Zoning for Coastal Flood Resiliency
Chapter 8: Urban Design & Visual Resources

A. INTRODUCTION

This chapter assesses the Proposed Action's potential effects on urban design and visual resources. As detailed in **Chapter 1, "Project Description,"** the New York City Department of City Planning (DCP) is proposing a zoning text amendment to update the Special Regulations Applying in Flood Hazard Areas (Article VI, Chapter 4) of the New York City Zoning Resolution (ZR), which includes the "Flood Resilience Zoning Text" (the "2013 Flood Text") and "Special Regulations for Neighborhood Recovery" (the "2015 Recovery Text"). These temporary zoning rules were adopted on an emergency basis to remove zoning barriers that were hindering the reconstruction and retrofitting of buildings affected by Hurricane Sandy and to help ensure that new construction there would be more resilient. The 2013 Flood Text provisions are set to expire with the adoption of new and final Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), which is anticipated to occur within the next few years. Applicability of the 2015 Recovery Text expired in July 2020. Therefore, DCP is proposing a citywide zoning text amendment, "Zoning for Coastal Flood Resiliency" (the "Proposed Action"), to improve upon and make permanent the relevant provisions of the existing temporary zoning rules of the 2013 Flood Text and 2015 Recovery Text. In addition, the Proposed Action includes special provisions to help facilitate the city's long-term recovery from the COVID-19 pandemic and its associated economic effects by providing more time for existing non-conforming uses to reopen and for builders to undertake certain construction projects. The Proposed Action also includes updates to other sections of the ZR, including the Special Regulations Applying in the Waterfront Area (Article VI, Chapter 2) and provisions within various Special Purpose Districts. The Proposed Action would mostly affect New York City's current 1% annual and 0.2% annual chance floodplains. However, select provisions of the Proposed Action would be applicable citywide. To help the City prepare for or respond to other disasters, select provisions in the Proposed Action regarding power systems and other mechanical equipment, ramps and lifts, vulnerable populations, and disaster recovery rules, would be applicable citywide.

Due to the broad applicability of the Proposed Action, it is difficult to predict the sites where development would be facilitated. In addition, the Proposed Action is not in-and-of-itself expected to induce development where it would not otherwise have occurred absent the Proposed Action. Although the Proposed Action may allow developments and existing buildings to retrofit to resilient standards, the overall amount, type, and location of construction within the affected area is not anticipated to change. Owing to the generic nature of this action, there are no known or projected as-of-right development sites identified as part of the Proposed Action's Reasonable Worst-Case Development Scenario (RWCDS). To produce a reasonable analysis of the likely effects of the Proposed Action, 14 representative Prototypical Analysis Sites containing either new developments, infill, reconstructions, or retrofits of existing buildings in the city's 1% and 0.2% annual chance floodplains were identified to demonstrate the wide range of proposed regulations for sites that would be able to develop as-of-right in the future with the Proposed Action, as detailed further in **Chapter 1**.

Per the 202014 *City Environmental Quality Review* (CEQR) *Technical Manual*, urban design is defined as the total of components – including streets, buildings, open spaces, wind, natural resources, and visual resources – that may affect a pedestrian's experience of public space. A visual resource is defined as the connection from the public realm to significant natural or built features, including views of the waterfront,

public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources. In an urban design and visual resources assessment pursuant to CEQR, one considers whether and how a project or action may change the visual experience of a pedestrian, focusing on the components of the project or action that may have the potential to significantly and adversely affect the arrangement, appearance, and functionality of the built and natural environment. A detailed analysis of the potential impacts of the Proposed Action on urban design and visual resources was prepared in conformance to the *CEQR Technical Manual*. This analysis describes existing conditions and compares conditions in the future without and with the Proposed Action to determine potential urban design and visual resource impacts. The urban design and visual resources analysis is based on field visits, photography, and computer imaging.

B. PRINCIPAL CONCLUSIONS

The Proposed Action would not result in significant adverse impacts on urban design or visual resources, but rather, is expected to enhance the pedestrian experience in the city's 1% annual and 0.2% annual chance floodplains. The Proposed Action includes zoning allowances coupled with enhanced design requirements that would allow building owners to better accommodate projected sea level rise when designing new buildings or retrofitting existing ones, without creating incongruous and uninviting streetscapes. Although the Proposed Action would result in a notable change in the design character of the floodplains as compared to No-Action conditions, this change would not constitute a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the city's floodplains such that the alteration would negatively affect a pedestrian's experience of the area. Rather, the changes in development anticipated in the With-Action conditions would improve the pedestrian experience by ensuring accessible ground-level design, particularly for buildings with lower-level commercial uses, in order to make the streetscapes in the floodplains more inviting, while ensuring preparedness to better accommodate projected sea level rise in New York City's floodplains.

The proposed floor area exemptions would continue to incentivize buildings to floodproof and encourage uses to be kept at street level. The Proposed Action would allow a small floor area incentive for active uses to be kept at grade and dry-floodproofed. As detailed below, the first 30 feet of floor area as measured from the street wall of a building when facing primary streets would be exempted from total floor area calculations, as these are the areas in which retail continuity is key for the success of the street. This allowance would incentivize buildings to dry-floodproof as opposed to elevating active uses, improving the pedestrian experience. Additionally, to ensure quality ground floors, this floor-area exemption would come with design controls, such as the condition that the ground floor level may not be higher than two feet above nor two feet below the level of the adjacent streets. This incentive would encourage well-designed commercial and community facility uses to be kept at grade, helping enhance the streetscape experience and retail continuity in the city's floodplains.

Additionally, as detailed above, the Proposed Action would require buildings in Residence Districts, Commercial Districts, and M1 Districts, utilizing the optional provisions in Article VI, Chapter 4 of the ZR, to meet designated points outlined in the streetscape mitigation regulations and would extend design requirements to all residential, commercial, and mixed-use buildings as well as buildings containing community facilities and light manufacturing buildings in the floodplain. These improvements would help attenuate elevated access and potential blank walls at the street level caused by resiliency needs. The Proposed Action would also provide a wider range of options to comply with the requirements, in order to better accommodate different neighborhood contexts, lot conditions, and ground-floor uses. For example, front porches, stair turns, entrances close-to-grade, and multiple entrances along a façade would be option, as well as treatments such as decorative latticework, street furniture, and ground floor level transparency. This expanded menu would give designers the toolkit to better reflect conditions found in the floodplain,

and the Proposed Action would ensure that these design options can be more easily utilized, classifying steps and covered porches as permitted obstructions and exempting buildings on narrow lots in low-density Residence Districts from existing front yard planting requirements inadvertently limiting the use of other available design options. These design requirements in the future with the Proposed Action would enhance the pedestrian experience and help activate the streetscapes of residential and commercial communities in the city's floodplains. In addition to these requirements, the Proposed Action would continue to provide flexibility for all buildings that have transparency requirements for ground floor levels.

The Proposed Action would not entail any major changes to block shapes, street patterns or hierarchies, land uses, building densities, topography, or wind conditions in the 1% annual or 0.2% annual chance floodplains. The Proposed Action would not change existing land uses or generate new land uses that would be incompatible with the existing built character of the city's floodplains. The Proposed Action would provide enhanced building envelopes for new developments and existing building retrofits and reconstructions in the floodplains in order to better accommodate projected sea level rise in building design. As detailed in **Chapter 7, "Historic & Cultural Resources,"** the Proposed Action could alter existing visual resources such as properties eligible for designation as New York City Landmarks (NYCLs) or for listing on the State/National Registers of Historic Places (S/NR). However, as detailed in **Chapter 5, "Open Space,"** and **Chapter 9, "Natural Resources,"** the Proposed Action would not result in any significant changes to open spaces or natural resources that are considered significant visual resources in the city's floodplains. Additionally, increased heights and bulks on the Prototypical Analysis Sites would not obstruct any significant viewsheds in the area, or negatively alter the pedestrian experience in the vicinity of the sites.

As detailed below, the Proposed Action would permit an elevated waterfront yard on Prototypical Analysis Site 14 that could alter existing view corridors. Although views of the waterfront or other visual resources could be partially obstructed as a result of the Proposed Action, none of these views would be unique, as more proximate and significant view corridors would remain throughout the city's floodplains, including vantage points in public parks, esplanades, and at street ends adjacent to the waterfront, as well as private waterfront properties that provide public waterfront access. Moreover, it should be noted that some waterfront properties, such as Prototypical Analysis Site 14, would continue to be subject to discretionary review, which requires urban design review and would further encourage the waterfront resiliency measures of the Proposed Action. Additionally, the proposed modifications to elevated visual corridors would help accommodate a broader range of site grade changes and design flood elevations utilized across the waterfront site and building, better reflecting a pedestrian's eye level and thus improving the pedestrian experience. Therefore, no significant adverse impacts to visual resources would occur as a result of the Proposed Action.

C. METHODOLOGY

Determining Whether an Urban Design Analysis is Necessary

In general, an assessment of urban design is needed when a project may have effects on one or more of the elements that contribute to a pedestrian's experience of public space. These elements, the totality of which defines the concept of urban design, are described below:

- *Streets*. For many neighborhoods, streets are the primary component of public space. The arrangement and orientation of streets define the location and flow of activity in an area, set street views, and create the blocks on which buildings and open spaces are organized. The apportionment of streetscape between cars, bicycles, transit, and sidewalk is critical to making

a successful streetscape, as is the careful design of street furniture, grade, materials uses, and permanent fixtures, including plantings, street lights, fire hydrants, curb cuts, and newsstands.

- *Buildings*. Buildings support streets. A building's street walls form the most common backdrop in the city for public space. A building's size, setbacks, lot coverage, placement on the zoning lot and block, the orientation of active uses, and pedestrian and vehicular entrances all play major roles in the vitality of the streetscape. The public realm also extends to building facades and rooftops, offering more opportunity to enrich the visual character of an area.
- *Visual Resources*. A visual resource is the connection from the public realm to significant natural or built features, including views of the waterfront, public parks, landmark structures or districts, otherwise distinct buildings or groups of buildings, or natural resources.
- *Open Space*. For the purposes of urban design, open space includes public and private areas, such as parks, yards, cemeteries, parking lots, and privately owned public spaces.
- *Natural Features*. Natural features include vegetation and geologic, topographic, and aquatic features. Rock out-croppings, street slopes, or varied ground elevation, beaches, or wetlands may help define the overall visual character of an area.
- *Wind*. Channelized wind pressure from between tall buildings and downwashed wind pressure from parallel tall buildings may cause winds that jeopardize pedestrian safety.

The Proposed Action would enable development to be constructed that would differ from existing zoning envelopes and could result in physical changes beyond the bulk and form currently permitted as-of-right. This has the potential to change pedestrians' experience of public space. Therefore, it is appropriate to assess the Proposed Action's potential impacts to urban design and visual resources.

Determining Whether an Analysis of Wind Conditions is Necessary

Per criteria of section 230 of the *CEQR Technical Manual*, a study of wind conditions and their effect on pedestrian level safety may be warranted under certain circumstances for projects involving the construction of large buildings at locations that experience high wind conditions. The *CEQR Technical Manual* identifies west- and northwest-facing waterfront in New York City as high wind locations. As noted above, owing to the generic nature of the Proposed Action, there are no known or projected as-of-right development sites identified as part of the Proposed Action's RWCDS. However, as the Proposed Action would alter zoning regulations in the city's floodplains, it is possible that Prototypical Analysis Sites could be located immediately adjacent to the waterfront, where buildings or natural features do not attenuate waterfront winds. Nevertheless, the Proposed Action would not result in the construction of multiple, tall buildings of substantial size that would warrant a pedestrian wind conditions analysis.

As detailed in **Chapter 1, "Project Description,"** the Proposed Action would increase the building height on several Prototypical Analysis Sites as compared to No-Action conditions. The largest incremental increase would be on Prototypical Analysis Site 3 in the 1% annual chance floodplain, which would increase 15 feet between the No-Action and With-Action conditions. The tallest building on a Prototypical Analysis Site would occur on Site 5 in the 0.2% annual chance floodplain. In the future with the Proposed Action, the structure on Site 5 would be retrofitted into an eight-story, 80-foot-tall building, an increase of 10 feet over No-Action conditions. As such, the Proposed Action would not result in the construction of multiple, tall buildings of substantial size on the waterfront that would result in "channelization" or "downwash" effects that would affect pedestrian safety in the vicinity of the sites. Therefore, a pedestrian wind conditions analysis is not warranted for the Proposed Action.

Study Areas

As defined in the *CEQR Technical Manual*, the urban design and visual resources study area consists of the area where an action may influence land use patterns and the built environment. As detailed in **Chapter 1, "Project Description,"** the Proposed Action would be applicable to all lots located wholly or partially within the city's current 1% and 0.2% annual chance floodplains. Additionally, to help the City prepare for or respond to other disasters, select provisions in the Proposed Action would be applicable to all lots in the city. However, for purposes of this urban design and visual resources analysis, the current 1% and 0.2% annual chance floodplains will be analyzed as the study areas for the Proposed Action.

As discussed above, the Proposed Action is analyzed in this environmental review as a generic action. Because the Proposed Action would affect thousands of properties across numerous zoning districts and special districts, the possible effects of the Proposed Action are considered by means of prototypical analysis. Prototypical Analysis Sites are not necessarily representative of a specific lot, but rather reflect prevalent conditions and recent development trends as a basis for analysis. To produce a reasonable analysis of the likely effects of the Proposed Action, 14 representative Prototypical Analysis Sites were identified, as detailed in **Chapter 1**. A detailed assessment with illustrative renderings of five of these Prototypical Analysis Sites (Nos. 3, 5, 8, 11, and 14) in the 1% annual chance floodplain is provided below.

Sources

In accordance with the *CEQR Technical Manual*, the detailed analysis describes existing and anticipated future (i.e., No-Action) conditions to a level necessary to understand the relationship of the Proposed Action to such conditions. The detailed analysis assesses any changes to these conditions that could be created by the Proposed Action in the 2029 analysis year. Existing land uses, building heights and densities, and lot coverage information were identified through review of a combination of sources including field visits, photographs, aerial views, and secondary sources such as the City's 2018 Primary Land Use Tax Lot Output (PLUTO™) data files, online Geographic Information Systems (GIS) databases such as the New York City Open Accessible Space Information System (OASIS, http://www.oasisnyc.net), and NYCityMap (http://gis.nyc.gov/doitt/nycitymap). Other publications and approved environmental review documents that have been completed for projects in the area were also consulted, as well as New York City Zoning Maps and the Zoning Resolution of the City of New York (ZR).

D. DETAILED ASSESSMENT

Existing Conditions

Urban Design

The following section discusses existing urban design components in the study areas, which as detailed in **Chapter 2, "Land Use, Zoning, & Public Policy,"** are mapped in a wide variety of zoning districts, ranging from low-density Residential Districts (R1 through R5), to medium- and high-density Residential Districts (R6 through R10), to Commercial Districts (C1 through C7) to heavy Commercial and Manufacturing Districts (C8 and M1 through M3). Due to the irregular boundaries of the shoreline, streets in the city's floodplains do not always adhere to the standard street grids found inland, and the topography, open space, and natural resources of the 1% and 0.2% annual chance floodplains vary based on the unique underlying conditions of the areas, which encompass large swaths of all five boroughs.

1% Annual Chance Floodplain

As detailed in **Chapter 2, "Land Use, Zoning, & Public Policy,"** the vast majority of lots in the current 1% annual chance floodplain are residential (approximately 74 percent of total lots). This is likely due to a significant number of smaller dwellings on small lots throughout the 1% annual chance floodplain. As presented in **Table 2-1** in **Chapter 2**, residential uses only comprise a total of seven percent of total lot area and nine percent of total building area in the 1% annual chance floodplain.

Table 8-1a: Building Heights in the 1% Annual Chance Floodplain

Number of Floors	Number of Lots	Percentage of Lots	Lot Area (SF)	Percentage of Lot Area
Up to 1 Floor	22,006	33%	2,763,471,638	68%
1.5 – 2 Floors	35,008	52%	404,047,923	10%
3 – 4 Floors	7,995	12%	562,390,681	14%
5 – 6 Floors	1,134	2%	225,169,410	6%
7 Floors or More	807	2%	108,752,840	2%
TOTAL	**66,950**	**100%**	**4,063,832,492**	**100%**

Source: 2018 PLUTO data.

As detailed in **Table 8-1a**, approximately 92 percent of lot area in the 1% annual chance floodplain contains buildings of up to four stories, of which approximately 68 percent are buildings of one story or less (illustrated in **Figure 8-1a**). This can be largely attributed to low-rise residential buildings as well as significant amounts of open space, transportation/utility uses, and vacant land in the area, which typically contain low-rise structures, if any. As discussed in **Chapter 2,** open space comprises the largest amount of lot area in the 1% annual chance floodplain (approximately 45 percent of total lot area) and comprises the largest percentage of total building area in the area (approximately 70 percent of total built area). Transportation/utility uses comprise approximately 20 percent of lot area in the 1% annual chance floodplain and vacant land comprises approximately 13 percent of total lot area.

