

ZONING FOR RESILIENCY

Community Outreach Summary



EXECUTIVE SUMMARY



Retail Workshop: Manhattan, Nov. 2017



Community Workshop: Howard Beach, Oct. 2017



Community Workshop: Eastern Bronx, Oct. 2017



Community Workshop: East Shore, Dec. 2017



Community Workshop: Howard Beach, Oct. 2017



Community Workshop: Rockaway, Jul. 2017



Community Workshop: Red Hook, Jun. 2017

Public workshops across New York City

Since Hurricane Sandy, the NYC Department of City Planning (DCP) has been engaging with coastal communities to provide helpful information and learn about their experiences rebuilding after the storm. For the past several years, the focus of our outreach has been to collaborate with community members on how the City's zoning could be updated so that buildings in the floodplain can be better prepared for future floods and contribute to neighborhood character. Recognizing that zoning is only one of many tools in New York City's strategy to build multiple lines of defense to prepare for increasing flood risks, we also sought to engage communities in a variety of ways and share information to help inform discussions.

Through this process, DCP staff have met with over 2,500 New Yorkers in all five boroughs at more than 110 public meetings and events where we presented an overview of the current Flood Resilience Zoning rules that were put in place immediately after Sandy, and solicited feedback on some initial ideas for its improvement. We hosted thirteen workshops with residents and architects to discuss these issues and others in finer detail. Several additional City agencies and organizations joined DCP planners at many of these events to share relevant information on flood insurance, coastal protection projects, and other resiliency issues. To help communities better understand the role of zoning in supporting resiliency, we shared resources at events and online, including a [short animated video](#), [an illustrated poster](#), and two-page handouts on [zoning](#), [flood risk](#), [flood resilient construction](#), and [flood insurance](#).

This document summarizes the input we heard from stakeholders—

residents, Community Boards, civic and homeowners associations, non-profit organizations, property owners, businesses, architects, and elected officials—about the ways that zoning can help support resiliency investments, whether it's a new building that will meet all flood-resistant construction standards or an existing building making small improvements to protect critical building equipment from flooding.

What we heard through these conversations is that many different stakeholders in floodplain communities are looking for **more flexibility to support a wider range of options** for designing resilient buildings. Many residents in particular want to be able to retrofit their homes to be more resistant to **flooding without losing the usable space** they had in their basement or cellar. Property owners and architects voiced support for zoning flexibility that would allow them to design buildings of the same internal size that are **elevated to higher flood elevations** expected in the future because of climate change. Businesses expressed interest in zoning incentives that would help **offset the cost of investing in a floodproofed commercial space** that can be accessed directly and easily from the sidewalk. Many stakeholders emphasized the need for straightforward rules that can be used by ordinary homeowners to build in a **timely and predictable manner**.

While voicing support for this additional zoning flexibility, many stakeholders shared concerns about how elevated buildings or large, blank floodproofed walls would affect neighborhood character. They were interested in seeing a greater variety of design options made available through zoning to **improve the aesthetics** of both residential and commercial resilient buildings.

Zoning was the focus of this outreach process. However, stakeholders raised concerns about other resiliency issues that are also summarized in this document. For example, many participants conveyed that it is often difficult for property owners to support the costs of proactive resiliency investments to their buildings without financial assistance.

This document summarizes the feedback we heard on issues and priorities, broken down by the following categories:

- Low-density residential neighborhoods
- Medium and high-density residential neighborhoods
- Commercial corridors
- Partial flood risk mitigations
- Areas beyond the 1% annual chance floodplain
- Recovery from future storms

This is followed by a summary of feedback we heard on other resiliency issues, and a description of next steps as the Department incorporates this feedback into a draft proposal for updates to flood resilience provisions of zoning. We invite you to review this outreach summary, [visit our website](#) and [watch our video](#) for additional background on this work, and write to us with your ideas to help shape a set of rules that can better support investments in resilient buildings in New York City.

Outreach Highlight: Video



DCP created this short video to explain special zoning regulations that apply to the floodplain. This video is part of an extensive public campaign to share information on flood risk and flood resistant construction requirements. The goal of this outreach is to generate input on how to modify zoning rules to remove regulatory barriers to resiliency investments and make neighborhoods more resilient.

Since Hurricane Sandy in 2012, DCP has led several initiatives to advance zoning and land use strategies to reduce flood risks and support the city's vitality and resiliency. This work is part of the City's [OneNYC plan](#), which includes numerous strategies to make the city more resilient through multiple lines of defense. In addition to coastal protection, infrastructure investment, and emergency preparedness, which are all important aspects of resiliency, building and retrofitting homes and businesses to more resilient standards ensures that neighborhoods can recover more quickly from a storm.

To ensure that there is a pathway for homes, businesses, and neighborhoods throughout the coastal area to meet the newest federal flood-resistant

construction standards, DCP developed special zoning regulations to advance flood resiliency that apply in the 1% annual chance floodplain. The goal of these rules was to promote resiliency by aligning zoning regulations with the demands of flood resilient construction standards, which are required through NYC's Building Code for any new or substantially improved buildings in the floodplain.

The Flood Resilience Zoning Text Amendment was adopted on a temporary, emergency basis in 2013, to support post-Sandy reconstruction. At this time, DCP expressed the intent to pursue a second text amendment to make provisions permanent and address additional issues encountered after these provisions were adopted.

Since then, DCP has undertaken several neighborhood and citywide studies to understand specific issues relating to resiliency improvements to buildings in residential, commercial and industrial areas. Coupled with lessons learned from homeowners and practitioners during the recovery and rebuilding process, this research has helped DCP identify opportunities to improve zoning regulations so they can better enable and encourage a more resilient building stock.

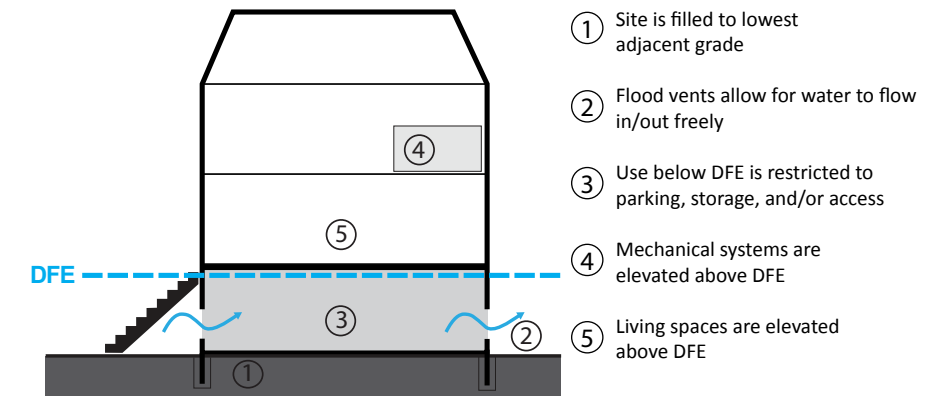
To learn more about all of DCP's resiliency initiatives visit www.nyc.gov/resilientneighborhoods.

Flood Resilient Construction Standards

Flood resilient construction reduces potential damages from flooding and can lower flood insurance premiums. New buildings in the floodplain are required to meet flood resilient construction standards, which are set by FEMA and defined in the NYC Building Code in Appendix G. Existing buildings that are substantially improved are required to meet these standards as well. Existing buildings also have the option of reducing their risk by proactively retrofitting or rebuilding to meet these standards, or investing in short-term measures to address safety concerns. There are a wide range of flood resilient construction practices that can enable buildings to better withstand floods. The most common methods are wet floodproofing, which enables water to pass underneath the building with minimal damage, and dry floodproofing, which utilizes materials and construction that seals the building from water. Dry floodproofing is only available for non-residential buildings.

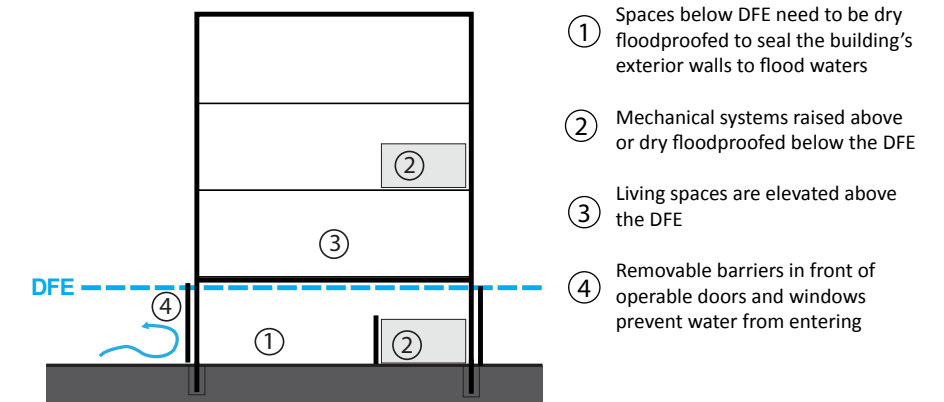
1 Wet Floodproofing

Elevating the lowest floor and mechanical equipment to above the DFE, and limiting uses below this level to parking, building access, and minor storage. This allows water to move in and out of the lower portions of the building with minimal damage.



