



# RESILIENT NEIGHBORHOODS INITIATIVE: CANARSIE

March 2<sup>nd</sup>, 2017





**A more resilient NYC is one where neighborhoods, buildings and infrastructure can withstand and recover quickly from flooding and climate events.**

**#ONENYC**

**This requires multiple lines of defense:**

- infrastructure hardening where feasible,
- emergency preparedness, and
- **utilizing building code and zoning** as tools so buildings are protected from future flooding due to sea level rise.

# City Planning's role in advancing resiliency



***Ensuring that zoning reflects the varied flood risks across the City by enabling resilient buildings and reducing vulnerability in the most at-risk neighborhoods.***

## After Sandy: Zoning for Recovery

**2013:** Allow storm-damaged and new buildings to comply with higher flood elevations and resilient construction requirements by **removing zoning barriers**

**2015:** Accelerate post-Sandy recovery in certain areas by **simplifying documentation requirements** and removing disincentives to resiliency investments

## Looking ahead: Zoning for Resiliency

Since Sandy, DCP has studied unique residential, retail, and industrial areas in all five boroughs and learned that **most areas in the floodplain can be made more resilient** so zoning should allow for building elevations and other retrofitting strategies

# Resilient Neighborhoods Initiative



## Reduce flood risks

Develop zoning strategies and other tools to advance short-term, cost-effective investments that can make New York City's building stock more resilient to severe storms and better protect our coastline.

## Plan for adaptation over time

Climate change will increase coastal risks over time, including more tidal flooding in some areas. It is important to take measures to reduce the long-term vulnerabilities that neighborhoods will face over time.

## Ensure neighborhoods are both resilient and vibrant

Encourage high-quality development that is both resilient and respects each neighborhood's built environment, such as by limiting building height and improving public space.



Resilient Neighborhoods Study Area  
 1% Annual Chance Floodplain

# Canarsie's Changing Shoreline



1924 Aerial of Jamaica Bay

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# Canarsie's Changing Shoreline



