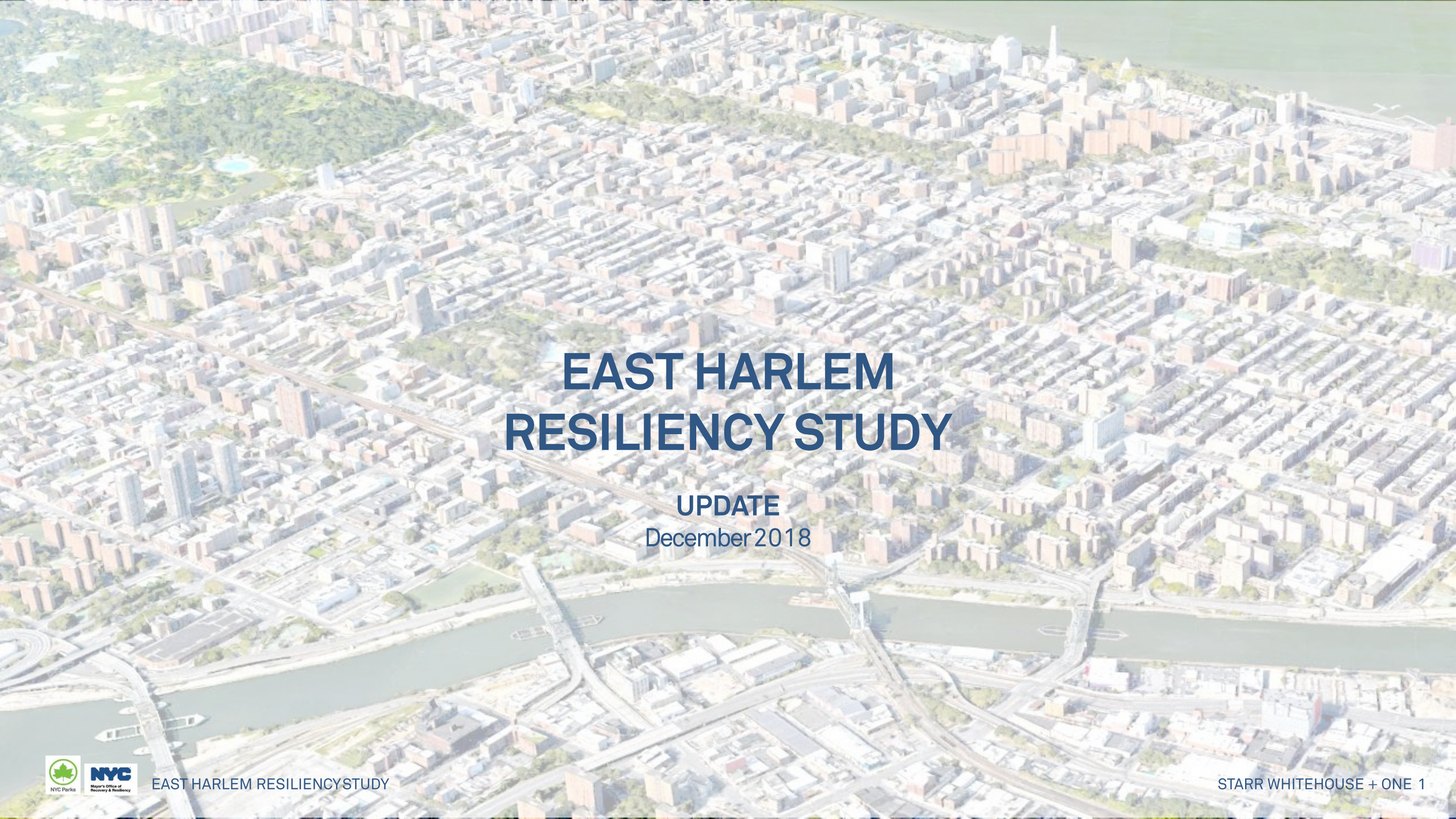
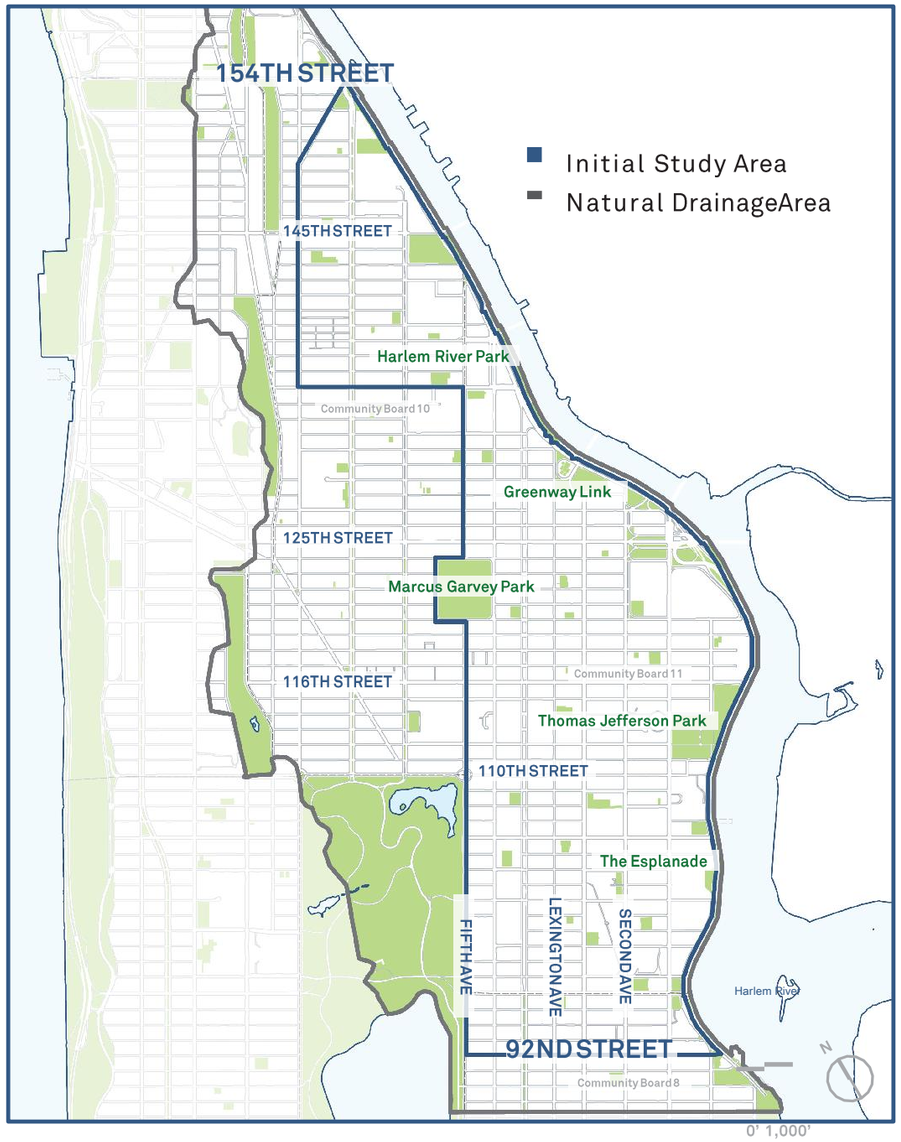