2 Dry Floodproofing

Sealing the exterior of the building to make it water-tight and using removable barriers at entrances below the DFE in mixed-use and non-residential buildings.



Terms to Know

1% annual chance floodplain	Also referred to as the "flood zone," or the 100-year floodplain, it is the area that has a 1% chance of flooding in any given year and is designated on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs).
Base Flood Elevation (BFE)	The elevation to which floodwater is anticipated to rise during a 1% annual chance storm as shown on FEMA's FIRMs (measured from a vertical control datum, not from ground level).
Design Flood Elevation (DFE)	The minimum elevation to which a structure must be elevated or floodproofed, determined by adding freeboard (additional height for safety, either 1 or 2 feet depending on building type) to the BFE.
Substantial Damage	Damage to a building for which the total cost of repairs is 50 percent or more of the building's current market value before the disaster occurred, regardless of the cause of damage.
Substantial Improvement	Any repair, reconstruction, rehabilitation, addition, or improvement with a cost equaling or exceeding 50 percent of the current market value of the building.

Flood Resilience Zoning

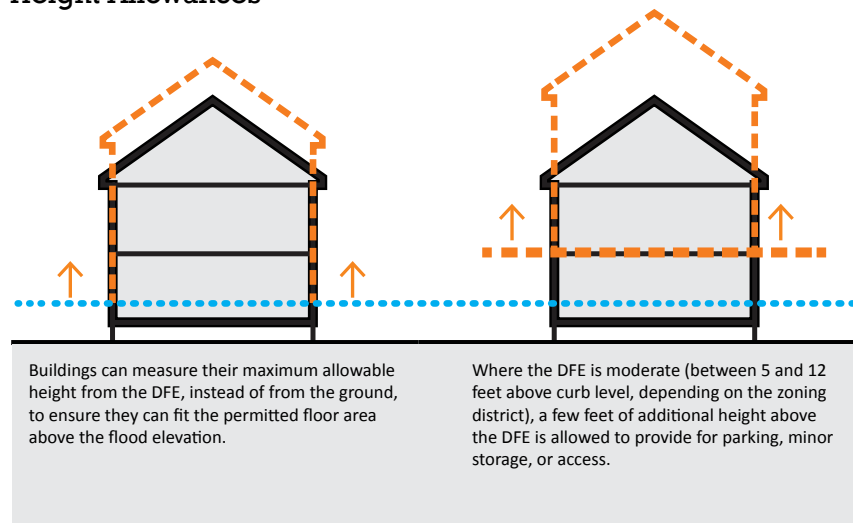
In 2013, the Flood Resilience Zoning Text Amendment was adopted on a temporary, emergency basis to remove regulatory barriers that hindered or prevented the reconstruction of storm-damaged properties. These zoning provisions enable buildings to comply with NYC Building Code and also require certain design elements

to soften the visual effect of elevated buildings that may have large, blank walls. These zoning provisions are available to buildings located entirely or partially within the 1% annual chance floodplain, as designated on either the 2007 Flood Insurance Rate Maps (FIRMs) or the 2015 Preliminary Flood Insurance Rate Maps (PFIRMs).

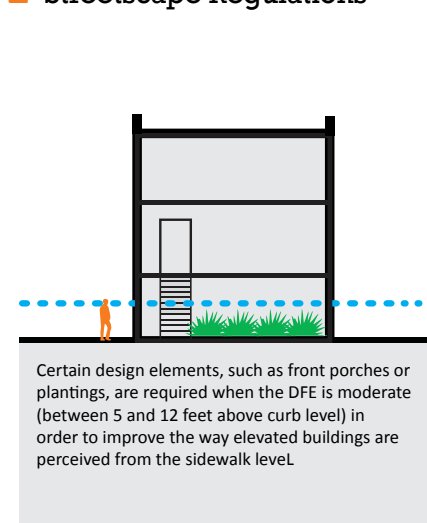
Under the current zoning, utilizing the following rules requires full compliance with NYC Building Code's flood resilient construction standards as defined in Appendix G.

Zoning Provisions for Development in the Floodplain

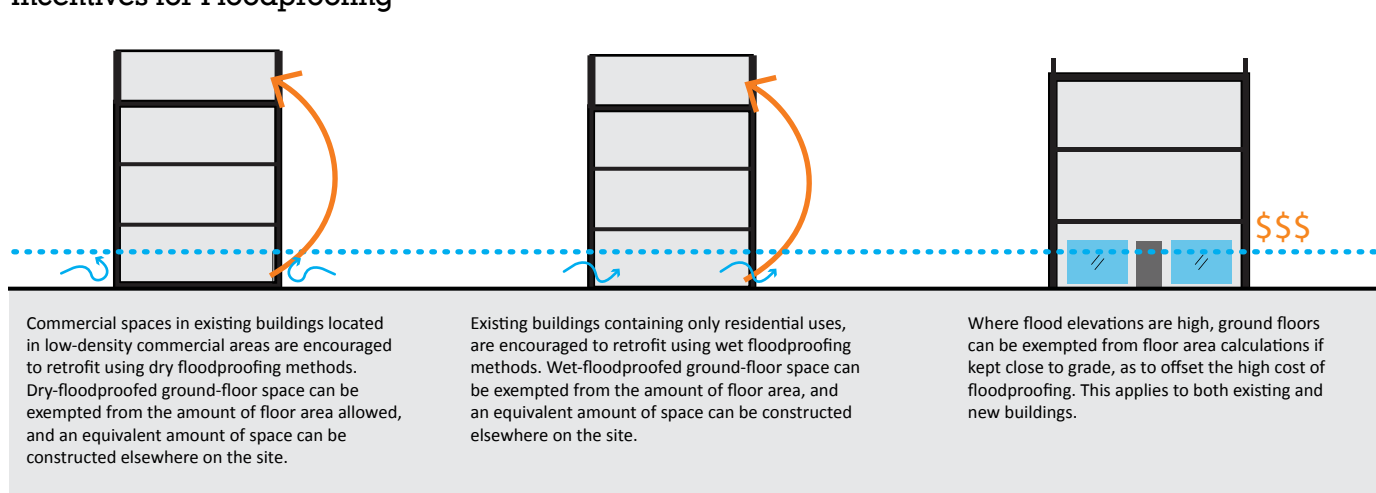
1 Height Allowances



2 Streetscape Regulations



3 Incentives for Floodproofing



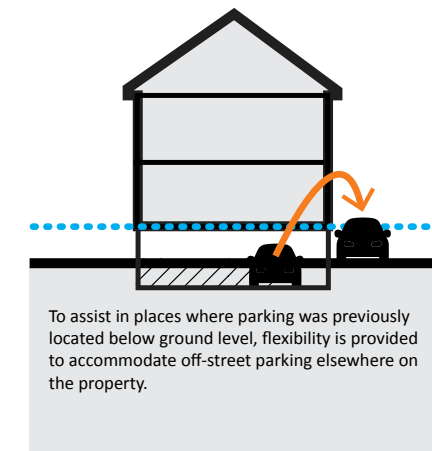
... DFE
- - - Zoning Envelope

Zoning Provisions for Partial Mitigations

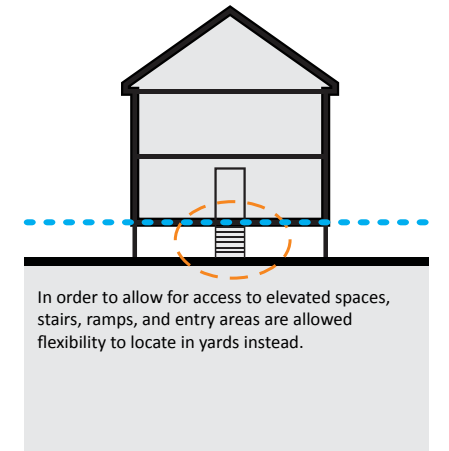
There are also provisions within the current zoning that do not require full compliance with Appendix G of the NYC Building Code. These provisions provide flexibility for property owners to make smaller resiliency investments.

