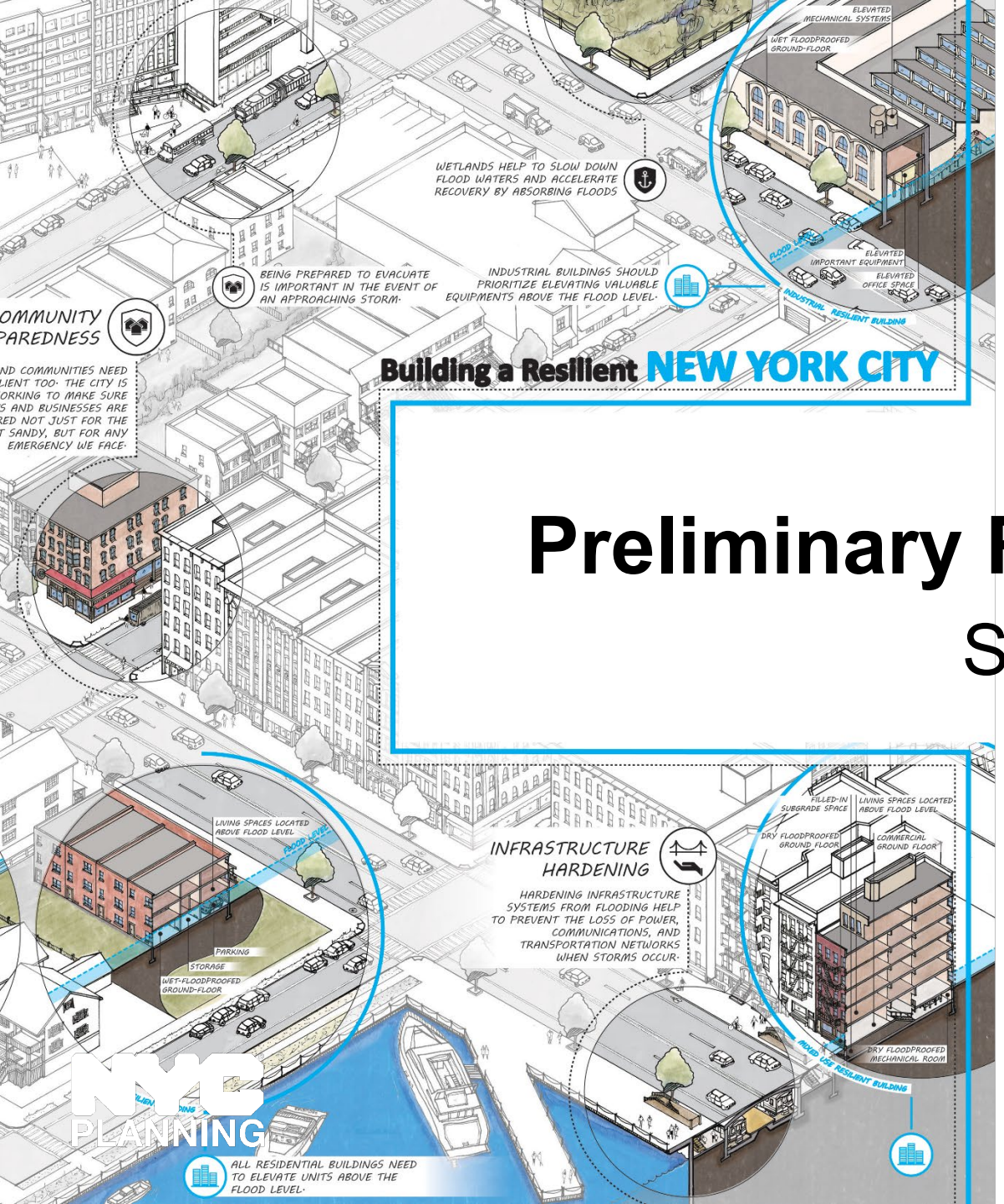


Zoning for Coastal Flood Resiliency

Preliminary Recommendations

Summary

NYC PLANNING

Today's Agenda

1. **Introduction |** Context

2. **Outreach Process |** Zoning issues identified by communities

3. **Preliminary Recommendations |** Summary

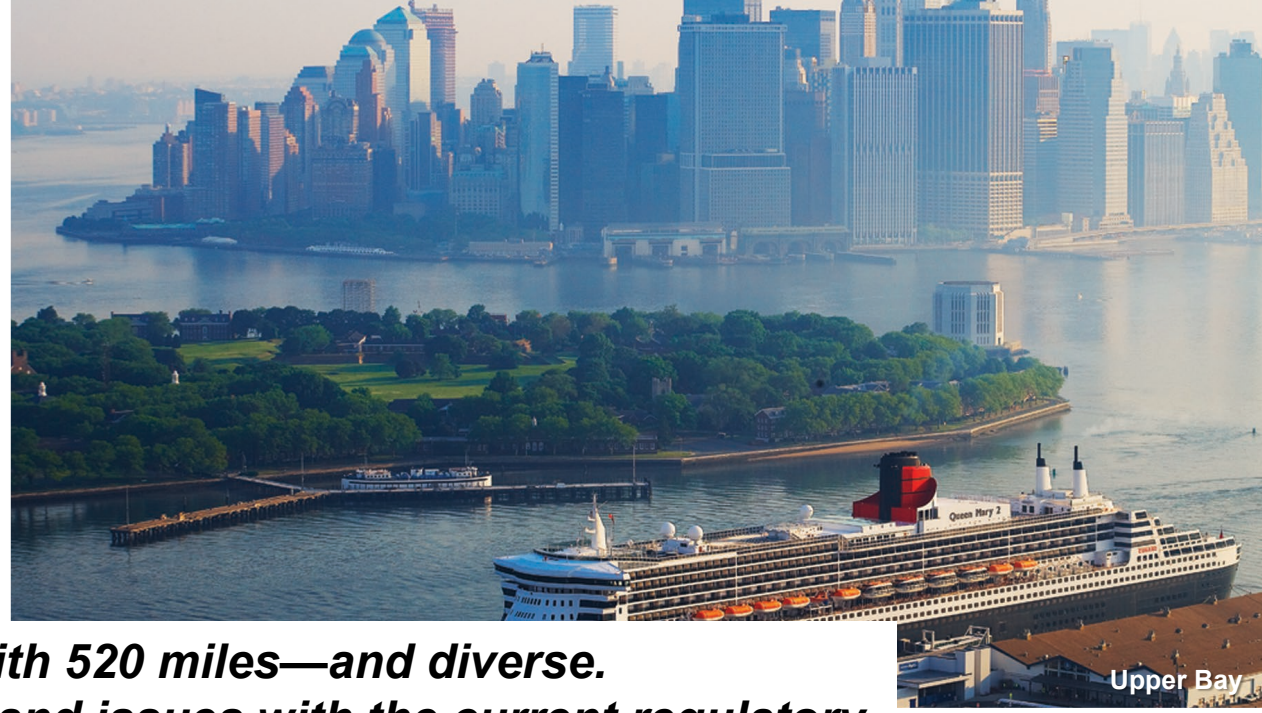
4. **Project Timeline & Outreach Resources**

Zoning for Coastal Flood Resiliency

1. Introduction

Context

Alley Pond Creek, Queens



Upper Bay

The waterfront is large—with 520 miles—and diverse. These areas face different flood risks and issues with the current regulatory framework, and require particular strategies to make them resilient.

Rockaways, Queens

Williamsburg, Brooklyn

FEMA Flood Map
Flood Risk in Manhattan

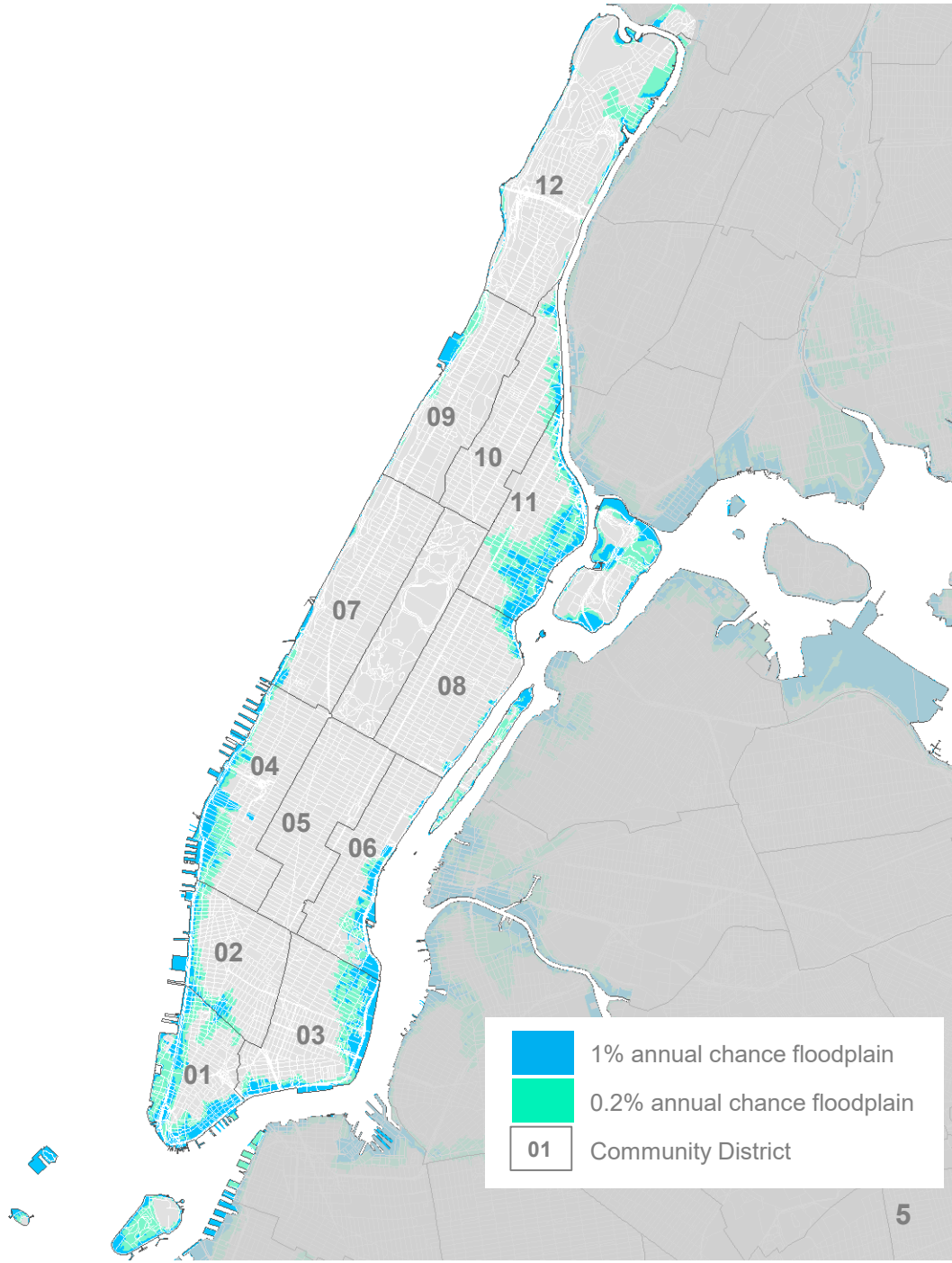
NYC's flood risk is high.

