Zoning for Coastal Flood Resiliency

Update and Summary of Preliminary Recommendations

Update for the Bronx Community Board 7 Environmental Subcommittee
June 4th, 2019
Hurricane Sandy

Port Morris  
Source: dna.info

Harding Park  
Source: Bronx Ink

Hunts Point  
Source: Bronx Ink

Locust Point  
Source: Daily News
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.
DCP’s work since Hurricane Sandy

2015
Flood Resilience Zoning Text Amendment: Initial temporary regulations to facilitate recovery

2014-2017
Citywide / Neighborhood Studies

2016-Present
Community Outreach

2019
Zoning for Coastal Flood Resiliency
### Flood Risk – Bronx

#### NYC
- **Total # of Lots**: 65,582
- **1% annual chance floodplain (FIRM+PFIRM)**: 36,723
- **0.2% annual chance floodplain (FIRM+PFIRM)**: 102,305
- **TOTAL**: 129,010

#### Bronx
- **Total # of Lots**: 3,536
- **1% annual chance floodplain (FIRM+PFIRM)**: 3,389
- **0.2% annual chance floodplain (FIRM+PFIRM)**: 6,925
- **TOTAL**: 10,244

- **Total # of Buildings**: 6,055
- **1% annual chance floodplain (FIRM+PFIRM)**: 3,922
- **0.2% annual chance floodplain (FIRM+PFIRM)**: 9,977
- **TOTAL**: 14,859
Building typologies

- Residential-detached
- Residential-attached and semi-attached
- Residential-bungalow
- Industrial
- Commercial and Mixed Use
Flood Risk – Bronx CD 7

9 buildings are in the 1% and 0.2% floodplain
How are buildings in the floodplain regulated?

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

Building Code (DOB)
- **Requires** new buildings and substantial improvements to meet FEMA standards (Appendix G)

Zoning Resolution (DCP)
- Zoning **accommodates** these regulations and improves neighborhood character
Flood resilient construction standards require residential buildings to elevate the lowest floor used for living purposes, as well as mechanical equipment, above the Design Flood Elevation (DFE).
Flood resilient construction standards require residential buildings to elevate the lowest floor used for living purposes, as well as mechanical equipment, above the Design Flood Elevation (DFE).
Zoning for Coastal Flood Resiliency
Overview of project’s goals

Zoning for Coastal 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

Applicability

1% floodplain + 0.2 % floodplain
• All provisions would be available to lots located within the 1% and 0.2% floodplains;
• Most rules would only be available if the building fully complies with flood-resistant construction standards*;
• Extra allowances would be offered for partial strategies.

Citywide
• Power systems (emergency generators).
• Emergency provisions

*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
Zoning Recommendations

Building Envelope

To support long-term resilient design across all building types, Zoning for Coastal Flood Resiliency would modify height and yard requirements so building owners can: elevate living spaces above current risk levels, reduce flood insurance costs, relocate basements and cellars above risk levels, and better meet neighborhood context.

Height Allowances

The zoning envelope can be measured from:

A Reference Plane located anywhere between the DFE and 10ft above grade (1% floodplain)

Or

A Reference Plane located anywhere between the grade and 5ft above grade (0.2% floodplain)

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

Updated FT1 Item

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

Proposed Rules: a Reference Plane available to all lots in the 1% and 0.2% floodplains
Zoning Recommendations

Building Envelope

To support long-term resilient design across all building types, Zoning for Coastal Flood Resiliency would modify height and yard requirements so building owners can: elevate living spaces above current risk levels, reduce flood insurance costs, relocate basements and cellars above risk levels, and better meet neighborhood context.

Cottage Envelope

Detached homes on small lots have the option to:

Reduce the front, rear or side-yards to construct, reconstruct, or retrofit existing buildings

However, yard flexibility comes with a shorter height requirement

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

Building Envelope

To support long-term resilient design across all building types, Zoning for Coastal Flood Resiliency would modify height and yard requirements so building owners can: elevate living spaces above current risk levels, reduce flood insurance costs, relocate basements and cellars above risk levels, and better meet neighborhood context.

Flexibility to old buildings
Non-compliant buildings can increase non-compliances when retrofitted or rebuilt

Non-conforming buildings such as homes in Manufacturing Districts can be retrofitted or rebuilt (under certain circumstances)

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

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

* Rules available if the building fully meets Appendix G of the Building Code
Floor Area Exemptions
For active uses that are dry-floodproofed and kept at grade with transparency (first 30ft from bldg street wall)

And for wet-flood proofed ground floors

Or to provide internal access or mechanical equipment

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 reqs

* Rules available/required if the building fully meets Appendix G of the Building Code
Zoning Recommendations

Building Design

Zoning for Coastal Flood Resiliency would also modify floor area, use regulations and design requirements so buildings are accessible to all, active uses remain at the sidewalk level with operation space that supports businesses, and ultimately, so neighborhoods continue to thrive with a vibrant streetscape.

Use Regulations
Mixed-use buildings can utilize the 2nd floor for commercial use

Design Requirements
To mitigate height and blank walls

Parking
Flexible curb-cut rules allow for parking below elevated homes

* Rules available/required if the building fully meets Appendix G of the Building Code
To allow for adaptation over time through partial resiliency strategies, Zoning for Coastal Flood Resiliency would modify permitted obstruction rules to facilitate: the elevation of mechanical, electrical and plumbing equipment, including generators, above the flood level; and install flood barriers, retaining walls, and structured berms.

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

* Rules available even if the building DOES NOT fully meets Appendix G of the Building Code
To allow for adaptation over time through partial resiliency strategies, Zoning for Coastal Flood Resiliency would modify permitted obstruction rules to facilitate: the elevation of mechanical, electrical and plumbing equipment, including generators, above the flood level; and install flood barriers, retaining walls, and structured berms.

**Permitted Obstructions**
To relocate mechanical, electrical and plumbing equipment, and emergency generators

- Or to build retaining walls and raise yards
- Or to build berms
- Or deploy flood panels

* Rules available even if the building DOES NOT fully meets Appendix G of the Building Code
To facilitate and expedite future-storm recovery, Zoning for Coastal Flood Resiliency would set up a framework that removes regulatory obstacles to allow the reconstruction of non-conforming uses and non-complying buildings that are damaged, and simplify the documentation process for obtaining permits from the Department of Buildings (DOB).

**Reconstruction allowances**
- Substantially-damaged non-conforming 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

* Rules available if the building fully meets Appendix G of the Building Code and there is a future storm
Zoning for Coastal Flood Resiliency Update
Project Timeline

2017 | 2018 | 2019
--- | --- | ---
Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4

**Outreach Summary**

**Plain Language Proposal**

Interagency Coordination on Non-Zoning Recommendations

Interagency Coordination on Zoning Items

Finalize Recommendations and Write Zoning Text

Environmental Review

Scoping

Referral

Public Review Process

- Summarize Feedback
- Weekly DCP Working Group meetings
- Additional Research
- Coordination with Other Agencies
- Public engagement on resiliency (briefings, newsletter, events, video)

* Timeline subject to change
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