Additional background on the flood resiliency rules within zoning can be found at www.nyc.gov/floodtext.

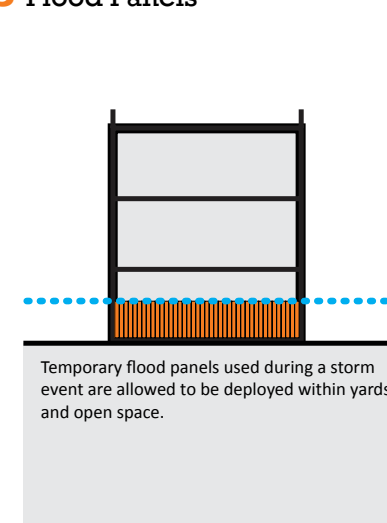
1 Off-Street Parking



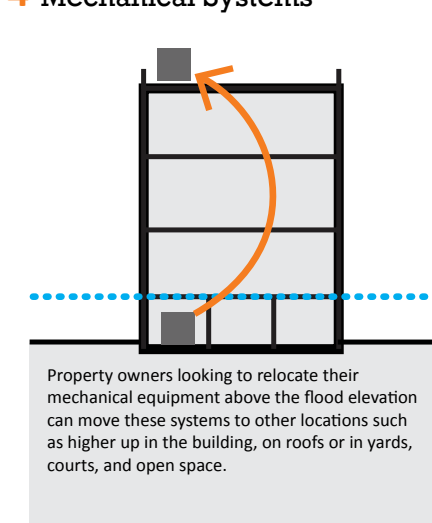
2 Access



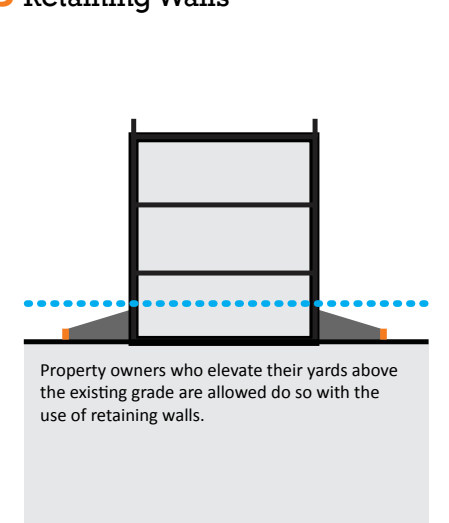
3 Flood Panels



4 Mechanical Systems



5 Retaining Walls



Special Regulations for Neighborhood Recovery

During the recovery effort to rebuild and elevate homes after Sandy, the City deemed it necessary to provide relief from documentation requirements for existing buildings undergoing retrofitting. Large numbers of homeowners with damaged buildings lacked clear documentation that their residences were legally non-conforming or non-complying with existing zoning. This made it difficult to reconstruct or elevate portions of existing structures that did not meet current zoning requirements. Because this was hampering the pace of neighborhood recovery, DCP, working with the Mayor's Office of Housing Recovery Operations, introduced an amendment to provide temporary exemption from these documentation requirements for buildings affected by Sandy. This amendment to the zoning text, called Special Regulations for Neighborhood Recovery, was adopted in 2015. In addition to simplifying the documentation process, it established a "cottage envelope" to allow lower, high-coverage buildings on certain narrow and shallow lots, where previous regulations were producing incongruous, tall and narrow "candlestick" structures. Since these regulations were intended to address the recovery process in heavily-impacted neighborhoods, they apply to limited areas in Brooklyn, Queens, and Staten Island, and are set to expire in 2020.

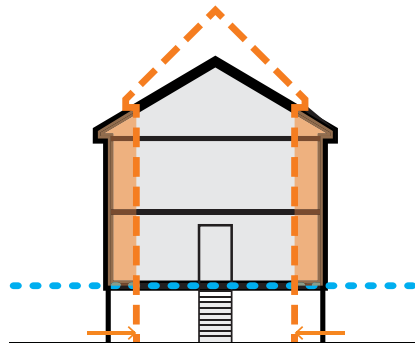
Additional Issues Identified

Since the adoption of Flood Resilience Zoning Text Amendment and Special Regulations for Neighborhood Recovery, DCP has been conducting analysis and outreach through citywide and neighborhood-specific resiliency studies to better understand how effective these temporary regulations have been in supporting the recovery and rebuilding process. This process has affirmed many ways in which the zoning is supporting flood resilient

construction, but also several key areas where the rules do not fully support, or may contribute to discouraging resiliency investments in buildings (whether to make them fully compliant with Appendix G or to make smaller improvements). As part of DCP's recent outreach efforts, the additional issues we initially identified were presented to community audiences in areas that were the subject of neighborhood resiliency studies as

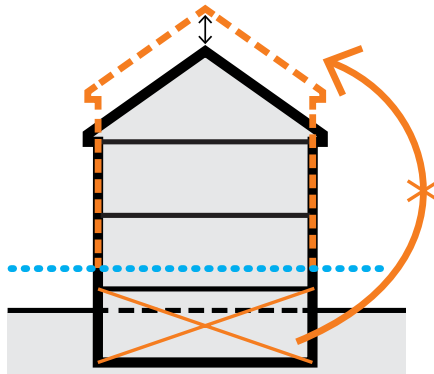
well as in other neighborhoods with a substantial area within the floodplain. This effort was intended to confirm and refine the Department's understanding of challenges faced by residents, property owners and businesses, and to identify additional issues. Examples of initial issues shared with communities are described below, and in more detail later in this document.

1 Old Homes on Small Lots



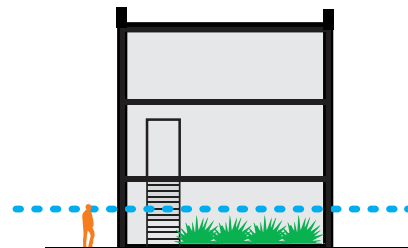
Property owners of older homes located on small lots may need more flexibility to rebuild or retrofit in the future, as they are often constrained by existing zoning regulations such as yard requirements.

2 Potential Loss of Space



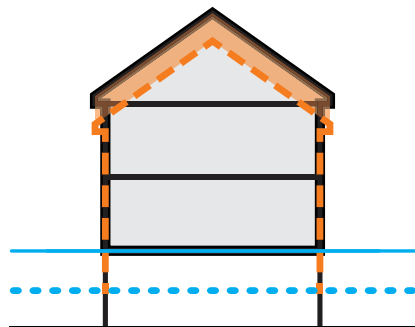
Property owners may not be able to replace lost subgrade spaces when retrofitting and filling in basements and cellars.

3 Improving the Streetscape



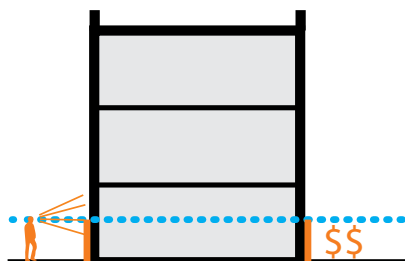
Opportunities exist to improve the options for streetscape-improving elements, including front porches or plantings, that are required for elevated buildings to mitigate potential negative effects from the street level, provide flexibility for a range of building types, and promote quality urban design.

4 Building for Future Risk



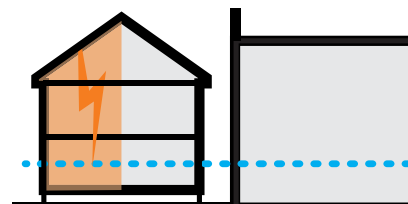
Property owners may be unable to elevate as high as they would like in order to account for future flood risk and higher flood elevations, or to reduce flood insurance costs.

5 Quality Ground Floors



Current zoning incentives for commercial buildings that were intended to keep active uses and access to the building at the sidewalk level may not be sufficient to help offset the high cost of dry-floodproofing.