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

The vast majority of the floodplain is already developed.

	1% annual chance floodplain (FIRM+ PFIRM)	0.2% annual chance floodplain (FIRM+ PFIRM)	TOTAL
Citywide Total # of Lots	**65,582**	**36,723**	**102,305**
Manhattan Total # of Lots	**2,724**	**2,083**	**4,807**

	1% annual chance floodplain (FIRM + PFIRM)	0.2% annual chance floodplain (FIRM+PFIRM)	TOTAL
Citywide Total # of Buildings	**80,907**	**44,636**	**125,539**
Manhattan Total # of Buildings	**3,461**	**2,276**	**5,737**



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FEMA Flood Map

Flood Risk in Manhattan

Buildings in the 1% and 0.2% Floodplains: Manhattan Community District 12

Buildings in Floodplain

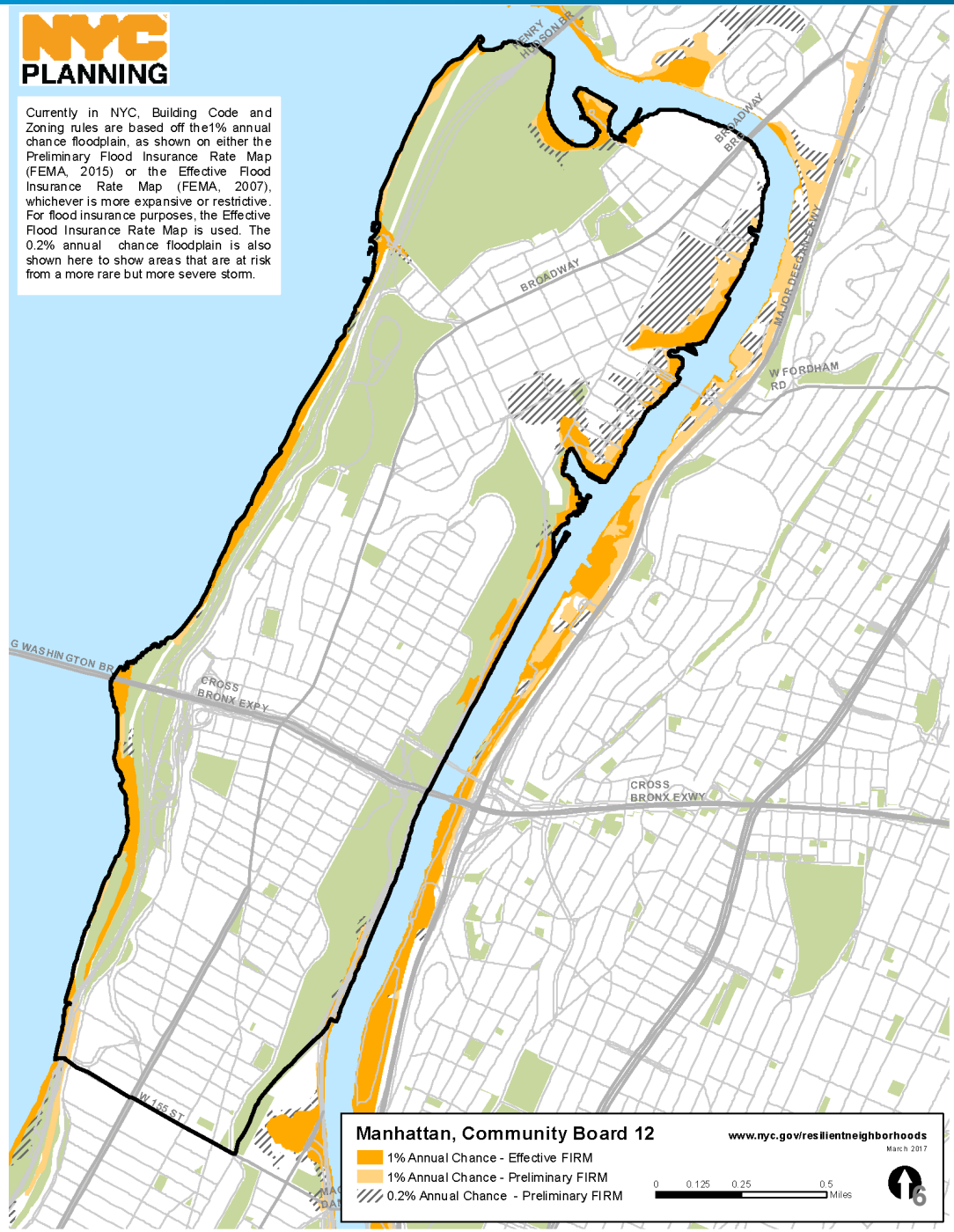
240

buildings are in the 0.2% Annual Chance floodplain

Bungalow	0
Detached Homes	0
Semi Detached Homes	0
Attached	0
Campus Complex | 1.3 %	3
Multi Family Buildings | 38.3 %	92
Mixed Use Buildings | 5.8 %	14
Commercial Only | 14.2 %	34
Community Facility | 8.3 %	20
Manufacturing | 3.3 %	8
Other | 28.7 %	69

Total Buildings ▪ Within Floodplain

Manhattan 12: 3%
of buildings are in floodplain



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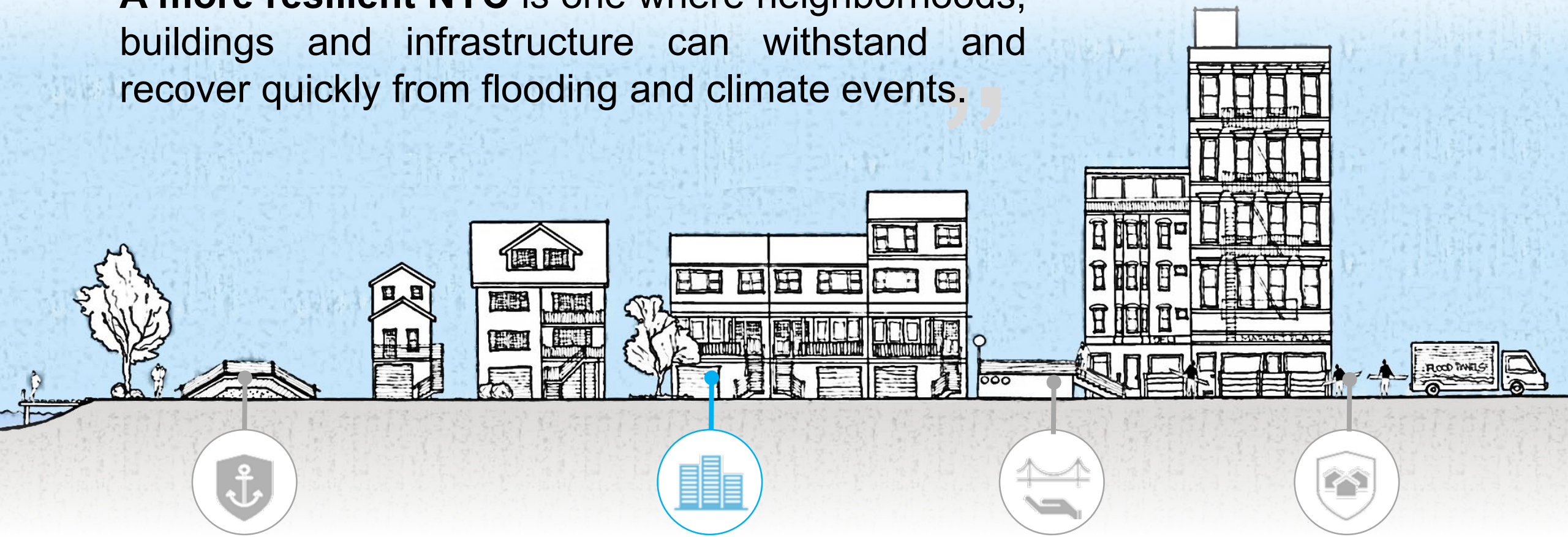
#ONENYC

"**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

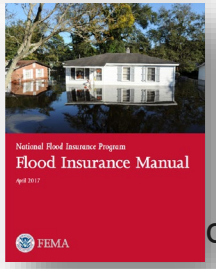
Residents and businesses
are prepared

How are buildings in the floodplain regulated?