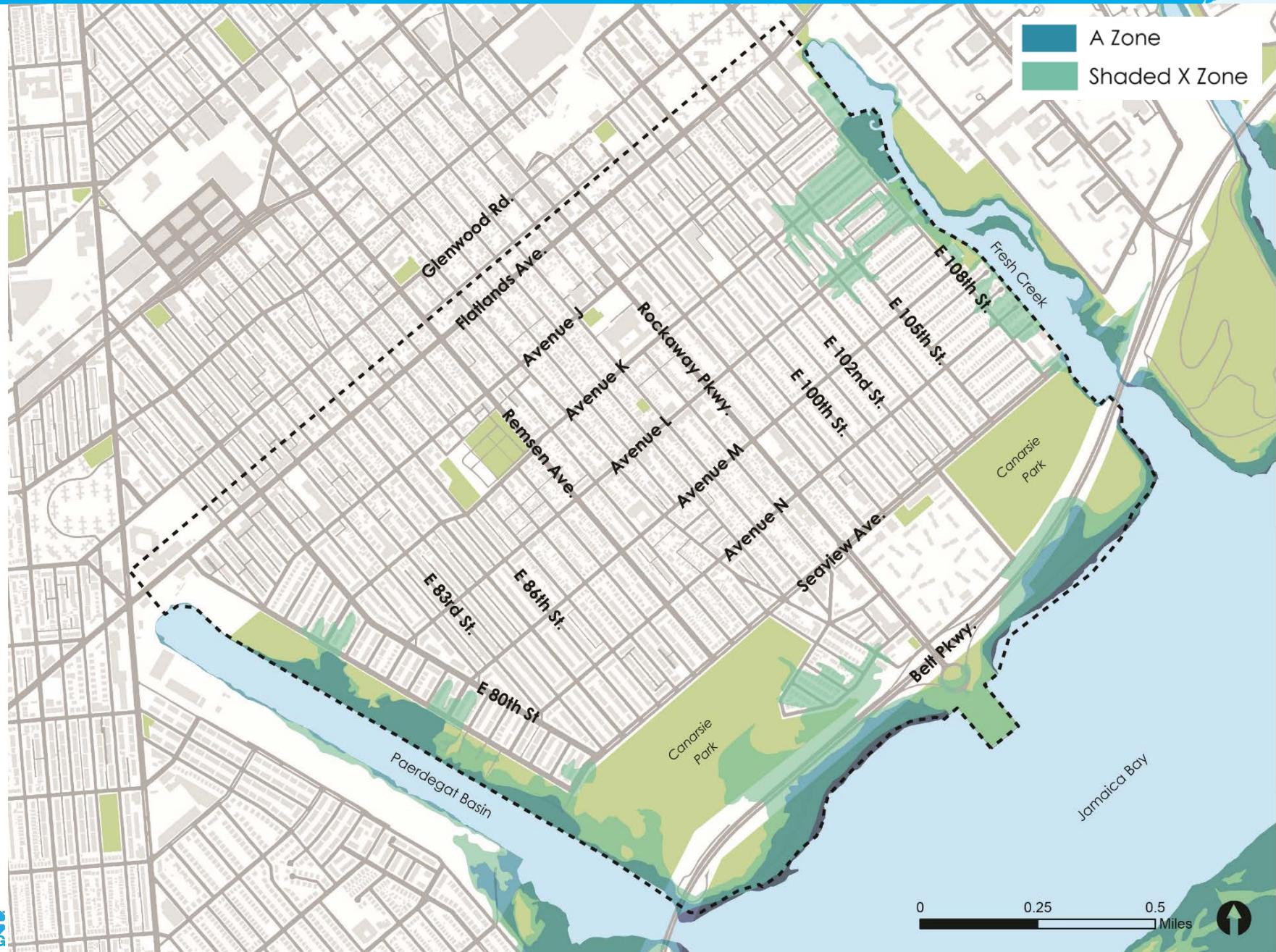
1924 Shoreline

# Canarsie's Changing Shoreline



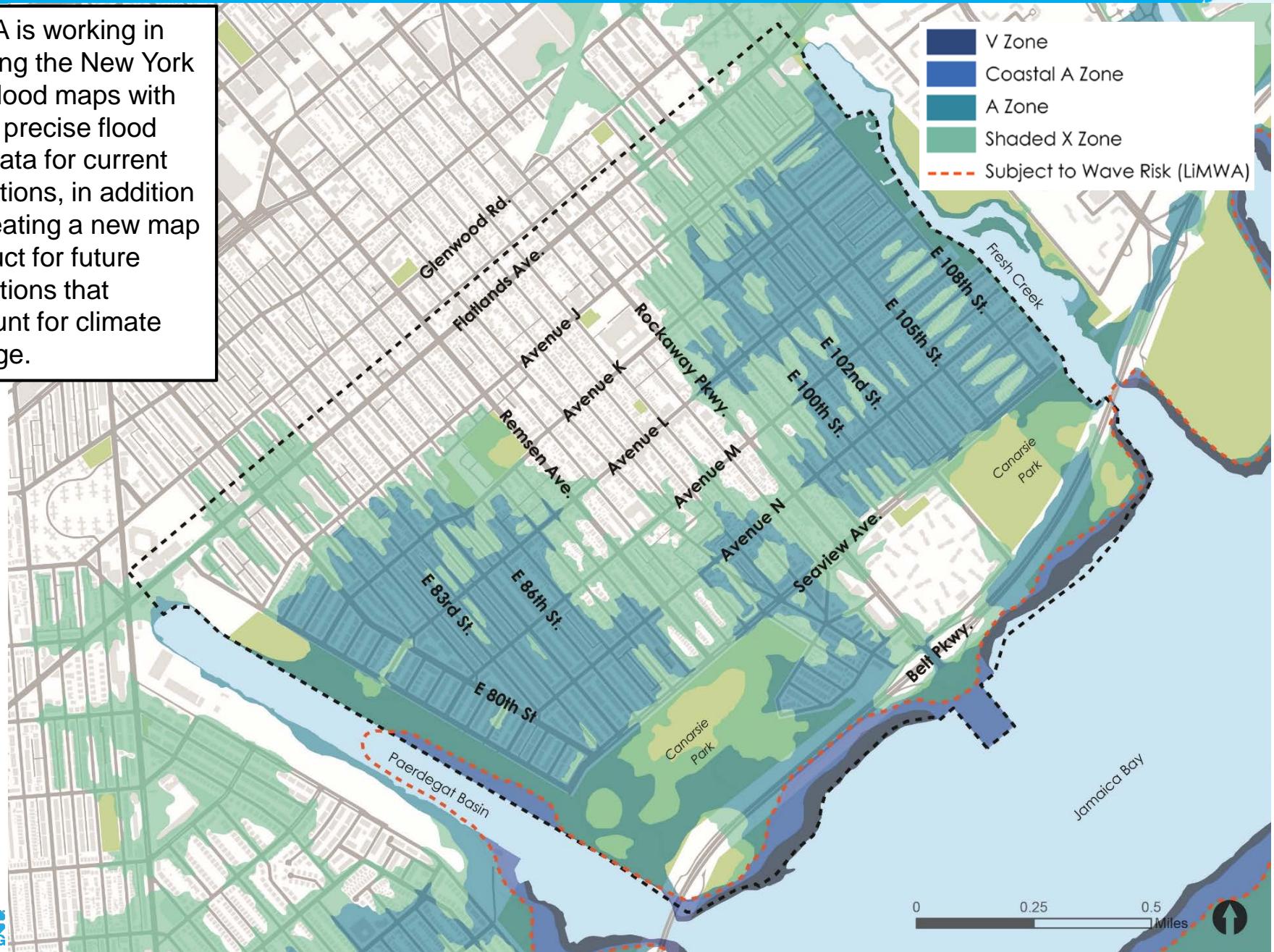
Today's Shoreline

# 2007 Flood Insurance Rate Map



# 2015 Preliminary Flood Insurance Rate Map

FEMA is working in revising the New York City flood maps with more precise flood risk data for current conditions, in addition to creating a new map product for future conditions that account for climate change.