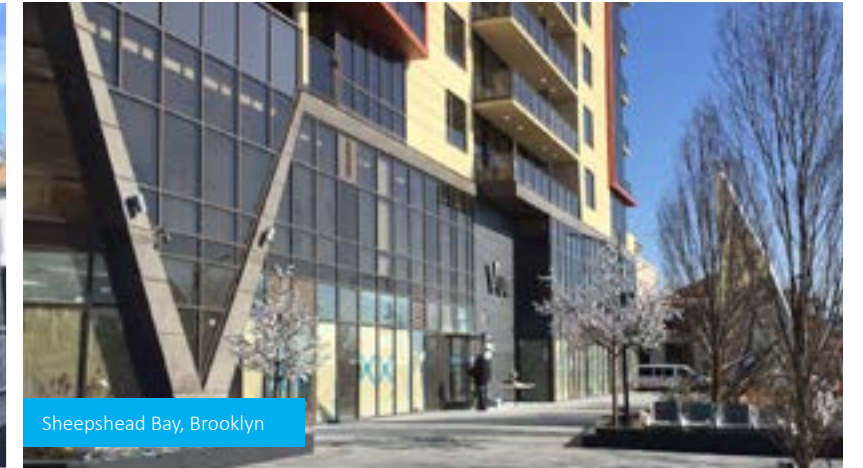
6 Residential Buildings in Manufacturing Districts



Existing homes located in Manufacturing Districts (M1, M2 and M3) and Heavy Commercial Districts (C8) are non-conforming, and thus are not able to significantly retrofit. If damaged extensively by a storm, they would be unable to rebuild as residential because zoning restricts the reconstruction of non-conforming buildings.



Gerritsen Beach, Brooklyn



Sheepshead Bay, Brooklyn



Broad Channel, Queens



Staten Island



Rosedale, Queens

City Planning staff on site visits and tours

Other Issues

In discussions with other agencies and nonprofit groups, DCP also identified other concerns that are not addressed in the current flood resiliency zoning rules, including:

- buildings in campus-style housing complexes lack the flexibility needed to incorporate small resiliency improvements
- buildings situated outside the floodplain often cannot make proactive resiliency investments
- the need for an administrative approach towards implementing temporary regulations to help aid recovery following storms

FLOOD RESILIENCY OUTREACH PROCESS

The outreach process was designed to engage stakeholders—residents, Community Boards, civic and homeowners associations, non-profit organizations, property owners, businesses, architects, other City agencies, and elected officials—throughout NYC’s floodplain by:

- **Partnering with stakeholders** to promote awareness of flood risk and resiliency issues
- **Explaining zoning tools** that relate to resiliency
- **Exploring unique neighborhood issues** through in-depth public dialogue
- **Incorporating community feedback** into the Zoning for Flood Resiliency text update

This outreach process, which began in 2016, included a range of activities:

- **Public presentations** at Community Board meetings, civic group meetings, and other community events, to share an overview of DCP’s climate resilience work and preliminary ideas for what can be addressed through a future zoning text update

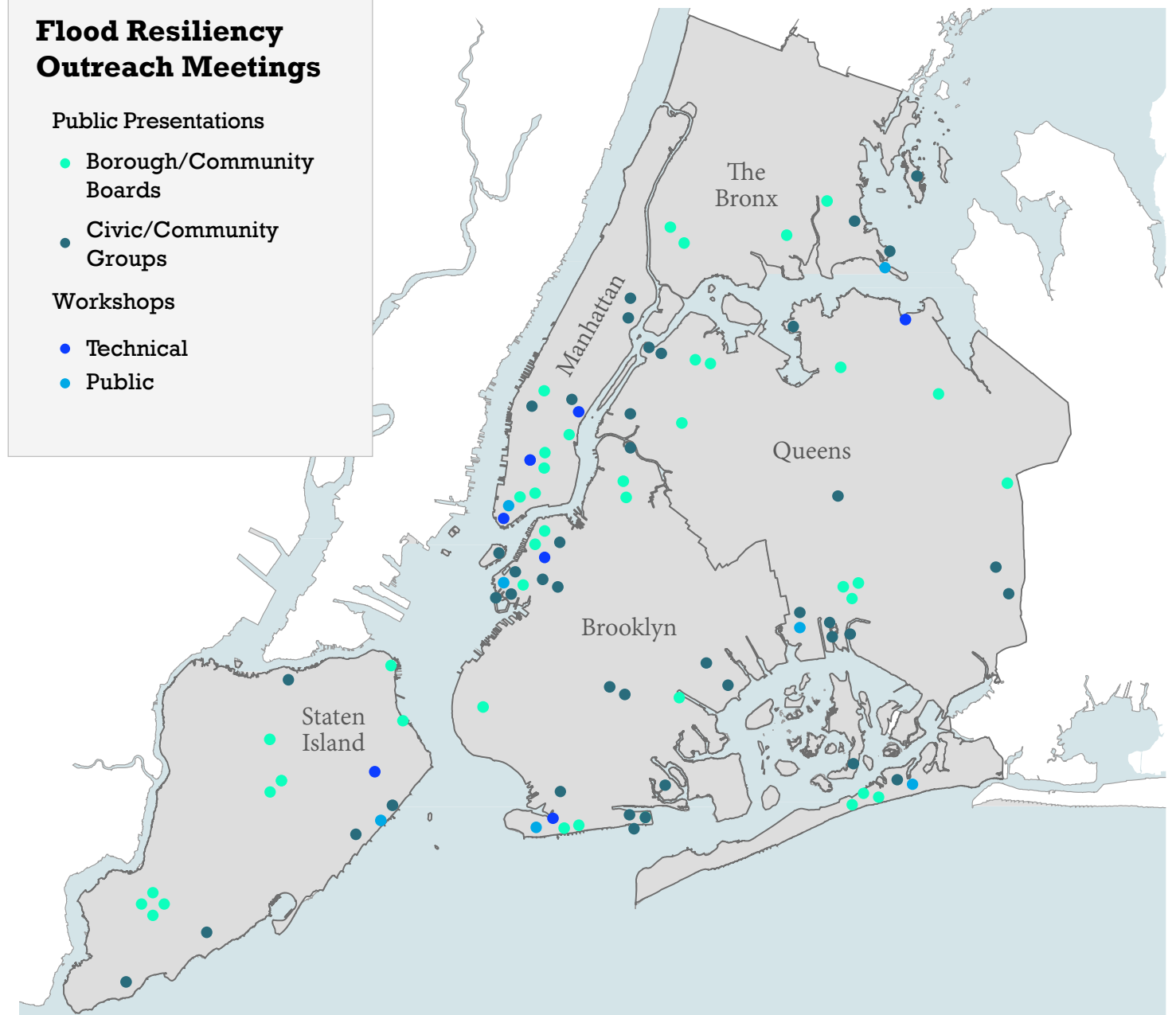
- **Public workshops** in each borough, in partnership with local organizations and other agencies; these included facilitated conversations to collect feedback on zoning approaches to enable resilient buildings, as well as urban design strategies that complement neighborhood character
- **Technical workshops** with practitioners who regularly design resilient buildings; to understand the zoning issues they commonly face when designing new buildings and retrofitting existing buildings to be climate resilient
- **Stakeholder conversations** with non-profit and advocacy, organizations, elected officials, and City, State, and Federal agencies to share ideas and learn from their experience working on climate resiliency projects

- **Sharing resources online**, including an animated informational video that was promoted on social media and advertisements throughout the city, two-page handouts on relevant topics in seven languages, a newsletter to answer common questions heard during the outreach process, and an online form for the public to share feedback if they were unable to attend presentations and workshops

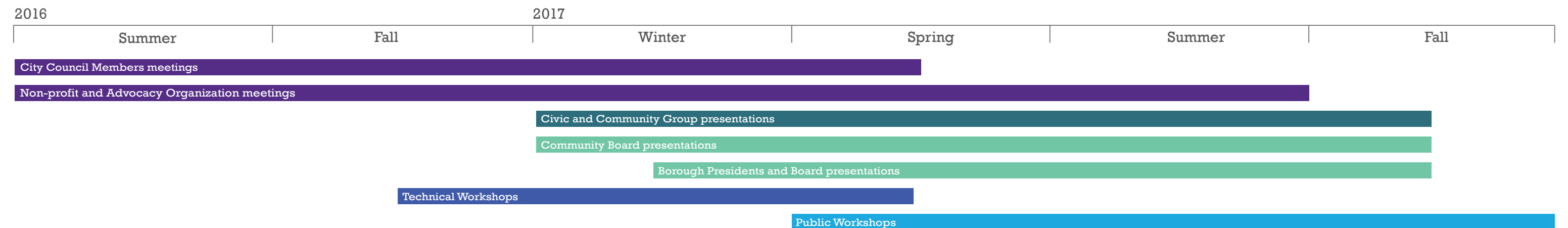
This outreach effort included over 110 meetings with Community Boards, civic groups, business owners, technical experts, and residents, all of whom provided input and contributed to DCP’s understanding of resilient building challenges in different neighborhood contexts.

