Zoning for Coastal Flood Resiliency

Preliminary Recommendations

Summary

Brooklyn CB 13 Land Use & Resiliency Committee

June 4, 2019
Today’s Agenda

1. Introduction | Context

2. Outreach Process | Zoning issues identified by communities

3. Preliminary Recommendations | Summary

4. Project Timeline & Outreach Resources
1. Introduction

Context
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.
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.

### Citywide Total # of Lots

<table>
<thead>
<tr>
<th>1% annual chance floodplain (FIRM+ PFIRM)</th>
<th>0.2% annual chance floodplain (FIRM+ PFIRM)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>65,582</td>
<td>36,723</td>
<td>102,305</td>
</tr>
</tbody>
</table>

### Brooklyn Total # of Lots

<table>
<thead>
<tr>
<th>1% annual chance floodplain (FIRM + PFIRM)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>25,257</td>
<td>20,457</td>
<td>45,714</td>
</tr>
</tbody>
</table>

### Citywide Total # of Buildings

<table>
<thead>
<tr>
<th>1% annual chance floodplain (FIRM + PFIRM)</th>
<th>0.2% annual chance floodplain (FIRM+PFIRM)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>80,907</td>
<td>44,636</td>
<td>125,539</td>
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### Brooklyn Total # of Buildings

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</thead>
<tbody>
<tr>
<td>29,549</td>
<td>25,115</td>
<td>54,664</td>
</tr>
</tbody>
</table>
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
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


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. More flexibility with height
2. Make the CottageEnvelope 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
3. Preliminary Recommendations

Summary
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**
  - Ground Floor Design: 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.

Encourage resiliency throughout the current and future floodplains
Zoning for Coastal Flood Resiliency

An expanded geography

Encourage resiliency throughout the 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*.

*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 of up to 10’ in the 1% floodplain or 5’ in the 0.2% floodplains

* 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.

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

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

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)

* 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 meets 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.

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

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

* Rules available if the building fully meets Appendix G of the Building Code and there is a future storm
4. Project Timeline & Outreach Resources
Zoning for Coastal Flood Resilience Update
Project Timeline

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

Outreach Summary
Interagency Coordination on Non-Zoning Recommendations
Interagency Coordination on Zoning Items
Finalize Recommendations and Write Zoning Text
Environmental Review
Scoping
Referral

Public Review Process

* Timeline subject to change

Summarize Feedback
Weekly DCP Working Group meetings
Additional Research
Coordination with Other Agencies

Broad public engagement on resiliency (briefings, newsletter, events, video)
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

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