Table 8-1b: Built Densities in the 1% Annual Chance Floodplain

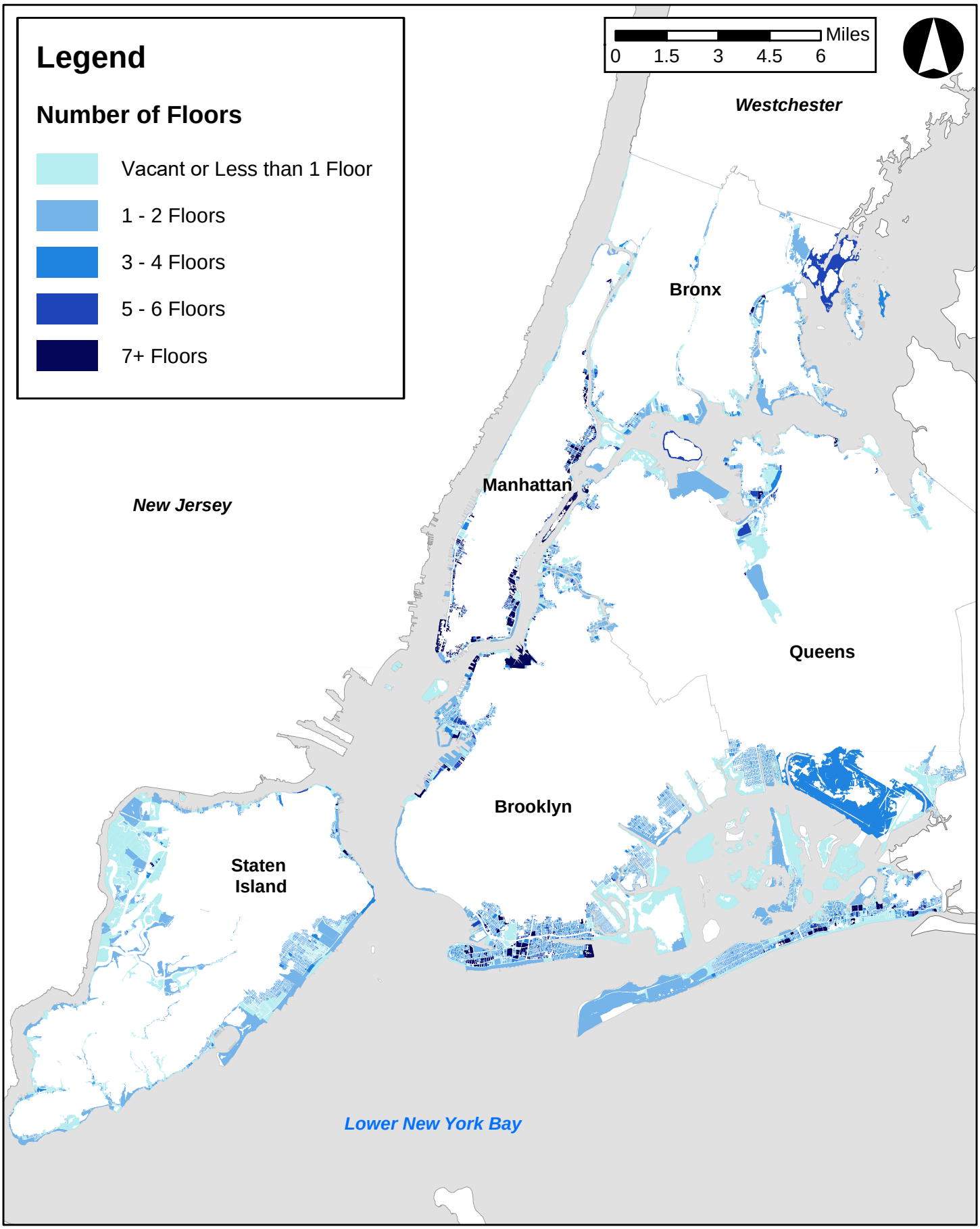
Existing Built FAR	Number of Lots	Percentage of Lots	Lot Area (SF)	Percentage of Lot Area
Up to 1.0 FAR	53,203	80%	3,894,784,662	96%
1.01– 2.5 FAR	10,817	16%	110,591,948	3%
2.51 – 3.5 FAR	905	1%	23,138,868	< 1%
3.51 – 5.0 FAR	852	1%	13,339,854	< 1%
5.01 FAR or More	641	2%	22,233,364	< 1%
TOTAL	**66,418**	**100%**	**4,064,088,696**	**100%**

Source: 2018 PLUTO data.

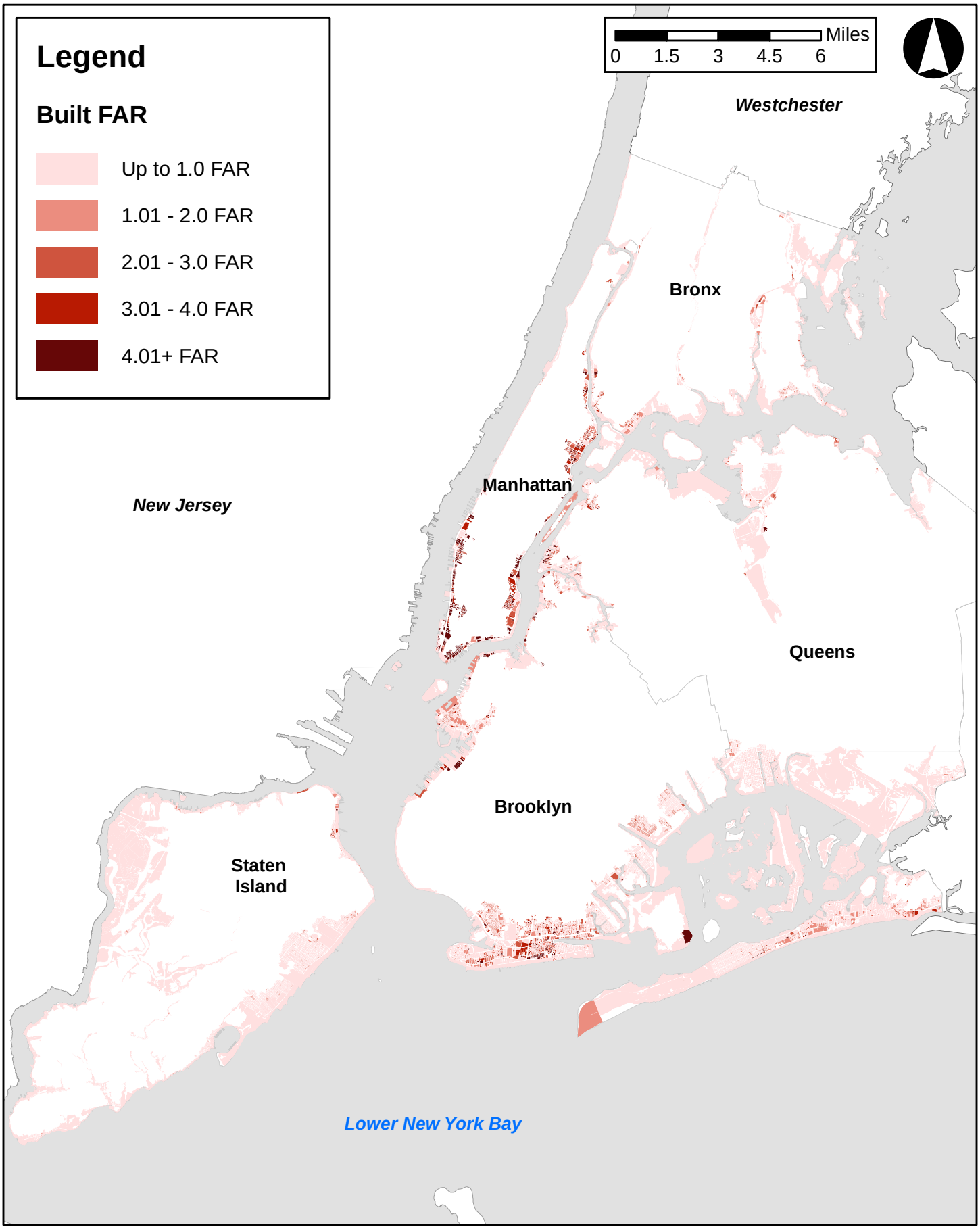
As detailed in **Table 8-1b** and illustrated in **Figure 8-1b**, the 1% annual chance floodplain is also a low-density area, with the vast majority of buildings with floor area ratios (FARs) at or below 2.5. Approximately 96 percent of lot area in the 1% annual chance floodplain contains buildings with FARs up to 1.0, and an additional three percent of lot area contains buildings with FARs of 1.01 to 2.5 FAR. Less than one percent of lot area in the 1% annual chance floodplain contains buildings with FARs above 2.5.

Figure 8-1a

Existing Building Heights: 1% Annual Chance Floodplain



Existing Building Densities: 1% Annual Chance Floodplain



As noted above and discussed in **Chapter 2**, this can be largely attributed to low-density residential buildings as well as significant amounts of open space, transportation/utility uses, and vacant land in the area, which typically have low densities.

0.2% Annual Chance Floodplain

As detailed in **Chapter 2, "Land Use, Zoning, & Public Policy,"** the vast majority of lots in the current 0.2% annual chance floodplain are residential (approximately 78 percent of total lots). One- and two-family buildings comprise the largest percentage of total lots (65 percent), although, similar to the 1% annual chance floodplain, these buildings only comprise four percent of total lot area and eight percent of total building area in the 0.2% annual chance floodplain, likely due to a large number of smaller dwellings on small lots.

As presented in **Table 2-2** in **Chapter 2**, approximately 23 percent of total built area in the 0.2% annual chance floodplain consists of multi-family elevator buildings, which comprise only two percent of total lots and three percent of total lot area in the 0.2% annual chance floodplain. This is likely due to an abundance of large residential campuses located on single tax lots in the 0.2% annual chance floodplain, a contrast to the 1% annual chance floodplain detailed above.

As detailed in **Table 8-2a**, approximately 94 percent of lot area in the 0.2% annual chance floodplain contains buildings of up to four stories, of which approximately 65 percent are buildings of one story or less (illustrated in **Figure 8-2a**). This can be largely attributed to low-rise residential buildings as well as significant amounts of open space and transportation/utility uses that typically contain low-rise structures, if any. As discussed in **Chapter 2,** open space comprises the largest amount of lot area in the 0.2% annual chance floodplain (approximately 47 percent of total lot area), followed by transportation/utility uses (approximately 21 percent of total lot area).

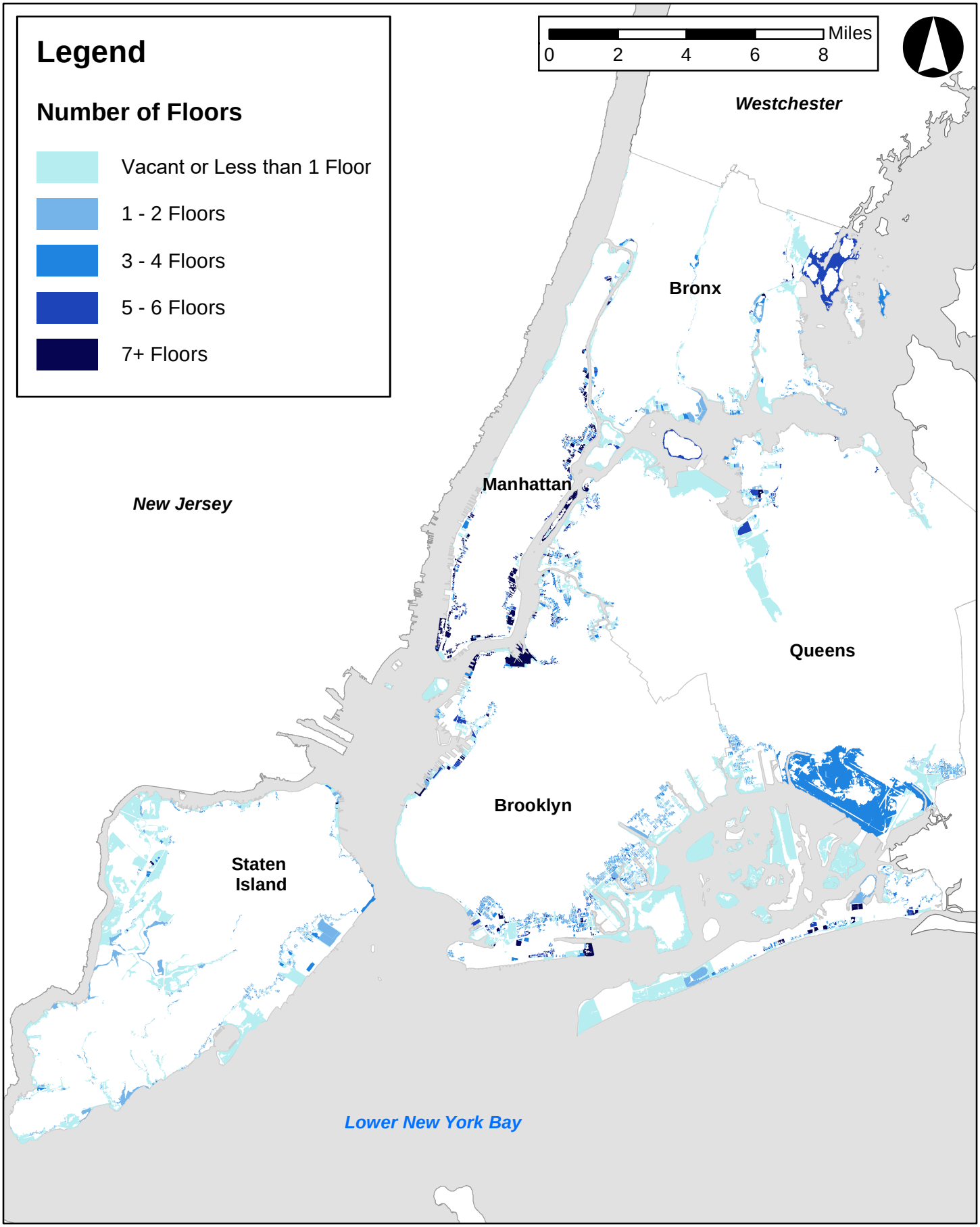
Table 8-2a: Building Heights in the 0.2% Annual Chance Floodplain

Number of Floors	Number of Lots	Percentage of Lots	Lot Area (SF)	Percentage of Lot Area
Up to 1 Floor	8,757	26%	1,246,742,645	65%
1.5 – 2 Floors	18,257	54%	245,594,614	13%
3 – 4 Floors	4,963	15%	300,109,312	16%
5 – 6 Floors	1,117	3%	126,501,907	6%
7 Floors or More	664	2%	7,493,465	< 1%
TOTAL	**33,758**	**100%**	**1,926,441,943**	**100%**

Source: 2018 PLUTO data.

As detailed in **Table 8-2b** and illustrated in **Figure 8-2b**, the 0.2% annual chance floodplain is also a low-density area, with the vast majority of buildings with FARs at or below 2.5. Approximately 93 percent of lot area in the 0.2% annual chance floodplain contains buildings with FARs up to 1.0, and an additional four percent of lot area contains buildings with FARs of 1.01 to 2.5 FAR. Approximately three percent of lot area in the 0.2% annual chance floodplain have buildings with FARs above 2.5. As noted above and discussed in **Chapter 2**, this can be largely attributed to low-density residential buildings like the 1% annual chance floodplain, as well as public facilities and institutions and large residential campuses surrounded by open areas and lawns, and significant amounts of open space and transportation/utility uses, which typically have low FARs.

Existing Building Heights: 0.2% Annual Chance Floodplain



Existing Building Densities: 0.2% Annual Chance Floodplain

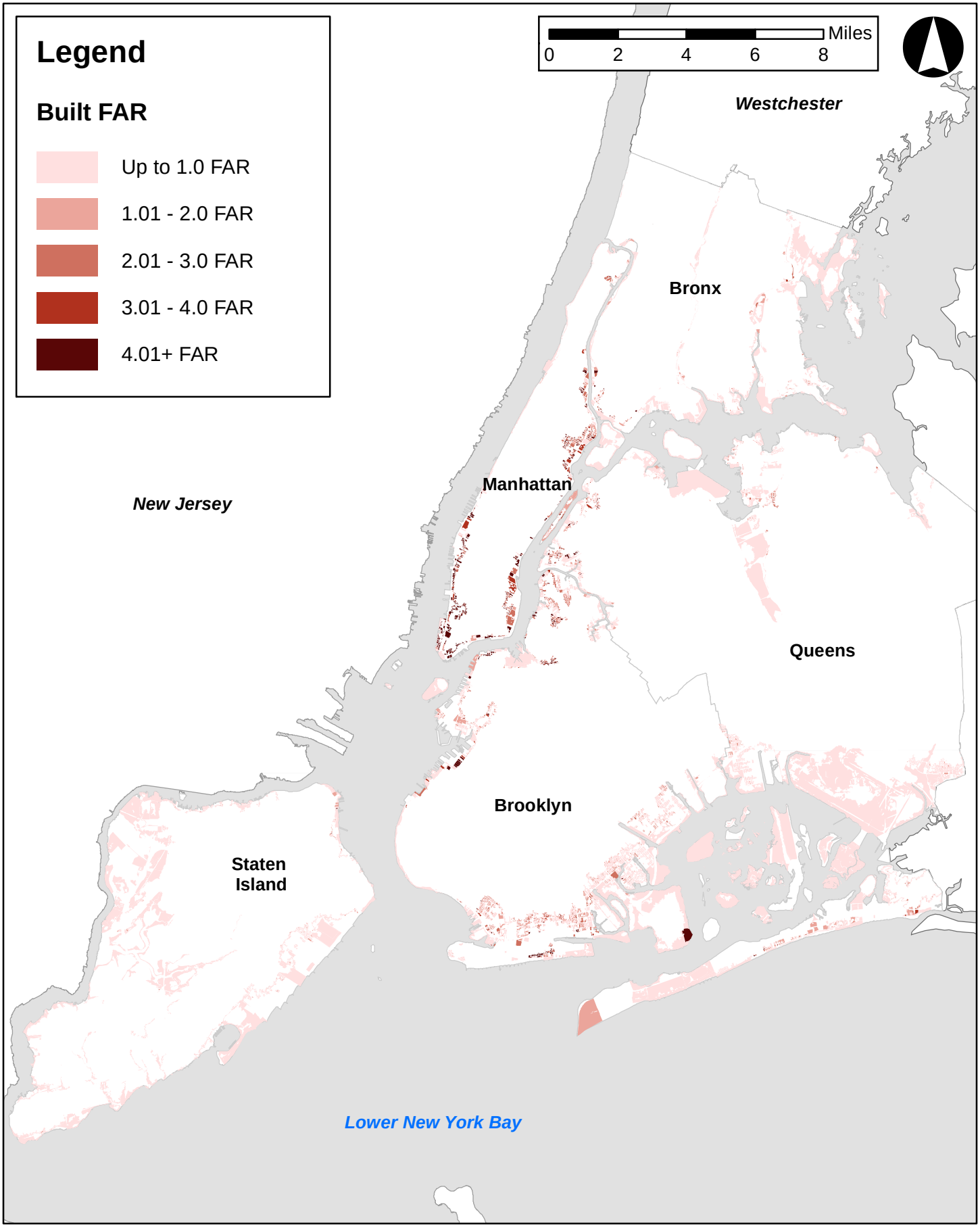


Table 8-2b: Built Densities in the 0.2% Annual Chance Floodplain

Existing Built FAR	Number of Lots	Percentage of Lots	Lot Area (SF)	Percentage of Lot Area
Up to 1.0 FAR	24,081	72%	1,862,198,661	93%
1.02– 2.5 FAR	7,126	21%	79,221,248	4%
2.51 – 3.5 FAR	859	3%	23,731,937	1%
3.51 – 5.0 FAR	863	3%	12,793,047	1%
5.01 FAR or More	580	2%	17,093,443	1%
TOTAL	**33,509**	**100%**	**1,995,038,336**	**100%**

Source: 2018 PLUTO data.