EAST HARLEM RESILIENCY STUDY

UPDATE

December 2018

OVERVIEW



The East Harlem Resiliency Study will develop a **Vision Plan for a Resilient East Harlem** by conducting analysis and collecting ideas to identify how East Harlem can be a stronger and safer community in the face of a changing climate

STUDY PROCESS

CLIMATE RESILIENCY

MITIGATING COASTAL AND INLAND FLOODING

SOCIAL RESILIENCY

UNDERSTANDING SOCIAL NETWORKS AND COMMUNITY FACILITIES

OPEN SPACE PLANNING

IDENTIFYING OPPORTUNITIES IN PARKS AND PUBLICSPACES

VISION PLAN

OUTREACH AND ENGAGEMENT

Stakeholder Meetings

Climate Resiliency Curriculum at DREAM HS

Project Advisory Committee

Mobile Outreach

Community Forums

Community Board Updates

WHAT WE HEARD

- Residents already experience weather-related events that will increase with climate change, such as local flooding and heat waves
- Extensive network of community facilities and social spaces
- Several highly-used parks
- Lack of access to waterfront

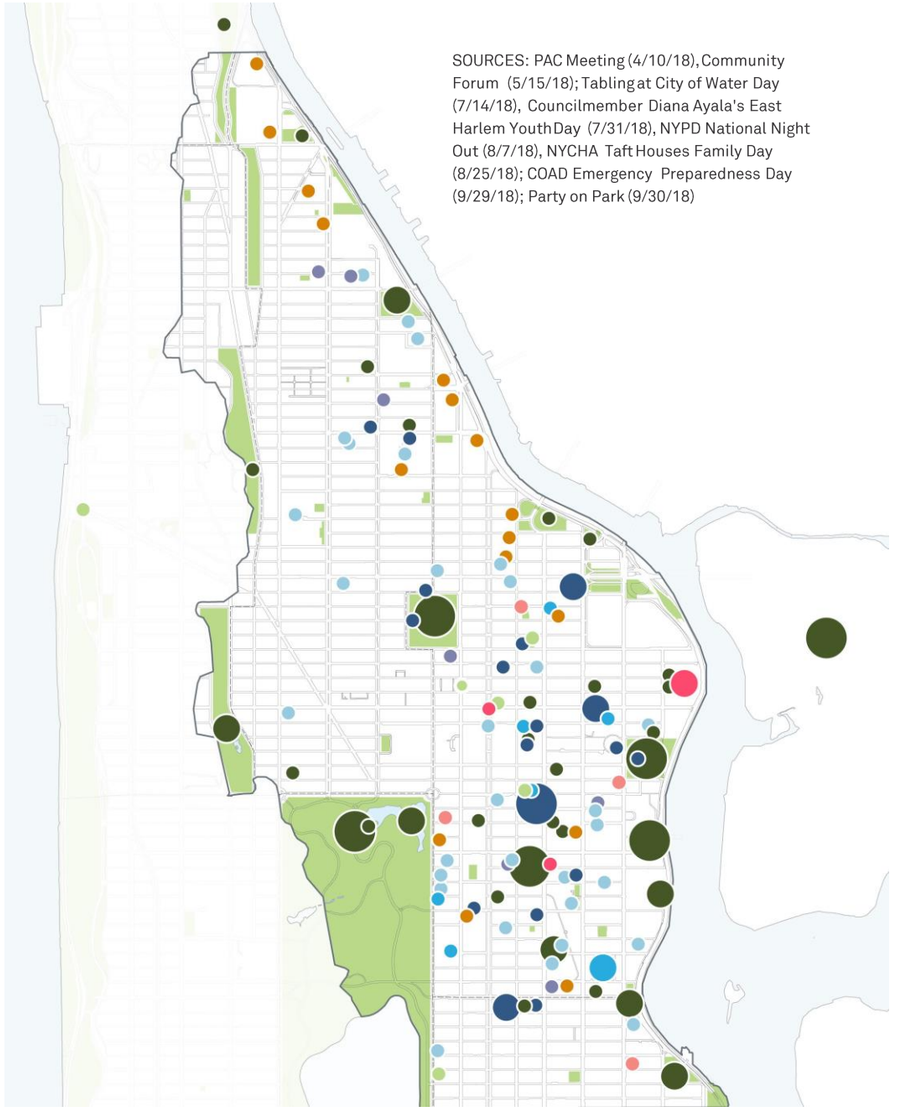
Types of Sites Mapped in Outreach Activities

- Parks
- City-owned community facilities
- Other open spaces
- Commercial
- Non-profit community facilities
- Non-profit organizations
- Health facilities
- Religious facilities
- Facilities in housing

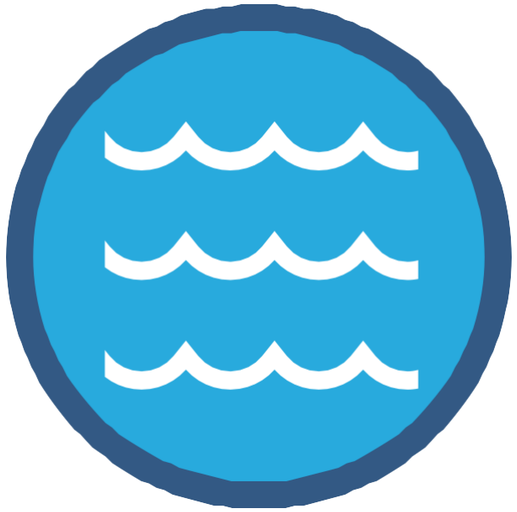
# of Times Mapped

3-5 6-15 25

Open Spaces and Community Facilities Mentioned in Conversations



FUTURE CLIMATE RISKS



SEA LEVEL RISE
(TIDAL INUNDATION)