FEMA

Flood Insurance Rate Maps (FIRMs)

Determine **<u>where floodplain regulations apply</u>**



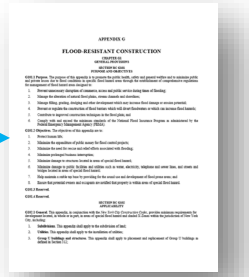
National Flood Insurance Program

<u>Set up Insurance Rates</u> depending on building elevation and other requirements

Construction Standards (ASCE 24)

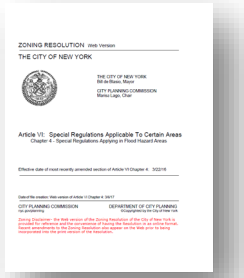
<u>Design minimum construction requirements</u> for flood hazard areas

NYC



Building Code (DOB)

<u>Requires</u> new buildings and substantial improvements to meet FEMA standards (Appendix G)



Zoning Resolution (DCP)

Zoning **<u>accommodates</u>** these regulations and improves neighborhood character

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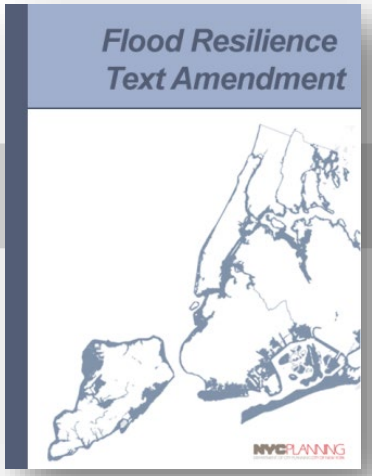
DCP's work since Sandy

Overview of Zoning Text Amendments

After Sandy, DCP issued 2 zoning text amendments that focused on facilitating Sandy's Recovery process

Post-Sandy

SHORT-TERM



2013 – FT1: Temporary provisions that **removed zoning barriers** to allow storm-damaged and new buildings to comply with higher flood elevations and resilient construction requirements (***expires 1 year after adoption of the new FIRMs***)

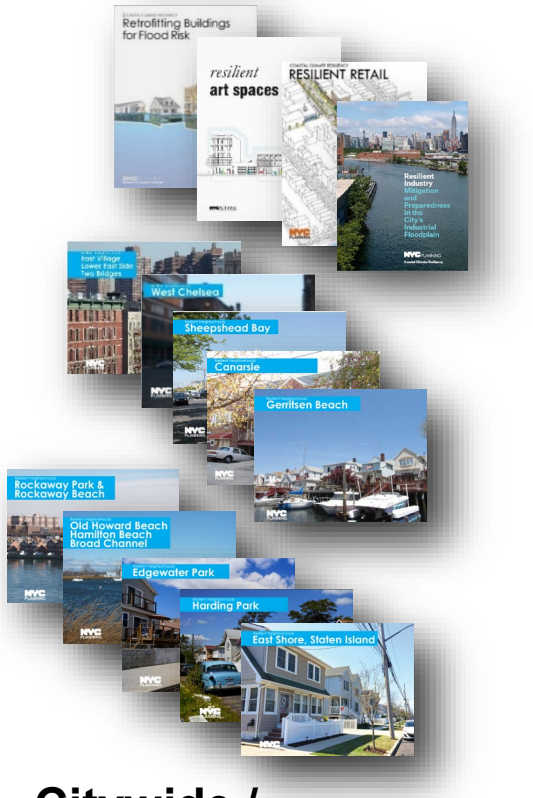
2015 – SRNR: **Simplified documentation requirements** and **removed additional zoning barriers** to give extra relief and accelerate post-Sandy recovery in certain areas that were heavily damaged by Sandy (***expires 2020***)

Facilitate
Sandy Recovery

2. Outreach Process

Zoning issues identified by communities

DCP's work since Sandy
Overview of Outreach



Citywide / Neighborhood Studies
(2014-2017)

Community Outreach
(2016-2018)
Workshops
Learn about other challenges communities faced

We have briefed **2,500** stakeholders at **138** events since August 2016.

- **10** Council Members
- **5** Borough Presidents & Borough Boards
- **35** Community Boards
- **16** Civic Associations
- **12** Non-Profits
- **15** Other Public Events
- **6** Architect Workshops
- **7** Community Workshops

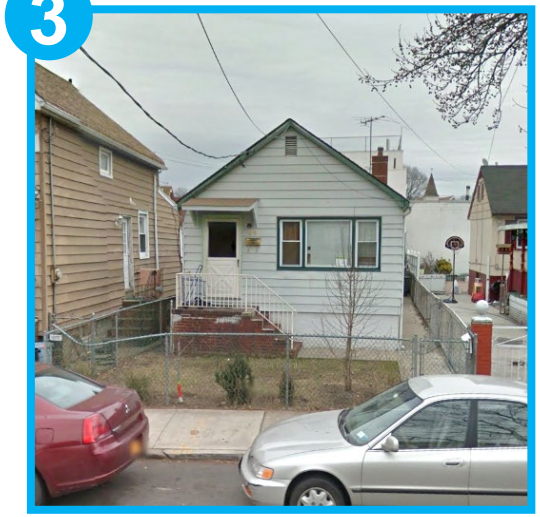
Overview of zoning issues identified by communities

From Community Outreach Summary document

1

2

3



4

5

6

1. More flexibility with height
2. Make the Cottage Envelope permanent
3. Allow homes in industrial areas to recover
4. Need better design controls
5. Keep active uses at the sidewalk level
6. More options for businesses to retrofit

Zoning for Coastal Flood Resiliency

3. Preliminary Recommendations

Summary

Land Use Planning in the Floodplain
Citywide vs. Local Approach

Zoning for Coastal Flood Resiliency

*Where flood **risk is high**, including where sea level rise will lead to **future daily tidal flooding***

*Where **risk** from extreme events **can be managed** through infrastructure and **context can support growth***

Flood risk and Land Use Considerations

Limit Density

In some areas, there is a need to limit future density, as to decrease the exposure to damage and disruption.

Support Planned Density

Adjust zoning to allow all buildings to meet resiliency standards, by providing flexibility and removing zoning obstacles.

Zoning for Flood Resiliency (citywide)

Encourage Density

In other areas, the city can encourage new development, as to increase the resilient building stock.

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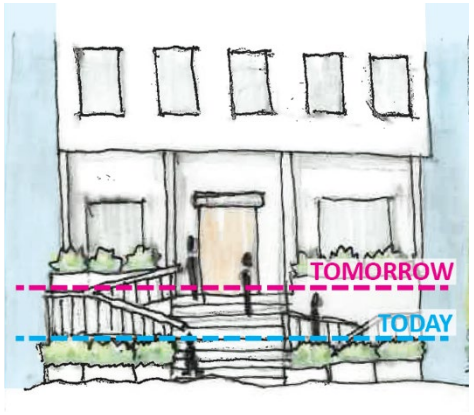
Zoning for Coastal Flood Resiliency

Overview of project's goals

Zoning for Flood Resiliency would provide building owners flexibility to design or otherwise retrofit their buildings to reduce damage from flooding, be resilient in the long-term, save on flood insurance costs, and expedite future-storm recovery.

1. Encourage resiliency throughout the city's current and future floodplains



2. Support long-term resilient design of all building types by offering flexibility in the zoning framework

3. Allow for adaptation over time through partial resiliency strategies

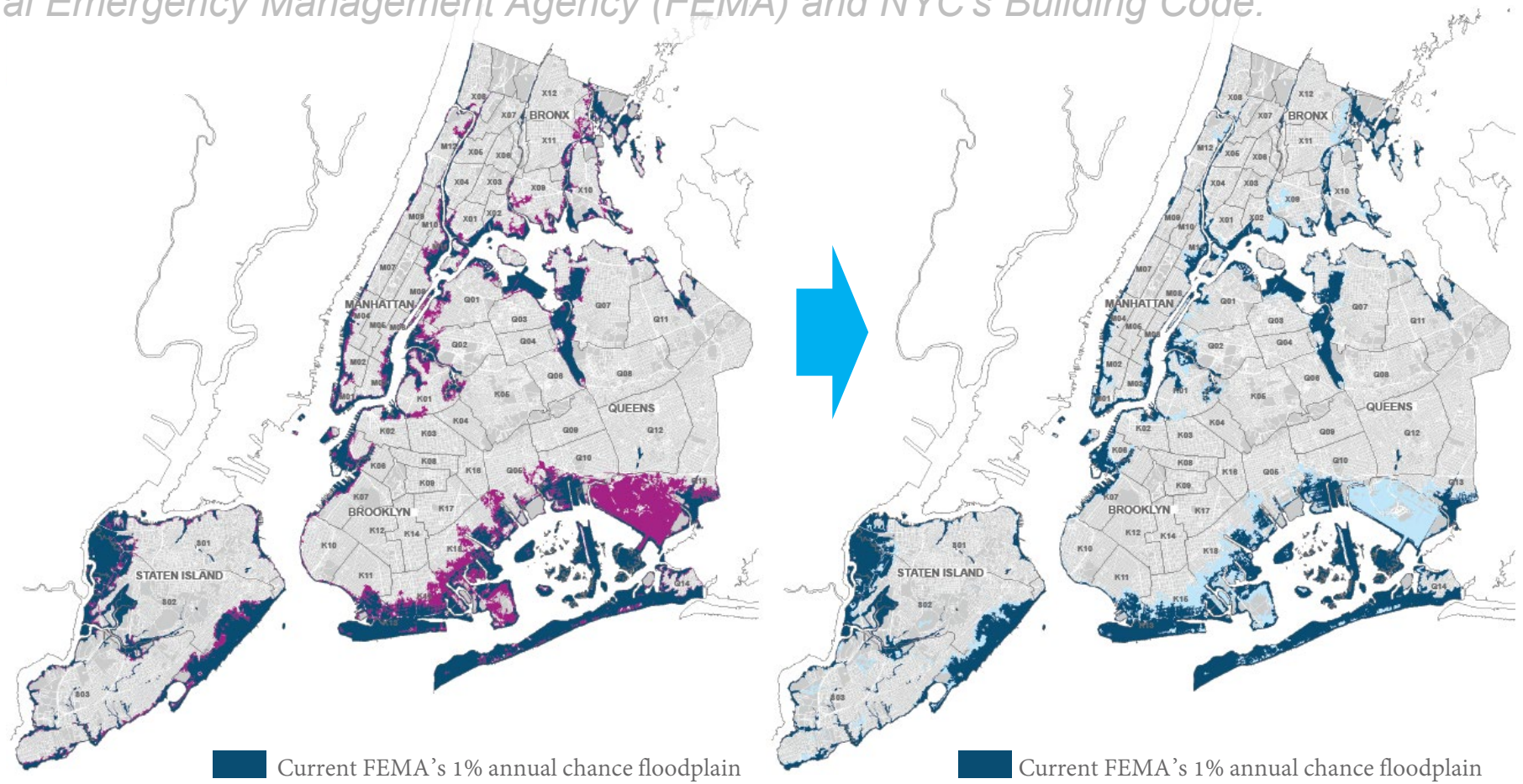
4. Facilitate future-storm recovery by removing regulatory obstacles

