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 Queens

<table>
<thead>
<tr>
<th></th>
<th>2015 PFIRMs</th>
<th>2050s Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population in Floodplain</td>
<td>99,100</td>
<td>167,200</td>
</tr>
<tr>
<td>Buildings in Floodplain</td>
<td>25,200</td>
<td>35,600</td>
</tr>
</tbody>
</table>

65% increase in population
40% increase in buildings
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
How are buildings in the floodplain regulated?

FEMA

**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

Building Code (DOB)

**Requires** new buildings and substantial improvements to meet FEMA standards
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 standards require certain buildings to elevate the lowest floor, as well as mechanical equipment, above the Design Flood Elevation (DFE).

Mechanical systems below DFE can be dry floodproofed.

Spaces below DFE need to be dry floodproofed.

Living spaces are elevated above 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
  - Annual premium: ~$9,000
- AT BFE
  - Annual premium: ~$1,400
- 3 FEET OR MORE ABOVE BFE
  - Annual premium: ~$450
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
2015 Special Regulations
Accelerate recovery in Sandy-damaged neighborhoods

Provided new zoning solutions in three key areas:

**Simplified process**
for documenting old homes

**Removed disincentives**
such as loss of basement space

**Established new envelope**
for rebuilds on small existing lots
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.

<table>
<thead>
<tr>
<th>DOB Permit Filings</th>
<th>in the flood hazard area, 10/2013 – 1/26/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Buildings</td>
<td>Major Alterations</td>
</tr>
<tr>
<td>NB</td>
<td>Alt-1</td>
</tr>
<tr>
<td>1,021 (100%)</td>
<td>1,090 (10%)</td>
</tr>
<tr>
<td>All meet full resiliency standards</td>
<td>Only meet full resiliency standards</td>
</tr>
<tr>
<td>149 (14%) approved</td>
<td>36 (31%) approved</td>
</tr>
<tr>
<td>451 (44%) underway</td>
<td>24 (21%) underway</td>
</tr>
<tr>
<td>179 (17%) complete</td>
<td>0 (0%) complete</td>
</tr>
<tr>
<td>25% rejected/pending</td>
<td>48% rejected/pending</td>
</tr>
<tr>
<td></td>
<td>Only 532 (3%) meet full resiliency standards</td>
</tr>
<tr>
<td></td>
<td>245 (46%) approved</td>
</tr>
<tr>
<td></td>
<td>122 (23%) underway</td>
</tr>
<tr>
<td></td>
<td>9 (1%) complete</td>
</tr>
<tr>
<td></td>
<td>30% rejected/pending</td>
</tr>
</tbody>
</table>

Lessons learned since 2013
Flood Text II
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 and lessons learned in six key areas

3. Begin to promote new development + proactive retrofitting to high resiliency standards

4. Encourage good resilient construction that enhances the character of coastal communities
Flood Text II
Zoning and land use strategies

Where flood risk is exceptional, including where sea level rise will lead to future daily tidal flooding.

Limit
Zoning and other tools should limit exposure to damage and disruption by limiting the density of future development.

Accommodate
Adjust zoning to allow buildings to retrofit, by providing flexibility and removing obstacles to resiliency investments.

Encourage
Encourage construction of new development built to a higher standard of flood protection.

Where risk from extreme events can be managed and infrastructure and context support growth.

*stakeholder input factored into zoning and land-use strategy throughout
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.

6. **Improve Streetscape**
   - Mitigate the effects of elevated buildings on neighborhood character.

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Zoning Resolution (DCP)

NYC Planning
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:

As part of this outreach process, DCP will:

* Schedule is tentative and 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

NYC Flood Insurance

Why Is Flood Insurance Important?
- Floods can cause significant damage to your property, vehicle, and other personal belongings.
- Can cause significant damage to your property, vehicle, and other personal belongings.
- Floods can cause significant damage to your property, vehicle, and other personal belongings.

NYC Planning | November 2019
Thank you!

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