HEAT WAVES

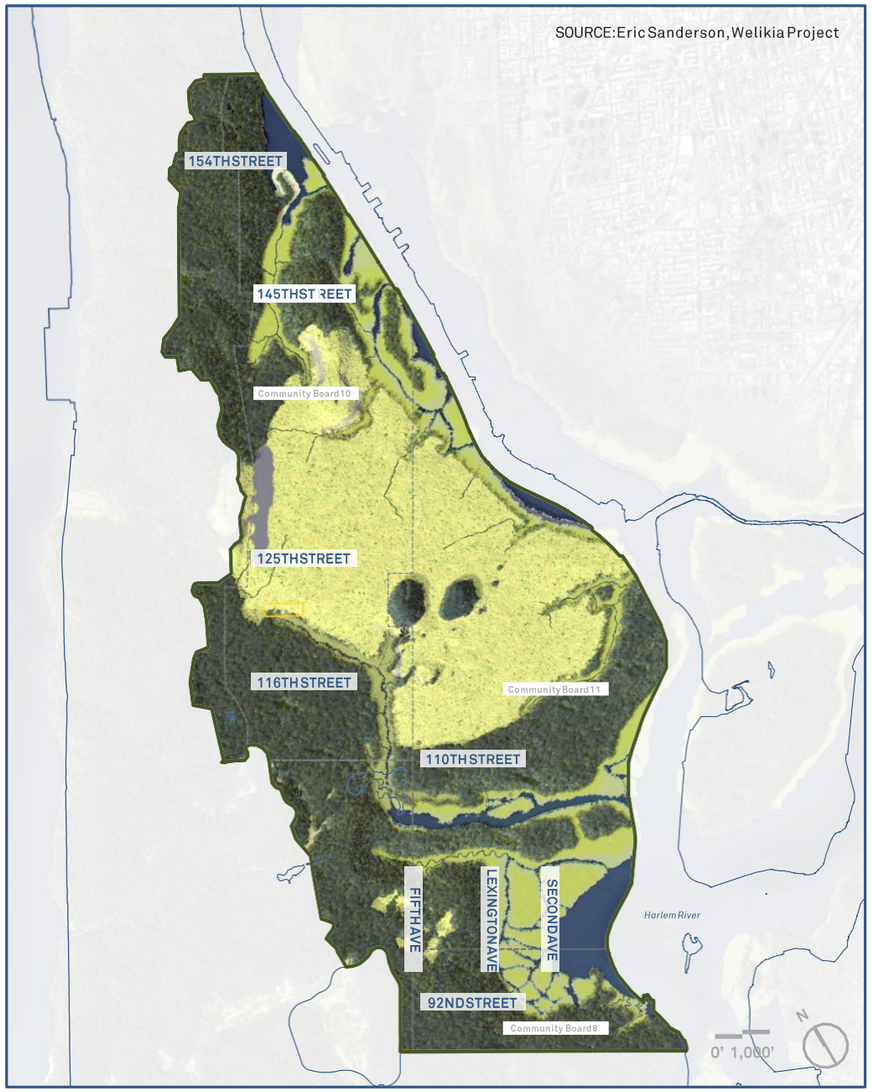
RAIN EVENTS

STORM SURGE

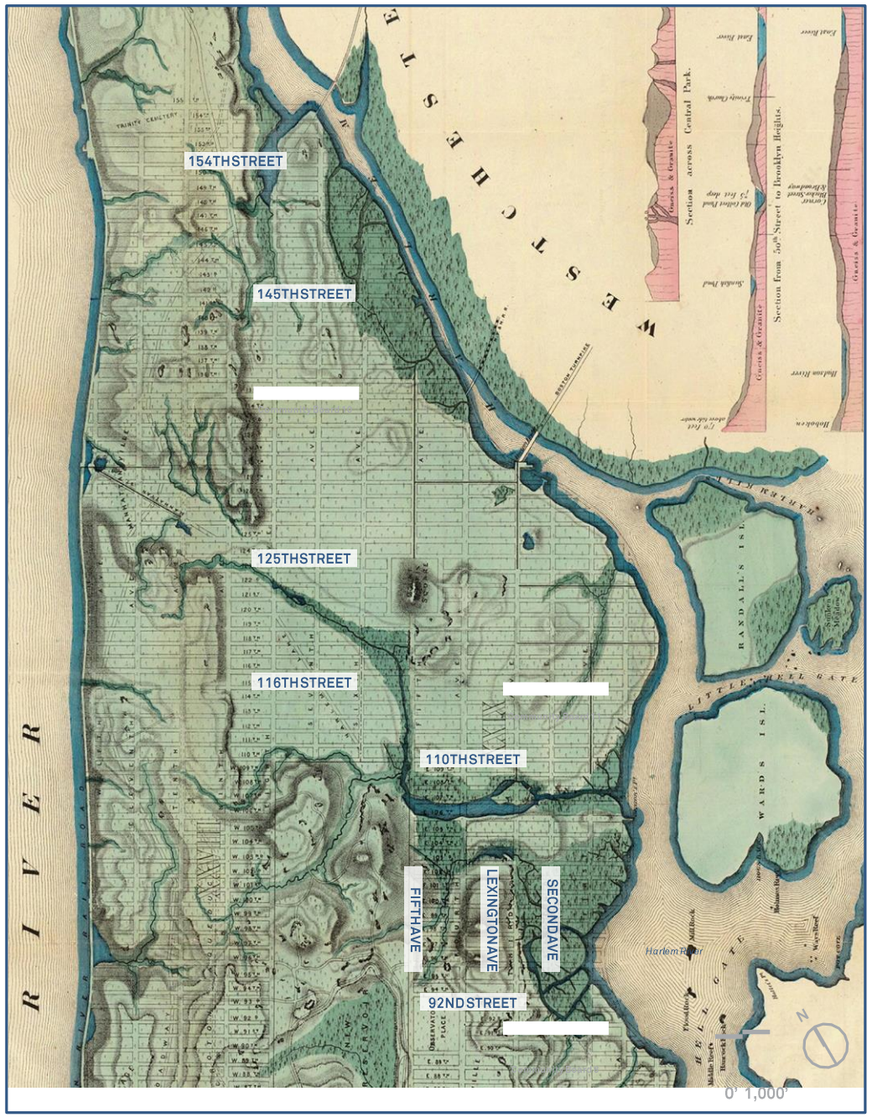
WHAT WE FOUND OUT

- East Harlem is historically low-lying
- Neighborhood is susceptible to flood from rain, sea level rise, and storms