Zoning for Coastal Flood Resiliency

An expanded geography

Building owners in both the city's 1% and 0.2% annual chance floodplains would be able to invest in resiliency improvements to fully meet or exceed flood-resistant construction standards, even when these standards are not required by the Federal Emergency Management Agency (FEMA) and NYC's Building Code.

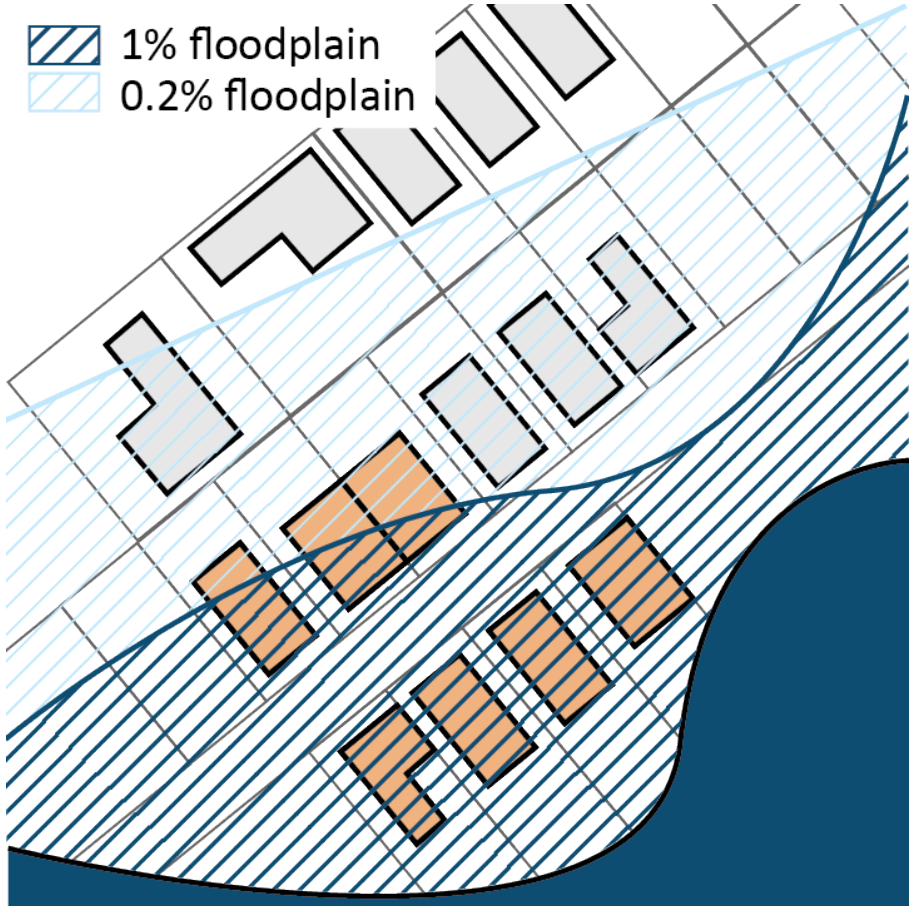
1. Encourage resiliency throughout the city's current and future floodplains



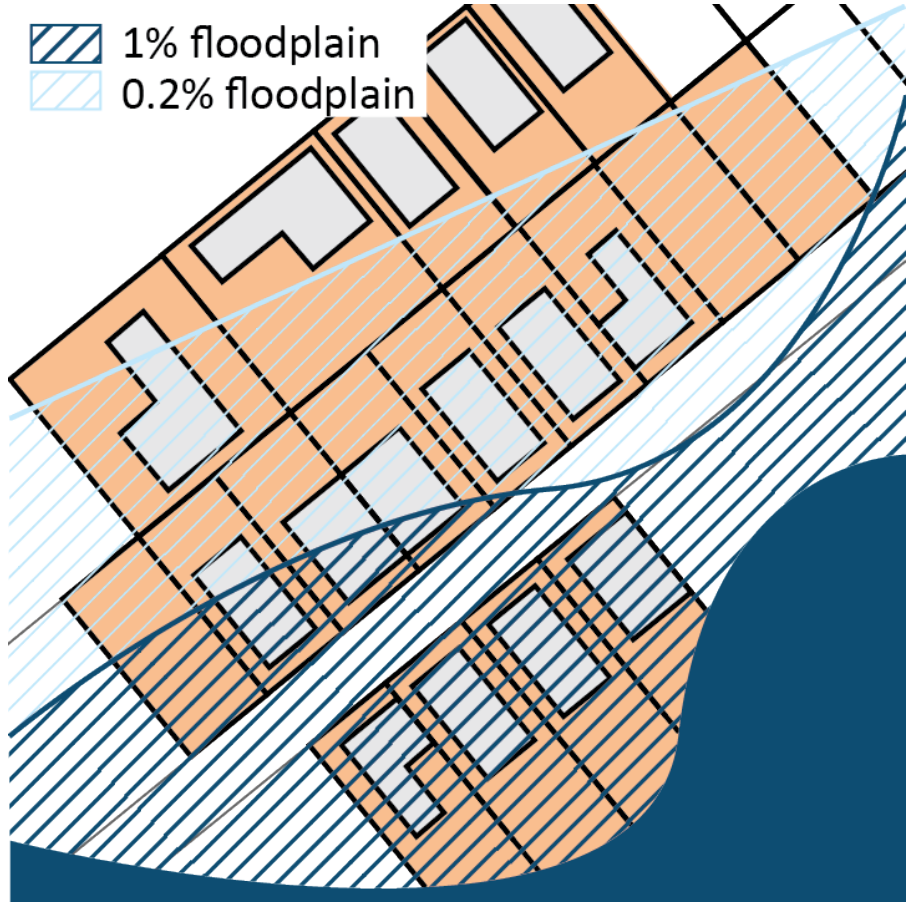
Applicability

General Applicability

Permanent regulations would facilitate buildings to **proactively** incorporate resiliency improvements to fully meet **or exceed** *flood-resistant construction standards* while maintaining the same allowable *Building Envelope*.



Existing Rules: apply to buildings within the 1% floodplain



Proposed Rules: apply to lots within the 0.2% floodplain

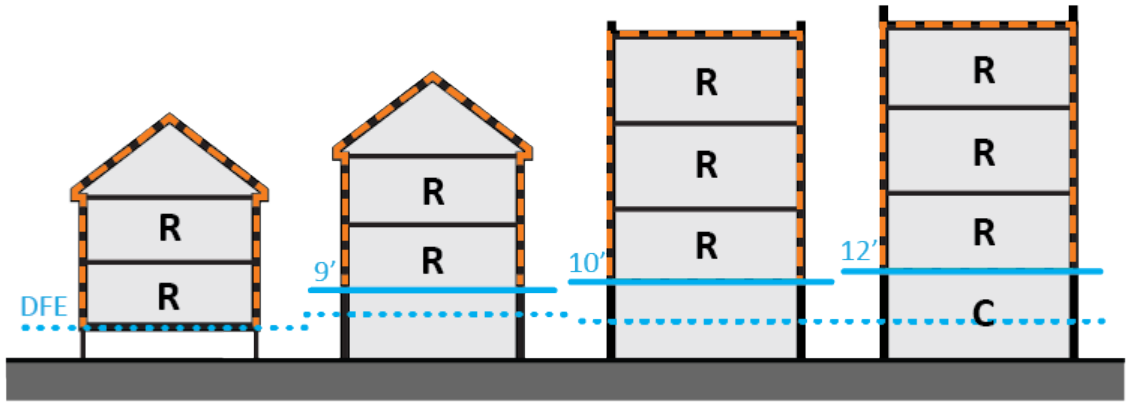
**Flood-resistant construction standards:* building-code standards for buildings located in the 100yr floodplain, as set forth in Appendix G of NYC's Building Code