Prototypical Analysis Sites

Chapter 1, "Project Description," detailed the methodology used to develop the 14 Prototypical Analysis Sites for the Proposed Action. A summary of the Prototypical Analysis Sites is provided below in **Table 8-3**, and illustrative renderings are provided in **Appendix A**. As detailed in **Chapter 1**, these sites are not intended to represent specific lots, but rather to illustrate how the Proposed Action would apply to a range of sites and conditions. As detailed therein, the Prototypical Analysis Sites are assumed to be spread throughout the 1% and 0.2% annual chance floodplains.

As detailed in **Table 8-3**, six of the Prototypical Analysis Sites (Nos. 2, 5, 7, 9, 11, and 14) are undeveloped, vacant land. Five sites (Nos. 1, 3, 4, 12, and 13) are developed with low-rise, low-density, one- to three-family residential buildings. Prototypical Analysis Site 6 contains an eight-story residential building with 320 DUs and an FAR of 2.4, and Prototypical Analysis Site 8 contains a seven-story residential building (4.0 FAR) with 13 DUs and ground-floor commercial space. These sites are located in a variety of residential zoning districts, ranging from low-density R3-1, R3A, R3X, R4, and R5 Districts to medium- and higher-density R6, R7A, and R8 Districts, some with commercial overlays. Most of these sites occupy interior lots of 12,000 square feet or less, except for Prototypical Analysis Site 14, which is a 50,000-sf waterfront lot, and Prototypical Analysis Site 6, which occupies a lot of 100,000 sf. Additionally, as detailed in **Table 8-3**, Prototypical Analysis Site 10 is a one-story industrial building with an FAR of 1.0. Site 10 is located on a 10,000 sf lot in an M1-1 manufacturing zoning district. As shown in **Table 8-3**, the existing structures on Prototypical Analysis Sites 12 and 13 are both non-compliant; the use on Site 13 is also non-conforming to existing zoning regulations.

Prototypical Analysis Site 3

Under existing conditions, Prototypical Analysis Site 3 contains a two-family attached residence on a 20-foot by 100-foot (2,000 sf) interior lot in an R4 infill residential zoning district. As shown in **Figure 8-3**, the existing building on Site 3 is two stories with a basement, where one residential unit is located in the basement. The lot is built with 2,700 sf of zoning floor area, the maximum permitted in an R4 infill zoning district, which allows for an FAR of 1.35. Spaces used for mechanical equipment in the basement of the building (approximately 135 sf) are exempted from zoning floor area.

This existing building on Prototypical Analysis Site 3 does not meet the minimum flood-resistant construction standards of Appendix G in the New York City Building Code, as it was constructed prior to the adoption of these regulations. The total building height is 22 feet above grade, with a perimeter wall of

22 feet—fitting within the permitted building envelope of an R4 district, which allows for a maximum building height of 35 feet and a maximum perimeter wall height of 25 feet.

Under existing conditions, Site 3 contains one unenclosed parking space in the front yard of the lot, meeting the one parking space required in the underlying zoning for group parking facilities in predominately built-up areas. The building complies with all other underlying zoning regulations.

Table 8-3: Prototypical Analysis Sites – Existing Conditions

Site	Zoning District	Lot Area (SF)	Existing Building Typology	Existing Use/Condition	Existing Height	Existing FAR
1	R3-1	4,000	Single-family detached residence	Residential building w/ 1 DU (2,900 gsf / 1,800 zsf)	28 feet	0.45
2	R3-1	2,500	*Vacant Lot*	*Vacant Lot*	-	*0*
3	R4	2,000	Two-family attached residence	Residential building w/ 2 DUs (2,835 gsf / 2,700 zsf)	22 feet	1.35
4	R5	2,500	Low-rise multi-family building	Residential building w/ 3 DUs (5,500 gsf / 4,125 zsf)	29 feet	1.65
5	R7A	11,500	*Vacant Lot*	*Vacant Lot*	-	*0*
6	R6	100,000	Campus-style housing	Residential building w/ 320 DUs (270,000 gsf / 240,000 zsf)	80 feet	2.4
7	R5 / C1-2	12,000	*Vacant Lot*	*Vacant Lot*	-	*0*
8	R7A / C1-2	2,500	High-rise mixed-use building	Mixed residential/ commercial building w/ 13 DUs (10,800 gsf /10,000 zsf)	75 feet	4.0
9	R3-1 / C1-2	10,000	*Vacant Lot*	*Vacant Lot*	-	*0*
10	M1-1	10,000	Industrial building	Industrial building (11,500 gsf / 10,000 zsf)	30 feet	1.0
11	R4	2,500	*Vacant Lot*	*Vacant Lot*	-	*0*
12	R3A	2,500	Single-family detached residence (non-compliant)	Residential building w/ 1 DU (2,204 gsf / 1,052 zsf)	17 feet	0.42
13	R3X	2,000	Two-family detached (non-conforming / non-compliant)	Residential building w/ 2 DUs (2,100 gsf / 1,370 zsf)	20 feet	0.49
14	R8 / C2-4	50,000	*Vacant Lot*	*Vacant Waterfront Site*	-	*0*

Note: Refer to **Appendix A** for illustrative renderings of the Prototypical Analysis Sites. A detailed assessment with illustrative renderings of Prototypical Analysis Sites 3, 5, 8, 11, and 14 in the 1% annual chance floodplain is provided below.
*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

Prototypical Analysis Site 5

Under existing conditions, Prototypical Analysis Site 5 is a vacant 115-foot by 100-foot, approximately 11,500 sf lot. Site 5 faces a wide street in an R7A contextual residential zoning district.

Prototypical Analysis Site 8

Under existing conditions, Prototypical Analysis Site 8 contains a mixed-use building on a 25-foot by 100-foot (2,500 sf) lot in an R7A contextual residential zoning district with a C1-2 commercial overlay. As shown in **Figure 8-5**, the existing building on Site 8 is seven stories tall, and includes 13 DUs as well as

approximately 1,040 zsf/gsf of ground-floor commercial space. The lot is built with 10,000 sf of zoning floor area (8,860 zsf residential and 1,140 zsf commercial), the maximum permitted in an R7A zoning district, which allows for an FAR of 4.0. Floor spaces used for MEP equipment (300 sf) and five percent of the remaining gross floor area (500 sf) would be exempted from the zoning floor area to account for other deductions of the Quality Housing Program.

The total building height is 75 feet above grade, fitting within the permitted building envelope of an R7A/C1-2 district, which allows for a maximum building height of 85 feet and a maximum base height of 75 feet with a qualifying ground floor. The MEP equipment is located on the roof of the building, and there is no parking on the site. The site has no parking spaces under existing conditions.

Prototypical Analysis Site 11

Under existing conditions, Prototypical Analysis Site 11 is a vacant 25-foot by 100-foot, approximately 2,500 sf interior lot in an R4 residential zoning district.

Prototypical Analysis Site 14

Under existing conditions, Prototypical Analysis Site 14 is a vacant, 50,000 sf waterfront lot in an R8 residential zoning district with a C2-4 commercial overlay.

Visual Resources

Due to their large areas, the 1% annual and 0.2% annual chance floodplains contain a plethora of visual resources, including open space resources (discussed further in **Chapter 5**, **"Open Space"**), potential historic architectural resources (discussed further in **Chapter 7, "Historic & Cultural Resources"**), and natural resources, including waterbodies adjacent to the floodplains, such as the Hudson River, East River, etc. (discussed further in **Chapter 9, "Natural Resources"**). There are numerous significant view corridors within the 1% and 0.2% annual chance floodplains with viewsheds of these visual resources, including various vantage points in public parks, esplanades, and at street ends adjacent to the waterfront. Additionally, there are certain private properties throughout New York City's floodplains that provide public waterfront access. These publicly accessible vantage points provide view corridors of significant natural features and distinct buildings and structures in and adjacent to the city's floodplains.

The Future Without the Proposed Action (No-Action Condition)

In the 2029 future without the Proposed Action, existing land use trends and development patterns in the city's current 1% and 0.2% annual chance floodplains are expected to continue, albeit without the benefit of special zoning relief provided in the 2013 Flood Text and 2015 Recovery Text. As detailed in **Chapter 1, "Project Description,"** it is expected that the 2013 Flood Text and 2015 Recovery Text have both expired during the 10-year analysis period in the future without the Proposed Action. It is assumed that each Prototypical Analysis Site would maximize their development under the permitted building envelope, and new developments would be required to meet the minimum standards of Appendix G of the New York City Building Code for structures in the 1% annual chance floodplain, but not in the 0.2% annual chance floodplain.

As detailed in **Chapter 1**, existing buildings, in general, only need to meet the requirements of Appendix G if they are substantially-damaged or substantially-improved, or if the building is conducting a horizontal enlargement. Although in certain instances these buildings could potentially pursue resilient improvements, for conservative analysis purposes, the No-Action scenarios assume that existing buildings would not be

retrofitted or reconstructed. Recent development trends also indicate that it is unlikely that existing buildings would invest in resiliency, especially absent special zoning relief to assist buildings to comply with flood-resistant construction standards without needing to lose existing floor space.

Prototypical Analysis Sites

Under the No-Action scenarios in both the 1% and 0.2% annual chance floodplains, new as-of-right development is expected to occur on six of the 14 Prototypical Analysis Sites (Sites 2, 5, 7, 9, 11, and 14, which are vacant lots under existing conditions as detailed in **Table 8-3** above). In the future without the Proposed Action, new buildings on the Prototypical Analysis Sites would be constructed to comply with all height, yard, setback, and parking regulations of their respective underlying zoning districts, without the beneficial zoning relief in the expired 2013 Flood Text and 2015 Recovery Text, as discussed above.

Table 8-4a: Prototypical Analysis Sites – No-Action Condition: 1% Annual Chance Floodplain

Site	Zoning District	Lot Area (SF)	No-Action Scenario	No-Action Height	No-Action FAR
1	R3-1	4,000	Residential building w/ one DU and detached garage (2,900 gsf / 1,800 zsf)	28 feet	0.45
2	R3-1	2,500	**NEW** Residential building w/ one DU and detached garage (1,600 gsf / 1,250 zsf)	29 feet	0.50
3	R4	2,000	Residential building w/ two DUs (2,835 gsf / 2,700 zsf)	22 feet	1.35
4	R5	2,500	Residential building w/ three DUs (5,500 gsf / 4,125 zsf)	29 feet	1.65
5	R7A	11,500	**NEW** Residential building w/ 54 DUs (56,330 gsf / 46,000 zsf)	73 feet	4.0
6	R6	100,000	Residential building w/ 320 DUs (270,000 gsf / 240,000 zsf)	80 feet	2.4
7	R5 / C1-2	12,000	**NEW** Mixed residential/commercial building w/ 10 DUs (21,600 gsf / 15,000 zsf)	37 feet	1.25
8	R7A / C1-2	2,500	Mixed residential/commercial building w/ 13 DUs (10,800 gsf / 10,000 zsf)	75 feet	4.0
9	R3-1 / C1-2	10,000	**NEW** Commercial building (5,040 gsf / 4,200 zsf)	21 feet	0.42
10	M1-1	10,000	Industrial building (11,500 gsf / 10,000 zsf)	30 feet	1.0
11	R4	2,500	**NEW** Residential building w/ one DU (3,195 gsf / 2,245 zsf)	40 feet	0.90
12	R3A	2,500	Residential building w/ one DU (2,204 gsf / 1,052 zsf)	17 feet	0.42
13	R3X	2,000	Residential building w/ two DUs (2,100 gsf / 1,370 zsf)	20 feet	0.49
14	R8 / C2-4	50,000	**NEW** Mixed residential/commercial building on a Waterfront Site	N/A	N/A

Note: Refer to **Figures 8-3** through **8-7** for illustrative comparisons of the No-Action vs. With-Action scenarios on Prototypical Analysis Sites 3, 5, 8, 11, and 14 in the 1% annual chance floodplain.
*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

The remaining eight Prototypical Analysis Sites are expected to remain unchanged in the No-Action scenarios, identical to existing conditions. **Tables 8-4a** and **8-4b** provide summaries of the Prototypical Analysis Sites in the future without the Proposed Action in both the 1% and 0.2% annual chance floodplains, respectively. Illustrative renderings of both No-Action scenarios are provided in **Appendix A**.

Table 8-4b: Prototypical Analysis Sites – No-Action Condition: 0.2% Annual Chance Floodplain

Site	Zoning District	Lot Area (SF)	No-Action Scenario	No-Action Height	No-Action FAR
1	R3-1	4,000	Residential building w/ 1 DU and detached garage (2,900 gsf / 1,800 zsf)	28 feet	0.45
2	R3-1	2,500	**NEW** Residential building w/ 1 DU (1,600 gsf / 1,250 zsf)	26 feet	0.50
3	R4	2,000	Residential building w/ 2 DUs (2,835 gsf / 2,700 zsf)	22 feet	1.35
4	R5	2,500	Residential building w/ 3 DUs (5,500 gsf / 4,125 zsf)	29 feet	1.65
5	R7A	11,500	**NEW** Residential building w/ 54 DUs (63,920 gsf / 46,000 zsf)	70 feet	4.0
6	R6	100,000	Residential building w/ 320 DUs (270,000 gsf / 240,000 zsf)	80 feet	2.4
7	R5 / C1-2	12,000	**NEW** Mixed residential/commercial building w/ 10 DUs (20,040 gsf / 15,000 zsf)	37 feet	1.25
8	R7A / C1-2	2,500	Mixed residential/commercial building w/ 13 DUs (10,800 gsf / 10,000 zsf)	75 feet	4.0
9	R3-1 / C1-2	10,000	**NEW** Commercial building (5,040 gsf / 4,200 zsf)	15 feet	0.42
10	M1-1	10,000	Industrial building (11,500 gsf / 10,000 zsf)	30 feet	1.0
11	R4	2,500	**NEW** Residential building w/ 1 DU and detached garage (2,110 gsf / 1,880 zsf)	28 feet	0.75
12	R3A	2,500	Residential building w/ 1 DU (2,204 gsf / 1,052 zsf)	17 feet	0.42
13	R3X	2,000	Residential building w/ 2 DUs (2,100 gsf / 1,370 zsf)	20 feet	0.49
14	R8 / C2-4	50,000	**NEW** Mixed residential/commercial building on a Waterfront Site	N/A	N/A

Note: Refer to **Appendix A** for illustrative renderings of the Prototypical Analysis Sites.
*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

Prototypical Analysis Site 3

It is unlikely for buildings to retrofit when they are not required to comply with the flood-resistant constructions standards. Therefore, in the future without the Proposed Action, conditions on Prototypical Analysis Site 3 (in the 1% annual chance floodplain) would remain the same as under existing conditions. As detailed above, Site 3 contains a two-family attached residence with approximately 2,700 zsf and an FAR of 1.35, the maximum permitted in R4 infill zoning districts (see **Figure 8-3**).

The No-Action building on Prototypical Analysis Site 3 does not meet the minimum flood-resistant construction standards of Appendix G in the New York City Building Code, as it was constructed prior to the adoption of these regulations. The total building height is 22 feet above grade, with a perimeter wall of 22 feet—fitting within the permitted building envelope of an R4 district, which allows for a maximum building height of 35 feet and a maximum perimeter wall height of 25 feet.

As under existing conditions, in the future without the Proposed Action, Site 3 contains one unenclosed parking space in the front yard of the lot (see **Figure 8-3**), meeting the one parking space required in the underlying zoning for group parking facilities in predominately built-up areas. The building complies with all other underlying zoning regulations.

Illustrative Comparison of the No-Action vs. With-Action Conditions on Prototypical Analysis Site 3 in the 1% Annual Chance Floodplain

No-Action Condition: Prototypical Analysis Site 3

With-Action Condition: Prototypical Analysis Site 3

***The conceptual designs of the Prototypical Analysis Sites are for illustrative purposes only.*

Prototypical Analysis Site 5

In the future without the Proposed Action, it is expected that Prototypical Analysis Site 5 (in the 1% annual chance floodplain) would be redeveloped to the maximum permitted FAR of 4.0 in R7A zoning districts, with a seven-story, multi-family building with 54 DUs (refer to **Figure 8-4**). The building would contain approximately 46,000 sf of residential floor area (approximately 56,330 gsf). Spaces used for mechanical equipment (630 sf), ground level enclosed parking (6,670 sf), and five percent of the remaining gross floor area (2,990 sf) would be exempted from the zoning floor area per underlying zoning regulations on the site.

Prototypical Analysis Site 5 is mapped with a BFE of two feet above grade, according to FEMA's flood maps, resulting in a DFE of three feet. In order to meet minimum flood-resistant construction standards in the future without the Proposed Action, the first occupiable floor of Site 5 would be placed at three feet above grade. The total No-Action building height on Site 5 would be 73 feet with a base height of 63 feet, fitting within the permitted zoning envelope of an R7A district measured from the BFE, which allows for a maximum building height of 82 feet and a maximum base height of 67 feet.

In the future without the Proposed Action, Prototypical Analysis Site 5 would have 27 accessory parking spaces within a garage (see **Figure 8-4**). The building would comply with all other underlying zoning regulations.

Prototypical Analysis Site 8

It is unlikely for buildings to retrofit when they are not required to comply with flood-resistant constructions standards. Therefore, in the future without the Proposed Action, conditions on Prototypical Analysis Site 8 (in the 1% annual chance floodplain) would remain the same as under existing conditions. As detailed above, Site 8 contains a seven-story, mixed-use building with 10,000 zsf and an FAR of 4.0 (refer to **Figure 8-5**). The building contains 13 DUs as well as approximately 1,040 zsf/gsf sf of ground-floor commercial space. Approximately 800 sf of the building is exempted from zoning floor area.

