Zoning for Coastal Flood Resiliency

Preliminary Recommendations

Summary

Brooklyn CD 2
September 18, 2019
Today’s Agenda

1. **Background** | Context on zoning for resiliency

2. **Preliminary Recommendations** | Summary

3. **Project Timeline & Outreach Resources**
Zoning for Coastal Flood Resiliency

1. Background
Zoning for Resiliency
Citywide Flood Risk
NYC’s flood risk is high and will increase.

The city’s current flood risk is high with ~782,800 residents in the floodplain.

Sandy inundated ~half of lots currently in the 0.2% annual chance floodplain.

This area will likely become the future 1% annual chance floodplain.
Brooklyn, Community Board 2

Currently in NYC, Building Code and Zoning rules are based on either the 1% annual chance floodplain, as shown on the Preliminary Flood Insurance Rate Map (FEMA, 2015) or the Effective Flood Insurance Rate Map (FEMA, 2007), whichever map is more expensive or restrictive. For flood insurance purposes, the Effective Flood Insurance Rate Map is used. The 0.2% annual chance floodplain is also shown here to show areas that are at risk from a more rare but more severe storm.
240 buildings are in the 1% Annual Chance floodplain

0
Bungalow
2
Detached Homes | 0.8%
5
Semi Detached Homes | 2.1%
1
Attached | 0.4%
0
Campus Complex
2
Multi Family Buildings | 0.8%
20
Mixed Use Buildings | 8.3%
12
Commercial Only | 5.0%
34
Community Facility | 14.2%
5
Manufacturing | 2.1%

Other | 66.3%

414 buildings are in the 0.2% Annual Chance floodplain

0
Bungalow
5
Detached Homes | 1.2%
11
Semi Detached Homes | 2.7%
12
Attached | 12.5%
52
Campus Complex | 2.7%
11
Multi Family Buildings | 5.3%
22
Mixed Use Buildings | 14.3%
59
Commercial Only | 4.1%
17
Community Facility | 9.2%
38
Manufacturing | 2.8%
28

Other | 41.3%
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?

Flood Insurance Rate Maps (FIRMs)
Determine the 1% and 0.2% annual chance floodplains where 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

Building Code (DOB)
Requires new buildings, substantial improvements and horizontal enlargements to meet FEMA standards (Appendix G)

Zoning Resolution (DCP)
Zoning accommodates these regulations, by setting up optional rules that assist buildings to meet Appendix G
DCP’s work since Hurricane Sandy

2012 Hurricane Sandy

Zoning Text (emergency-basis)

2013 “Flood Text 1” Temporary Rules

2015 “Recovery Text” Temporary Rules

Research & Outreach Process


Community Outreach Workshops (2016-2018)

Proposal (permanent-basis)

Zoning for Coastal Flood Resiliency (2019)
Zoning for Coastal Flood Resiliency

From recovery to long-term resiliency

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, potentially save on flood insurance costs, and expedite future-storm recovery.

1. Encourage resiliency throughout the current and future floodplains

2. Support long-term resilient design through flexibility in zoning

3. Allow for adaptation over time through incremental retrofits

4. Facilitate future storm recovery
2. Preliminary Recommendations

Summary
Zoning for Coastal Flood Resiliency
An expanded geography

Building owners in both the 1% and 0.2% annual chance floodplains would be able to invest in resiliency to meet or exceed flood-resistant construction standards, even when not required by FEMA or Building Code.

1. Encourage resiliency throughout the current and future floodplains

**Existing Rules**
are only available to buildings within the 1% floodplain (High Risk Area)

**Proposed Rules**
will be available to lots within the 0.2% floodplain (Moderate Risk Area)
Rules available for buildings within the 1% floodplain

Existing rule

Rules available for lots within the 1% and 0.2% floodplains

Proposed Optional Rules
Zoning for Coastal Flood Resiliency
An enhanced Building Envelope

Allowances coupled with design requirements would allow building owners to accommodate sea level rise projections when designing new or retrofitting buildings, without creating negative impacts on the streetscape.

2. Support long-term resilient design through flexibility in zoning

Residential Buildings
- Height allowances: envelope may be measured from the DFE or a Reference Plane of 10’ (in 1% floodplain) or 5’ (in 0.2% floodplain)
- Floor area exemptions for wet-floodproofed spaces (entryways, parking) will help living spaces be placed well-above flood risk levels.
- Design requirements will help mitigate streetscape issues caused from elevating.
Height Allowance Applicability in Brooklyn CD 2

**Existing FT1 Optional Rules**
- Height can be measured from DFE

**Proposed Optional Rules**
- Height can be measured from DFE or up to 10' RP whichever is higher
- Height can be measured from up to 5' RP
Zoning for Coastal Flood Resiliency
An enhanced Building Envelope

Allowances coupled with design requirements would allow building owners to accommodate sea level rise projections when designing new or retrofitting buildings, without creating negative impacts on the streetscape.

2. Support long-term resilient design through flexibility in zoning

Commercial & Mixed-Use Buildings
- Floor area exemptions for dry-floodproofed spaces will incentivize active uses (commercial and community facilities) to be kept at the sidewalk level
- Design requirements will help ensure active ground floors
Building owners would have additional zoning flexibility to relocate mechanical, electrical and plumbing equipment or back-up generators above areas at risk of flooding, including roofs or new separate structures.

3. Allow for adaptation over time through incremental retrofits

More flexible permitted obstructions provide more options for MEP to be relocated to either above the roof or within separate structures

Floor Area Exemptions for existing industrial buildings allow the creation of small mezzanine space or a 2nd floor to store important spaces/equipment
Rules available for buildings within the 1% floodplain

Existing rule

Rules available for lots within the 1% and 0.2% floodplains

Proposed Optional Rules
To be ready for future storm events, new rules would make it easier for damaged buildings to be reconstructed. This would allow residents and neighborhoods to recover faster and allow the City to offer disaster assistance.

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

**Documentation process**
Aerial photographs/tax bills can be used to establish the existence of a building. A survey may be used to document non-compliances
3. Project Timeline & Resources
Zoning for Coastal Flood Resiliency

Project Timeline

2017 2018 2019 2020
Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3

Outreach Summary
Release (August)

Draft Proposal
ZCFR WORKING GROUP (DCP) / COORDINATION WITH SISTER AGENCIES

Proposal Release (May 1)
Referral

Environmental Review
RWCDS / PROTOTYPES DSOW / EAS COMMENTS / FSOW / DEIS FEIS

Scoping (June 13)

Public Review
CBs, BPs BBs CPC CC

Outreach
PHASE 1: BPs, BBs, CMs, public workshops

PHASE 2: BPs, BBs, CMs, CBs (high priority)

WHERE WE ARE

* Timeline subject to change

Broad public engagement (NEWSLETTER, EVENTS, VIDEO, LINK NYC, ETC)
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