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.
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
## Future Flood Map
### Flood Risk in QN CB 14

<table>
<thead>
<tr>
<th></th>
<th>2015 PFIRMS</th>
<th>2050’s Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>R units in floodplain</td>
<td>37,460</td>
<td>39,930</td>
</tr>
<tr>
<td>Buildings in floodplain</td>
<td>16,510</td>
<td>17,650</td>
</tr>
<tr>
<td>% buildings in QN CB 14</td>
<td>80%</td>
<td>85%</td>
</tr>
</tbody>
</table>

- Projected increase in R units in floodplain: 7%
- Projected increase in buildings in floodplain: 7%

Source: PFIRMS
How are buildings in the floodplain regulated?

Ferm

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

- Mechanical systems are elevated above DFE.
- Site is filled to lowest adjacent grade.
- Use below DFE is restricted to parking, storage or access.
- Living spaces are elevated above DFE.
- Living spaces are elevated above DFE.
- WET FLOODPROOF (Water comes in and out).
Flood resilient construction standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).
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
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
2015 Special Regulations
Accelerate recovery in Sandy-damaged neighborhoods

Temporary regulations, expiring in 2020, in limited areas of Brooklyn, Queens, and Staten Island

Simplified process for documenting old homes

Removed disincentives such as loss of basement space

Established new envelope for rebuilds on small existing lots
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 Text Update
Need for a new citywide text amendment

1. Make the provisions of the current, temporary 2013 Flood Text permanent

2. Fix and improve provisions based on studies, lessons learned, and outreach

3. Begin to promote new development + proactive retrofitting to high resiliency standards
Lessons learned since 2013

Construction/retrofitting activity in the flood zone:

The zoning relief we provided may not be achieving our goal of increasing code-compliant, flood-resistant projects.

DOB Permit Filings
in the flood hazard area, 10/2013 – 1/26/2016

<table>
<thead>
<tr>
<th>Category</th>
<th>New Buildings NB</th>
<th>Major Alterations Alt-1</th>
<th>Minor Alterations Alt-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,021</td>
<td>1,090</td>
<td>15,573</td>
</tr>
<tr>
<td>Meet full resiliency standards</td>
<td>All 1,021 (100%)</td>
<td>Only 113 (10%)</td>
<td>Only 532 (3%)</td>
</tr>
<tr>
<td>Status</td>
<td>149 (14%) approved</td>
<td>36 (31%) approved</td>
<td>245 (46%) approved</td>
</tr>
<tr>
<td></td>
<td>451 (44%) underway</td>
<td>24 (21%) underway</td>
<td>122 (23%) underway</td>
</tr>
<tr>
<td></td>
<td>179 (17%) complete</td>
<td>0 (0%) complete</td>
<td>9 (1%) complete</td>
</tr>
<tr>
<td>Rejected/Pending</td>
<td>25% rejected/pending</td>
<td>48% rejected/pending</td>
<td>30% rejected/pending</td>
</tr>
</tbody>
</table>
Flood Text II
Fix and improve provisions based on lessons learned

1 Height
Homeowners may face the loss of subgrade spaces when retrofitting

2 Height
Property owners may want to address future risk by over-elevating

3 Ground Floors
Current incentives to keep active ground floors may not be enough

4 Homes in M Districts
Existing homes in M. Districts, if damaged, may not be able to rebuild

5 Old Homes in Small Lots
Old homes on small lots may need more flexibility to rebuild in the future
Flood Text Update

Outreach

As part of this outreach process, DCP will:

- Partner 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

DCP plans a robust public engagement process:

* Schedule is tentative and subject to change
Outreach Resources

NYC Flood Hazard Mapper
www.nyc.gov/floodhazardsmapper

Info briefs on Flood Resilience Zoning, Flood Risk, Flood Resilient Construction, and Flood Insurance
www.nyc.gov/resilientneighborhoods
Thank you!

For more information, and to stay involved, email resilientneighborhoods@planning.nyc.gov