The existing and No-Action building on Prototypical Analysis Site 8 does not meet the minimum flood-resistant construction standards of Appendix G in the New York City Building Code, as it was constructed prior to the adoption of these regulations. The total building height is 75 feet above grade, with a perimeter wall of 75 feet, fitting within the permitted building envelope of an R7A district. Additionally, as under existing conditions, in the future without the Proposed Action, the MEP equipment for Site 8 is on the roof of the building, and the lot contains no parking spaces (see **Figure 8-5**).

Prototypical Analysis Site 11

In the future without the Proposed Action, it is expected that Prototypical Analysis Site 11 (in the 1% annual chance floodplain) would be redeveloped to the maximum permitted FAR of 0.90 in R4 zoning districts, including an attic allowance (refer to **Figure 8-6**). Under No-Action conditions, Site 11 would be redeveloped with a single-family detached residence with three stories and approximately 2,245 sf of zoning floor area (approximately 3,195 gsf). Spaces used for mechanical equipment (50 sf) and the wet-floodproofed ground floor (900 sf) would be exempted from the zoning floor area per underlying zoning regulations on the site.

Prototypical Analysis Site 11 is mapped with a BFE of five feet above grade, according to FEMA's flood maps, resulting in a DFE of seven feet. In order to meet the minimum Appendix G requirements and use the ground floor as a garage in the future without the Proposed Action, the first occupiable floor of Site 11 would be placed at eight feet above grade. The total No-Action building height on Site 11 would be 40 feet

Illustrative Comparison of the No-Action vs. With-Action Conditions on Prototypical Analysis Site 5 in the 1% Annual Chance Floodplain

No-Action Condition: Prototypical Analysis Site 5

With-Action Condition: Prototypical Analysis Site 5

Illustrative Comparison of the No-Action vs. With-Action Conditions on Prototypical Analysis Site 8 in the 1% Annual Chance Floodplain

No-Action Condition: Prototypical Analysis Site 8

With-Action Condition: Prototypical Analysis Site 8

*BFE= Base Flood Elevation
*DFE= Design Flood Elevation
*RP= Reference Plane
*FRCE= Flood-Resistant Construction Elevation
Note: Flood elevations measured from grade

***The conceptual designs of the Prototypical Analysis Sites are for illustrative purposes only.*

Illustrative Comparison of the No-Action vs. With-Action Conditions on Prototypical Analysis Site 11 in the 1% Annual Chance Floodplain

No-Action Condition: Prototypical Analysis Site 11

With-Action Condition: Prototypical Analysis Site 11

*BFE= Base Flood Elevation
*DFE= Design Flood Elevation
*RP= Reference Plane
*FRCE= Flood-Resistant Construction Elevation
Note: Flood elevations measured from grade

***The conceptual designs of the Prototypical Analysis Sites are for illustrative purposes only.*

with perimeter wall of 26 feet, fitting within the permitted building envelope of an R4 district measured from the BFE. This would allow for a maximum building height of 40 feet and a maximum perimeter wall height of 30 feet. Because the lot width is less than the minimum required in the zoning district, the building is allowed to reduce the width of the required side yards from eight to five feet on one side of the building (ZR 23-48). The ground floor would have a wet-floodproofed garage with one enclosed parking space. The No-Action building on Prototypical Analysis Site 11 would comply with all other underlying zoning regulations (see **Figure 8-6**).

Prototypical Analysis Site 14

Under No-Action conditions, Prototypical Analysis Site 14 would have a mixed-use residential and commercial building with a public access area on a 50,000 sf waterfront zoning lot. The waterfront zoning lot would be developed with 50,000 sf of zoning floor area and the area of the waterfront public access area would be 10,000 sf. The depth of the waterfront yard and the width of the shore public walkway would both be 40 feet.

The lot would be mapped with a BFE of four feet above grade, according to FEMA's flood maps, resulting in a FRCE of five feet. In order to meet Appendix G requirements, the building would be elevated five feet above grade; however, the level of the waterfront yard and the shore public walkway would be at grade. The shore public walkway would be planted with a total area of 5,000 sf which is 50 percent of the total area of the shore public walkway, and the planted screening buffer would be at a minimum of 10 feet between the building and any pedestrian paths. The retaining wall would be at a maximum height of 18 inches.

The Future With the Proposed Action (With-Action Condition)

As detailed in **Chapter 1, "Project Description,"** the Proposed Action is a zoning text amendment to update the Special Regulations Applying in Flood Hazard Areas (ZR Article VI, Chapter 4). The Proposed Action would improve upon and make permanent the relevant provisions of the existing temporary zoning rules of the 2013 Flood Text and 2015 Recovery Text. In addition, the Proposed Action includes special provisions to help facilitate the city's long-term recovery from the COVID-19 pandemic and its associated economic effects by providing more time for existing non-conforming uses to reopen and for builders to undertake certain construction projects. The Proposed Action also includes updates to other sections of the ZR, including the Special Regulations Applying in the Waterfront Area (Article VI, Chapter 2) and provisions within various Special Purpose Districts. The Proposed Action would mostly affect New York City's current 1% annual and 0.2% annual floodplains, however, select provisions of the Proposed Action would be applicable citywide.

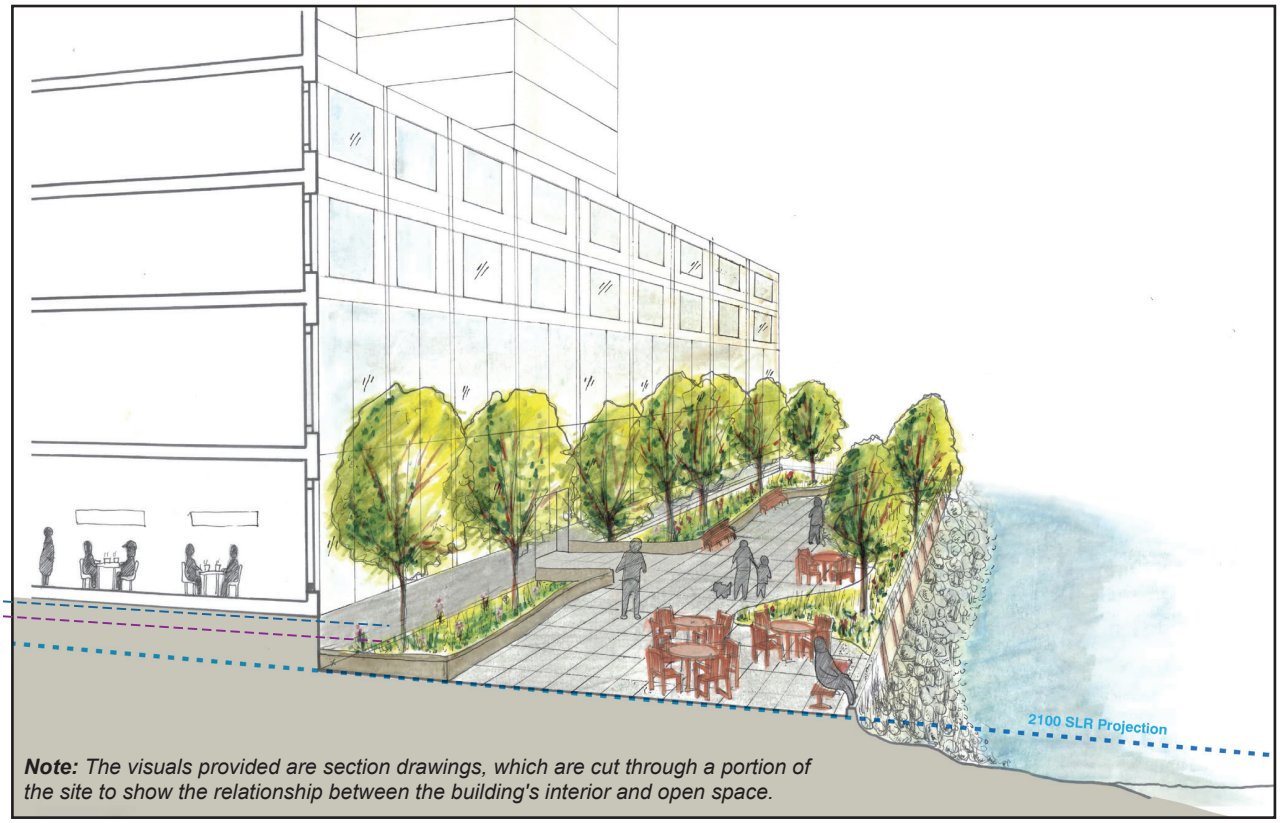
Due to the broad applicability of the Proposed Action, it is difficult to predict the sites where development would be facilitated. In addition, the Proposed Action is not in-and-of-itself expected to induce development where it would not otherwise have occurred absent the Proposed Action. Although the Proposed Action may allow developments and existing buildings to retrofit to resilient standards, the overall amount, type, and location of development within the affected area is not anticipated to change.

Like the 2013 Flood Text and the 2015 Recovery Text, the Proposed Action would generally provide optional zoning rules in the floodplain for buildings to fully incorporate "flood-resistant construction standards,"[1] but also for those who may want to incorporate incremental resiliency improvements to protect

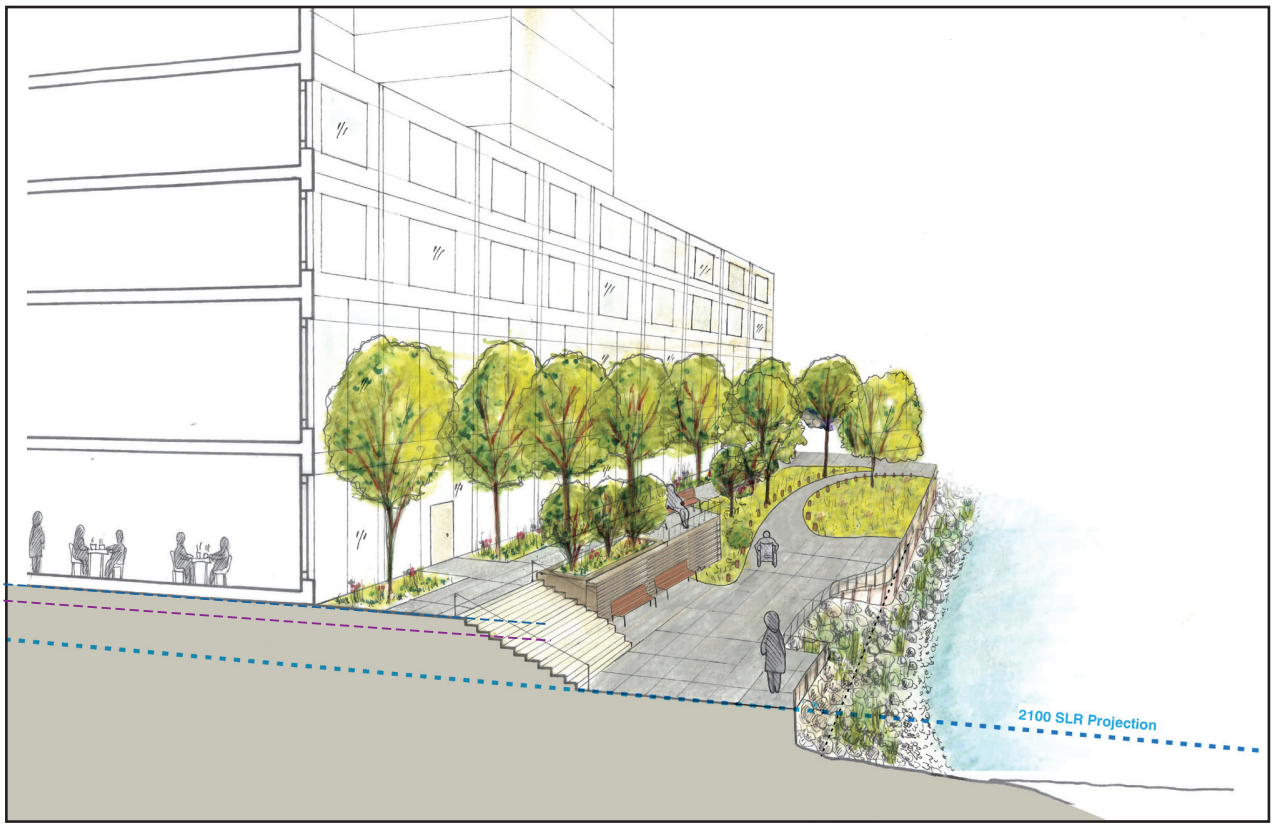
[1] "Flood-resistant construction standards" are the construction standards set forth in Appendix G of the NYC Building Code for "Post-FIRM Construction" (as defined therein) applied up to the flood-resistant construction elevation or higher to aid in

Figure 8-7

Illustrative Comparison of the No-Action vs. With-Action Conditions on Prototypical Analysis Site 14



No-Action Condition: Prototypical Analysis Site 14



With-Action Condition: Prototypical Analysis Site 14

*BFE= Base Flood Elevation
*DFE= Design Flood Elevation
*FRCE= Flood-Resistant Construction Elevation
Note: Flood elevations measured from grade

***The conceptual designs of the Prototypical Analysis Sites are for illustrative purposes only.*

their buildings against flooding over time, as described in more detail below. Given the scale and variety of the city's floodplain, the Proposed Action necessarily includes modifications to many existing zoning regulations. These changes generally allow habitable spaces and other building support features to be better protected and raised out of harm's way and address the effect these elevated spaces can have on the city's streetscape. The Proposed Action also includes provisions with applicability beyond the floodplain to help address a wider variety of situations.

Long-Term Resilient Design for All Building Types

The Proposed Action would include optional zoning regulations that better enable building owners to make their buildings more resilient by physically elevating habitable spaces and other building support features above expected flood elevations. These would generally modify existing regulations for building envelopes and ground floors, as well as address more unique situations. When these allowances are used, buildings would have to comply with flood-resistant construction standards and a new set of streetscape requirements meant to improve the relationship between the raised building and its surroundings.

Accommodating Current and Future Flood Risk in the Building Envelope

The Proposed Action includes optional modifications of various building envelope regulations to better allow habitable spaces to be raised above flood levels.

Flood-Resistant Construction Elevation

The Proposed Action would continue to provide additional building height where building owners are required or are opting to meet Appendix G floodproofing standards. The Proposed Action would continue to allow building envelopes across all zoning districts to be measured from the FRCE. In addition, such term would be revised to add certain clarifications. The FRCE will be required to not be lower than two feet above lowest adjacent grade to ensure a minimum level of floodproofing. In the 0.2% floodplain, where compliance with Appendix G is voluntary and no DFEs exist, this two foot minimum level of protection would also apply. Coupled with required compliance with the flood-resistant construction standards, this would mean that no living space would be located below the FRCE, and below grade basements and cellars would not be built in residences. In addition, essential facilities (such as hospitals) would be able to measure height from the 500-year flood elevation, which is required by Appendix G. Finally, the allowance to measure height from the BFE would be removed to ensure a consistent framework and any additional height would be tied to flood-resistant improvements.

Reference Plane

The Proposed Action would include a consistent framework for additional building height to encourage building owners to address long-term climate change, lower insurance costs and provide usable spaces at grade. To create a consistent framework for height measurement, the Proposed Action would allow building heights to be measured from a new "reference plane" that is up to 10 feet above the base plane or curb level in the 1% annual chance floodplain and up to five feet in the 0.2% annual chance floodplain. To ensure that the additional height is tied to actual improvement in the building's resiliency, the building would have to comply with flood-resistant construction standards and its "first story above the flood elevation" (FSAFE) would have to be located at or above the chosen "reference plane" height. The FSAFE would be defined as the level of the finished floor of the first story located at or above the level to which the building complies

protecting buildings in the floodplain from flood damage, governing both buildings that are required to comply with such standards and those that voluntarily comply.

with flood-resistant construction standards. In areas where the FRCE is higher than 10 feet, the higher FRCE could continue to be used.

Other Envelope Modifications

To help offset the effects of the proposed additional height that would allow construction at or above the FRCE, the Proposed Action would include several allowances intended to break down the building massing in the upper portions of buildings. For lower-density residential areas, the Proposed Action would continue to encourage sloped roof design in areas where that type of roof is the prevailing context. However, there would be a minor modification to the existing "attic allowance," which allows a 20 percent floor area bonus in exchange for a sloped roof in R2X, R3, R4, R4A and R4-1 Districts. The current regulations require that the additional floor area be located directly under the roof, which often results in taller roofs and building heights to accommodate a usable attic. If these rules were applied to the floodplain, the height of these buildings could be exacerbated, as building heights would be measured from the FRCE or the "reference plane." To address this, the Proposed Action would instead allow the additional floor area to be located in any portion of the building which would encourage a lower roof slope and overall building height. In Lower Density Growth Management Areas (LDGMA) the rule would not change, since the ability to locate the additional floor area is already permitted (albeit with a steeper roof pitch). However, "cottage envelope" buildings, described below, would be able to use the lower pitch in LDGMAs since it is more reminiscent of bungalow homes.

In medium- and high-density contexts, the Proposed Action would make two modifications to promote lower building scale. First, while maximum base heights and overall heights in Quality Housing buildings may be measured from the FRCE or the reference plane, the Proposed Action would allow minimum base heights to continue to be measured from the base plane. This would allow setbacks in buildings to be made closer to the ground and keep the base heights lower. Additionally, the Proposed Action would modify the underlying dormer allowances to provide an alternative that could break up the bulk in the upper portion of the building, allowing a dormer that extends up to 40 percent of the building width without any diminishing.

Accommodating Flood-Resistant Construction Standards on Ground Floors

The Proposed Action includes a series of regulations intended to incentivize the floodproofing of ground floors, encourage active uses to be kept at the street level to promote more resilient neighborhoods, and encourage internal building access.

Wet-Floodproofed Spaces

The Proposed Action would provide a consistent floor area exemption for wet-floodproofed ground floor spaces for all buildings to promote long-term resiliency improvements. Flood-resistant construction standards require the ground floor of residential buildings to be wet-floodproofed, thereby limiting the use of this ground floor space solely to parking, storage and/or building access. While accessory parking is generally not counted toward zoning floor area calculations, spaces used for storage or building access typically count and therefore can act as a severe disincentive to floodproofing. The 2013 Flood Text addressed this by allowing all existing structures to fully exempt a wet-floodproofed ground floor. For new buildings, the exemptions are limited to entryway areas used for enclosed ramps and stairs to encourage access to be kept within the building. The Proposed Action would provide the full ground floor exemption for wet-floodproofed spaces to new and existing buildings. This would provide more consistent results and incentivize internal access at grade, while encouraging living spaces to be elevated above the FRCE in new and existing buildings, including those that cannot be physically elevated.

