Zoning for Coastal Flood Resiliency

Preliminary Recommendations
Summary
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.
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.

<table>
<thead>
<tr>
<th></th>
<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><strong>Citywide Total # of Lots</strong></td>
<td>65,582</td>
<td>36,723</td>
<td>102,305</td>
</tr>
<tr>
<td><strong>Manhattan Total # of Lots</strong></td>
<td>2,724</td>
<td>2,083</td>
<td>4,807</td>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Citywide Total # of Buildings</strong></td>
<td>80,907</td>
<td>44,636</td>
<td>125,539</td>
</tr>
<tr>
<td><strong>Manhattan Total # of Buildings</strong></td>
<td>3,461</td>
<td>2,276</td>
<td>5,737</td>
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FEMA Flood Map
Flood Risk in Manhattan
Buildings in the 1% and 0.2% Floodplains:
Manhattan Community District 12

240 buildings are in the 0.2% Annual Chance floodplain

- 92 Campus Complex (1.3%)
- 34 Mixed Use Buildings (5.4%)
- 20 Commercial Only (14.2%)
- 20 Community Facility (6.3%)
- 8 Manufacturing (3.3%)
- 89 Other (28.7%)
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 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.

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)
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 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
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.

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

**Overview of project’s goals**

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
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*.

**Applicability**

<table>
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<tr>
<td>1% floodplain</td>
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<tr>
<td>0.2% floodplain</td>
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**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.

**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
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

* 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.
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
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.
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 meets 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
4. Project Timeline & Outreach Resources
Zoning for Coastal Flood Resilience Update (FT2)

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

* Timeline subject to change

Summarize Feedback

Weekly DCP Working Group meetings

Additional Research

Coordination with Other Agencies

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

Broad public engagement on plain-language proposal

* 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