# Canarsie's Building Types



easier to retrofit



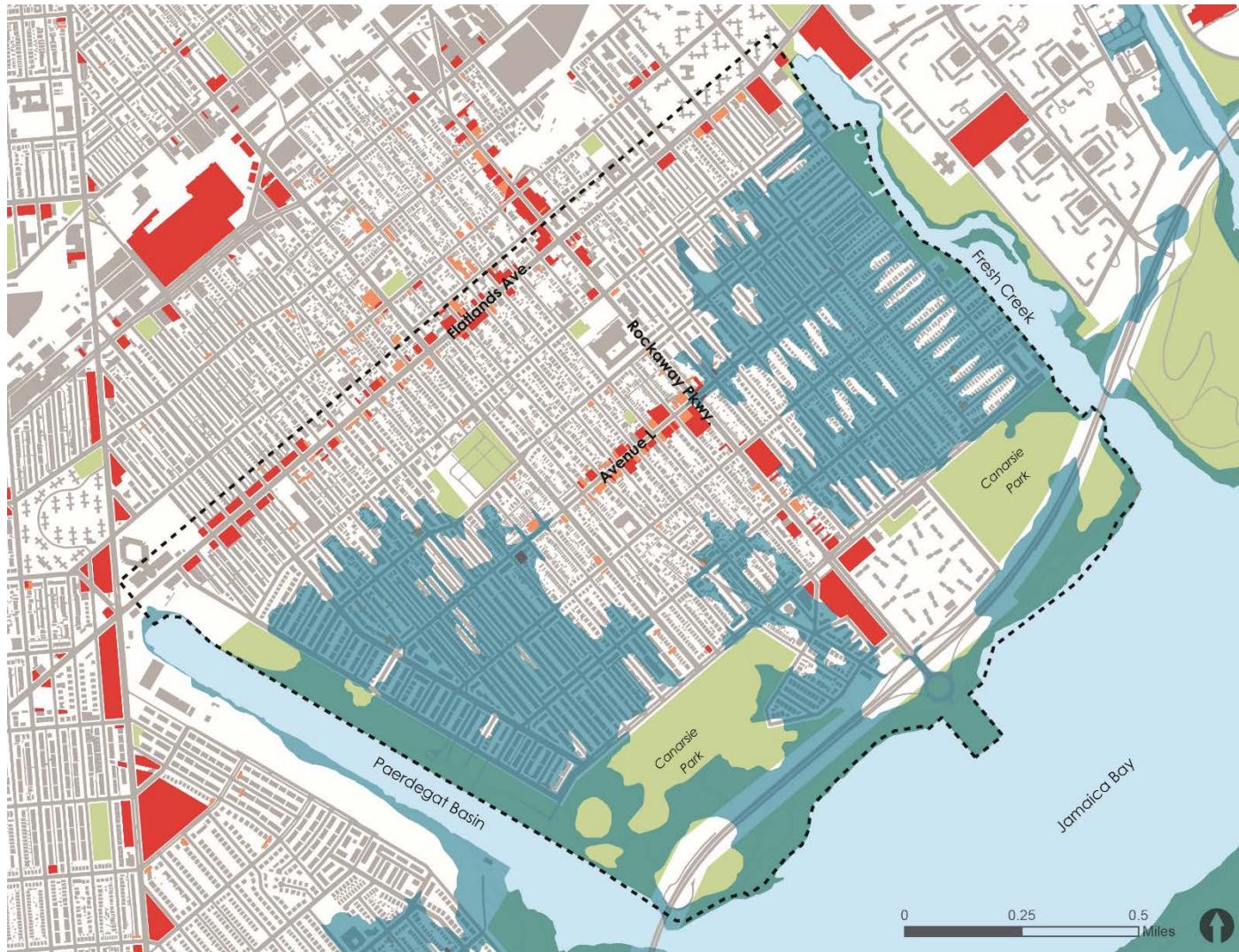
harder to retrofit

# Resiliency Challenges in Canarsie



- Dense residential area of over **83,000 residents and 17,900 residential units**
- **80% of units are in attached or semi-detached buildings**
- **86% of homeowners have mortgages**