Dry-Floodproofed Spaces

To promote a safe and lively pedestrian environment, the Proposed Action would encourage active dry-floodproofed ground floor spaces along the city's retail corridors. Flood-resistant construction standards allow non-residential ground floor uses to be dry-floodproofed. While this method allows active uses to be kept close to grade, which is beneficial in maintaining retail continuity along the city's commercial streets, this method has proven to be quite costly. The 2013 Flood Text attempted to incentivize dry-floodproofing by allowing up to 10,000 sf of non-residential uses in existing buildings to be exempted from floor area calculations if they are dry-floodproofed. However, this provision has seen limited use to date due to both the high cost of dry-floodproofing as well as existing restrictions on the use of relocated space that make the resiliency investment less viable. But if the 2013 provision was utilized, the large size of the floor area exemption could lead to out-of-scale development on small lots. For new buildings, the exemptions are limited to entryway areas used for enclosed ramps and stairs, to encourage access to be located within the building.

The Proposed Action would modify these incentives to better encourage dry-floodproofed spaces in appropriate locations. The provision would be available for both new and existing buildings facing "primary street frontages" (as defined in the ZR) in Commercial Districts and M1 Districts paired with Residence Districts. The floor area exemption would only be available for the first 30 horizontal feet of the non-residential floor space as measured from the street wall of the building, since this is the most critical space to maintaining retail continuity. The exemption would come with design requirements to ensure quality ground floors. These would require the ground floor level be within two feet of the adjacent sidewalk and follow transparency requirements. In addition, the Proposed Action would maintain the existing floor area exemption for access, to encourage ramps and stairs be located within the building.

Cellars

The Proposed Action would ensure that floor area exemptions are given only when buildings are floodproofed and remove incentives to build low-quality ground-floors.

The 2013 Flood Text included some limited modifications to the definition of "cellar" to help ensure that buildings with moderate and high FRCE levels (especially those that equal or exceed four and a half feet above grade) can achieve their fully permitted floor area. However, this provision has unexpectedly resulted in low-quality spaces, since it encourages low ground floor heights to obtain the floor area exemption, and the outcome can be out of scale with the neighborhood context, since an entire floor can be discounted from floor area calculations even when the space is used for active uses. In addition, where allowed, this provision has also encouraged the construction of sunken retail ground floors. While these floors would have to be dry-floodproofed, they could become vulnerable as sea levels rise, making it harder to further retrofit these buildings in the future.

The Proposed Action would limit these exemptions by not allowing the FRCE to be used as the measurement threshold for cellars and basements. In addition, as noted in the flood resistant construction elevation section above, the Proposed Action would modify the "base plane" definition to remove references to BFE. Taken together, this would restrict the owners of buildings subject to a high BFE from taking significant floor area exemptions for these low-quality below-grade spaces. With this proposed change, floor area exemptions would only be tied to the floodproofing of the building. However, existing buildings would have the option to determine floor area calculations using either the definition prior to or after the change to ensure that significant new non-compliances are not caused for these sites.

Street Wall Location

The Proposed Action would include limited street wall modifications when access or flood protection measures are provided outside of the building. Many zoning districts have street wall location provisions that ensure new development will be constructed close to the property line to reflect the character of their area. While these regulations promote best practices in streetscape design, they can conflict with the ability to provide sufficient outdoor access from the sidewalk into buildings in the floodplain since stairs and ramps can occupy considerable space and may not fit in the permitted area.

The Proposed Action would allow sufficient space to accommodate exterior stairs and ramps, as well as flood panels, in all zoning districts that require street walls be located on or near the street line. To incorporate these measures, street walls could be located up to eight feet from the property line and, to allow ramps that run perpendicular to the street, up to 50 percent of the street wall could be located beyond eight feet (see **Figure 8-8a**). In acknowledging the access challenges for narrow lots (less than 50 feet), the Proposed Action would allow the remaining 50 percent of the street wall to be recessed at the ground floor level. The possible visual impact of the access measures would be limited by requiring planting if the access extended along 70 percent or more of the street wall.

Ground Floor Level Requirements

The Proposed Action would accommodate resilient buildings and raised first floors by addressing conflicts with existing ground floor level zoning requirements. To promote walkability and enliven retail corridors, some zoning districts have ground floor use regulations that typically require non-residential uses (i.e., commercial and community facility) on the ground floor level in close proximity to the sidewalk level (often between two and five feet), and that the building facade adjoining these uses would be transparent to promote the feel of shopping districts with large show windows. In the floodplain, that ground floors and transparency be located close to the sidewalk level would often preclude floodproofing strategies, which could become extremely onerous in areas with a high FRCE. In addition, Commercial and Manufacturing Districts include accessory signage regulations to promote businesses on the lot that include size and height limitations measured from grade which may lead to impractical outcomes in the floodplain given the need to sometimes elevate these uses.

To address issues in applying these rules at the sidewalk level in the floodplain, the 2013 Flood Text allowed these ground floor measures to be elevated to the FRCE so that buildings could comply with Appendix G. For example, if the FRCE of the building was five feet above grade, the measurement elevation for required non-residential uses could be elevated to the FRCE along with associated transparency rules. Accessory signage could also be measured from this elevation. With these changes, owners can consider a wide variety of resilient design strategies including ground-floor elevation, dry-floodproofing, or the creation of wet-floodproofed "show pits."

The Proposed Action would continue to allow this, with small additions. In all areas, any blank walls created along retail corridors would now be subject to streetscape rules and would need to be addressed by adding elements such as planting, street furniture, or artwork. Additionally, in V zones and Coastal A zones identified by FEMA, ground floor use regulations would be made optional because dry-floodproofing is prohibited and FRCEs are often extremely high above the sidewalk.

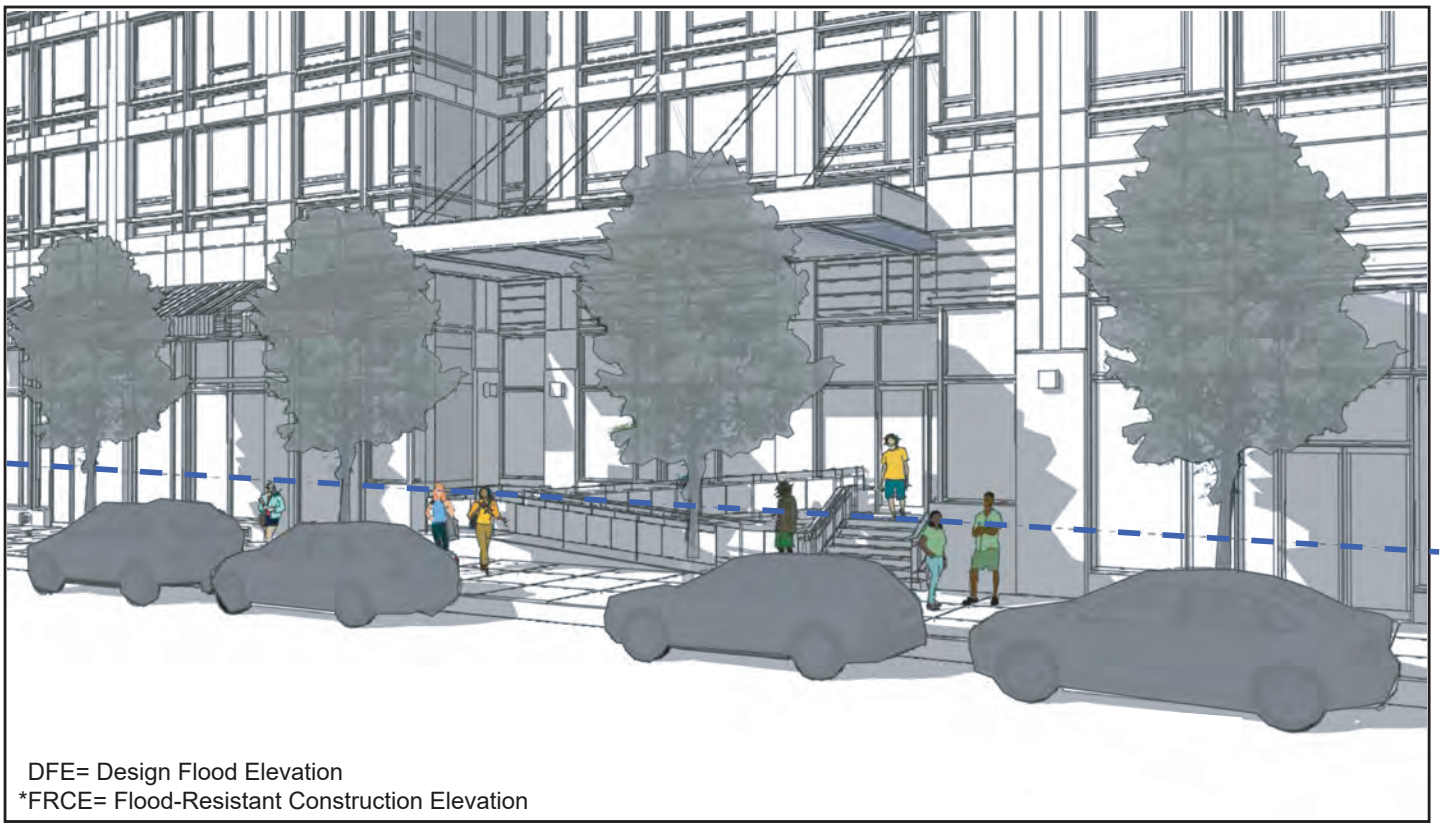
Improving Streetscapes in the Floodplain

The Proposed Action would require buildings using any of the regulations provided to comply with flood-resistant construction standards to also comply with streetscape requirements meant to help ensure flood-

Figure 8-8a

Illustrative Comparison of No-Action vs. With-Action Conditions on a Commercial Site

No-Action Condition



With-Action Condition *

***These conceptual designs are for illustrative purposes only.**

resistant buildings contribute to their surroundings. The Proposed Action would continue to require design features to address concerns about building elevation and blank walls but would address the issues raised with the current rules. Specifically, this would create a more consistent framework of requirements, with more design options, to better address the wide variety of building conditions found in the floodplain.

The framework would include a points system, like the 2013 Flood Text. Points would now be available in two broad categories: Building Access and Ground Floor Level. Building Access would be focused on how users reach the building's elevated first story, while Ground Floor Level would be focused on the design of the ground floor itself. Generally, for buildings with a "first story above the flood elevation" (FSAFE) that is less than five feet above grade, one point would be required and may be fulfilled within either category. Where the building's FSAFE is five feet or higher, the building would have to meet a total of three points, with at least one point coming from each of the two categories. These requirements would be applicable in all zoning districts other than M2 and M3 districts. Additionally, in M1 Districts, they would not apply to heavy industrial uses. A much-expanded menu of design options would be available for each category to better address different building types and scales found in the floodplain. For example, the Building Access category would include nine options such as front porches, stair turns, entrances close-to-grade, and multiple entrances along a facade (see **Figure 8-8b**). The Ground Floor Level category would include 14 options, including planting and raised yards (included in the 2013 Flood Text), as well as wall treatments such as decorative latticework, street furniture, and ground floor level transparency. This expanded menu would give designers the toolkit to better reflect conditions found in the floodplain, such as locations along commercial corridors or in higher-density residential neighborhoods.

In addition, the Proposed Action would ensure that these design options can be more easily utilized. It would classify steps and covered porches as permitted obstructions in front yards and modify the maximum height of retaining walls to three feet to address those practical construction constraints caused by the previous maximum height of two and a half feet (see **Figure 8-8b**). In low-density Residence Districts, the Proposed Action would also exempt buildings on narrow lots from existing front yard planting requirements that inadvertently limit the use of the other available design options. Finally, for all buildings subject to these provisions, all group parking facilities provided on the ground floor level would be required to be either wrapped by usable building space, or screened by treatments such as latticework, vertical plantings, or artwork.

Accommodating Current and Future Flood Elevations in Special Conditions

The Proposed Action includes more tailored zoning regulations to address special situations found in the city's floodplain, including small or narrow lots, as well as for existing buildings that do not meet current zoning requirements. While these conditions exist throughout the floodplain, they are often concentrated in certain neighborhoods, such as the bungalow communities often found along the water's edge.

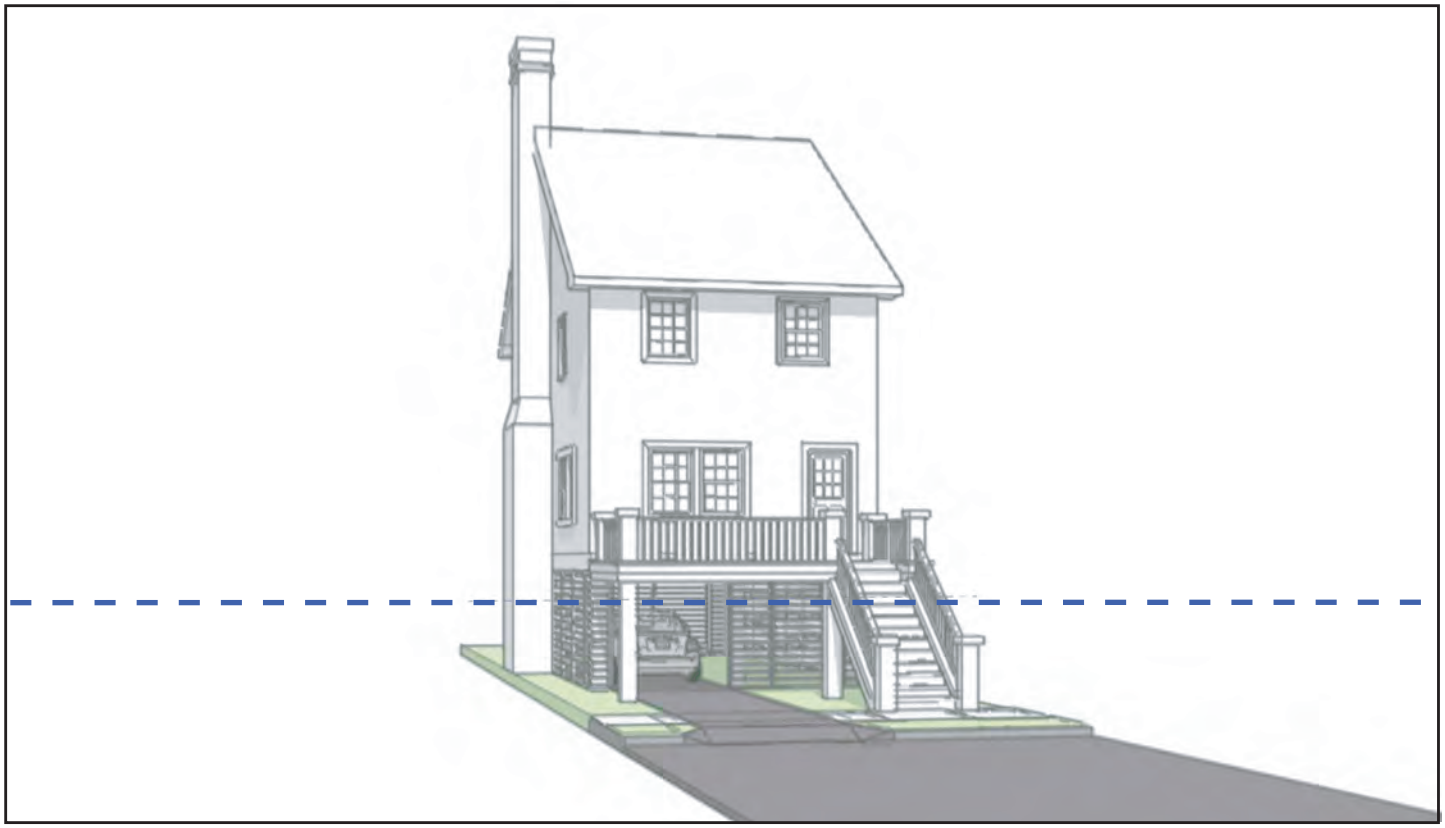
Substandard Lots (Cottage Envelope)

The Proposed Action would expand the availability of the popular cottage envelope option, first created in the 2015 Recovery Text, to small lots throughout the floodplain. This would allow for the construction of resilient buildings that better match their surroundings and accommodate better layouts.