Flood Resiliency Outreach Meetings

- Public Presentations**
 - Borough/Community Boards
 - Civic/Community Groups
- Workshops**
 - Technical
 - Public



Outreach Timeline



Outreach Highlight: Public Workshop

In order to gain insights into the challenges of resilient construction in different neighborhoods, DCP hosted seven public workshops across the city with the support and assistance of community groups and other agencies. These workshops were held in Red Hook, Brooklyn; Rockaway, Queens; Midland Beach, Staten Island; Howard Beach, Queens; Coney Island, Brooklyn; Throggs Neck, the Bronx; and Lower Manhattan.

The main goals of the workshops included:

- **Giving participants an overview** of DCP's climate resiliency work, with a focus on how zoning can enable neighborhoods become more resilient to flooding
- **Sharing information**, by providing both data on flood risk and an opportunity for relevant non-profits and agencies to communicate their ongoing resiliency work with participants
- **Facilitating conversations and collecting feedback** on resiliency challenges, zoning strategies, and urban design priorities to enable and encourage resilient buildings.

Facilitated conversations and feedback were the primary focus of these events, which were centered around a table activity where participants designed their own resilient buildings. Participants were asked to examine and discuss challenges of their design choices and compare them to what is allowed under existing zoning.

Workshop zoning discussions explored, but were not limited to:

- **Addressing loss of subgrade space** by providing extra height for property owners to replace lost basement or cellar space elsewhere within the building
- **Supporting long-term planning** by allowing extra height for building owners that construct to higher flood elevations
- **Promoting active retail streets** by offering floor area incentives for commercial buildings that floodproof to keep entrances close to sidewalk level

- **Strengthening neighborhood fabric** by identifying a range of design strategies to mitigate the effects of elevated buildings.

Participants also shared challenges they faced when making their workshop buildings more resilient, as well as preferences for different design options. These workshops allowed for in-depth discussion on nuanced zoning issues, which provided DCP with insight into participants' primary concerns and ideas for fostering a more resilient building stock. Comments shared at these intensive hands-on workshops, summarized here, will continue to shape DCP's development of a proposal for Zoning for Flood Resiliency.

Workshop Exercise: Construct Your Own Resilient Building



1 Pick a building in your neighborhood. It can be the place you live, work, or are interested in!



2 Build the existing conditions of your building with available cut-out cards.



3 Place your flood elevation on the building.



4 Retrofit your building to become more resilient by using available cards.



5 Add the zoning envelope that reflects your neighborhood's zoning above the flood level.



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



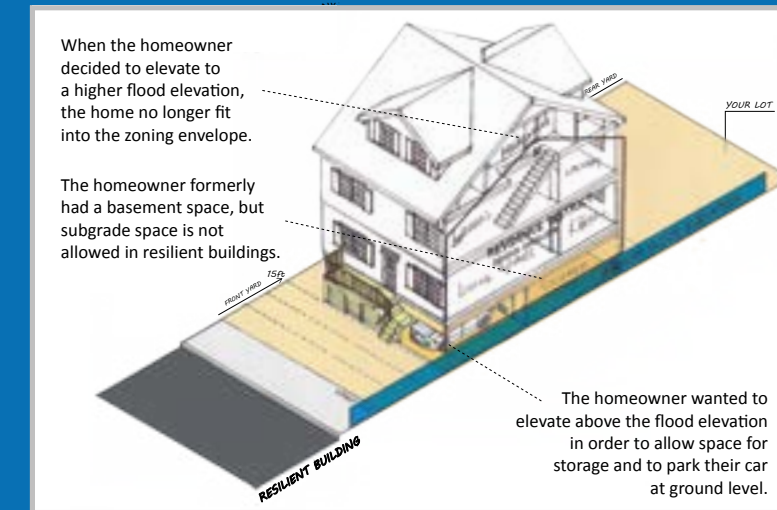
7 Add your building to the wall and imagine how your neighborhood could look like!



8 What do you think about the results? Add a post-it with your thoughts on the wall!

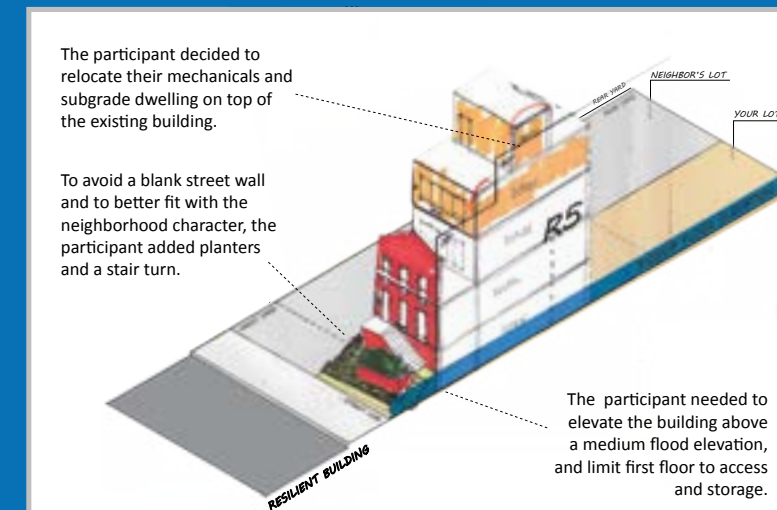
Examples of Participant-developed Resilient Buildings

Detached Residential



A participant at our Zoning for Flood Resiliency Workshop decided to elevate their example home above the flood elevation. Though they were able to add parking and additional storage space, the change in height made the home exceed the envelope allowed by current zoning regulations.

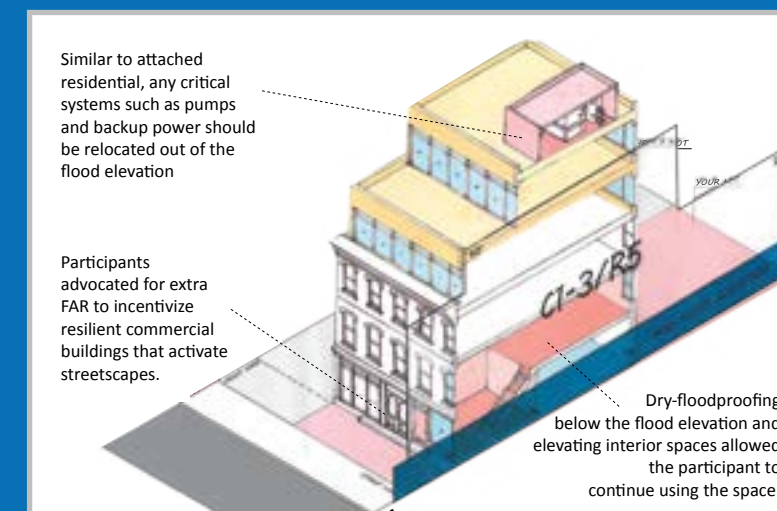
Attached Residential



A participant chose a multi-family building for the workshop. They decided to fill in the basement and relocate the dwelling above the flood elevation.

Furthermore, they identified a number of urban design strategies, such as adding vegetation in front of the elevated stair turn, to mitigate the effects of elevated buildings on neighborhood character.

Commercial/Mixed Use



A participant that worked in a mixed-use art gallery and apartment complex chose to workshop a similar building. They chose to dry-floodproof and relocate storage for the gallery and mechanicals from the basement to a higher floor to avoid damage and utility outage in the event of a storm.

WHAT WE HEARD



Community Workshop: Eastern Bronx, Oct. 2017



Community Workshop: Howard Beach, Oct. 2017



Community Workshop: Rockaway, Jul. 2017

110+ Outreach events held
 700+ Workshop posters given out
 2500 Community members & stakeholders engaged



Community Workshop: Red Hook, Jun. 2017



Community Workshop: Coney Island, Oct. 2017

Public workshops across New York City

Overall, the feedback we received about zoning was primarily related to the constraints faced when designing resilient buildings, how greater flexibility for height, yards, and floor area can make this easier, and how

building design can enhance rather than detract from the vibrancy of neighborhoods. Many stakeholders were also interested in learning about topics other than zoning, such as flood insurance, stormwater management,

and sources of financial assistance for retrofitting homes. This feedback is summarized and organized by topic area. For the full list of all the meetings we held, visit www.nyc.gov/floodtextupdate.