Manhattan in 1600s



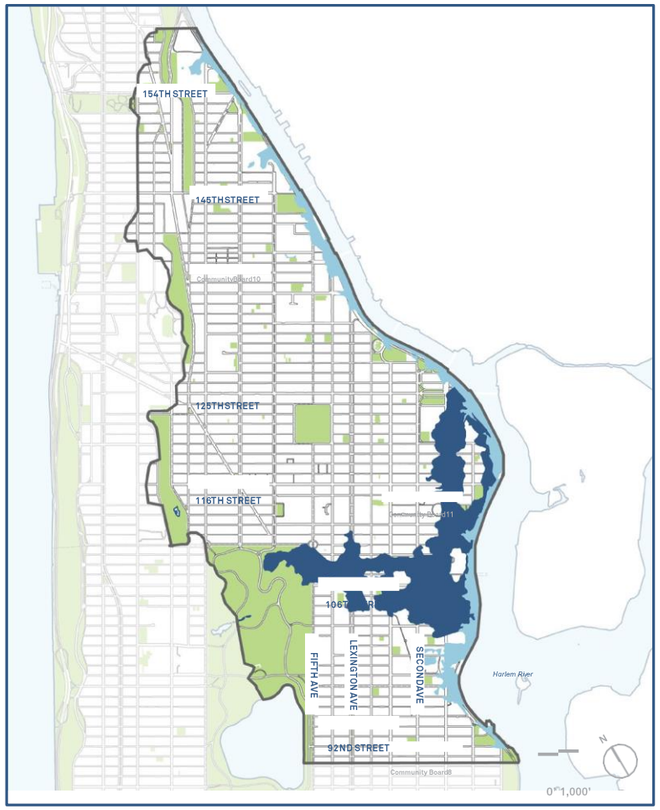
Viele Water Map (1865)



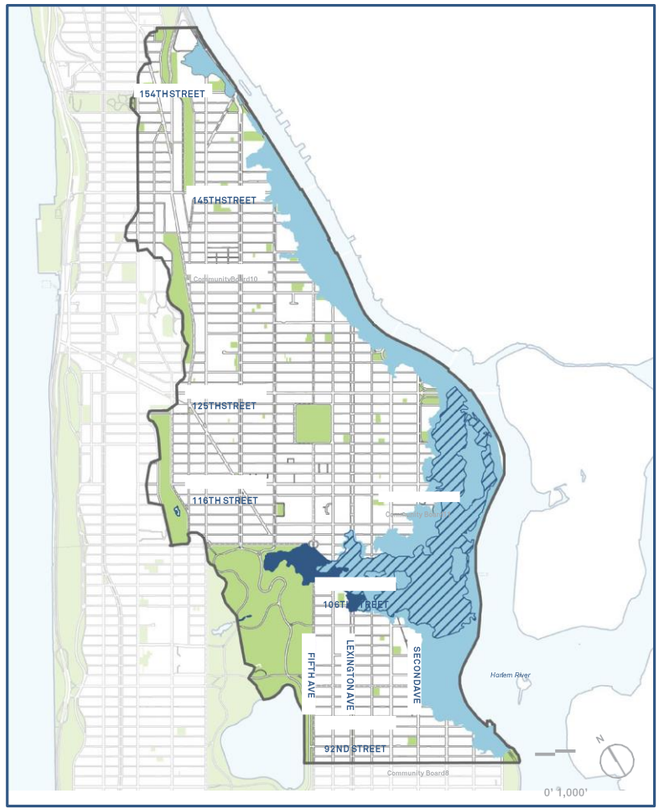
CLIMATE CHANGE IMPACTS

- Heavy rain will cause more frequent flooding in low-lying areas compared to storm surge
- Climate change will worsen economic, social, and infrastructure vulnerability
- Sea level rise will back up the sewer system
- Flooding of FDR / Harlem River Drive could impact emergency response and limit waterfront access
- Climate change will make heat waves more frequent and intense