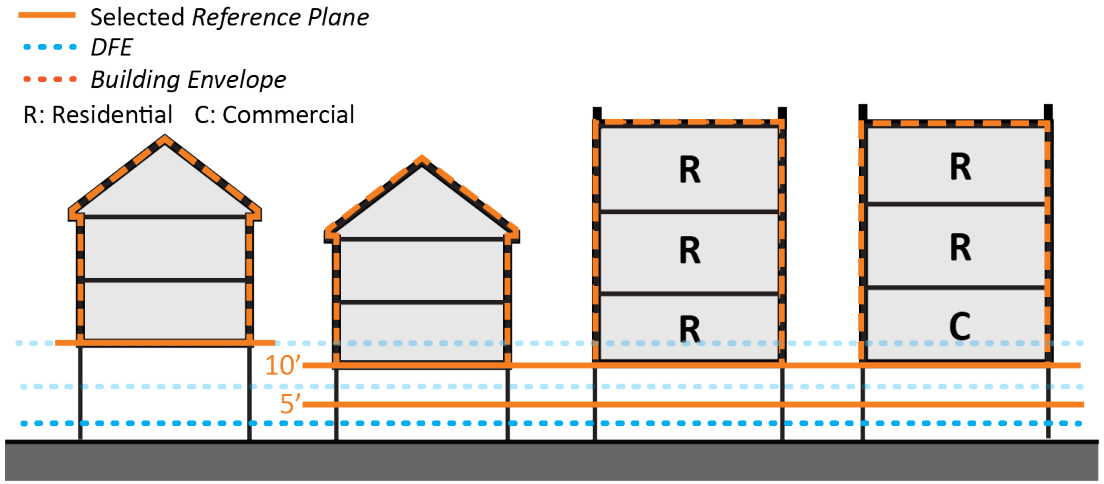
Updated Item

Building Envelope

Height Allowance

Optional height regulations would facilitate buildings to **incorporate sea level rise projections** when meeting *flood-resistant construction standards*, while improving the utility of spaces below the *DFE*.





Existing Rules: DFE or a Reference Plane measured from 9', 10' or 12' depending on the building's use and zoning district

Proposed Rules: DFE or a Reference Plane (up to 10' or 5') available to all lots in the 1% and 0.2% floodplains, respectively

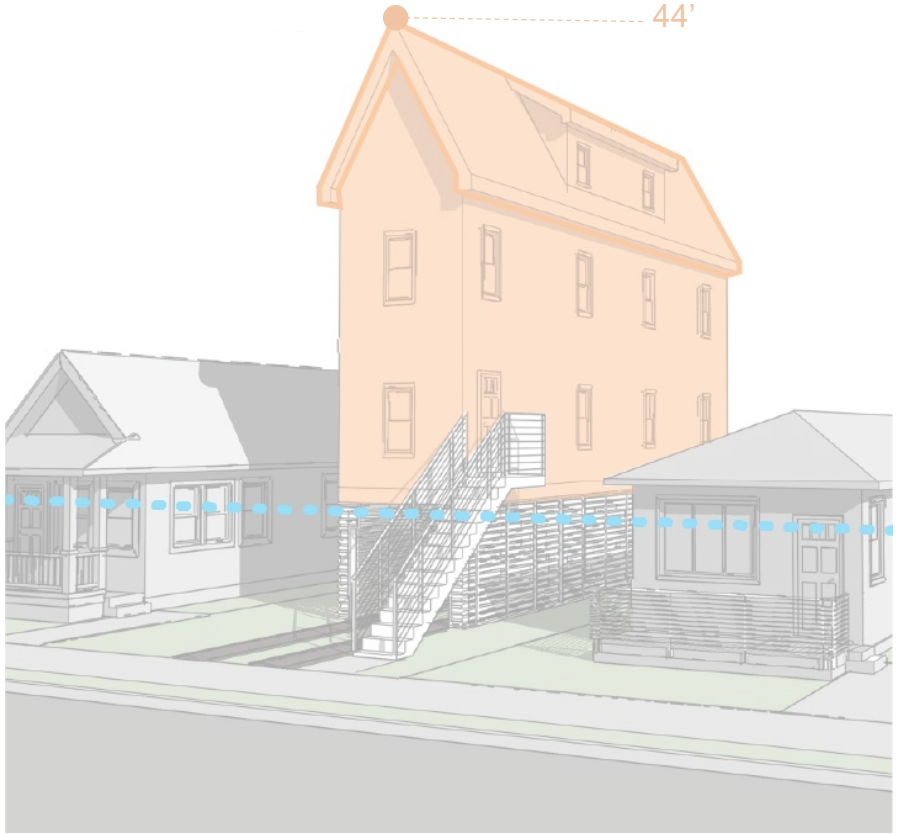
NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code

Updated Item

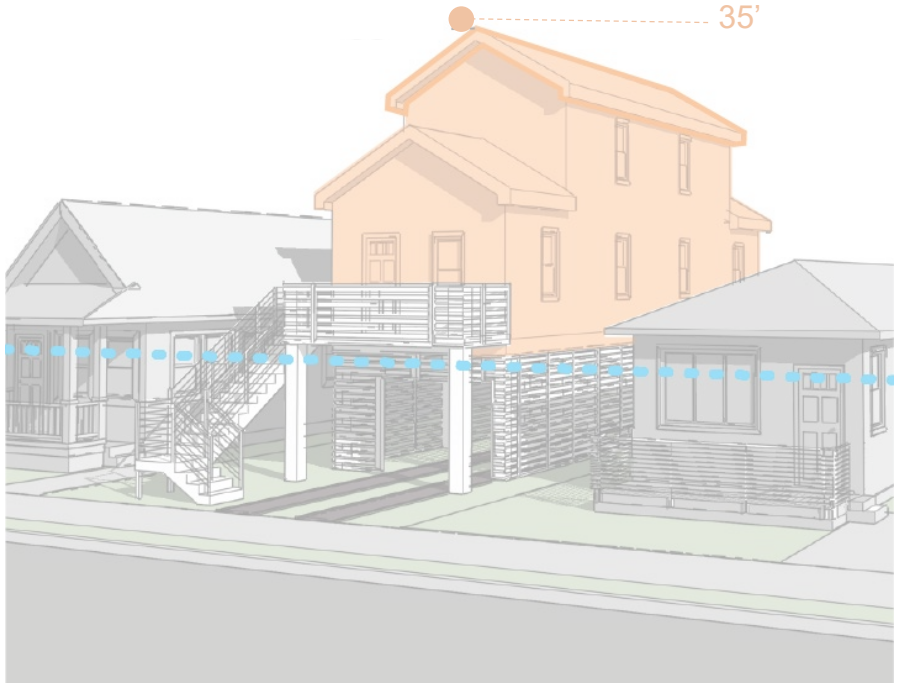
Building Envelope

Cottage Envelope

Optional *Building Envelope* would facilitate the **construction, reconstruction, and *retrofit*** of homes located on pre-existing substandard lots **in all areas**, and better reflect the scale of traditional cottage buildings.



Existing Rules: maximum height of 35’ as measured from the DFE or 9’ Reference Plane



Proposed Rules: maximum height of 25’ as measured from the DFE up to 10’ Reference Plane

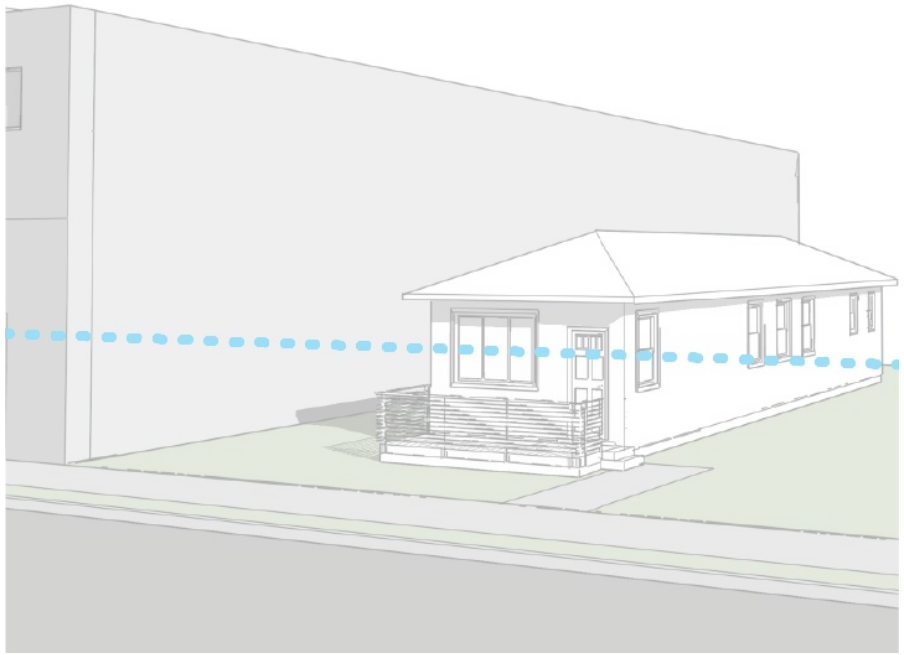
NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code

Updated Item

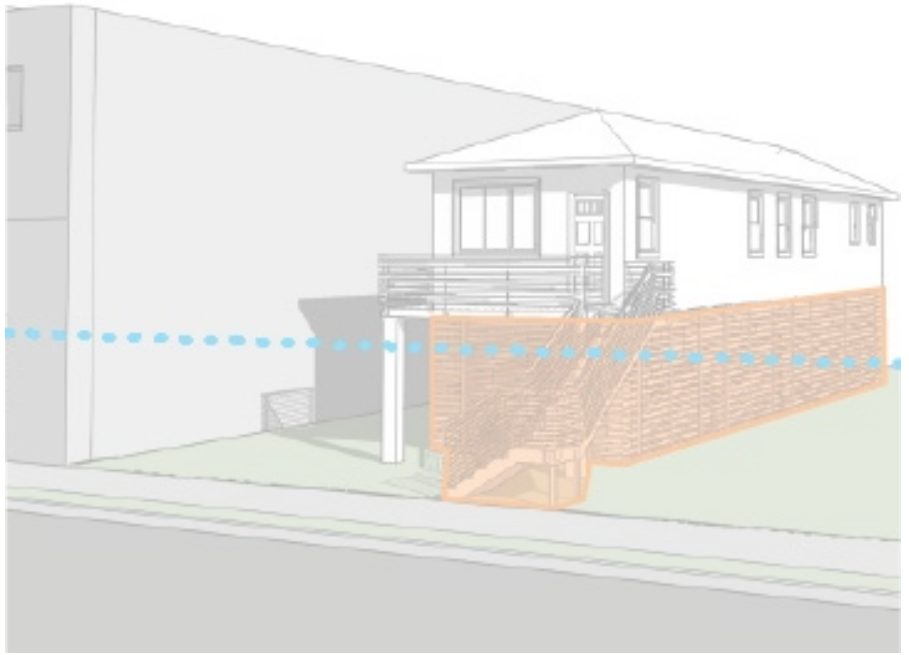
Building Envelope

Existing Buildings

Regulations would allow the reconstruction, enlargement or alteration of **a greater range of** existing non-complying and/or non-conforming buildings to meet **or exceed** *flood-resistant construction standards*.