Resiliency Zoning Feedback

Low-Density Residential Neighborhoods

Participants from low-density communities across the city's floodplain frequently voiced a desire for increased zoning flexibility to support and encourage resilient design. Residents supported allowing homes to be elevated above today's flood levels by permitting extra height beyond what is allowed under existing zoning. They saw various benefits to this approach: preparation for future flood risk due to climate change or floods caused by larger storms like Sandy, additional savings on flood insurance premiums, and the ability to create new space underneath the home for parking or to relocate storage that was previously in the basement or cellar.

Basements and cellars are widely used as living spaces in the Eastern Bronx, and building owners are supportive of finding a way to recoup floor area that is lost when retrofitting.

Neighborhood resident at Northeastern Bronx Workshop

During the workshops in particular, many participants said that they would be interested in retrofitting their homes only if they were able to ensure that they could recoup their lost basement or cellar space elsewhere in the building. This concern was one we also heard from other City agencies and architects working with homeowners in the flood zone, who described homeowners shelving plans to retrofit their homes to flood resistant construction standards. In some instances, homeowners enrolled in the City's housing recovery program, Build It Back, withdrew after learning that zoning restrictions meant their basement or cellar space could not be relocated, declining an opportunity to make their home resilient.

Architects noted that adding extra elevation to a home already undergoing a retrofit represents a relatively small additional cost overall, and yields the benefits of lower risk of flood damage, lower insurance premiums, and additional space for storage or parking. Architects and residents both expressed interest in having the option of basing the building's elevation on future, higher flood levels, to better protect their homes from the anticipated effects of climate change.

Once a building is up on cribbing, adding another three feet is a negligible cost compared to the increased resiliency of that building.

Architect at Rockaway Workshop



Participants discussing resilience strategies at the Community Zoning Workshop in Eastern Bronx, October 2017

While participants in these sessions frequently expressed support for extra height allowances to support resiliency, some residents expressed concern that taller homes would conflict with existing neighborhood character. While these residents recognized that some of this is an unavoidable consequence as homes are elevated above flood levels over time, they were concerned that allowing taller homes would change the current visual experience of their street.

In neighborhoods characterized by bungalow-style homes on small lots, participating residents expressed resounding support for making the "cottage envelope" available throughout the floodplain. The "cottage envelope" is an optional, alternative set of height and setback regulations that was created under the Special Regulations for Neighborhood Recovery, a temporary zoning provision that applies to a limited number of neighborhoods that were heavily impacted by Hurricane Sandy. These regulations relax certain yard requirements for homes on small, narrow or shallow lots that are otherwise highly constrained by underlying zoning, provided that the building meets a lower overall height limit. Residents have noted that homes rebuilt utilizing the cottage envelope provision have achieved better interior layouts and better fit with existing neighborhood character.

It's important for people to be able to maximize savings on flood insurance premiums without being penalized by zoning height limits.

Staten Island Community Board member

Finally, in workshops for low-density residential areas, we heard feedback regarding design strategies, such as stair turns and front porches, that help soften the visual effect of elevated buildings. Residents saw value in having flexible design parameters for elevated buildings that enable a range of aesthetically pleasing design solutions that fit different owners and neighborhoods. Some workshop participants requested that there be a wider range of design options available, beyond what is provided under zoning today.

Medium and High-Density Residential Neighborhoods

In medium and high-density residential communities, feedback was mostly related to the construction of new buildings or resiliency investments in existing buildings that do not involve physically elevating the building. (It is difficult to elevate larger buildings because of their size or structural type, especially when they share a wall with a neighbor.) Participants in these sessions generally supported additional zoning flexibility, such as allowing more height to accommodate the relocation of basement or cellar space, or exempting certain types of floodproofed space from floor area calculations. However, some residents suggested that incentives should be crafted carefully so as to avoid offering too many benefits to developers.

Residents expressed support for changes that would allow space used for lobbies and internal stairs to be exempted from the maximum allowed floor area. They felt this approach would result in better design by keeping entrances at sidewalk level and stairs within the building, as compared to locating ramps and stairs outside of the building, which would force the building to be more set back from the sidewalk. Some suggested that if parking is located beneath an elevated building, it should not count against the maximum allowed building height, although some raised concerns that parking on the ground floor will become more prevalent in resilient buildings and diminish the quality of the streetscape, and therefore should be mitigated with design elements. In general, architects and residents shared an interest in urban design strategies that help soften the stark visual impact of blank walls along the sidewalk but are flexible enough to work for a range of buildings and contexts.

It would be a common sense approach to remove existing disincentives that could hinder resilient construction. There is a need for more floor area incentives and height relief to all areas of the floodplain.

Northwestern Queens
Community Board member

Developers could possibly abuse extra height relief because of high property values, so it is important that DCP make it clear how much additional height would be needed in anticipation of future flood elevations.

Lower Manhattan
Community Board member

Proposed [elevated] development in the neighborhood could have a big impact on the street experience due to its blank facades. Green infrastructure and more greenery should be incorporated in these cases since it would be a better design and would also help to absorb water in the case of heavy rain or other types of flooding that the community experiences more often than a rare storm event.

Northwestern Queens Community Board member



Participant selecting their favorite incentives and urban design strategies for a mixed-use high density neighborhood, November 2017



DCP held over 110 public presentations, including the Community Zoning Workshop in East Shore Staten Island, June 2017



Participant learning about base flood elevations at the Community Zoning Workshop in Red Hook, June 2017

Commercial Corridors

Residents, business owners, property owners, and architects shared a variety of perspectives on ways to ensure that commercial corridors in the floodplain are both vibrant and resilient. There was consistent agreement among participants in workshops and at public meetings that buildings in commercial corridors best serve businesses and the community when the business can be accessed at the sidewalk level, which is most directly achieved through dry floodproofing. Stakeholders noted that dry floodproofing storefronts may add substantial upfront costs to the construction, especially when transparent, flood-resistant glass is utilized. To address this challenge, they expressed support for providing incentives for dry floodproofing through zoning, such as increasing floor area allowances for buildings with dry floodproofed spaces. An incentive for the dry floodproofing of some existing commercial buildings was created in the Flood Resilience Text Amendment, but has not been extensively utilized. Architects noted an unintended consequence of current zoning provisions: buildings are encouraged to provide less desirable ground-floor retail space with “squished” floor-to-ceiling heights, because a first floor that is more than 50% below the DFE is considered a “cellar” rather than a “basement,” and is not considered floor area.

Businesses should be able to utilize additional commercial space on second floors. However, second floors should not fully replace first floor retail experiences since active, strong visual connections are key for successful first floor retailers.

Business owner at
Manhattan Retail Workshop

The less costly approach of elevating a commercial space can disconnect pedestrians both physically and visually from the goods or services being offered, which hurts businesses and can disrupt the continuity of commercial streets that rely on foot traffic. In the event commercial uses are elevated from the sidewalk level, stakeholders favored design techniques that mitigate the negative effects of elevated buildings and reflect neighborhood characteristics. In general, people favored design elements that help activate the street-level space with areas for people to meet, gather, and sit, rather than visual elements such as wall art that are difficult to maintain.

Workshop participants shared insights about businesses that depend on cellar spaces for operational functions such as storage, mechanical equipment, or small offices. At the Manhattan Retail Workshop, participants discussed

Elevating retail spaces can create challenges for accessibility for people with disabilities and maintaining commercial vibrancy, so there's a desire to keep retail at street level. Also, ramps and stairs with cement barriers can create walls that de-humanize a commercial street. If this approach is used, then sloped sidewalks with plantings are more appealing. Large blank walls on elevated buildings could lead to graffiti or neglected streetscape.

Neighborhood resident at Western Brooklyn Workshop

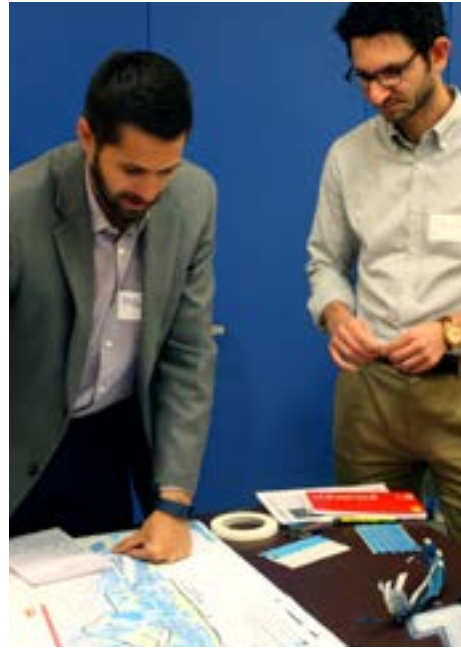


Active discussion about storage space in commercial buildings at the Manhattan Retail Workshop, November 2017

Partial Flood Risk Mitigations

Property owners and other stakeholders pointed out that not all existing buildings will be able to fully meet flood resistant construction standards set by Building Code, either because of physical obstacles or because of financial constraints. In light of these limitations, participants at workshops also discussed the option of small improvements that can partially mitigate damage from a flood, whether at today's flood levels or higher levels in the future due to climate change. In general, stakeholders expressed a desire for zoning to allow for a wider variety of small improvements, or partial mitigations, to enable a less expensive, as-of-right approach for making their buildings more resilient.