2050s 5-Year Rainfall Event and 10-year Coastal Surge



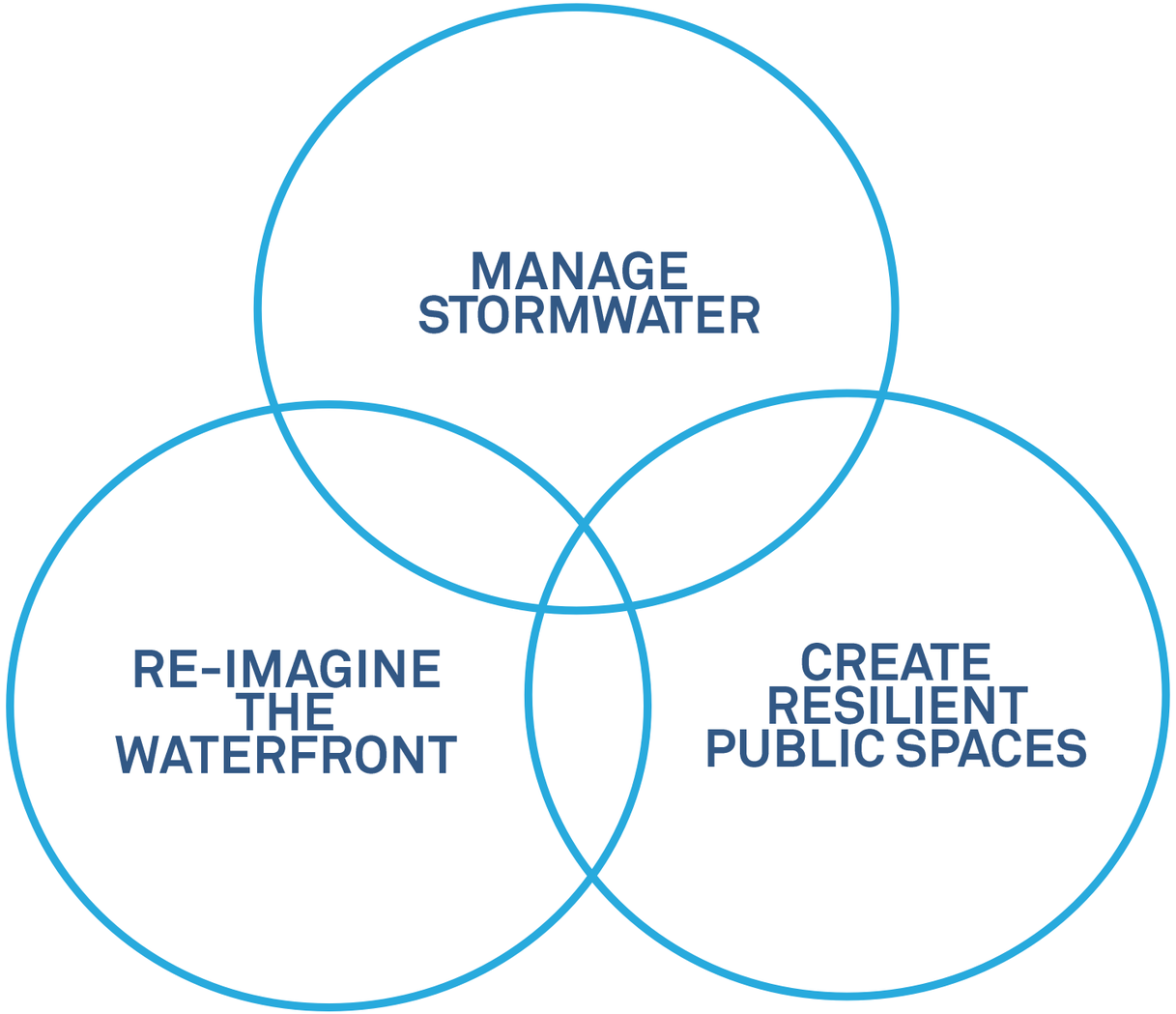
2050s 5-Year Rainfall Event and 100-year Coastal Surge



- Inundation from rainfall event
- Extent of inundation from rainfall within 100-year coastal surge inundation
- Inundation from coastal surge

SOURCES: New York City Panel on Climate Change projects; inundation modeling by Langan Engineering

A RESILIENCY FRAMEWORK



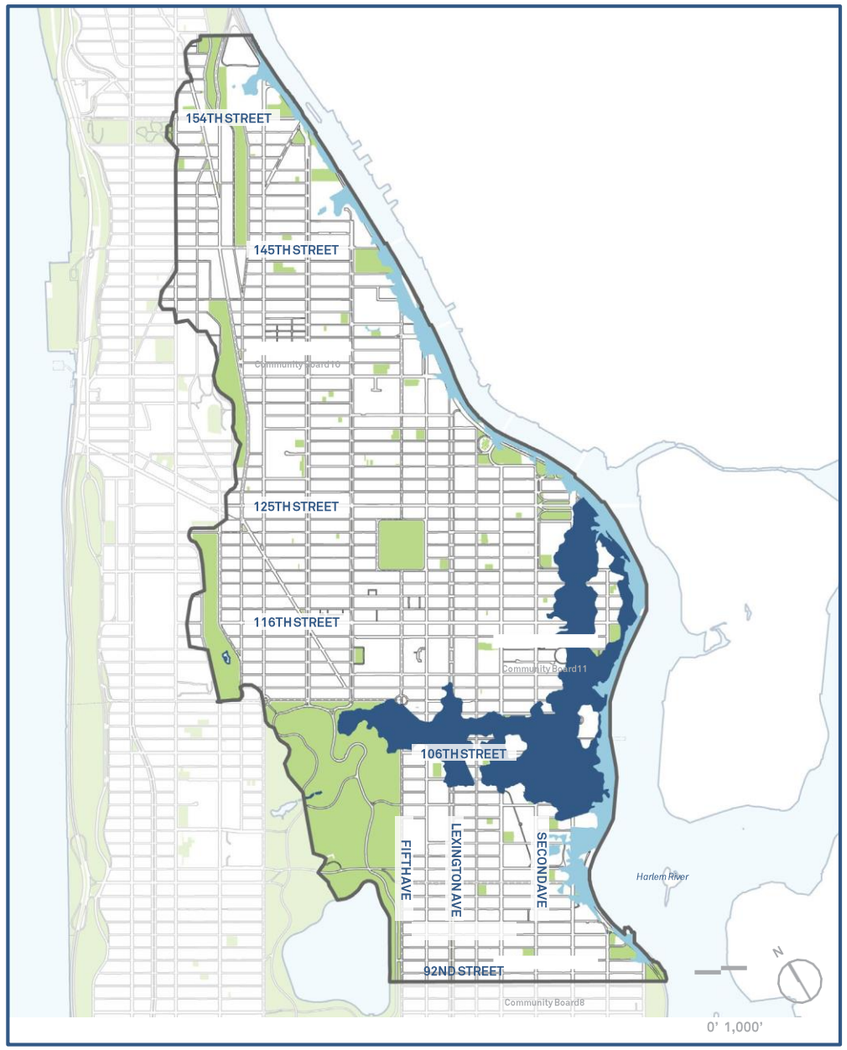
VISION PLAN

THEME 1: MANAGE STORMWATER

ISSUES

- Water collects in low-lying areas
- In the future, water can back up with sea level rise / high tides
- This can cause streets, buildings, and Parks to flood
- Scale of issue requires both green and gray infrastructure solutions

2050s 5-Year Rainfall Event and 10-year Coastal Surge



Inundation from rainfall event

Inundation from coastal surge

SOURCES: New York City Panel on Climate Change projects; inundation modeling by Langan Engineering

THEME 1: MANAGE STORMWATER

PROPOSED IDEAS

- Create “green corridors” along key streets
- Increase water absorption in public spaces
- Investigate feasibility of storm sewers and gray infrastructure system upgrades to reduce new street flooding

