Zoning for Coastal Flood Resiliency

Update and Summary of Preliminary Recommendations

Update for the Bronx Community Board 10 Housing and Zoning Committee

June 11th, 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
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.
Building typologies in the Bronx floodplain

- Residential-detached
- Residential-attached and semi attached
- Residential-bungalow
- Industrial
- Commercial and Mixed Use
Flood Risk Bronx CD 10: Buildings and dwelling units

<table>
<thead>
<tr>
<th>1% annual chance floodplain</th>
<th>Buildings</th>
<th>Dwelling units</th>
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<tbody>
<tr>
<td>4,248</td>
<td>20,555</td>
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<table>
<thead>
<tr>
<th>0.2% annual chance floodplain</th>
<th>Buildings</th>
<th>Dwelling units</th>
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<tbody>
<tr>
<td>5,598</td>
<td>22,675</td>
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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).
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Zoning for Coastal Flood Resiliency

Overview of 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.

Encourage resiliency throughout the current and future floodplains

Support long-term resilient design of all building types through flexibility in zoning

Allow for adaptation over time through incremental retrofits

Facilitate future storm recovery
Zoning for Coastal Flood Resiliency
Overview of 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.

- **Applicability**: Encourage resiliency throughout the current and future floodplains
- **Building Envelope**: Support long-term resilient design of all building types through flexibility in zoning
- **Partial Resiliency Strategies**: Allow for adaptation over time through incremental retrofits
- **Emergency Rules**: Facilitate future storm recovery
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
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.
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

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

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

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

Building Envelope

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

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

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

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

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

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

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

* Rules available even if the building DOES NOT fully meet Appendix G of the Building Code
Partial Resiliency Strategies

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.

* Rules available even if the building DOES NOT fully meet Appendix G of the Building Code.
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

* 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

Q3
Summarize Feedback

Q4
Weekly DCP Working Group meetings

Q1
Additional Research

Q2
Coordination with Other Agencies

2018

Q3
Outreach Summary

Q4
Interagency Coordination on Non-Zoning Recommendations

Q1
Interagency Coordination on Zoning Items

Q2
Finalize Recommendations and Write Zoning Text

Q3
Environmental Review

Q4
Scoping

2019

Q1
Referral

Q2
Public Review Process

Q3

Q4

Public engagement on resiliency (briefings, newsletter, events, video)

* Timeline subject to change
Resources

Flood Insurance information: https://www.floodhelpny.org/

NYC Flood Hazard Mapper: www.nyc.gov/floodhazardmapper


Community District Profiles: https://communityprofiles.planning.nyc.gov