- Many homes in Canarsie have **critical systems such as heaters in cellars and basements that are below the DFE and subject to flooding**
- Some homeowners have converted garages and storage spaces to residential areas such as dens or separate residential units

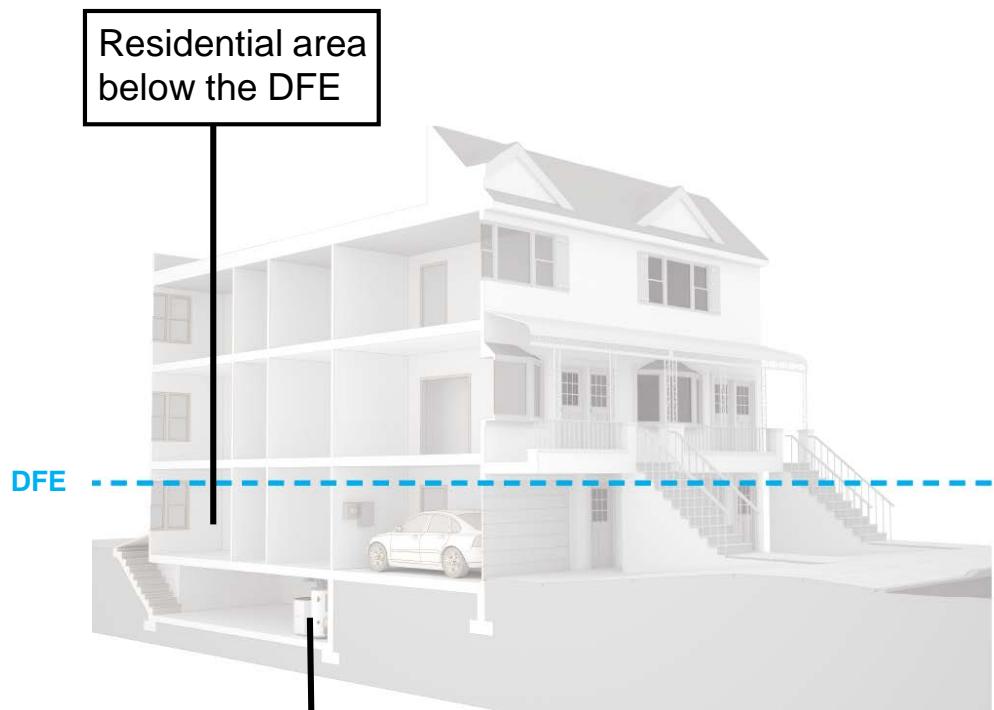
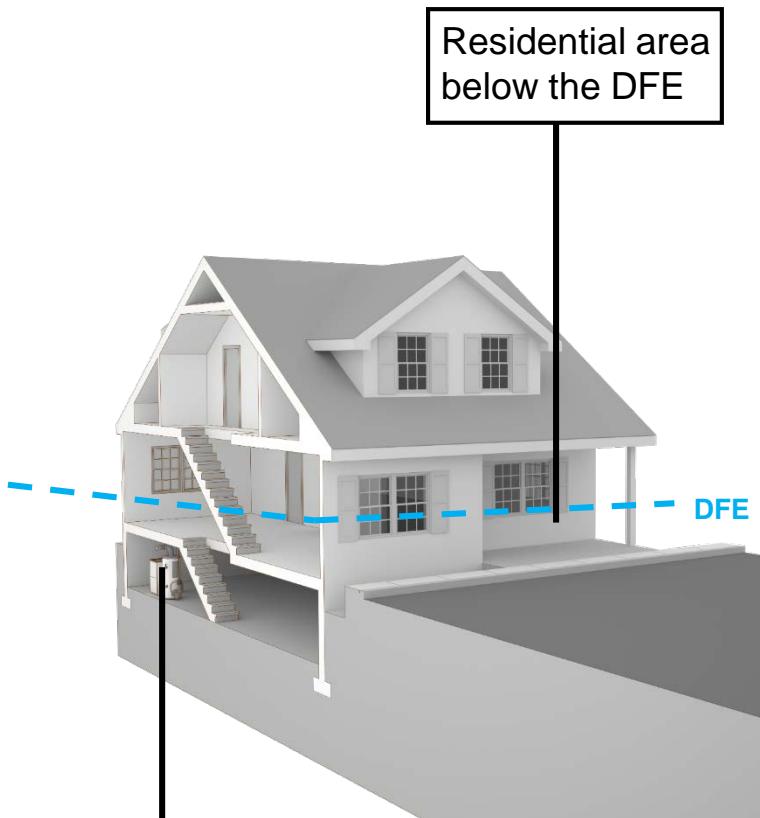
# Canarsie's Retail Corridors