106th Street Stormwater Management Potential Concept

— Stormwater conveyance under 106th Street

□ Stormwater management on open spaces adjacent to 106th

⇉ Street Stormwater drainage connections to 106th Street corridor

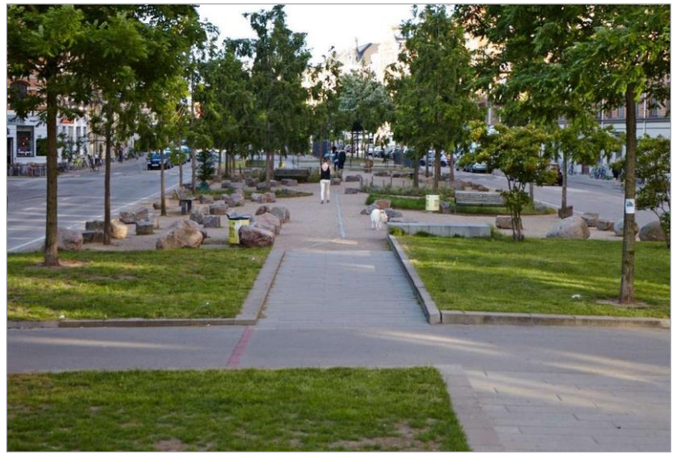
THEME 1: MANAGE STORMWATER

GASTEIZ AVENUE, VICTORIA-GASTEIZ, SPAIN

ALLEN STREET, LOWER EAST SIDE, NY

MIRACLE MILE STREETSCAPE, CORAL GABLES, FL

SØNDER BOULEVARD, COPENHAGEN, DENMARK



WATER SQUARE, ROTTERDAM, THE NETHERLANDS

WATER DETENTION CRATES

THEME 2: RE-IMAGINE THE WATERFRONT

ISSUES

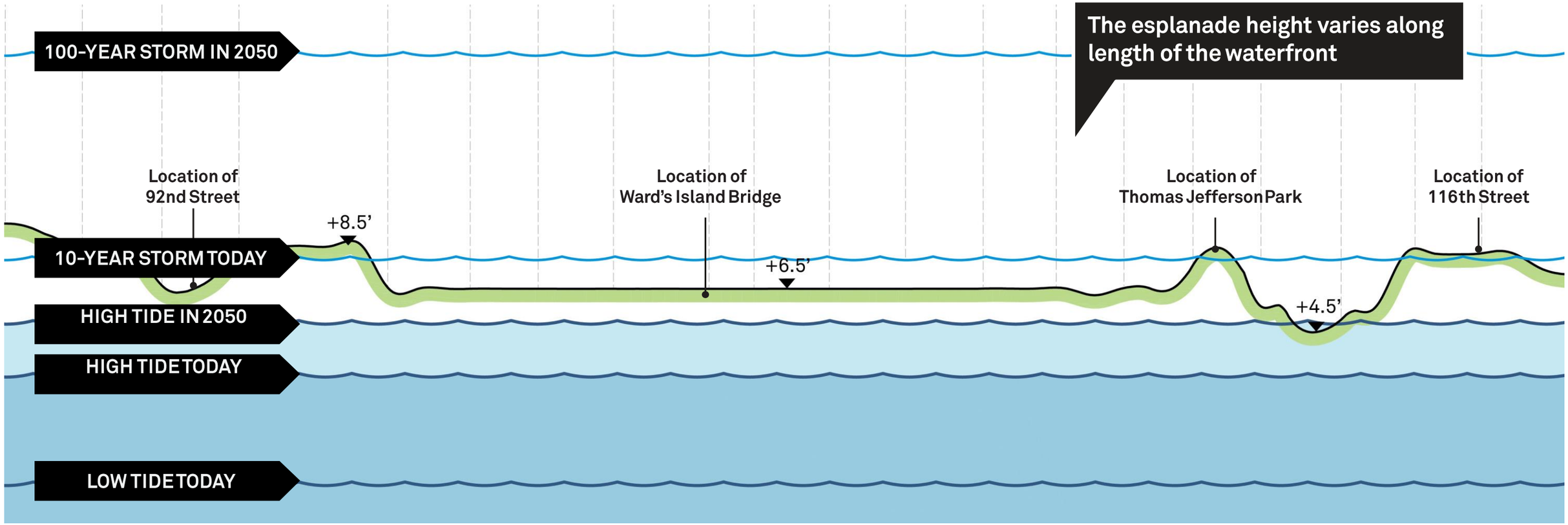
- Waterfront infrastructure conditions
- Limited access
- Sea level rise and storms can flood the highway and esplanade
- Sea level rise and storms can cause backup of outfalls and inland flooding

EXISTING ESPLANADE CONDITIONS

THEME 2: RE-IMAGINE THE WATERFRONT

PROPOSED IDEAS

Near-term: Elevate bulkheads and esplanade to address sea level rise and frequent storms

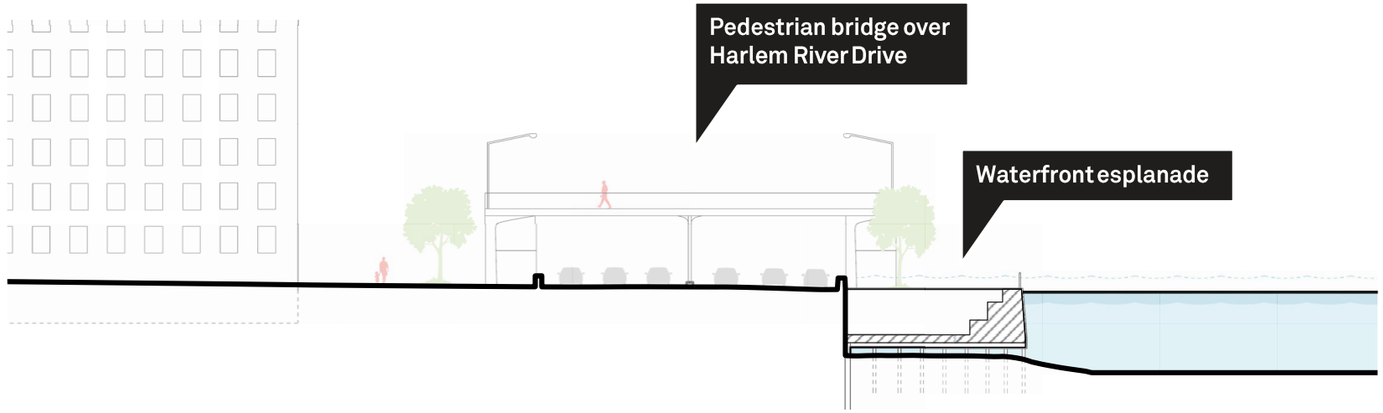


THEME 2: RE-IMAGINE THE WATERFRONT

PROPOSED IDEAS

Long term:
Explore large-scale transformation to improve waterfront access, open space, transportation infrastructure, and drainage needs in the face of climate change

