENTS IN THE FLOODPLAIN  
1 ABOUT MAINTAINING EXISTING RULES  
3 ABOUT FLOOD MAPS  
2 ABOUT LOCAL ACTION REQUESTS

Recommendations

Building Envelope

## RECOMMENDATIONS

3

## CB'S/BB'S/BP'S

MN BB  
MN CB 1  
MN CB 4

## TOPICS

3 ABOUT HEIGHT

**Recommendations**

**Ground Floor**

**RECOMMENDATIONS**

**5**

**CB'S/BB'S/BP'S**

**MN BB  
MN BP  
MN CB 1  
MN CB 4  
QN CB 10**

**TOPICS**

**5 ABOUT FLOOR AREA**

Recommendations

Parking

## RECOMMENDATIONS

1

## CB'S/BB'S/BP'S

QN CB 10

## TOPICS

1 ABOUT PARKING

**Recommendations**

**Discretionary Actions**

## RECOMMENDATIONS

**4**

## CB'S/BB'S/BP'S

**BX CB 8  
MN BB  
MN CB 1  
MN CB 2**

## TOPICS

**4 ABOUT DISCRETIONARY ACTIONS**

## RECOMMENDATIONS

6

## CB'S/BB'S/BP'S

MN BB  
MN CB 5  
MN CB 8  
MN CB 11  
QN CB 1

## TOPICS

5 ABOUT MEP  
1 ABOUT PERMITTED OBSTRUCTIONS

Recommendations

Important Spaces

## RECOMMENDATIONS

1

## CB'S/BB'S/BP'S

MN CB 6

## TOPICS

1 ABOUT AFFORDABLE HOUSING AND OPEN SPACE

Recommendations

Waterfront Rules

## RECOMMENDATIONS

1

## CB'S/BB'S/BP'S

QN CB 1

## TOPICS

1 ABOUT WATERFRONT RULES

## RECOMMENDATIONS

1

## CB'S/BB'S/BP'S

MN CB5

## TOPICS

1 ABOUT GENERATORS

## RECOMMENDATIONS

5

## CB'S/BB'S/BP'S

MN BB  
MN CB 1  
MN CB 2  
MN CB 3  
QN CB 14

## TOPICS

5 ABOUT VULNERABLE POPULATIONS

**Recommendations**

**Disaster Rules**

## RECOMMENDATIONS

**5**

## CB'S/BB'S/BP'S

**BX CB8**

**MN BB**

**MN CB2**

**MN CB3**

## TOPICS

**4 ABOUT THE FRAMEWORK**

**1 ABOUT DISCONTINUANCE RULES**

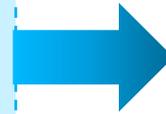
## Environmental Review

### DGEIS

A Draft Generic Environmental Impact Statement (DEIS) was conducted with the Department of City Planning (DCP) acting on behalf of the City Planning Commission (CPC) as the Lead Agency.

A Notice of Completion of a Draft Generic Environmental Impact Statement (DEIS) was issued on October 16, 2020.

Comments can be received by February 16, 2021.



The DEIS identified the potential for unmitigated impacts for Historic and Cultural Resources and Hazardous Materials.

These impacts are typical for Generic actions (common for citywide text amendments)