## Commercial Uses

- Mixed Commercial/Residential
- Commercial/Office
- PFIRM 1% Annual Chance Floodplain

# Existing Conditions



**Design Flood Elevation  
(DFE)**

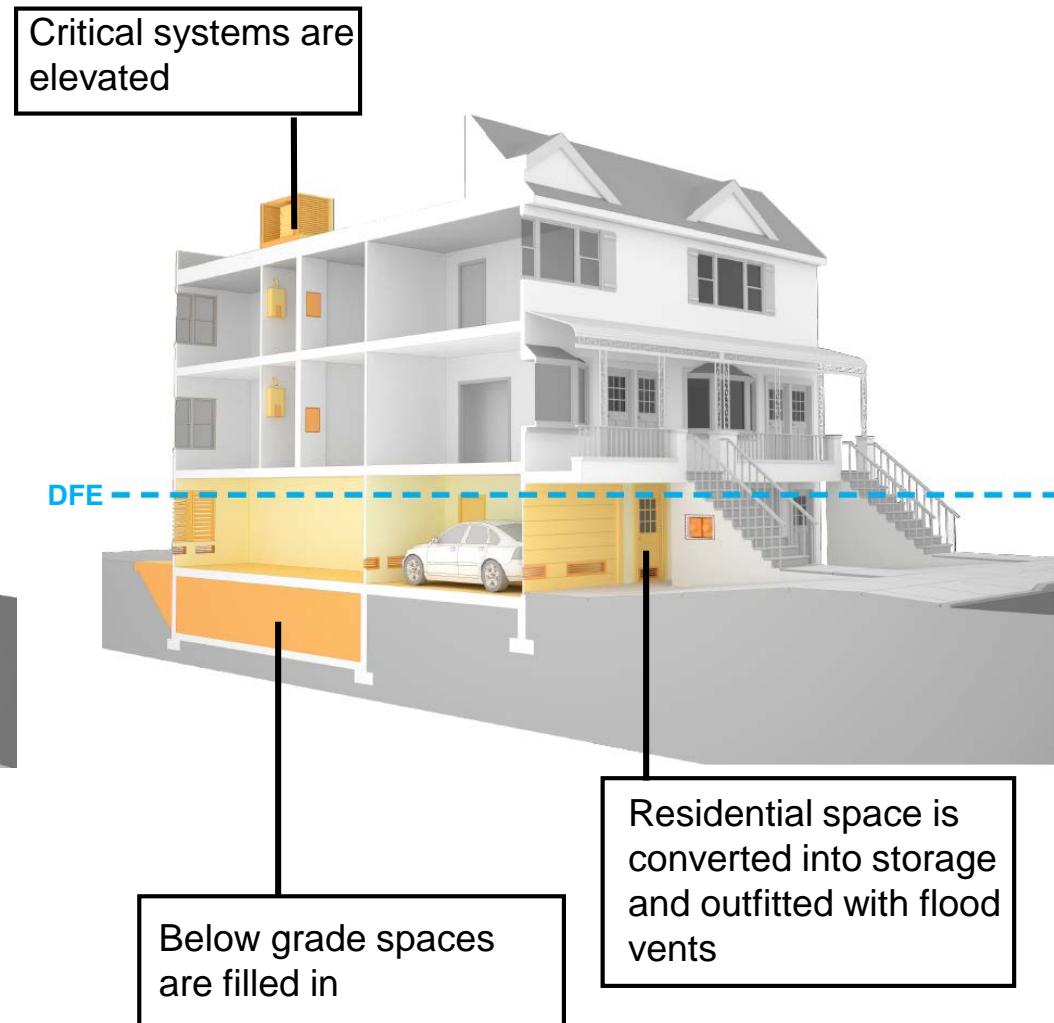
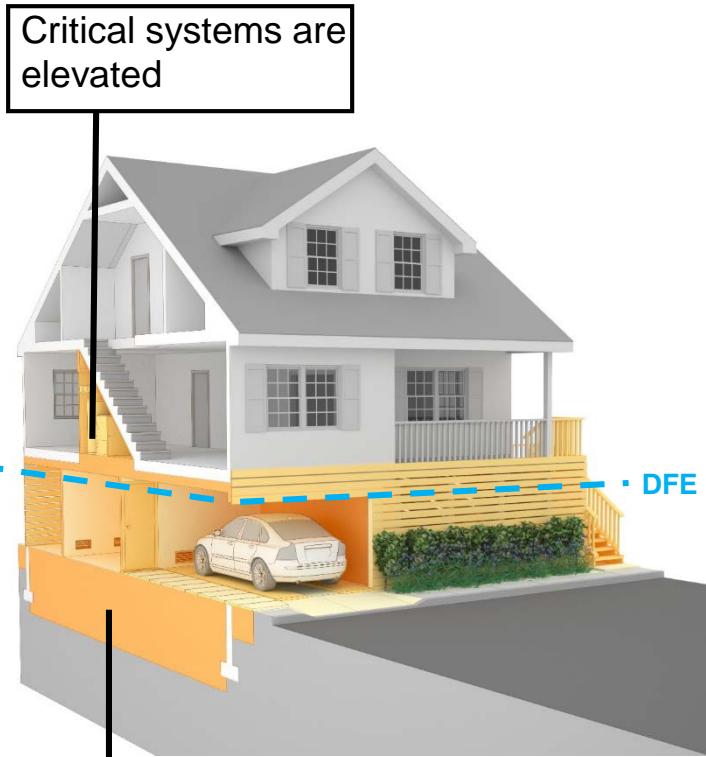
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**Base Flood Elevation (BFE)**  
height of flooding from the 1%  
annual chance flood as shown  
on FEMA maps