Existing Rules: homes in M/C8 districts cannot be retrofitted or rebuilt



Proposed Rules: homes in M/C8 districts can be retrofitted or rebuilt

NYC PLANNING

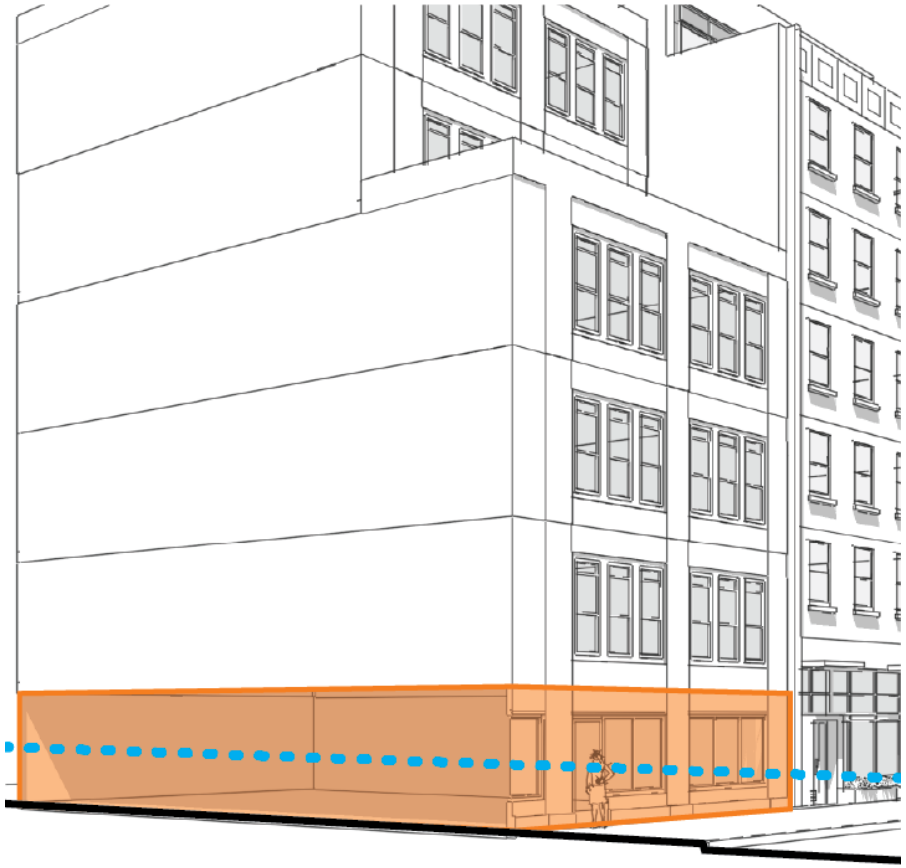
* Rules available if the building fully meets Appendix G of the Building Code

New Item

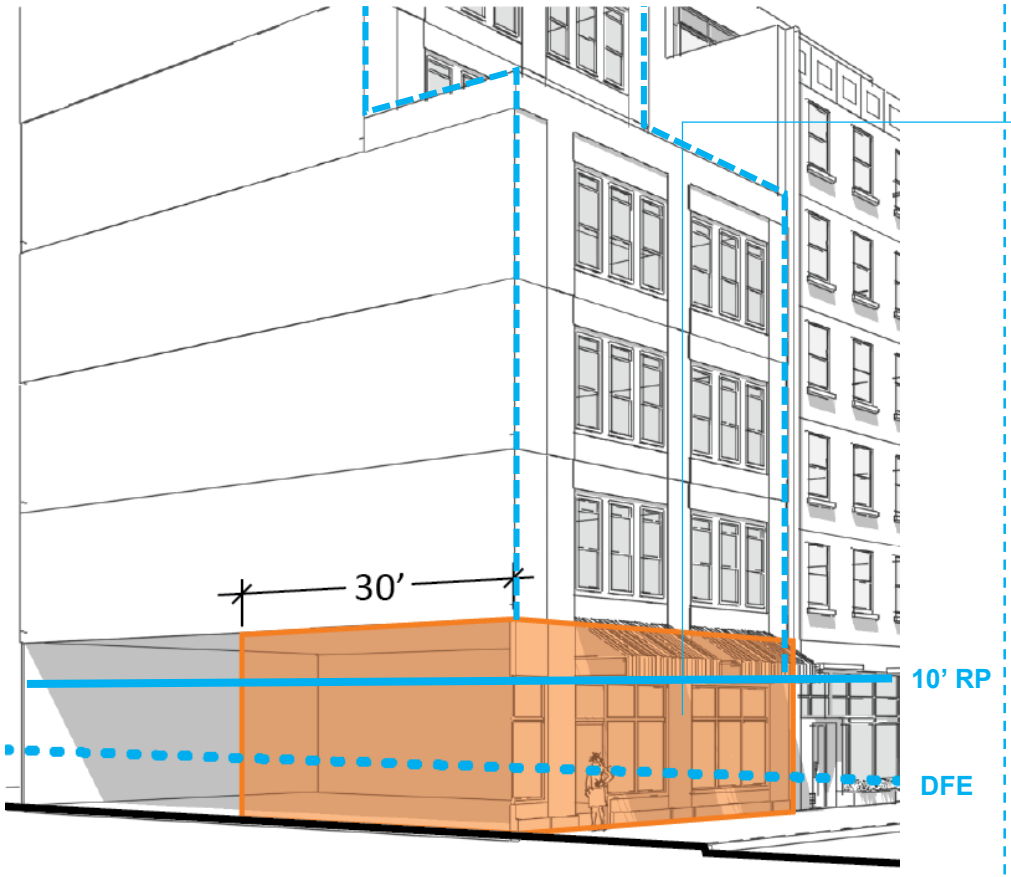
Building Design

Floor Area Exemptions

Floor Area regulations would exempt floor area to encourage new and existing buildings to meet **or exceed** *flood-resistant construction standards*, **while ensuring quality ground-floors that are kept at street level.**



Existing Rules: entire ground-floor is exempted if > half of the floor-to-ceiling height is below the DFE



Proposed Rules: a portion of the ground-floor is exempted if meeting design requirements

Design Requirements
Require transparency and quality ground-floors

And for wet-flood proofed ground floors

Or to provide internal access or mechanical equipment

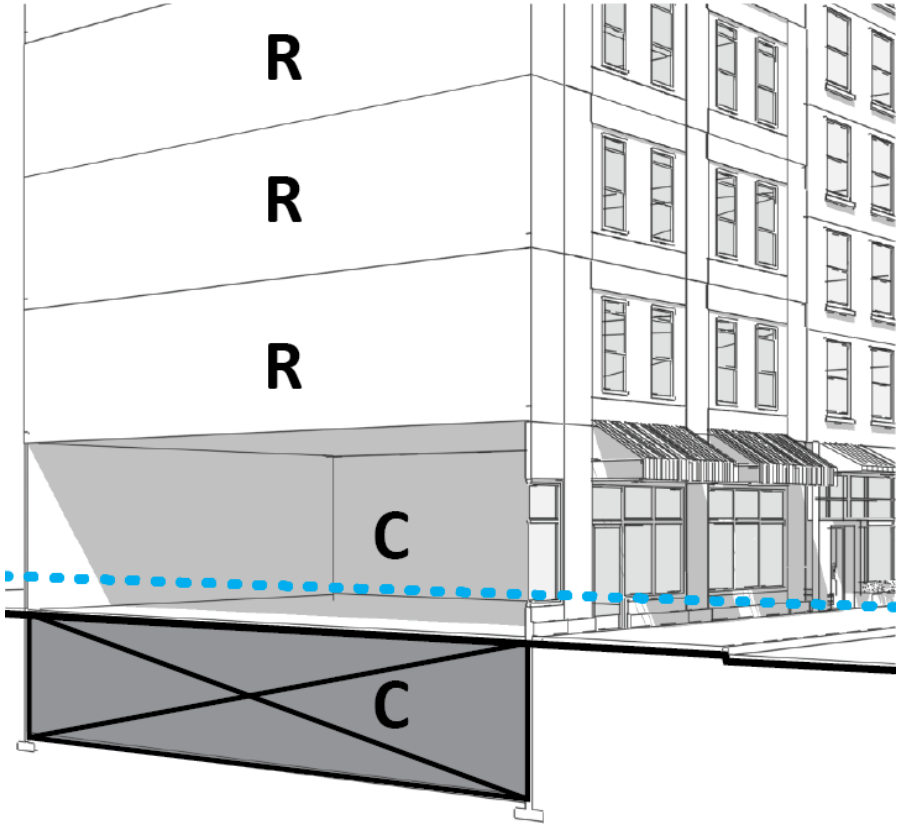
NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code