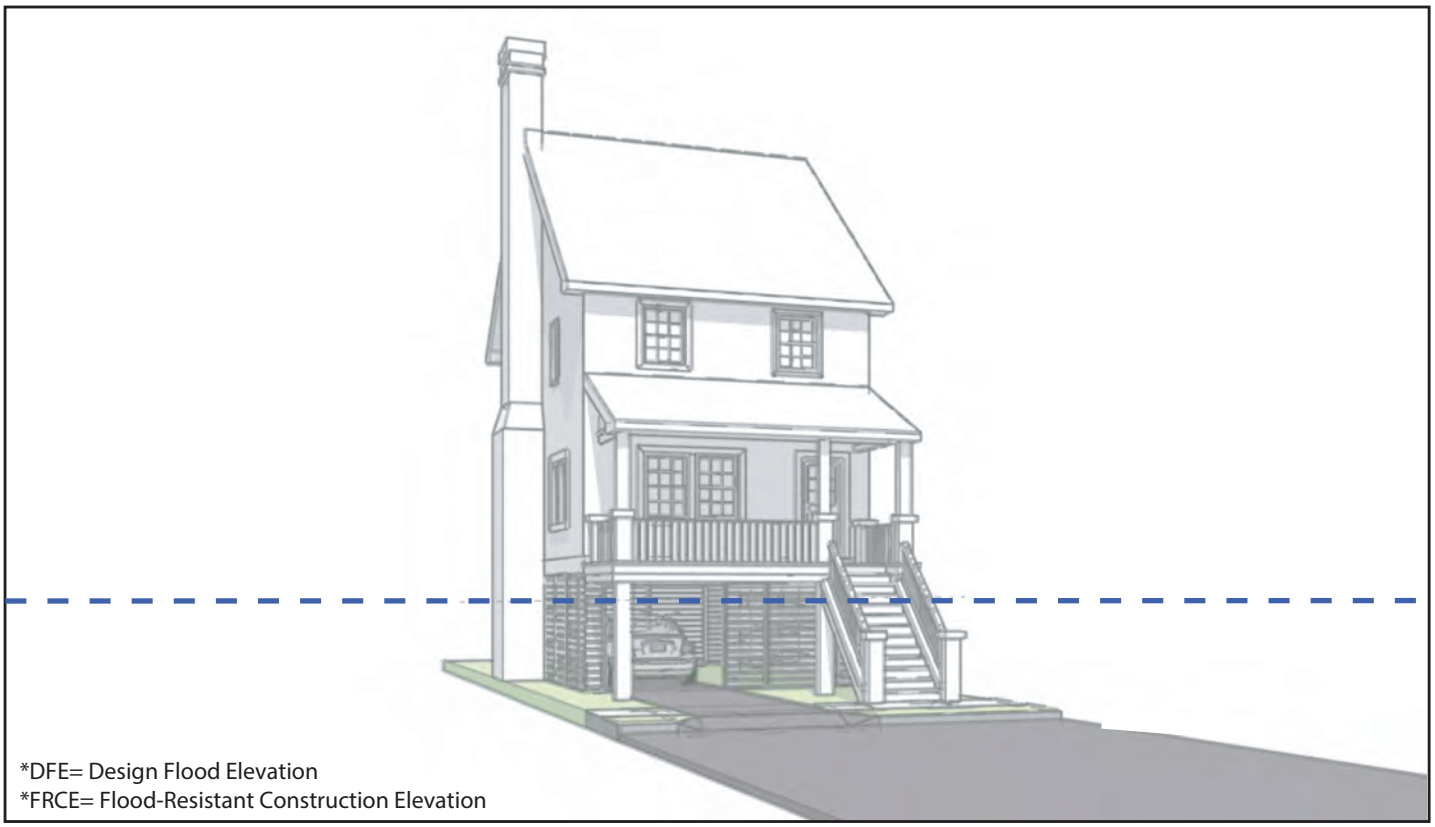
The 2015 Recovery Text provided an alternative cottage envelope option for single- and two-family detached residences reconstructed in the special Neighborhood Recovery Areas. This envelope came with decreased yard requirements and increased permitted lot coverages on substandard lots, in exchange for a shorter overall building height. The resulting building form mimics the wider and deeper bungalow homes and has provided homeowners the opportunity to create a more practical design and interior layout. While

Figure 8-8b

Illustrative Comparison of No-Action vs. With-Action Conditions on a Residential Site



No-Action Condition



With-Action Condition: Highlighting Streetscape Mitigation Requirements

These conceptual designs are for illustrative purposes only.

this provision has been well received, it was limited to reconstructions in the specific recovery areas.

The Proposed Action would expand the 2015 Recovery Text provisions by allowing all new and existing single- and two-family detached residences in R1 through R5 Districts in the floodplain to use the cottage envelope option when the building is designed to flood-resistant construction standards. Specifically, the maximum permitted building height would be reduced to 25 feet, as measured from the reference plane, instead of the typical maximum height of 35 feet. In exchange for this reduction, the applicable yard and lot coverage requirements would be modified: the minimum front yard would be reduced to the depth of neighboring homes, while minimum side and rear yards would be reduced at a rate proportional to the narrowness and shallowness of the lot (up to a minimum of three and 10 feet respectively). In addition, any applicable lot coverage and open space requirements would not apply because the modified yard regulations effectively control the building's footprint. Corner lots would be able to consider one of their front yards a (narrower) side yard to allow for a more contextual corner building.

Parking on Narrow Lots

The Proposed Action would continue to encourage single- and two-family residences on narrow lots to have parking be located below the building. The 2013 Flood Text included modified curb cut spacing and parking location requirements, particularly for narrow lots. These have allowed narrow residences to be elevated and parking to be located below the building provided that at least two parking spaces are located there. The Proposed Action would maintain these allowances, with small modifications to better align the number of parking spaces that may locate under an elevated building to what is required by the zoning district (which may be less than two spaces) and to only allow the curb cut spacing for narrow lots. Specifically, in providing parking spaces beneath the building single and two-family residences in R1 through R5 districts (except R4B and R5B districts) would be able to disregard underlying parking location and curb cut location rules to allow parking spaces be located under the building. On existing zoning lots with widths of less than 35 feet, the curb cut spacing regulations would become optional if four feet of curb space is provided between the new and existing curb cuts. In either case, the site would have to comply with the underlying front yard planting requirements.

Non-Complying and Non-Conforming Buildings

The Proposed Action would promote resiliency for the large number of existing buildings and land uses that do not adhere to the zoning rules that are currently applicable. These conditions exist because the buildings or uses were constructed before zoning existed or because they were legally built under the provisions in effect at the time and the regulations have since changed. These non-complying buildings or non-conforming uses can stay in place but there are limits on their reconstruction, enlargement or alteration. Most importantly, if these buildings or uses are demolished or damaged, such that more than a specified amount of floor area is removed— (75 percent for most non-compliances, 50 percent for most non-conformances) —they cannot be put back, although single- and two-family residences located in districts that permit them can be fully demolished and replaced. This longstanding policy was intended to ensure that properties comport with the applicable zoning regulations over time.

However, these restrictions became immediately problematic in the aftermath of Hurricane Sandy. The drafters of the ZR in 1961 did not anticipate the significant destruction of non-conforming uses or non-complying buildings caused by the storm, which meant that many uses and buildings could not be rebuilt since they were damaged beyond the applicable thresholds. Nor did the drafters anticipate that these buildings would need to be elevated to become more resilient, therefore potentially creating, or increasing, non-compliance with several bulk regulations.

The Proposed Action would allow nearly all non-conforming uses and non-complying buildings to be elevated, retrofitted, or reconstructed to meet flood-resistant construction standards and measure height from the reference plane while retaining existing non-conformances and non-compliances. This allowance would come with the condition that less than 75 percent of the floor area be damaged or demolished (single- and two-family residences in districts that permit them would maintain their higher threshold). Relief beyond this threshold would be available for non-conforming uses and non-complying buildings damaged in any future disaster.

In addition, non-compliances could be created or increased as long as the change to the building does not exceed specified parameters. For example, it would be possible to retain and relocate non-complying floor area (often located in basements) above the reference plane, provided that the floor area does exceed the maximum allowed in the applicable zoning district by 20 percent. Similarly, it would be possible to increase the height of a building with non-complying height (as measured from the lowest floor to the highest point of the roof), provided that the elevated building does not exceed the maximum height allowed by the applicable zoning district by 10 percent or 10 feet, whichever is less, as measured from the reference plane. Non-compliances could also be created or increased for open areas (yards, courts, and open spaces, including minimum distance between buildings) to accommodate resiliency measures on constrained sites. For instance, a building's previous footprint could be shifted or altered provided that the building's lot coverage is not increased and that any new encroachment into required yards does not get too close to surrounding lot lines (five feet from the rear lot line and three feet from the front and side lot lines).

Building on the provisions of the 2015 Recovery Text, the Proposed Action would also allow non-conforming residential buildings in heavy Commercial (C8) Districts and in all Manufacturing Districts throughout the floodplain to be elevated, retrofitted, or reconstructed to meet flood-resistant construction standards and measure height from the reference plane as long as the buildings are located within predominantly residential areas in these districts. In addition, the residential floor area in these buildings could not be increased and the maximum height for single- and two-family residences would be 35 feet (multi-family buildings, generally rare in these areas, would be able to use the applicable zoning district height).

Allow for Adaptation Over Time Through Incremental Retrofits

While the proposal is primarily focused on encouraging all buildings in the floodplain to fully meet flood-resistant construction standards, there are situations where specific conditions, such as regulatory obstacles or cost constraints, may prevent a building from reaching that level of resiliency. The Proposed Action includes optional modifications that would encourage buildings to become more resilient over time without having to comply with those standards. These modifications, which would also be available to buildings that meet flood-resistant construction standards, include provisions to facilitate location of mechanical equipment and other critical spaces above the FRCE, allowances for some specific flood protection measures, and parking design modifications in low-density Residence Districts.

Locating Mechanical Equipment Above Flood Elevation

The Proposed Action would help protect mechanical equipment from flood damage by facilitating its elevation above flood levels, which is often the first and most cost-effective resiliency strategy for existing buildings since it requires few changes to the building's structure or floor elevations.

The 2013 Flood Text allowed mechanical equipment, typically found in basements and cellars, to be relocated to other areas within buildings or in required open areas. In some instances, these have been found to be insufficient and have therefore hampered resiliency improvements. For example, owners of residential

campuses who are looking to construct a new separate structure to house mechanical equipment above expected flood levels have been hindered by zoning regulations that require minimum distances between buildings. The Proposed Action would improve upon these existing 2013 Flood Text provisions for mechanical equipment by promoting an expanded set of resiliency improvements.

Within and On Top of Buildings

The Proposed Action would facilitate the relocation of mechanical equipment from basements and cellars to locations higher in or on top of buildings. The 2013 Flood Text included allowances for larger bulkheads on the top of multi-family buildings and for existing commercial or manufacturing buildings. It also included modifications in lower-density Residence Districts to facilitate the relocation of equipment from below-grade spaces to elsewhere within the building. Bulkheads were already considered permitted obstructions and permitted to extend above any required maximum heights or sky exposure planes if they remained within certain size limitations. The 2013 Flood Text increased these dimensions in the floodplain to encourage mechanical equipment to be moved onto roofs where they are more protected from flooding. For example, for buildings in R5 through R10 districts, and in Commercial and Manufacturing Districts, these changes permitted a 10 percent increase in bulkhead coverage. Alternatively, for existing buildings, it allowed an approximately 30 percent increase of their permitted height. Bulkheads in R3 and R4 Residence Districts were permitted smaller increases given their smaller scale. Screening was required for all bulkheads. The Proposed Action would maintain these provisions, while increasing their applicability for all new and existing buildings in Residence, Commercial and Manufacturing Districts. While there are no prohibitions on locating mechanical equipment in the cellars of non-residential structures, in the long-term it is safer to locate such equipment above the flood level.

In addition, the 2013 Flood Text also exempted buildings in the floodplain from limitations on interior mechanical space found in many lower-density Residence Districts, as this tended to force mechanical equipment into basements and cellars. This exemption would continue in the Proposed Action to ensure that mechanical equipment can be placed above the FRCE.

In Open Areas

The Proposed Action would also facilitate the placement of mechanical equipment above the FRCE outside of buildings to address situations where the structures cannot physically sustain additional loads or where centralizing this equipment in a single structure would be more efficient.

The 2013 Flood Text included allowances for mechanical equipment in various open areas regulated by zoning. The equipment can be considered permitted obstructions within yards, courts and other open areas if it stays within certain coverage and height limitations. These measures offered alternative locations for necessary mechanical equipment in lieu of basements and cellars. The provisions are available for existing single- and two-family residences as well as all other new and existing buildings.

The Proposed Action would consistently apply these allowances to all buildings regardless of whether they are new or existing. It would also modify some of the dimensional limitations to provide more rational standards to address various design challenges that have been identified since 2013. Mechanical equipment would have to be placed a minimum of five feet from property lines (though this could be reduced to three feet for substandard lots). Coverage would be limited to 25 percent of the minimum required open space, but the coverage would be restricted to 25 square feet if the equipment is located between the building and the front lot line, to minimize its effect on the street. The height would be limited to certain heights above the "reference plane" depending on the zoning district (10 feet in low-density Residence Districts, 15 feet in other Residence Districts, and 23 feet in Commercial and Manufacturing Districts). All equipment would

be required to be screened by vegetation when located in front yards or between the street line and the street wall and when placed in other locations, if more than one piece of equipment is provided, it would have to be screened by materials that are at least 50 percent opaque.

Finally, to allow for the construction of new utility structures on larger campus-style housing sites, the Proposed Action would permit buildings used predominantly for mechanical equipment to be considered permitted obstructions on properties larger than 1.5 acres. The structure's coverage would similarly be limited to 25 percent of the minimum required open space, and it would be required to be located at least 30 feet from any legally required windows with the exhaust stacks located above adjacent residential buildings. The structures would be subject to underlying height and setback controls.

Locating Important Spaces Out of Harm's Way

Beyond mechanical equipment, there are some situations where elevating key support spaces would improve the long-term resiliency of buildings and their uses. The Proposed Action therefore includes modifications to address three of these situations.

Many retail stores rely on basement and cellar space to support their at-grade retail, but zoning regulations often restrict these spaces from being located on the second floor, which limits the stores' ability to become more resilient. The Proposed Action would therefore include two modifications to address this issue.[2] In low- and medium-density C1 and C2 local Commercial Districts, where underlying zoning regulations limit commercial uses to the first story in mixed-use buildings, the Proposed Action would allow commercial uses on the second story in buildings in the floodplain. This would give businesses an opportunity to move key spaces out of basements or cellars. The space within the second floor would still be counted towards floor area regulations.

In Commercial and Manufacturing Districts with a low maximum floor area ratio (FAR), buildings may have little available floor area to raise key spaces above the flood elevation.[3] To remedy this, the Proposed Action would add a floor area exemption of up to 500 square feet to provide businesses the option of elevating important spaces, such as offices or storage rooms, above the FRCE in Commercial and Manufacturing Districts where the permitted commercial or manufacturing FAR is less than or equal to 1.0.

Lastly, existing residential buildings in low-density Residence Districts are often hindered by underlying zoning regulations when attempting to fill in their basements or cellars and relocate the required parking found there to other portions of their lot. The 2013 Flood Text included provisions to address this. The Proposed Action would similarly allow below-grade parking in existing residential buildings in R1 through R5 districts (except R4B and R5B districts) to be relocated to front, side or rear yards. To be granted this allowance, below-grade spaces would have to be removed and filled, in compliance with flood-resistant construction standards. In addition, the Proposed Action would continue to allow parking spaces and driveways to be covered with dustless gravel for all single- and two-family residences in R1 through R5 districts.

Flood Protection Measures

The Proposed Action would allow more flood protection measures as permitted obstructions to accommodate their installation when required for compliance with flood-resistant construction standards and in situations where alternate flood protection strategies may be warranted.

[2] This recommendation came from the 2016 *Resilient Retail* report.
[3] This recommendation came from the 2018 *Resilient Industry* report.

The 2013 Flood Text allowed several flood protection measures, such as flood barriers and associated emergency egress, as permitted obstructions in various required open areas in recognition that they are required in front of building entrances. However, practitioners and other City agencies have subsequently identified additional viable measures that are not included and have noted the difficulty in finding on-site storage within buildings for temporary measures such as flood panels, both of which have limited the use of these measures.

The Proposed Action would therefore maintain the existing flood protection measures listed as permitted obstructions but add items which were not previously listed: landscaped berms and their associated floodgates. The Proposed Action would also allow space used for the storage of temporary flood panels to be exempted from floor area calculations, up to a maximum exemption of 15 square feet for each linear foot of protection and no more than 1,000 square feet of exemption per zoning lot. These standards account for the space that panels, trolleys and deployable access take up in a typical building configuration).

Accommodating Current and Future Flood Elevations on Waterfront Sites

The Proposed Action would modify provisions applicable in waterfront areas to better allow for coastal flood resilient design. The Proposed Action would permit the construction of bi-level esplanades that facilitate waterfront public access both close to the shoreline at the water level and at a higher elevation to meet flood design elevations at the building level. To facilitate these bi-level designs, the Proposed Action would also allow for increased retaining wall heights (generally up to three feet), provide new planting design options (including terraced planting), and provide slight reductions to the minimum required planting areas, and screening buffers so that access requirements can be satisfied.

The Proposed Action would facilitate the elevation of waterfront public access areas while maintaining visual connectivity to the water by raising the required level of visual corridors on upland streets from three feet above curb level to five feet. In addition, flood protection measures such as temporary flood control devices and associated permanent fixtures, structural landscaped berms, flood gates, and associated emergency egress systems would be permitted as obstructions in both waterfront yards and visual corridors subject to dimensional limitations (up to the FRCE or five feet above the lowest adjacent grade, whichever is higher).

Finally, to encourage waterfront sites to include soft shorelines (such as natural aquatic grasses) as a resiliency measure, the Proposed Action would allow the width of the required waterfront yard and shore public walkway to be reduced for soft shorelines by up to seven feet along up to 30 percent of the shoreline length of such yard.

Reducing Regulatory Obstacles

The Proposed Action would include modifications to expedite future recovery processes. Hurricane Sandy showed that areas affected by the storm went beyond the floodplain and that the regulations which would facilitate recovery would be useful for other types of disasters. Thus, these select rules would be applicable citywide.

Power Systems and Other Mechanical Equipment

The Proposed Action would allow appropriately scaled power systems on lots throughout the city to make it easier to provide back-up energy, especially in the event of a disaster. In the future with the Proposed Action, power systems (including, but not limited to, generators, solar energy systems, fuel cells, batteries, and other energy storage systems) would be added as a permitted obstruction, subject to dimensional

limitations, that could encroach in any required open area in all zoning districts citywide. Similar to the limitations for the broader mechanical equipment category in the floodplain, power systems would have to be placed a minimum of five feet from property lines. Coverage would be limited to 25 percent of the minimum required open space, although the coverage would be restricted to 25 square feet if the equipment is located between the building and the front lot line to minimize its effect on the street. The height would be limited to certain heights above adjoining grade, or the reference plane for lots in the floodplain, depending on the zoning district (10 feet in low-density Residence Districts, 15 feet in other Residence Districts, and 23 feet in Commercial and Manufacturing Districts). Exempted equipment would be subject to requirements for enclosure or screening, depending on the equipment type and applicable zoning district.

In addition, the Proposed Action would clarify that the floor area exemption for mechanical equipment applies to mechanical, electrical, plumbing (MEP) equipment, as well as to fire protection and power systems, and necessary maintenance and access areas. This is consistent with the general practice at the DOB but would ensure that buildings across the city would be treated consistently.

Ramps and Lifts

The Proposed Action would provide rules for accessible design that are consistent throughout the city. The Proposed Action would provide full consistency across the city by classifying both ramps and lifts as permitted obstructions in all required open areas.