EXISTING CONDITION



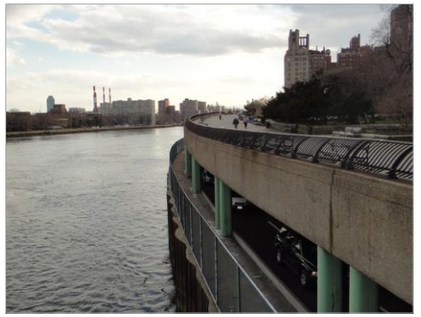
REPAIR / RECONSTRUCTION OF WATERFRONT ESPLANADE AND HIGHWAY

Pedestrian bridge at Thomas Jefferson Park

REPAIR / RECONSTRUCTION OF INLAND DRAINAGE

Combined sewer outfall located on Harlem River

PEDESTRIAN BRIDGES

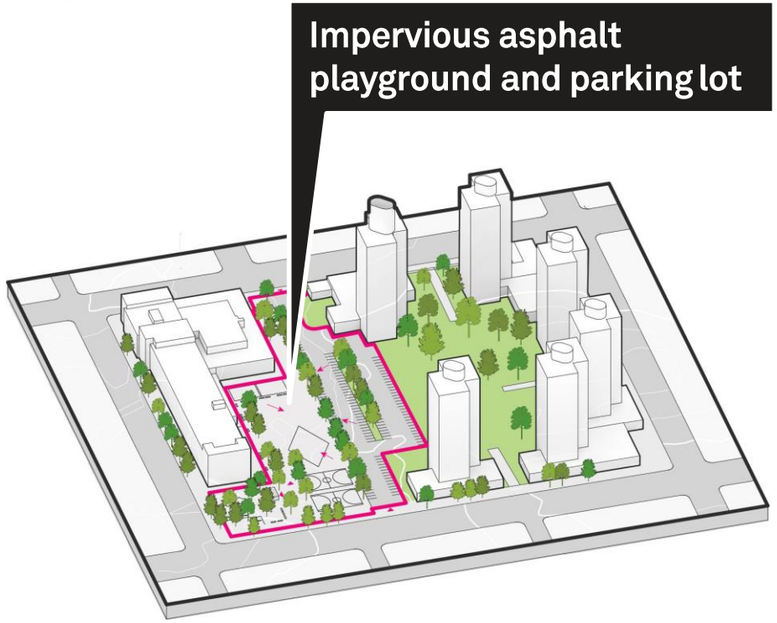


Carl Schurz Park, NewYork

THEME 3: CREATE RESILIENT PUBLIC SPACES

ISSUES

- Numerous but underused and disconnected public spaces and community resources
- Abundance of underused impervious surfaces
- Heat vulnerable
- Urban heat island effect