Updated Item

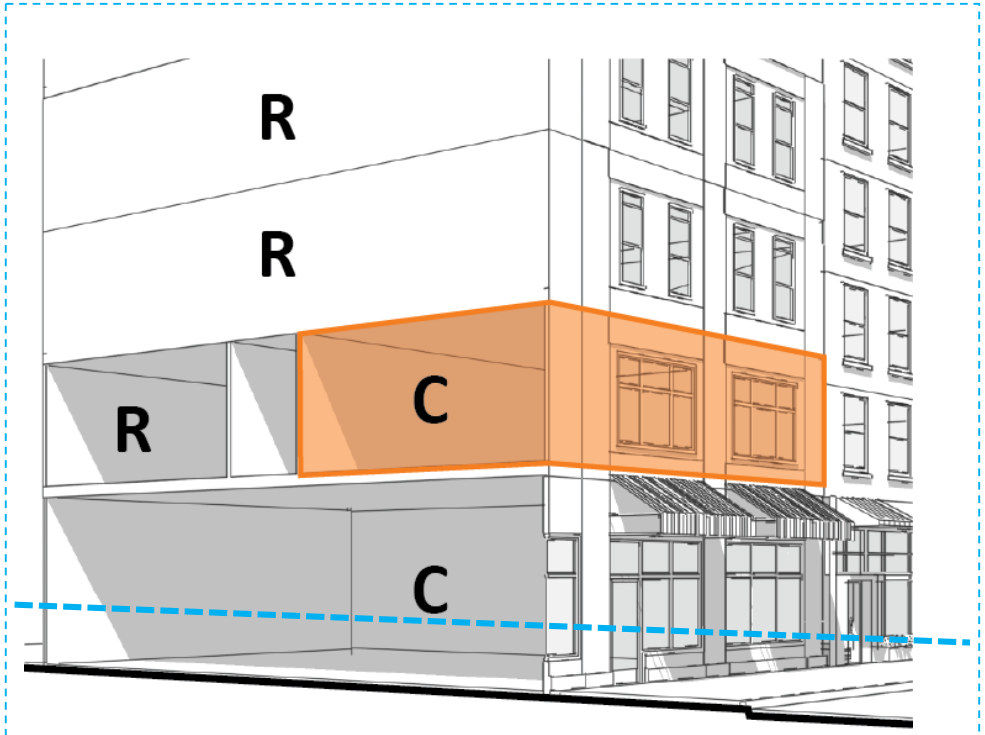
Building Design

Use Regulation

Supplemental use regulations would offer alternatives beyond dry-floodproofed cellars for businesses to locate commercial uses, especially accessory spaces



Existing Rules: : Commercial uses are limited to the ground-floor in mixed-use buildings in certain commercial corridors



Proposed Rules: : Commercial uses can be located within the second story in mixed-use buildings above the flood level in all commercial corridors

New Item

NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code

Building Design

Streetscape Regulations

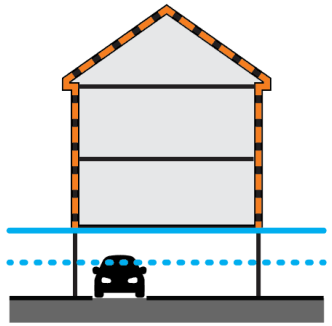
Streetscape regulations would promote walkability across the city's ***floodplain*** by **ensuring an accessible design that makes the streetscape more inviting while mitigating additional height.**

Existing Rules: Few design options to help mitigate potential blank walls

Proposed Rules: Wider range of design options to make the streetscape more inviting while mitigating additional height

Parking

Flexible curb-cut rules allow for parking below elevated homes (R1-R5)



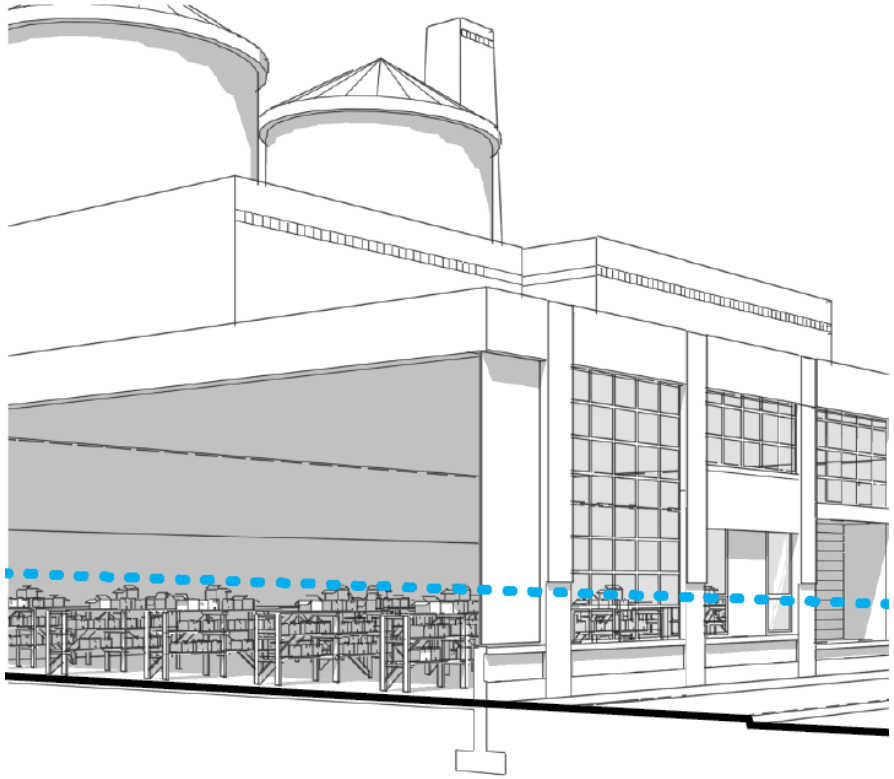
Updated Item

NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code

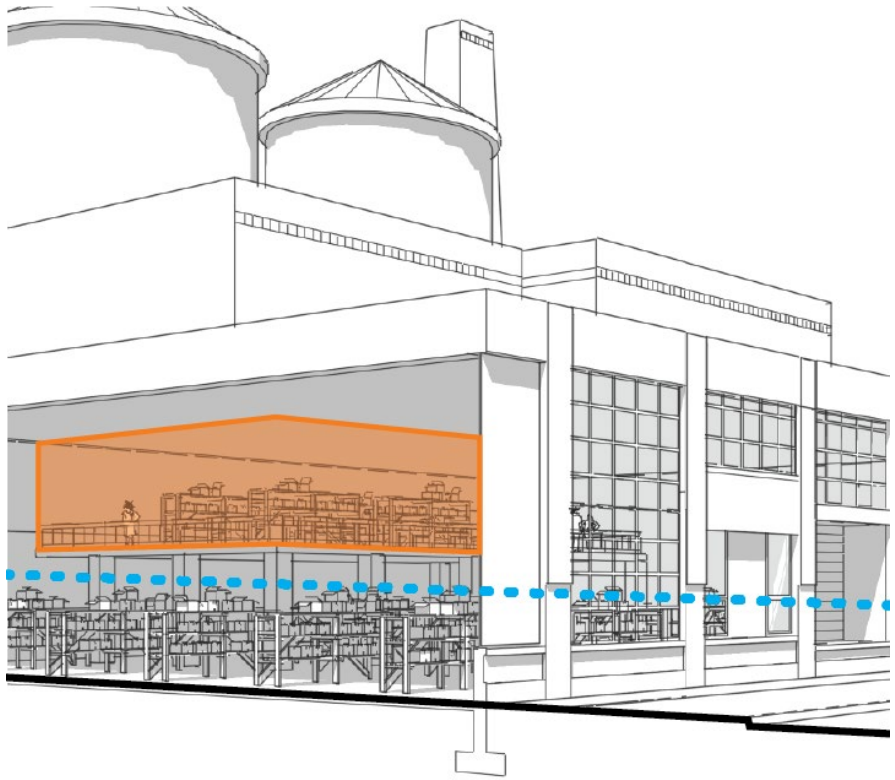
Partial Resiliency Strategies

Floor Area Exemption

Industrial buildings can create small mezzanine or 2nd floor to store important space/equipment



Existing Rules: Existing industrial buildings may not have enough floor area to elevate important equipment/spaces



Proposed Rules: Floor area can be exempted to facilitate the placement of important equipment/spaces above the flood level within small mezzanines

New Item

NYC PLANNING * Rules available even if the building DOES NOT fully meets Appendix G of the Building Code

Partial Resiliency Strategies

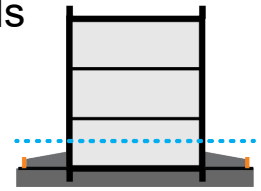
Mechanical Equipment

Permitted obstruction and floor area regulations would facilitate the placement of ***MEP*** **equipment** above the ***DFE***, including emergency generators within or outside of buildings, **including within separate *MEP* buildings.**

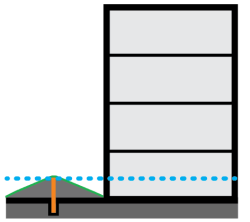
Existing Rules: Additional flexibility with permitted obstructions facilitate mechanical equipment to be relocated to the roof of buildings

Proposed Rules: Additional flexibility to facilitate mechanical, electrical and plumbing equipment to be placed on the roof or in a separate structure

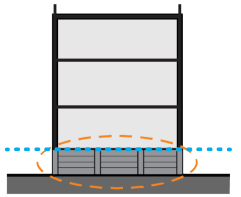
Or to build retaining walls and raise yards