Vulnerable Populations

The Proposed Action would limit the growth of vulnerable populations in nursing homes in high-risk areas of the floodplain. The Proposed Action would therefore prohibit the development of new nursing homes and restrict the enlargement of existing facilities within the 1% annual chance floodplain and other selected geographies (shown in **Appendix C**) likely to have limited vehicular access because of the storm event. The modification would restrict the enlargement of existing nursing homes in this geography to a maximum of 15,000 square feet to allow for improvements, including those related to resiliency. These restrictions would also apply to the nursing home portions of Continuing Care Retirement Communities (CCRCs). The CPC special permit (ZR Section 74-901) that permits nursing homes in areas where they are not allowed as-of-right (i.e., R1 and R2 districts and certain community districts) would not be available in this geography.

Uses in Waterfront Recreation Districts

Lastly, the Proposed Action would modify the zoning requirements that have made it difficult for eating or drinking establishments in some lower-density waterfront areas from making long-term resiliency improvements. In C3 and C3A Waterfront Recreation zoning districts, which are mapped along the city's waterfront in limited locations, these businesses are required to obtain a New York City Boards of Standards and Appeals (BSA) special permit to operate, renewable every five years. The Proposed Action would extend the initial special permit term from five to 10 years for new applicants. Additionally, for existing establishments with a previously approved special permit, the permit would allow the BSA to determine the required term moving forward.

Future Discretionary Actions

As detailed in **Chapter 1, "Project Description,"** the Proposed Action would also modify the existing special permits that can be granted by the BSA to facilitate resiliency investments in unique conditions, in addition to the creation of a new special permit that would provide a wider range of use alternatives for the

ground floor design of residential buildings as detailed above. As it is not possible to predict whether a discretionary action would be pursued on any one site in the future, the RWCDS for the Proposed Action does not consider specific developments. Instead, a conceptual analysis of these sites is provided in **Chapter 23, "Conceptual Analysis,"** to assess potential environmental impacts generically.

Prototypical Analysis Sites

As detailed in **Tables 8-5a** and **8-5b** below and illustrated in **Appendix A**, the Proposed Action would not result in changes to land uses on the Prototypical Analysis Sites as compared to the No-Action scenarios. In the future with the Proposed Action, it is expected that new buildings on the Prototypical Analysis Sites would exceed the minimum flood-resistant construction standards of Appendix G for buildings in both the 1% and 0.2% annual chance floodplains. Additionally, it is expected that existing buildings would retrofit to either meet the minimum flood-resistant construction standards of Appendix G or exceed it, depending on the cost and structural feasibility of construction for both the 1% annual chance floodplain and the 0.2% annual chance floodplain.

Table 8-5a: Prototypical Analysis Sites – With-Action Condition: 1% Annual Chance Floodplain

Site	1% Annual Chance Floodplain With-Action Scenario	With-Action Height	With-Action FAR	Change between No-Action and With-Action Scenarios
1	**RETROFIT** Residential building w/ one DU (2,835 gsf / 1,800 zsf)	36 feet	0.45	*- 65 gsf* **+ 8 feet**
2	**NEW** Residential building w/ one DU (2,231 gsf / 1,500 zsf)	34 feet	0.60	**+ 250 zsf (+ 0.1 FAR)** **+ 631 gsf** **+ 5 feet**
3	**RECONSTRUCTION** Residential building w/ two DUs (3,927 gsf / 2,700 zsf)	37 feet	1.35	**+ 1,092 gsf** **+ 15 feet**
4	**RETROFIT** Residential building w/ three DUs (5,630 gsf / 4,125 zsf)	38 feet	1.65	**+ 130 gsf** **+ 9 feet**
5	**NEW** Residential building w/ 54 DUs (60,980 gsf / 46,000 zsf)	80 feet	4.0	**+ 4,650 gsf** **+ 7 feet**
6	**RETROFIT** Residential building w/ 320 DUs (247,200 gsf / 240,000 zsf)	80 feet	2.4	*- 22,800 gsf*
7	**NEW** Mixed residential/commercial building w/ 10 DUs (19,800 gsf / 15,000 zsf)	42 feet	1.25	*- 1,800 gsf* **+ 5 feet**
8	**RETROFIT** Mixed residential/commercial building w/ 13 DUs (12,105 gsf / 10,000 zsf)	85 feet	4.0	**+ 1,305 gsf** **+ 10 feet**
9	**NEW** Commercial building (6,000 gsf / 4,510 zsf)	21 feet	0.45	**+ 310 zsf (+ 0.03 FAR)** **+ 960 gsf**
10	**RETROFIT** Industrial building (12,000 gsf / 10,000 zsf)	30 feet	1.0	**+ 500 gsf**
11	**NEW** Residential building w/ one DU (3,461 gsf / 2,250 zsf)	35 feet	0.90	**+ 5 zsf** **+ 266 gsf** *- 5 feet*
12	**RETROFIT** Residential building w/ one DU (2,254 gsf / 1,102 zsf)	25 feet	0.44	**+ 50 zsf (+ 0.02 FAR)** **+ 50 gsf** **+ 8 feet**
13	**RETROFIT** Residential building w/ two DUs (2,130 gsf / 1,400 zsf)	29 feet	0.50	**+ 30 zsf (+ 0.01 FAR)** **+ 30 gsf** **+ 9 feet**
14	**SITE MODIFICATION** Waterfront Site	N/A	N/A	**N/A**

Note: Refer to **Figures 8-3** through **8-7** for illustrative comparisons of the No-Action vs. With-Action scenarios on Prototypical Analysis Sites 3, 5, 8, 11, and 14 in the 1% annual chance floodplain.
*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

It is assumed that the 14 Prototypical Analysis Sites would maximize their development under the Proposed Action. Developments in the 0.2% annual chance floodplain generally follow the development rationale for the 1% annual chance floodplain, unless the limited height flexibility in the 0.2% annual chance floodplain does not allow for it. As detailed in **Table 8-5a** and **8-5b**, in both the 1% and 0.2% annual chance floodplains, five Prototypical Analysis Sites (Nos. 2, 5, 7, 9, and 11) would accommodate new development under With-Action conditions, and the remaining nine sites (Nos. 1, 3, 4, 6, 8, 10, 12, 13, and 14) would be retrofitted, reconstructed, or would undergo site modifications in the future with the Proposed Action.

Table 8-5b: Prototypical Analysis Sites – With-Action Condition: 0.2% Annual Chance Floodplain

Site	0.2% Annual Chance Floodplain With-Action Scenario	With-Action Height	With-Action FAR	Change between No-Action and With-Action Scenarios
1	**RETROFIT** Residential building w/ one DU (2,835 gsf / 1,800 zsf)	34 feet	0.45	*- 65 gsf* **+ 6 feet**
2	**NEW** Residential building w/ one DU (2,231 gsf / 1,500 zsf)	34 feet	0.60	**+ 250 zsf (+ 0.1 FAR)** **+ 631 gsf** **+ 8 feet**
3	**RECONSTRUCTION** Residential building w/ two DUs (2,835 gsf / 2,700 zsf)	31 feet	1.35	**+ 9 feet**
4	**RETROFIT** Residential building w/ three DUs (5,630 gsf / 4,125 zsf)	38 feet	1.65	**+ 130 gsf** **+ 9 feet**
5	**NEW** Residential building w/ 54 DUs (60,980 gsf / 46,000 zsf)	80 feet	4.0	**+ 2,940 gsf** **+ 10 feet**
6	**RETROFIT** Residential building w/ 320 DUs (247,200 gsf / 240,000 zsf)	80 feet	2.4	*- 22,800 gsf*
7	**NEW** Mixed residential/commercial building w/ 10 DUs (19,850 gsf / 15,000 zsf)	42 feet	1.25	*- 190 gsf* **+ 5 feet**
8	**RETROFIT** Mixed residential/commercial building w/ 13 DUs (12,105 gsf / 10,000 zsf)	85 feet	4.0	**+ 1,305 gsf** **+ 10 feet**
9	**NEW** Commercial building (6,000 gsf / 4,510 zsf)	21 feet	0.45	**+ 310 zsf (+0.03 FAR)** **+ 960 gsf** **+ 6 feet**
10	**RETROFIT** Industrial building (12,000 gsf / 10,000 zsf)	30 feet	1.0	**+ 500 gsf**
11	**NEW** Residential building w/ one DU (3,182 gsf / 1,925 zsf)	27 feet	0.77	**+ 45 zsf (+ 0.02 FAR)** **+ 1,072 gsf** *- 1 foot*
12	**RETROFIT** Residential building w/ one DU (2,254 gsf / 1,102 zsf)	25 feet	0.44	**+ 50 zsf (+ 0.02 FAR)** **+ 50 gsf** **+ 8 feet**
13	**RETROFIT** Residential building w/ two DUs (2,130 gsf / 1,400 zsf)	29 feet	0.50	**+ 30 zsf (+0.01 FAR)** **+ 30 gsf** **+ 9 feet**
14	**SITE MODIFICATION** Waterfront Site	N/A	N/A	**N/A**

Note: Refer to **Appendix A** for illustrative renderings of the Prototypical Analysis Sites.
*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

As shown in **Tables 8-5a** and **8-5b**, the Proposed Action would not modify permitted land uses or the type of development on the Prototypical Analysis Sites as compared to No-Action conditions. Although the Proposed Action would not allow for increases in maximum permitted floor area on these sites, changes to building placement, setbacks, yards, lot coverage, and building heights would allow for the construction of slightly different buildings than under No-Action conditions, resulting in minor changes to total square footages, lot coverage, and building heights (see **Tables 8-6a** and **8-6b**).

Table 8-6a: No-Action vs. With-Action Condition: 1% Annual Chance Floodplain

Site	No-Action Height	With-Action Height	*Incremental Difference*	No-Action FAR	With-Action FAR	*Incremental Difference*
1	28 feet	36 feet	***+ 8 feet***	0.45	0.45	-
2	29 feet	34 feet	***+ 5 feet***	0.50	0.60	***+ 0.10 FAR***
3	22 feet	37 feet	***+ 15 feet***	1.35	1.35	-
4	29 feet	38 feet	***+ 9 feet***	1.65	1.65	-
5	73 feet	80 feet	***+ 7 feet***	4.0	4.0	-
6	80 feet	80 feet	-	2.4	2.4	-
7	37 feet	42 feet	***+ 5 feet***	1.25	1.25	-
8	75 feet	85 feet	***+ 10 feet***	4.0	4.0	-
9	21 feet	21 feet	-	0.42	0.45	***+ 0.03 FAR***
10	30 feet	30 feet	-	1.0	1.0	-
11	40 feet	35 feet	***- 5 feet***	0.90	0.90	-
12	17 feet	25 feet	***+ 8 feet***	0.42	0.44	***+ 0.02 FAR***
13	20 feet	29 feet	***+ 9 feet***	0.49	0.50	***+ 0.01 FAR***
14	N/A	N/A	***N/A***	N/A	N/A	***N/A***

*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

Overall, implementation of the Proposed Action would improve the ability of the city's many flood-prone neighborhoods to withstand and recover quickly from future storms. The Proposed Action would not result in significant adverse impacts to zoning in the city's floodplains, but rather, would provide enhanced zoning allowances and design requirements in order to help building owners to better accommodate projected sea level rise when designing new buildings or retrofitting/reconstructing existing ones, without creating incongruous and uninviting streetscapes.

Table 8-6b: No-Action vs. With-Action Condition: 0.2% Annual Chance Floodplain

Site	No-Action Height	With-Action Height	*Incremental Difference*	No-Action FAR	With-Action FAR	*Incremental Difference*
1	28 feet	34 feet	***+ 6 feet***	0.45	0.45	-
2	26 feet	34 feet	***+ 8 feet***	0.50	0.60	***+ 0.10 FAR***
3	22 feet	31 feet	***+ 9 feet***	1.35	1.35	-
4	29 feet	38 feet	***+ 9 feet***	1.65	1.65	-
5	70 feet	80 feet	***+ 10 feet***	4.0	4.0	-
6	80 feet	80 feet	-	2.4	2.4	-
7	37 feet	42 feet	***+ 5 feet***	1.25	1.25	-
8	75 feet	85 feet	***+ 10 feet***	4.0	4.0	-
9	15 feet	21 feet	***+ 6 feet***	0.42	0.45	***+ 0.03 FAR***
10	30 feet	30 feet	-	1.0	1.0	-
11	28 feet	27 feet	***+ 1 foot***	0.75	0.77	***+ 0.02 FAR***
12	17 feet	25 feet	***+ 8 feet***	0.42	0.44	***+ 0.02 FAR***
13	20 feet	29 feet	***+ 9 feet***	0.49	0.50	***+ 0.01 FAR***
14	N/A	N/A	***N/A***	N/A	N/A	***N/A***

*Site 14 illustrates the proposed modifications specific to waterfront regulations for open space. See **Appendix A** for more details.

Prototypical Analysis Site 3

As illustrated in **Figure 8-3**, in the future with the Proposed Action, Prototypical Analysis Site 3 in the 1% annual chance floodplain would be reconstructed. The building would continue to be a two-family attached

residence with 2,700 sf of zoning floor area and an FAR of 1.35, the maximum permitted in an R4 infill zoning district. The With-Action building on Site 3 would be 3,927 gsf.

Under With-Action conditions, the basement of the structure on Prototypical Analysis Site 3 would be filled-in to comply with flood resistant construction standards. The floor area lost due to the filled-in basement would be added as a horizontal enlargement in the rear yard and as a partial story to the top of the building. An enclosed, wet-floodproofed garage with one parking space would be added to the ground floor of Site 3; an unenclosed parking space would be located on the front yard (refer to **Figure 8-3**). Additionally, in the future with the Proposed Action, the building's MEP equipment would be relocated from the basement to the rear yard as a permitted obstruction, and would be elevated 10 feet above grade to match the FSAFE. As a result of the Proposed Action, spaces used for MEP equipment (187 sf) and wet-floodproofed ground floor (1,040 sf) would be exempted from the zoning floor area on Prototypical Analysis Site 3.

As noted above, according to FEMA's flood maps, Site 3's lot is mapped with a BFE of five feet above grade, resulting in a FRCE of seven feet above grade. In order to floodproof the building for the long-term and exceed minimum flood-resistant construction standards, the first occupiable floor of Site 3 is at 10 feet above grade, and everything below is filled in. The total building height is 37 feet with a perimeter wall of 28 feet, fitting within the permitted building envelope of the R4 zoning district as measured from a reference plane of 10 feet, which allows for a maximum building height of 45 feet and a maximum perimeter wall height of 35 feet.

As a result of the Proposed Action, there would be an additional 1,092 sf of gross floor area and exempted floor area on Prototypical Analysis Site 3, allowing for a horizontal enlargement on the lot and an additional 15 feet of building height, as illustrated in **Figure 8-3**. No additional zoning floor area or residential DUs would be added on the lot in the future with the Proposed Action.

Prototypical Analysis Site 5

As illustrated in **Figure 8-4**, in the future with the Proposed Action, Prototypical Analysis Site 5 in the 1% annual chance floodplain would be developed with a high-rise, multi-family building, similar to the No-Action scenario. The eight-story building with 54 DUs would have 46,000 sf of zoning floor area (60,980 gsf) and an FAR of 4.0, the maximum permitted in R7A districts. As a result of the Proposed Action, spaces used for MEP equipment on Site 5 (630 sf), wet-floodproofed ground-level enclosed parking, storage, and lobby space, and five percent of the remaining gross floor area (a total of 14,350 sf) would be exempted from the total zoning floor area to account for other deductions of the Quality Housing Program.

In order to floodproof the building for the long-term and exceed the minimum Appendix G requirements, the building is utilizing the reference plane allowance of 10 feet in the 1% annual chance floodplain, which results in the FSAFE being placed at 10 feet above grade. Therefore, the total building height on Site 5 would be 80 feet with a base height of 70 feet, as measured from grade, fitting within the permitted quality housing envelope of the R7A district, measured from a reference plane of 10 feet above grade, which permits a maximum building height of 90 feet and a maximum base height of 75 feet without a qualifying ground floor. Additionally, the With-Action building on Prototypical Analysis Site 5 would contain a garage with 27 parking spaces, as required in the underlying zoning.

As a result of the Proposed Action, Site 5 would contain an additional 4,650 gsf and exempted floor area. The Proposed Action would allow the ground-floor of the building to be wet-floodproofed and used as a lobby and enclosed parking, resulting in an increased building height of seven feet. The first floor DUs would be shifted from three feet above grade to the second floor of the building on Site 5, which is 10 feet

above grade (see **Figure 8-4**). No additional DUs or parking spaces would be added on Prototypical Analysis Sites 5 in the future with the Proposed Action.

Prototypical Analysis Site 8

As illustrated in **Figure 8-5**, in the future with the Proposed Action, Prototypical Analysis Site 8 in the 1% annual chance floodplain would be retrofitted. The building would continue to be a mixed-use structure with 10,000 sf of zoning floor area and an FAR of 4.0, the maximum permitted in an R7A district. The With-Action building on Site 8 would contain 12,105 gsf (10,665 gsf residential and 1,140 gsf commercial). As a result of the Proposed Action, floor spaces used for MEP equipment (300 sf), five percent of the remaining gross floor area (500 sf) to account for other deductions of the Quality Housing Program the first 30 feet of dry-floodproofed space from the street wall at ground level and wet-floodproofed residential lobby (total 930 sf), and flood panel storage space at the ground level (375 sf) would be exempted from the zoning floor area.

The Prototypical Analysis Site is mapped with a BFE of two feet above grade, according to FEMA's flood maps resulting in a FRCE of three feet. In order to floodproof the building for the long term and exceed the minimum Appendix G requirements in the future with the Proposed Action, Prototypical Analysis Site 8 would utilize the maximum proposed reference plane of 10 feet above grade. In order to get the proposed floor area exemption, the commercial space on the ground floor would be dry-floodproofed and the FSAFE would be placed at 15 feet above grade following the existing building structure. The 570 sf of exempted floor area would be added to the building as a partial residential story (and increase of 10 feet), increasing the building height to 85 feet in the future with the Proposed Action. This fits within the permitted building envelope of an R7A/C1-2 zoning district as measured from a reference plane of 10 feet above grade, with the qualifying ground floor. The MEP equipment on Site 8 would continue to be located on the roof of the building, and there would be no parking on the site under With-Action conditions.