+

**1 to 2 feet to account for  
future flood risk from  
sea level rise**

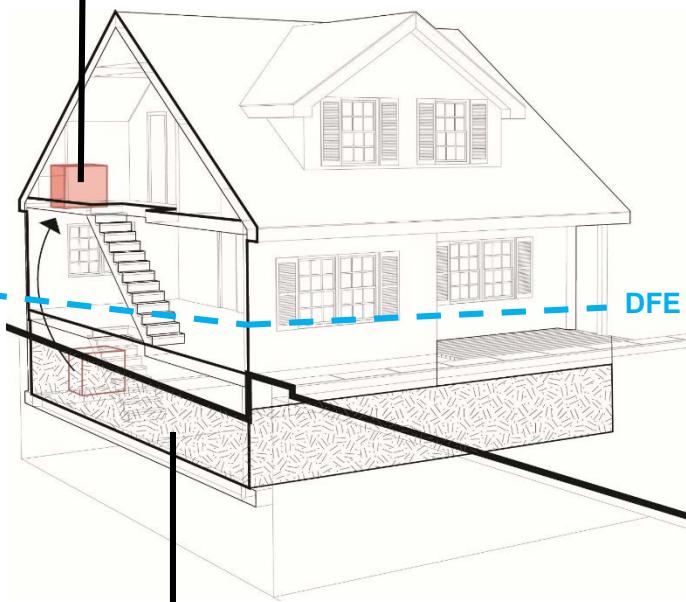
# Full FEMA Compliance Retrofit



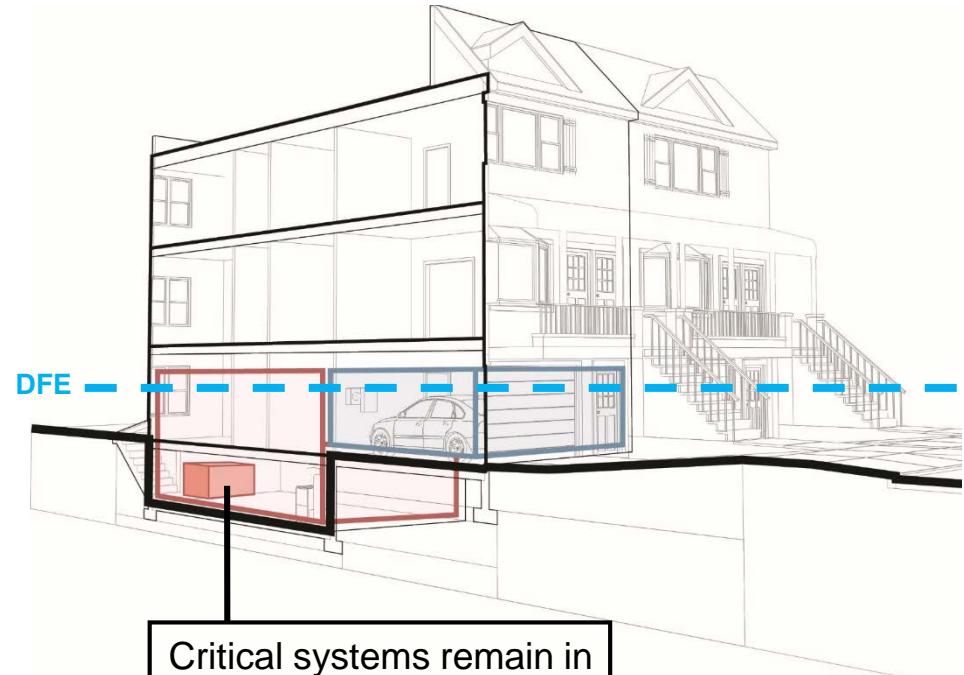
# Alternative Strategies



Critical systems  
are elevated



Below grade spaces  
are filled in



Critical systems remain in  
place and are enclosed in  
floodproofed vault

**Note: These strategies do not directly lower flood insurance premiums**

# Resiliency Framework



## Attached Housing/Semi-detached Housing

Identify citywide zoning modifications that make it easier to undergo retrofitting and replace ground flood uses in vertical additions



## Detached Housing

Identify citywide zoning modifications that make it easier for detached homes to elevate to a height that allow for use of ground floor for parking and storage



## Retail Corridors

The commercial corridors in Canarsie are not in the floodplain. Identify small businesses programs that help build capacity of existing businesses while incentivizing new business development



## Coastal Protection Opportunity Areas

Canarsie is surrounded by city and federally owned parkland which could be leveraged to create coastal protection against serious flooding events



# Coastal Protection Opportunity Area



# Flood Insurance and Retrofitting Resources



**Flood risk information and address lookup:** [FloodHelpNY.org](http://FloodHelpNY.org)

**Flood insurance agent lookup:** [floodsmart.gov](http://floodsmart.gov)

**FEMA Map questions:** [1-877-FEMA MAP \(1-877-336-2627\)](tel:1-877-FEMA MAP)

**FEMA Flood Insurance agent referral:** [1-888-435-6637](tel:1-888-435-6637)

For more information and updates visit our website:

[www.nyc.gov/resilientneighborhoods](http://www.nyc.gov/resilientneighborhoods)

or email us:

[ResilientNeighborhoods@planning.nyc.gov](mailto:ResilientNeighborhoods@planning.nyc.gov)