While the current zoning allows additional latitude for mechanical equipment to be relocated from the basement to the top of the building or a rear yard, architects and property owners highlighted some limitations of these allowances. Though some flexibility exists for mechanical equipment, the space used to access the equipment is counted as floor area, which can pose difficulties for existing buildings that are trying to reconfigure and relocate building systems. Similarly, a number of residents participating in sessions requested more flexibility for locating their mechanical equipment, and owners of small homes expressed interest in being able to expand spaces to accommodate amenities such as minor storage or laundry appliances, along with the mechanical space. We also heard concerns from architects and elected officials about being able to locate emergency power generators within yards and rooftops without zoning barriers, not just within the floodplain, but within other areas of the city that may be impacted by power outages.



City Planning staff discussing Community District 13 floodplain boundaries at the Community Zoning Workshop in Southern Brooklyn, October 2017

Relocating mechanical systems to back and side yards is an attractive solution, since new mechanical systems are generally smaller and more efficient than current mechanical systems in homes.

Architect at Howard Beach Workshop



Participant discussing resilience strategies for mixed use high-density buildings at the Manhattan Retail Workshop, November 2017

Areas Beyond the 1% Annual Chance Floodplain

Participants in outreach meetings, especially residents and architects, expressed concern that zoning does not provide additional flexibility to incorporate resiliency measures into buildings located outside the 1% annual chance floodplain, even though these areas may flood from more extreme storms or become part of the 1% annual chance floodplain in the future. In many such neighborhoods, particularly in southern Brooklyn, existing buildings may not be able to elevate above future flood levels, without bumping up against zoning height limits.

Zoning should refer to maps that incorporate climate change projections to encourage or even require buildings within the future floodplain to comply with flood resistant construction standards.

Resident at Southern Queens Community Meeting

Recognizing the risks of an expanding floodplain due to climate change, stakeholders suggested that zoning should not restrict proactive resiliency investments in buildings that could be affected by storms that cause flooding beyond the 1% annual chance floodplain. Many recalled that Sandy flooded areas not mapped as 1% annual floodplain at the time, and at flood levels higher than indicated on the map in many areas of the floodplain. Even though buildings in these areas are not currently required to meet flood resilient construction standards, and building owners will not necessarily voluntarily forego basement or cellar space, a number of residents and practitioners participating in these sessions expressed concern that those buildings do not have a reasonable option to prepare for future flood risks.

Recovery from Future Disasters

The many initiatives undertaken by DCP to support and expedite rebuilding after Sandy, including the initial Flood Resiliency Zoning Text Amendment and Special Regulations for Neighborhood Recovery, helped ensure that underlying zoning regulations did not conflict with the NYC Building Code's flood resilient construction standards, and provided relief for buildings that are non-conforming or non-complying. These efforts were undertaken on a temporary, emergency basis, with the support of community residents and leaders. While this issue was not a specific focus of this recent public outreach process, feedback from many meeting participants reflected the importance of supporting timely rebuilding in the wake of unforeseen events, and quickly putting in place appropriate regulations when needed.

Encouraging proactive over-elevation would help residents prepare for flooding in the long-term.

Architect

The City should explore financial incentives including tax abatements and dedicating tax resources paid to resiliency improvements.

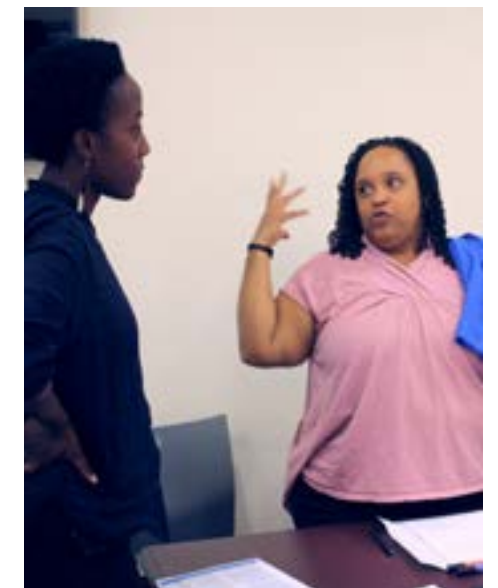
Architect at Southern Brooklyn Community Meeting



City staff on a site visit at Sheepshead Bay, Brooklyn



Participant identifying the floodplain in her neighborhood at the Community Zoning Workshop in Howard Beach, October 2017



Participant discussing resilience strategies for attached residential buildings at the Community Zoning Workshop in Southern Brooklyn, October 2017

Additional Resiliency Feedback

Zoning is of course only one of the factors influencing the resiliency of buildings and neighborhoods, and many comments from stakeholders related to resiliency issues that go beyond zoning. The most commonly voiced concerns were about the high cost of retrofitting buildings, the challenges of supporting rising flood insurance premiums, and a desire to see coastal protection improvements. While these issues go beyond what zoning can directly affect, DCP has collected this feedback and shared it with agency partners, to inform future City activities and decision making.

How can homeowners be expected to pay for flood insurance and to have the funds to retrofit their homes?

Resident at Southern Queens Community Meeting

Across the city, both residents and elected officials expressed that there is a gap between property owners' willingness to make proactive resiliency investments to their buildings and their ability to make these investments without financial assistance. While retrofitting their homes would not only better prepare them for a future flood but also reduce their flood insurance costs, many homeowners lack access to the capital necessary to make these investments.

In addition, as a result of changes to the National Flood Insurance Program, flood insurance premiums are increasing. While FEMA's intent is to encourage homeowners to make resiliency improvements, homeowners expressed concern that this rising cost will reduce the value of their homes, and thereby limit their ability to take out a home equity loan to help them pay for resiliency improvements. In addition, some homeowners expressed concerns that making resiliency improvements

could trigger reassessment of their homes and result in higher property taxes. A homeowner with a rental unit in their basement, which would be is vulnerable to flooding and raise flood insurance premiums, would not want to lose this source of income unless there were some means of replacing the unit (or the income) elsewhere. These factors—construction costs, insurance premiums, property taxes, and potential lost income—all act as deterrents to resiliency improvements.

If retrofitting triggers a new home value assessment that results in increased property taxes, this is especially challenging as flood insurance premiums are also rising.

Resident at Howard Beach Workshop

Owners of buildings with retail and community facility spaces stated their preference to dry floodproof in order to keep these commercial uses at sidewalk level, but they noted that the costs of doing this can be high, and that technical and material specifications, regulations, and operational and maintenance needs for these systems are often misunderstood. They expressed hope that advances in technology can make a greater array of dry floodproofing materials available at lower cost in the future.

Aquarium glass is financially prohibitive and insurance companies don't always recognize the material as a dry floodproofing strategy.

