Zoning for Flood Resilience

Eastern Bronx Community Workshop
SUNY Maritime
Saturday, October 21st, 11:00 AM – 1:00 PM
Zoning for Flood Resilience
Workshop Agenda

1. Welcome and Overview – 30 min
   • Flood Risk
   • Flood Insurance
   • Resilient Buildings
   • Zoning for Flood Resilience
   • Q&A

2. Table Activity about building-scale resilience strategies in the Eastern Bronx – 50 min

3. Report Summary of Table Discussions - 20 min
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
US Army Corps of Engineers, NYS DEC, NYC DPR

Buildings are designed to withstand and recover from flooding
FEMA, DCP, DOB, HRO, NYCHA

Infrastructure is protected from climate hazards
DOT, DEP, DDC, Utility Companies, MTA

Residents and businesses are prepared
OEM
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 resilient construction
Required by DOB

**Required** for all *new* buildings

**Not required** for *existing* buildings
(unless substantially damaged or improved)

*Substantially Damaged: Restoring Cost ≥ 50% Market Value*
*Substantially Improved: Improvement Cost ≥ 50% Market Value*
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).

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

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

FIRMs (used for flood insurance purposes)

Preliminary FIRMs (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 FIRM

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

• For those outside the high-risk floodplain, flood insurance is inexpensive

• Flood insurance policy is tied to the property
Flood Risk: Citywide

NYC’s flood risk is high and it will only continue to increase.

<table>
<thead>
<tr>
<th>100 year (1% annual chance) floodplain</th>
<th>2015 PFIRMS</th>
<th>2050s Projected FIRMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents</td>
<td>400,000</td>
<td>808,900</td>
</tr>
<tr>
<td>Buildings</td>
<td>71,500</td>
<td>118,000</td>
</tr>
</tbody>
</table>

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

Residential Units:
- 30% 1-4 units
- 70% 5+ units

50 of 59 Community Boards
45 of 51 Council Districts

Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
Future flood zone impacts based on NPCC2 90th percentile sea level rise projections
Bronx CD 10 accounts for nearly 60% of the Bronx’s floodplain population and 80% of its floodplain building stock.

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</thead>
<tbody>
<tr>
<td>Residents</td>
<td>10,100</td>
<td>17,800</td>
</tr>
<tr>
<td>Buildings</td>
<td>3,100</td>
<td>5,200</td>
</tr>
</tbody>
</table>

Map analysis based on Preliminary Flood Insurance Rate Maps (PFIRMS)
Future flood zone impacts based on NPCC2 90th percentile sea level rise projections
Bronx CD 10
Common Building Typologies

49.9% of buildings in the Bronx CD 10 flood plain are 1-2 family homes

Detached
2-3 stories, detached, wide lot
City Island

Detached
1-2 stories, wide lot
Locust Point

Attached/Semi-attached
1-2 stories, detached, narrow lot
Throggs Neck

Bungalows
1-2 stories, detached, narrow lot
Edgewater Park

Image Source: Google Street View
Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).
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
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 for Flood Resilience Update
Issues identified by DCP and coastal communities

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

2 Future Flood Risk
Property owners may want to address future risk or reduce insurance by over-elevating.

3 Old neighborhoods
Old buildings may need more flexibility to rebuild, elevate, or retrofit to resiliency standards.

4 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