As a result of the Proposed Action, there would be an increase of approximately 1,305 sf of gross floor area, an increase of approximately 505 sf of exempted floor area, and an increase of 10 feet on Prototypical Analysis Site 8 in the 1% annual chance floodplain, as compared to No-Action conditions. The Proposed Action would allow the ground floor of the building to be dry-floodproofed and the first 30 feet from the street wall to be exempted. There would be an increase of residential gross floor area (1,155 sf) and an increase of residential zoning floor area (945 sf) on the site., As a result of the Proposed Action, while commercial gross floor area would increase by 150 sf and commercial zoning floor area would decrease by 945 sf. These changes would allow for an additional 10 feet of building height, as illustrated in **Figure 8-5**. No additional parking spaces or DUs would be added on the lot in the future with the Proposed Action on Site 8.

Prototypical Analysis Site 11

As illustrated in **Figure 8-6**, in the future with the Proposed Action, Prototypical Analysis Site 11 in the 1% annual chance floodplain would be developed with a three-story, single-family detached residence. The home would contain 2,250 sf of zoning floor area (3,182 gsf) with an FAR of 0.90, the maximum permitted in an R4 district when utilizing the cottage envelope's attic allowance. As a result of the Proposed Action, spaces used for MEP equipment on Site 11 (160 sf) and the wet-floodproofed ground floor (1,046 sf) are exempted from the zoning floor area. The space used for the MEP equipment for the With-Action building on Site 11 is larger because the MEP is calculated based on the gsf of the building.

According to FEMA's flood maps, Prototypical Analysis Site 11 is mapped with a BFE of five feet above grade, resulting in a FRCE of seven feet. In order to floodproof the building for the long-term and exceed

minimum Appendix G requirements, the home is utilizing the reference plane allowance of 10 feet in the 1% annual chance floodplain, which results in the FSAFE being placed 10 feet above grade. The total building height would be 35 with a perimeter wall of 28 feet, fitting within the proposed cottage envelope as measured from a reference plane of 10 feet, allowing a maximum building height of 35 feet and a maximum perimeter wall height of 29 feet. In the future with the Proposed Action, the ground floor of Prototypical Analysis Site 11 would have a wet-floodproofed garage with one enclosed parking space. The building's MEP equipment would be located in the rear yard of the lot as a permitted obstruction, and would be elevated 10 feet above grade to match the FSAFE and attached to the building (see **Figure 8-6**).

As a result of the Proposed Action, there would be an additional 50 sf of zoning floor area and an additional 366 sf of gross floor area and exempted floor area on Prototypical Analysis Site 11. Additionally, the perimeter wall of the building would be two feet higher than the No-Action building, and the overall height of Site 11 would be five feet lower than No-Action conditions. No additional stories, DUs, or parking spaces would be added to Site 11 in the future with the Proposed Action.

Prototypical Analysis Site 14

As illustrated in **Figure 8-7**, in the future with the Proposed Action, Prototypical Analysis Site 14 would be updated to improve the resiliency of the property, and no changes to the building on the site, in terms of use, FAR, height and setback, and parking and loading requirements, would occur. Under the With-Action condition, Prototypical Analysis Site 14 would continue to contain a mixed-use building with a public access area. The waterfront zoning lot would continue to be developed with 50,000 zsf and the waterfront public access area would continue to be 10,000 sf. Additionally, the depth of the waterfront yard and the width of the shore public walkway would both continue to be 40 feet.

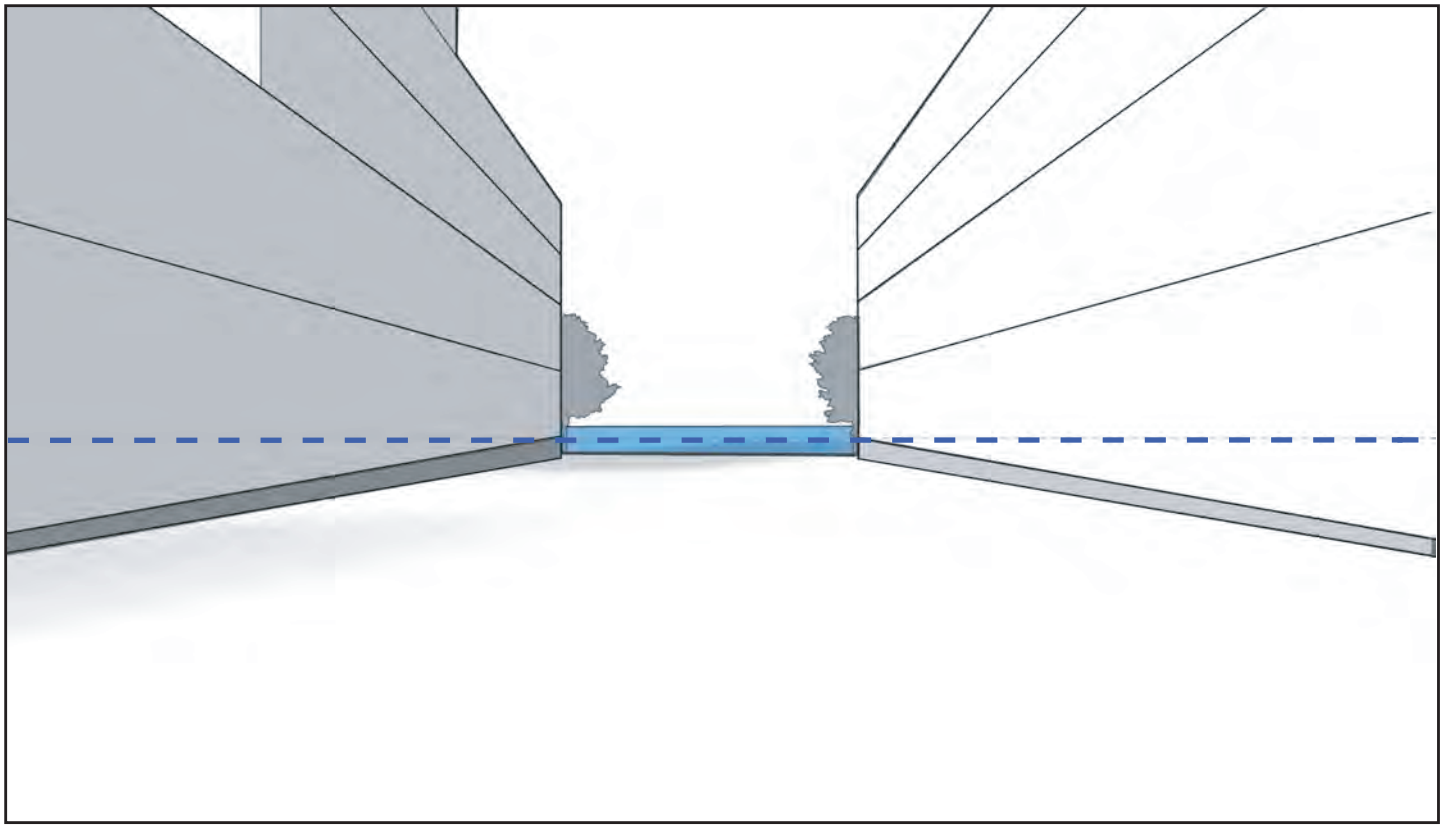
The lot is mapped with a BFE of four feet above grade, according to FEMA's flood maps, resulting in a FRCE of five feet. In order to meet Appendix G requirements, a portion of the site would be filled and elevated five feet above grade, resulting in a bi-level walkway with the remaining level of the waterfront yard and the shore public walkway at grade. Under With-Action conditions, the shore public walkway on Site 14 would be planted with a total area of 3,500 sf, which is 35 percent of the total area of the shore public walkway, and the planted screening buffer would be at a minimum of 6 feet between the building and any pedestrian circulation paths. The retaining wall would be at a maximum height of 36 inches. In addition, a tidal wetland area would span 75 feet of the length of the waterfront yard and shore public walkway at a depth of seven feet (525 sf). The tidal wetland area would also count toward the planted area requirements.

As a result of the Proposed Action, there would be a decrease in the planted area for the shore public walkway on the waterfront yard of Prototypical Analysis Site 14, in order to provide a bi-level walkway. The screening buffer on Site 14 would decrease by four feet and the retaining wall height would increase by 18 inches. Additionally, while the total area of the shore public walkway remains the same between the No-Action and the With-Action, 525 sf of the shore public walkway and the waterfront yard is allowed as a tidal wetland area as a result of the Proposed Action.

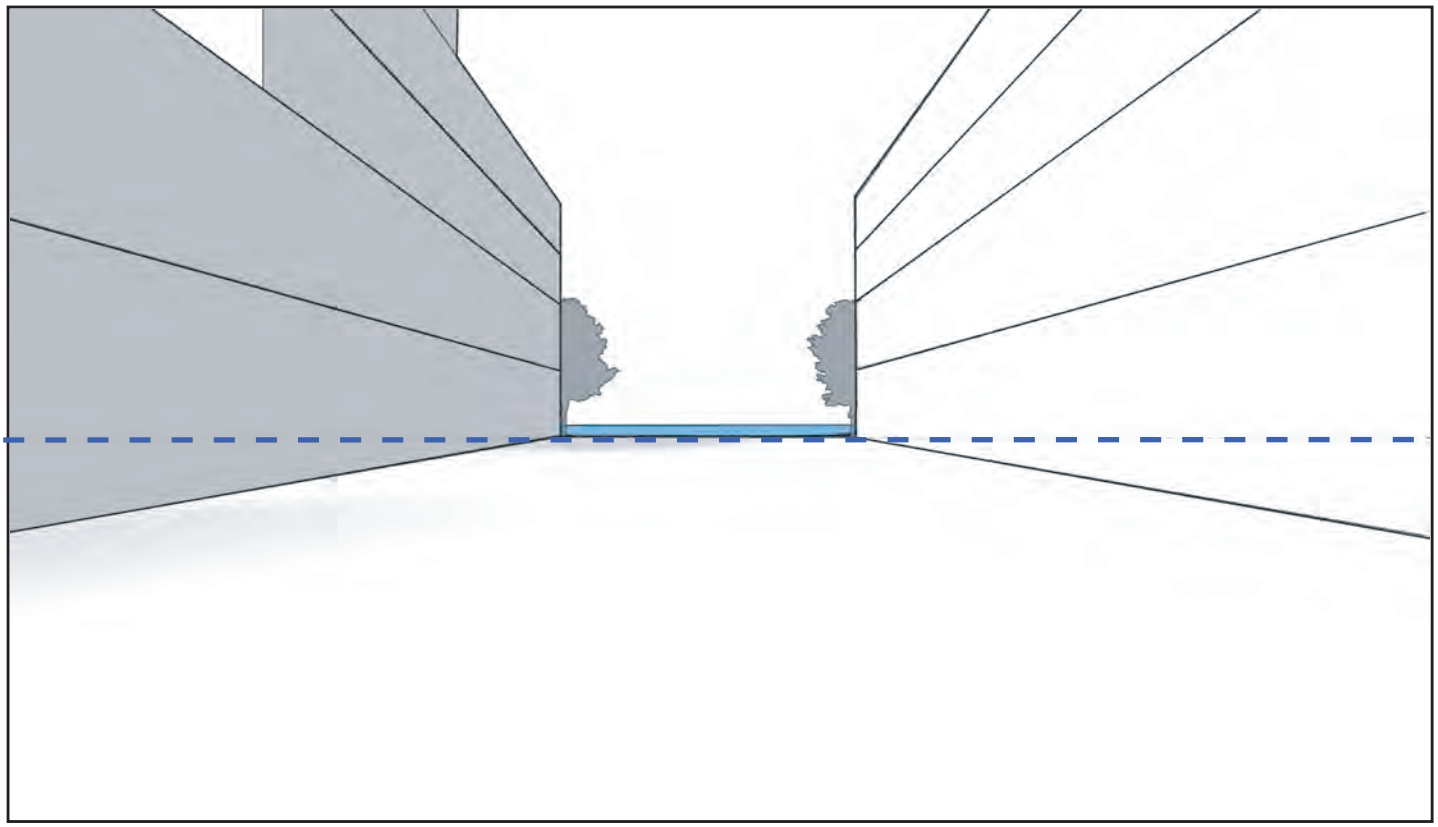
Due to the generic nature of Prototypical Analysis Site 14, it is not known whether the lot would contain significant public views of the waterfront or other important visual resources as viewed by a pedestrian on a public sidewalk, street or from the waterfront public access area. However, for conservative analysis purposes, it is assumed that Site 14 would contain significant view corridors of the waterfront from the sidewalk, as illustrated in **Figure 8-8c**. Therefore, the elevated waterfront yard on Site 14 that would be permitted in the future with the Proposed Action could alter this existing visual corridor. Although views of the waterfront could be partially obstructed as a result of the Proposed Action, none of these views would be unique, as more proximate and significant view corridors would remain throughout the city's

Figure 8-8c

Illustrative Comparison of No-Action vs. With-Action Conditions on a Visual Corridor



No-Action Condition



With-Action Condition

***These conceptual designs are for illustrative purposes only.**

*DFE= Design Flood Elevation
*FRCE= Flood-Resistant Construction Elevation

floodplains, including vantage points in public parks, esplanades, and at street ends adjacent to the waterfront, as well as private waterfront properties that provide public waterfront access. Moreover, it should be noted that some waterfront properties, such as Prototypical Analysis Site 14, would continue to be subject to discretionary review, which requires urban design review and would further encourage the waterfront resiliency measures of the Proposed Action.

E. CONCLUSIONS

The Proposed Action would not result in significant adverse impacts on urban design or visual resources, but rather, is expected to enhance the pedestrian experience in the city's 1% annual and 0.2% annual chance floodplains. The Proposed Action includes zoning allowances coupled with enhanced design requirements that would allow building owners to better accommodate projected sea level rise when designing new buildings or retrofitting existing ones, without creating incongruous and uninviting streetscapes. Although the Proposed Action would result in a notable change in the design character of the floodplains as compared to No-Action conditions, this change would not constitute a significant adverse urban design impact in that it would not alter the arrangement, appearance, or functionality of the floodplains such that the alteration would negatively affect a pedestrian's experience of the area. Rather, the changes in development anticipated in the With-Action conditions would improve the pedestrian experience by ensuring accessible ground-level design, particularly for buildings with lower-level commercial uses, in order to make the streetscapes in the floodplains more inviting, while ensuring preparedness to better accommodate projected sea level rise in the city's floodplains (see **Figure 8-8a**).

The proposed floor area exemptions detailed above would continue to incentivize buildings to floodproof and encourage uses to be kept at street level. The Proposed Action would allow a small floor area incentive for active uses to be kept at grade and dry-floodproofed. As detailed above, the first 30 feet of floor area as measured from the street wall of a building when facing primary streets would be exempted from total floor area calculations, as these are the areas in which retail continuity is key for the success of the street. This allowance would incentivize buildings to dry-floodproof as opposed to elevating active uses, improving the pedestrian experience. Additionally, to ensure quality ground floors, this floor-area exemption would come with design controls, such as the condition that the ground floor level may not be higher than two feet above nor two feet below the level of the adjacent street. This incentive would encourage well-designed commercial and community facility uses to be kept at grade, helping enhance the streetscape experience and retail continuity in the city's floodplains.

Additionally, as detailed above, the Proposed Action would require buildings in Residence Districts, Commercial Districts, and M1 Districts, utilizing the optional provisions in Article VI, Chapter 4 of the ZR, to meet designated points outlined in the streetscape mitigation regulations and would extend design requirements to all residential, commercial, and mixed-use buildings, as well as buildings containing community facilities and light manufacturing buildings in the floodplains. These improvements would help attenuate elevated access and potential blank walls at the street level caused by resiliency needs. The Proposed Action would also provide a wider range of options to comply with the requirements, in order to better accommodate different neighborhood contexts, lot conditions, and ground-floor uses. For example, front porches, stair turns, entrances close-to-grade, and multiple entrances along a façade would be option, as well as treatments such as decorative latticework, street furniture, and ground floor level transparency (see **Figure 8-8b**). This expanded menu would give designers the toolkit to better reflect conditions found in the floodplain, and the Proposed Action would ensure that these design options can be more easily utilized, classifying steps and covered porches as permitted obstructions and exempting buildings on narrow lots in low-density Residence Districts from existing front yard plangent requirements inadvertently limiting the use of other available design options. These design requirements in the future with the Proposed

Action would enhance the pedestrian experience and help activate the streetscapes of residential and commercial communities in the city's floodplains. In addition to these requirements, the Proposed Action would continue to provide flexibility for all buildings that have transparency requirements for ground floor levels.

The Proposed Action would not entail any major changes to block shapes, street patterns or hierarchies, land uses, building densities, topography, or wind conditions in the 1% annual or 0.2% annual chance floodplains. The Proposed Action would not change existing land uses or generate new land uses that would be incompatible with the existing built character of the city's floodplains. The Proposed Action would provide enhanced building envelopes for new developments and existing building retrofits and reconstructions in the floodplains in order to better accommodate projected sea level rise in building design. As detailed in **Chapter 7, "Historic & Cultural Resources,"** the Proposed Action could alter existing visual resources such as properties eligible for designation as NYCLs or for listing on the S/NR. However, as detailed in **Chapter 5, "Open Space,"** and **Chapter 9, "Natural Resources,"** the Proposed Action would not result in any significant changes to open spaces or natural resources that are considered significant visual resources in the city's floodplains. Additionally, increased heights and bulks on the Prototypical Analysis Sites would not obstruct any significant viewsheds in the area, or negatively alter the pedestrian experience in the vicinity of the sites.

As detailed above, the Proposed Action would permit an elevated waterfront yard on Prototypical Analysis Site 14 that could alter existing view corridors (see **Figure 8-8c**). Although views of the waterfront or other visual resources could be partially obstructed as a result of the Proposed Action, none of these views would be unique, as more proximate and significant view corridors would remain throughout the City's floodplains, including vantage points in public parks, esplanades, and at street ends adjacent to the waterfront, as well as private waterfront properties that provide public waterfront access. Additionally, the proposed modifications to elevated visual corridors would help accommodate a broader range of site grade changes and design flood elevations utilized across the waterfront site and building, better reflecting a pedestrian's eye level and thus improving the pedestrian experience. Therefore, no significant adverse impacts to visual resources would occur as a result of the Proposed Action.