Zoning for Flood Resilience

Howard Beach Community Workshop
At St. Helen Catholic Academy
Tuesday, October 17th – 7:30pm
Zoning for Flood Resilience
Workshop Agenda

1. Welcome and Overview – 20 min
   • Flood Risk
   • Flood Insurance
   • Resilient Buildings
   • Zoning for Flood Resilience
   • Q&A

2. Table Activity about building-scale resilience strategies in Howard Beach – 50 min

3. Report Summary of Table Discussions – 20 min
NYC’s flood risk is high.

The floodplain affects a large geography and most community and council districts.

**100 Year Floodplain**
FEMA 2015 PFIRM

Population: **400,000**

50 of 59 Community Boards

Buildings: **71,500**

45 of 51 Council Districts

Buildings:
- 80% 1-4 units
- 7% 5+ units
- 13% nonresidential

Residential Units:
- 30% 1-4 units
- 70% 5+ units
### Flood Map
#### Flood Risk in Queens CD 10

<table>
<thead>
<tr>
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<th>2015 PFIRMs</th>
<th>2050s Projected</th>
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<tbody>
<tr>
<td>Population in Floodplain</td>
<td>11,910</td>
<td>20,580</td>
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<tr>
<td>Buildings in Floodplain</td>
<td>5,440</td>
<td>6,500</td>
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- **Population Increase:** 72%  
- **Buildings Increase:** 19%
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.
- **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

Zoning Resolution (DCP)
- Zoning **accommodates** these regulations and improves neighborhood character
Flood insurance rates
Set by FEMA

Raising or retrofitting your building or home will reduce costs

FEMA’s flood insurance premiums are lowest when the lowest inhabited floor (any area not used solely for storage, access or parking) is elevated above the Base Flood Elevation (BFE).

- ~$9,000 Annual premium
  4 FEET OR MORE BELOW BFE
- ~$1,400 Annual premium
  AT BFE
- ~$450 Annual premium
  3 FEET OR MORE ABOVE BFE
Resources for Homeowners

- FloodHelpNY.org
- NFIP Preferred Risk Policy (PRP)

FIRM Maps (used for flood insurance purposes)

Preliminary FIRM Maps (used for building code/zoning)
NYC Federal Priorities

Ensure NFIP Affordability

Expand Mitigation Options and Premium Credits

Increase availability of mitigation funding for all building types

Improve communication to agents, real estate, property owners
Key Takeaways for Homeowners

• NYC’s flood risk is rising; homeowners insurance does not cover floods

• Until the new maps are issued, flood insurance rates will continue to be based on the 2007 Effective FIRMs

• When revised maps are adopted, new flood insurance requirements will go into effect

• For those outside the high-risk floodplain, flood insurance can be as low as $500/year

• Flood insurance policy is tied to the property
Howard Beach
Building Typologies in the Floodplain

Bungalows—
1-2 stories, detached, narrow lot
Hamilton Beach, 164th Road

Detached homes—
1-2 stories, detached, 40’+ lot width
New Howard Beach, 163rd Avenue

Attached residences—
2 stories, shared party wall
Old Howard Beach, 95th Street

Apartment buildings—
3+ stories
Lindenwood, 84th Street

Commercial corridors—
1-2 story bldgs w/on-street parking
Cross Bay Boulevard

Commercial corridors—
1-2 story bldgs w/on-street parking
Coleman Square
Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).
Flood resilient construction
Examples of Residential Buildings

**Residential Building**
Before construction – House on 91st St./161st Ave.

Source: Google Streetview, August 2013

**Resilient Residential Building** – Elevated to DFE
After construction - House on 91st St./161st Ave.

Building Code (DOB)
Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).

Living spaces are elevated above DFE.

Spaces below DFE need to be dry floodproofed.

Mechanical systems below DFE can be dry floodproofed.

Spaces below DFE need to be dry floodproofed.

Living spaces are elevated above DFE.

Flood resilient construction Required by DOB

Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).
Flood resilient construction
Examples of Commercial Buildings

Commercial Ground Floor
Existing Building with access at grade (deployable flood shields)

Commercial Ground Floor
Elevated to DFE ~ 3 feet
Flood Resilience Zoning
Projects at DCP

2013
“Flood Text”
initial temporary regulations to facilitate recovery

2018
“Flood Text Update”
 improve upon, and make permanent, the Flood Text

Flood Resilience Text Amendment
Retrofitting Buildings for Flood Risk
resilient art spaces
RESILIENT RETAIL
RESILIENT INDUSTRY

Flood Resilience Text Amendment II
2018
2013 Citywide Flood Text
Temporary Rules

Main Goal
Facilitate Recovery from Hurricane Sandy

2013: Temporary provisions that allow storm-damaged and new buildings to comply with higher flood elevations and resilient construction requirements by removing zoning barriers.

2015: Accelerate post-Sandy recovery in certain areas by simplifying documentation requirements and removing disincentives to resiliency investments, through 2022.
2013 Citywide Flood Text
Amended zoning in six key areas

1. Height
   - Measured from flood elevation

2. Access
   - Flexibility for stairs, ramps, lifts

3. Parking
   - Flexibility to relocate parking

4. Systems
   - Flexibility to relocate/elevate

5. Ground Floors
   - Account for costs of new flood risk

6. Streetscape
   - Require features to mitigate blank wall
Flood Text Update
Permanent Rules

Goal 1
Facilitate Recovery from Future Storms by making the provisions of the temporary Flood Text permanent

Goal 2
Promote Long-Term Resiliency by encouraging proactive retrofitting and development that is safe in the long run

Goal 3
Enhance Neighborhood Character by encouraging good resilient design within coastal communities

Zoning Resolution (DCP)
Flood Text Update
Issues identified by DCP and coastal communities

1 Subgrade Spaces
Homeowners may face the loss of subgrade spaces when retrofitting.

2 Active Uses
Current incentives and use options to keep active ground floors, may not be enough.

3 Active Streetscapes
Design requirements may be needed to mitigate the effects of elevated buildings.
STEP 1: Pick a building in your neighborhood. It can be the place you live, work or are interested in!

STEP 2: Build the existing conditions of your building with available cut-out cards (black and white).

STEP 3: Place your flood elevation (low, medium or high) above existing building and check your risk!

STEP 4: Retrofit your building to become resilient by using available cards (colored).

STEP 5: Add the zoning envelope that reflects your neighborhood’s zoning above the flood level.

STEP 6: Check if there are any zoning conflicts. Does the retrofitted building fit within the envelope?

STEP 7: Add your building to the wall and imagine how your neighborhood could look like!

STEP 8: What do you think about the results? Add a post-it with your thoughts on the wall!
As part of this outreach process, DCP has been:

- **Partnering with stakeholders** to educate and promote awareness of flood risk and resiliency issues
- **Explain how zoning tools** relate to resiliency
- **Explore unique neighborhood issues** through in-depth public presentations and workshops
- **Develop a proposal through an iterative process** that is shaped by feedback

* Schedule is tentative and subject to change