Or to build berms



Or deploy flood panels

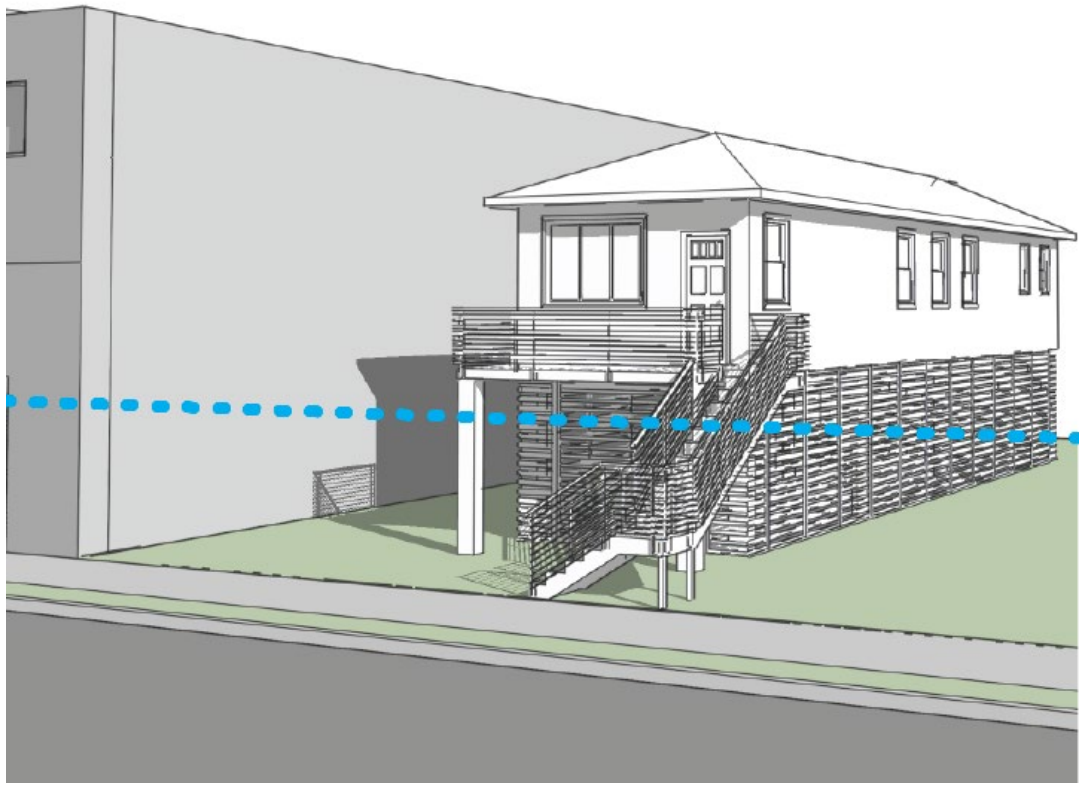


NYC PLANNING * Rules available even if the building DOES NOT fully meets Appendix G of the Building Code

Updated Item

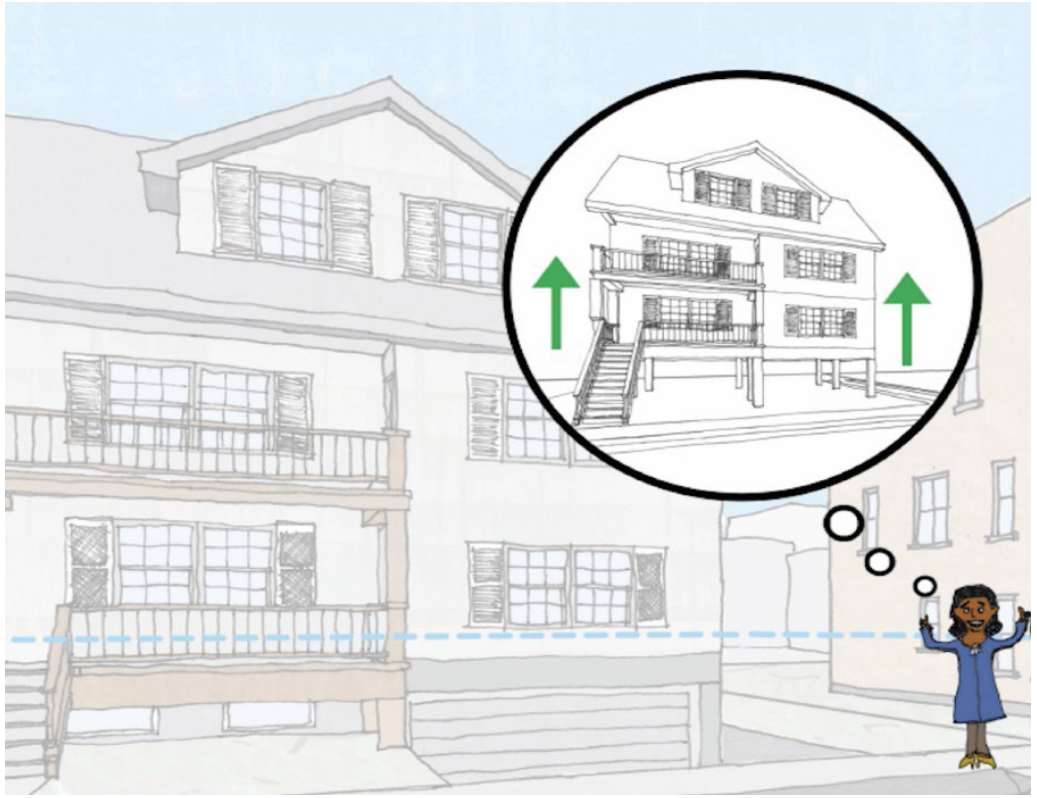
Emergency Rules

Regulations would facilitate the reconstruction of existing non-complying and/or non-conforming buildings that were **damaged by a future disaster in future recovery area**.



Reconstruction allowances

Substantially-damaged non-conforming or non-complying buildings can rebuild to at least minimum resiliency standards



Documentation process

Aerial photographs and tax bills can be used to establish the existence of a building// Survey prepared by a land surveyor may be used to document non-compliances

New Item

NYC PLANNING * Rules available if the building fully meets Appendix G of the Building Code and there is a future storm

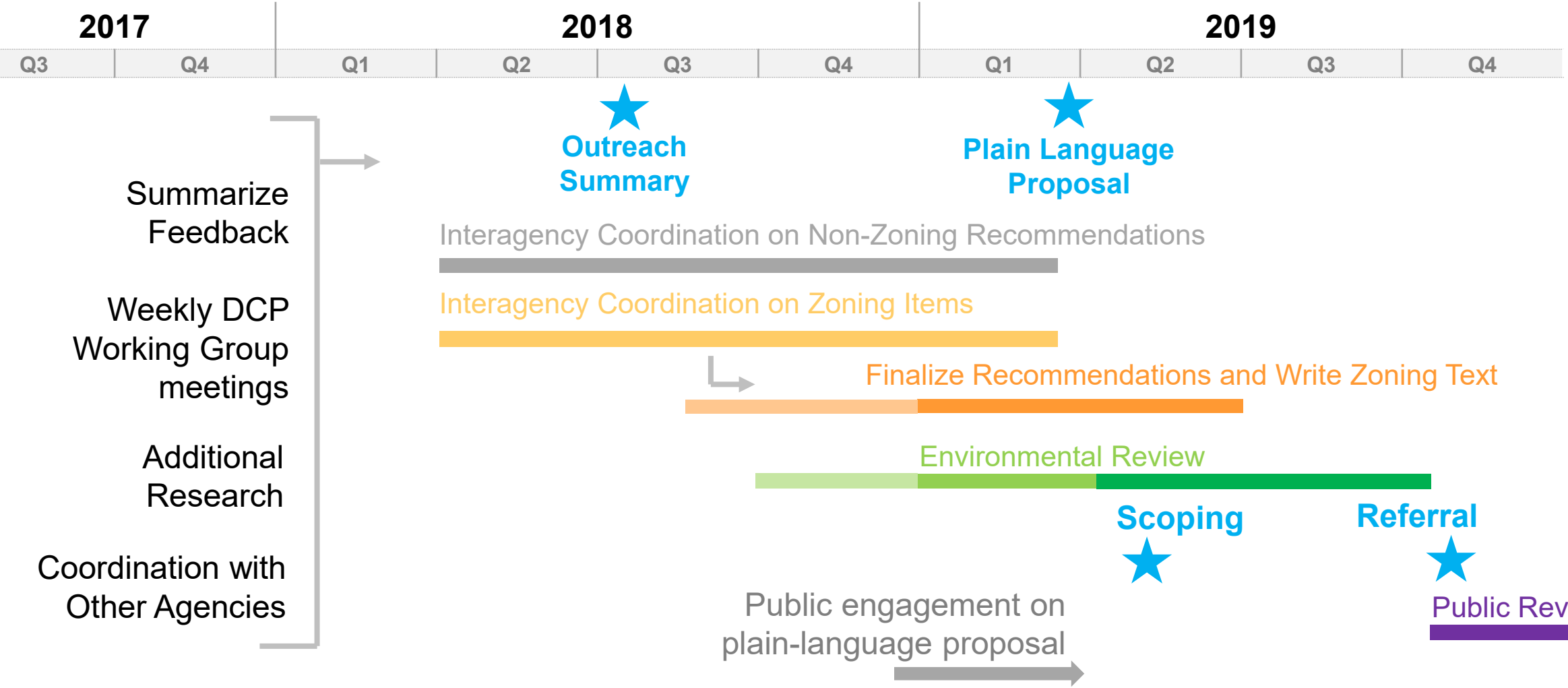
Zoning for Coastal Flood Resiliency

4. Project Timeline & Outreach Resources

Zoning for Coastal Flood Resilience Update (FT2)

Project Timeline

** Timeline 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