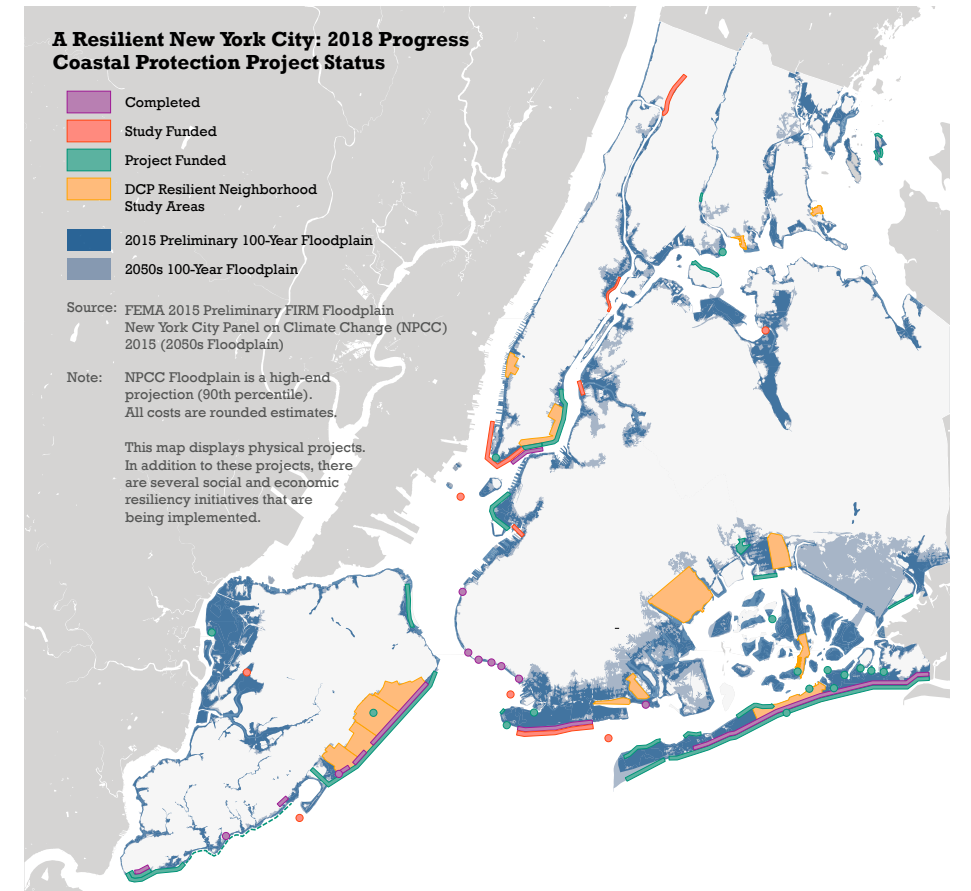
Contractor at Manhattan Retail Workshop



City Planning staff on a site visit in Rosedale, Queens

Residents in some neighborhoods were particularly interested in learning about how the City advocates for changes to the National Flood Insurance Program and how this could help them reduce their premiums through partial mitigation measures or income-based premium relief. In some areas of the city, there were requests for investments in shoreline protection or government buy-out of properties that are especially vulnerable. In neighborhoods that experience non-coastal flooding, residents raised questions about stormwater management improvements, especially green infrastructure solutions where they can help absorb rainwater.

Finally, at some meetings, residents requested additional enforcement of regulations for elevated homes to ensure that space below the flood elevation adheres to use restrictions and is not converted to living space or other use.

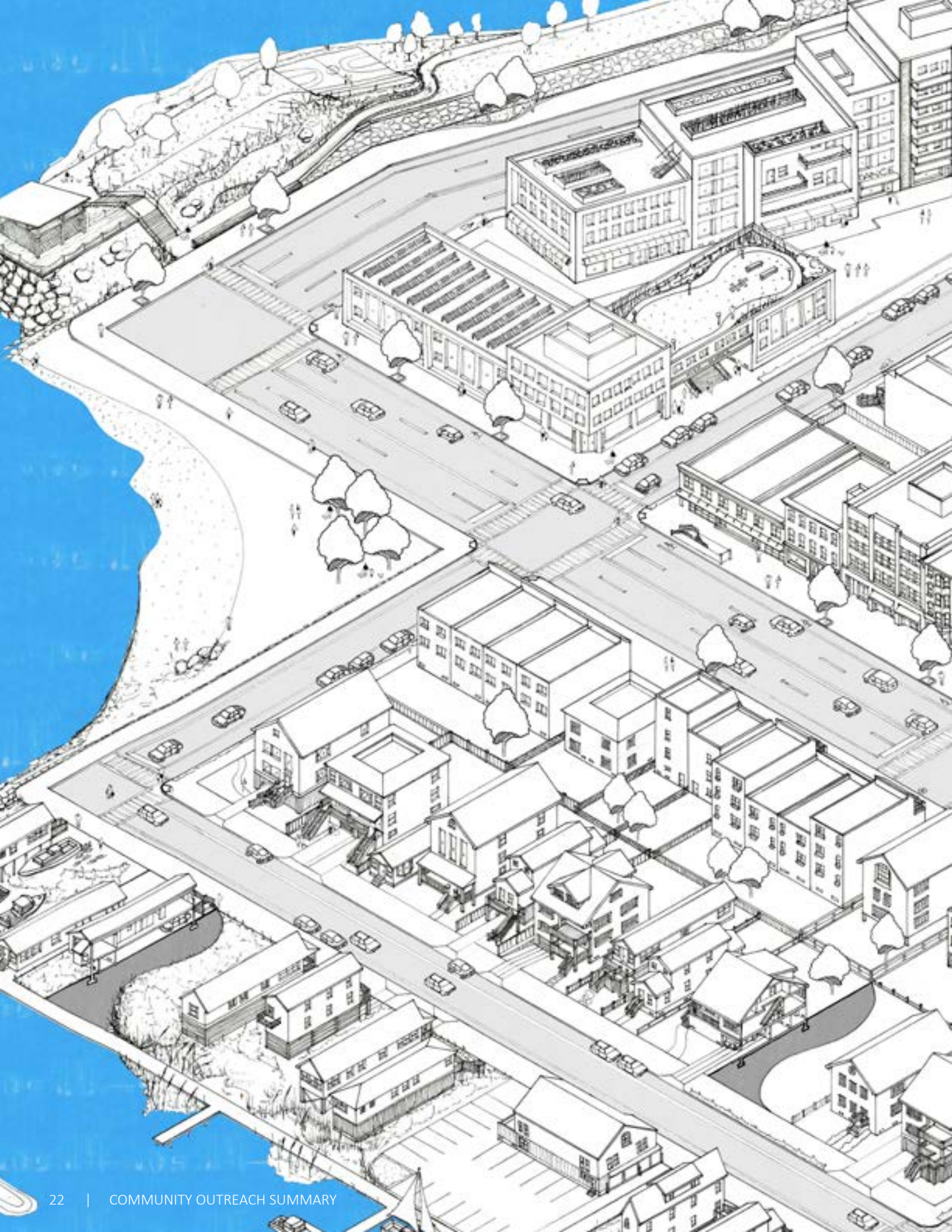


OneNYC Progress Report

In 2015, New York City created a strategic plan to address challenges of population growth, aging infrastructure, increasing inequality, and climate change called *One New York: The Plan for a Strong and Just City*, also known as OneNYC. The City is using four guiding visions — 1. Our Growing, Thriving City, 2. Our Just and Equitable City, 3. Our Sustainable City, and 4. Our Resilient City, to shape inclusive growth and climate action.

Vision 4, Our Resilient City, ties directly into City Planning's work to mitigate flood risk at the building and neighborhood scale. In 2018, the Mayor's Office published their third progress report, where latest data shows the square footage of buildings upgraded against flood risk increasing from about 7.7 million in 2017 to over 21.5 million in 2018. City Planning, along with the Office of Recovery and Resiliency and the Housing Recovery Office, has been working with coastal communities hit by Hurricane Sandy and encouraging flood-resilient building construction and retrofits. In addition, the City launched a public education campaign with FloodHelpNY.org offering free flood risk information and services. This work is augmented supporting preparedness efforts of community and faith-based organizations, investments in protecting critical infrastructure systems, and supporting numerous coastal protection projects that span across New York City's shoreline, seen in the map above.

For the full report and past progress reports, visit onenyc.cityofnewyork.us.



NEXT STEPS

The 2,500 stakeholders in communities across the floodplain who participated in DCP's outreach events provided important input on strategies that can support resilient building design, whether it involves making small investments to protect critical assets, retrofitting an existing home or business to meet full resilient standards, or designing a new resilient building.

The Department is actively incorporating this feedback into the process of drafting a proposal for Zoning for Flood Resiliency, which we plan to release publicly in Fall 2018, with a plain-language description of proposed zoning changes. This draft proposal will take into account what we have learned through the process of supporting Sandy recovery, the recommendations generated from our recent resiliency studies, including the [Resilient Retail](#) and [Resilient Industry](#) studies as well as [Resilient Neighborhoods](#) studies, and of course what we heard during our public outreach process. As we further develop the zoning proposal, we will continue to engage with communities and other stakeholders in advance of beginning the formal public review process, which will include a full environmental review and will provide opportunities for Community Boards, Borough Presidents, and the public at large to provide comments or feedback before the City Planning Commission and City Council consider and vote on the proposed changes.

If you didn't have the opportunity to attend one of our outreach meetings, we invite you to share your feedback on the issues covered in this summary. Have you encountered zoning issues when making resilient investments in your building? Do you have ideas about how resilient buildings can also ensure a vibrant neighborhood? Are there any zoning issues related to enabling resilient construction you think we have missed? Write to us at: ResilientNeighborhoods@planning.nyc.gov.