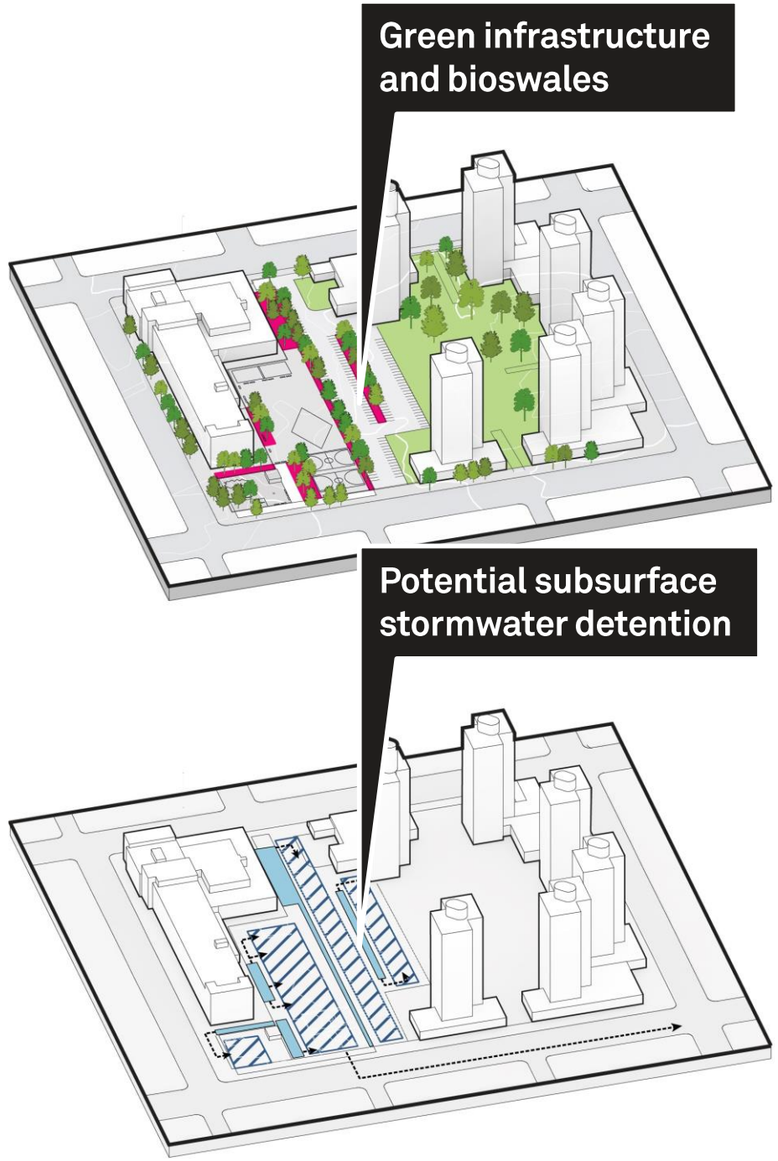


POOR RICHARD'S PLAYGROUND

THEME 3: CREATE RESILIENT PUBLIC SPACES

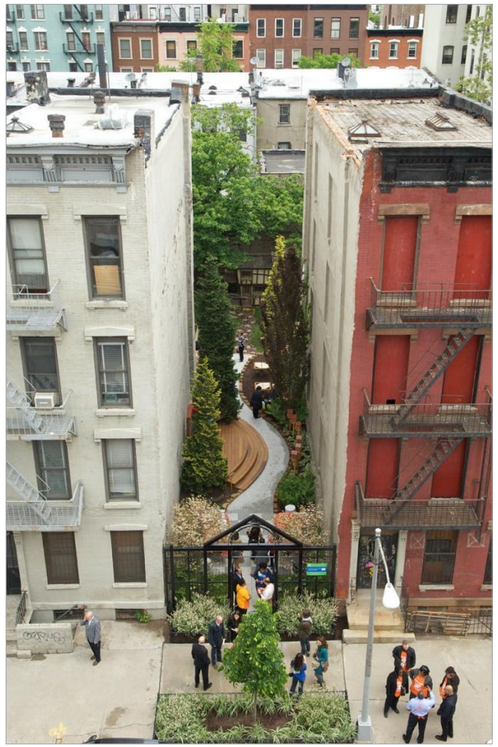
PROPOSED IDEAS

- Increase water absorption in public spaces (ex. Parks and NYCHA)
- Plant more street trees and install materials to address extreme heat
- Equip community facilities with information and resources for emergency preparedness/relief functions

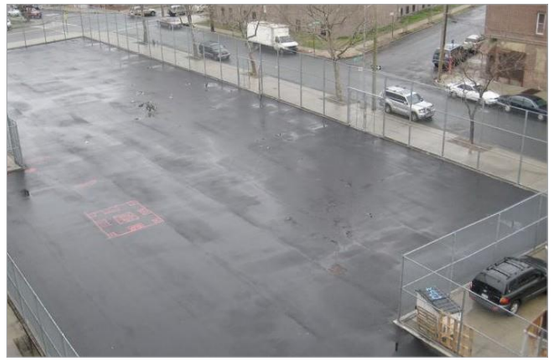


THEME 3: RESILIENT PUBLIC SPACE EXAMPLES

IMPROVED COMMUNITY GARDEN
(HOME DEPOT CHILDREN'S GARDEN, EAST HARLEM)

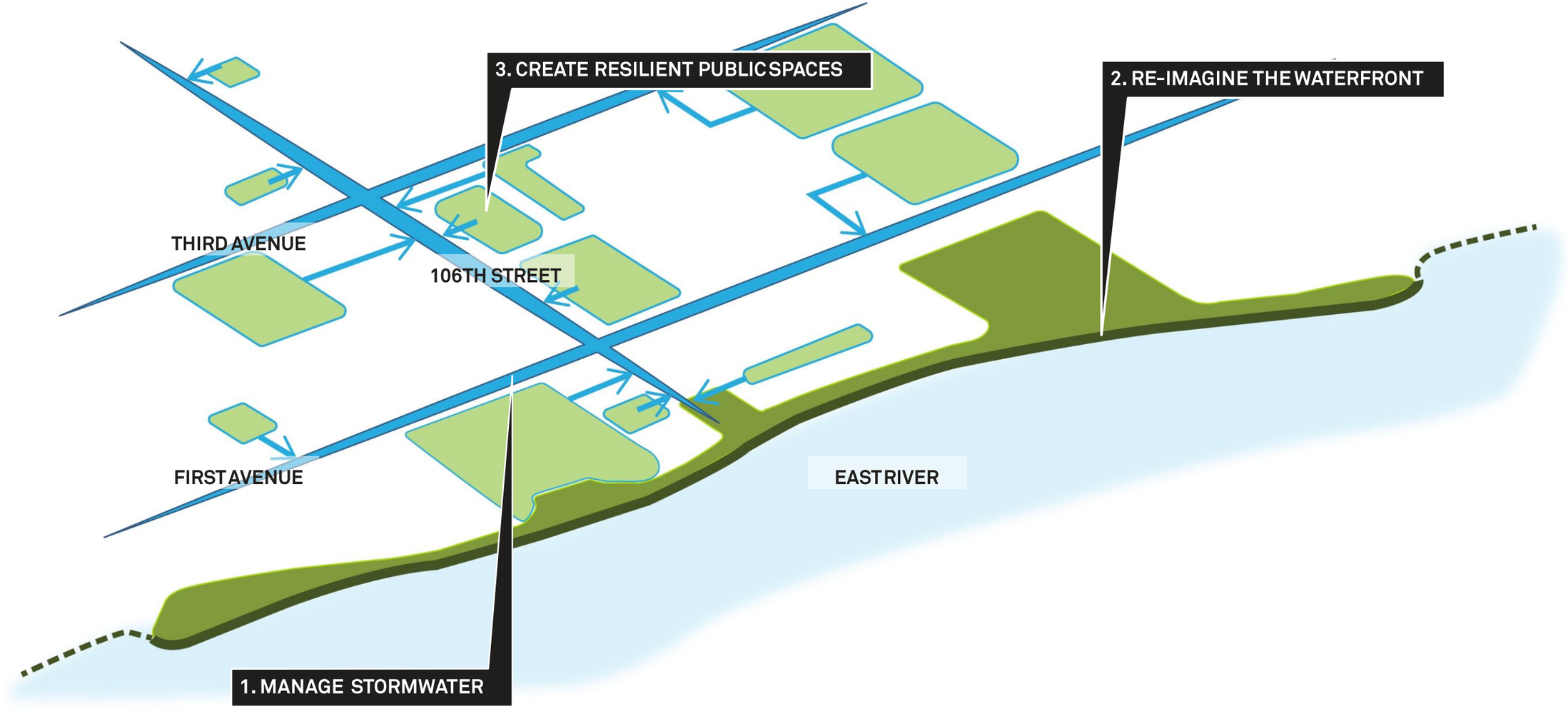


IMPROVED ASPHALT PLAYGROUND
(J.H.S. 218, EAST NEW YORK, BROOKLYN)



BIOSWALES AND STORMWATER MANAGEMENT
(QUEENS BOTANICAL GARDENS, FLUSHING, QUEENS)

VISION CONCEPT



NEXT STEPS
HOW TO STAY INVOLVED

VISION PLAN

To be released Winter 2018/2019

WEBSITE

http://nyc.gov/parks/ehrstudy

QUESTIONS?

Contact Alda.Chan@parks.nyc.gov or 212-360-3473