Department of Design and Construction

RED HOOK COASTAL RESILIENCY (RHCR)

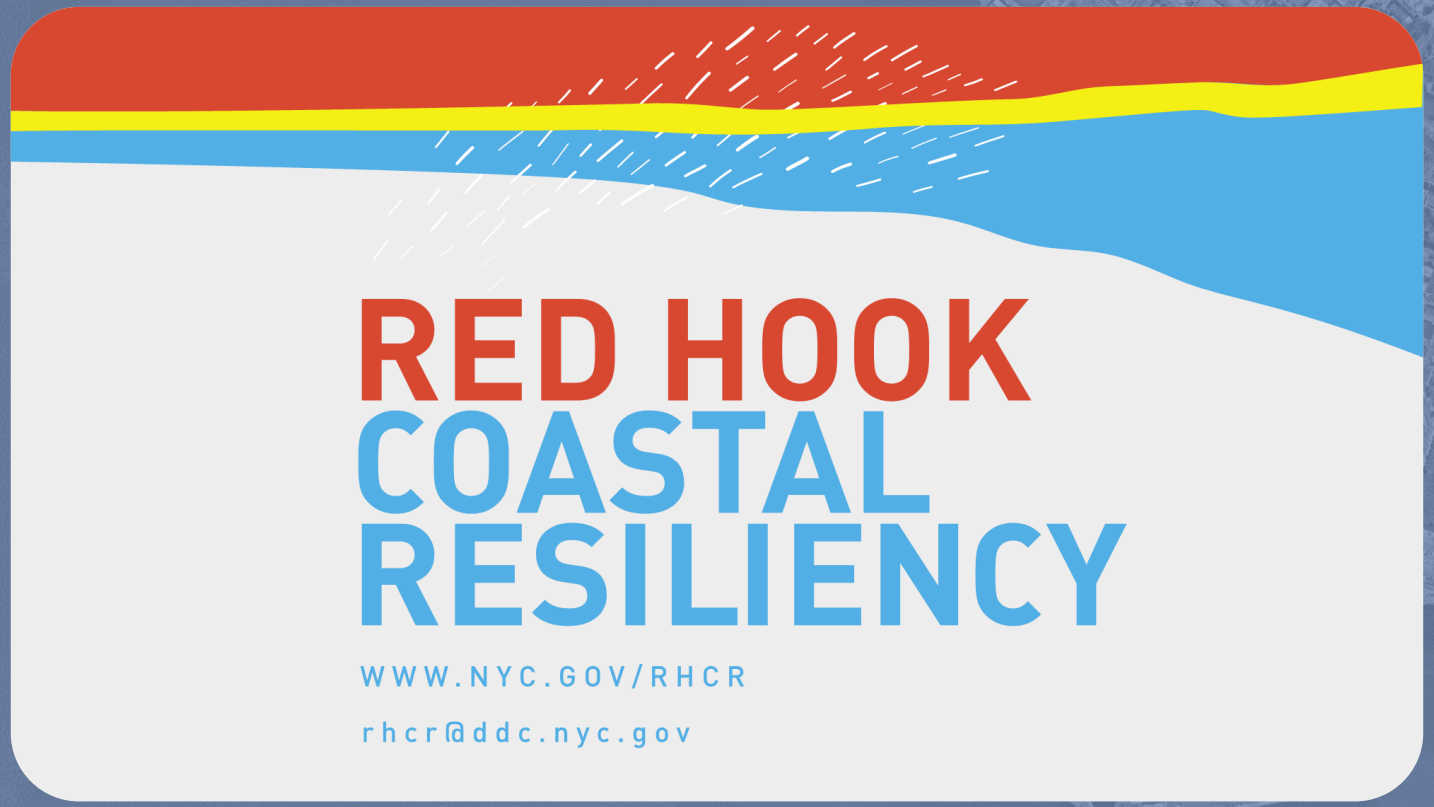
COMMUNITY ENGAGEMENT KICK-OFF MEETING

Bill de Blasio
Mayor

Lorraine Grillo
Commissioner

JANUARY 29,2019

WELCOME & THANK YOU



AGENDA

1. Introduction
2. Community Engagement
3. Climate Risks and Hazards
4. Update: Interim Flood Protection Measures (IFPM)
5. Overview: Feasibility Study (IFPS)
6. Project Design Phase (RHCR)
7. Questions
8. Display Boards

1. INTRODUCTION

BACKGROUND

- Hurricane Sandy's coastal storm surge exposed the flood vulnerability within the Red Hook community.

- The coastal storm surge flooded over 75 percent of the Red Hook area, affected over 10,000 residents, and resulted in huge economic losses for the businesses and residential properties.

- The City was awarded $50 million in funding from FEMA (along with a local match of $50 million) to build an integrated coastal protection system.

- FEMA also awarded $4 million in funding to study the feasibility of an integrated flood protection system (IFPS).

RHCR Project Partners & Team

New York City

- Department of Design and Construction (DDC)
- Mayor's Office of Resiliency (MOR)
- Emergency Management (EM)
- Department of Environmental Protection (DEP)
- Department of Transportation (DOT)
- Economic Development Corporation (NYCEDC)
- Mayor's Office of Environmental Coordination (OEC)
- NYC Department of City Planning (DCP)
- NYC Department of Parks & Recreation (DPR)

New York State

- NYS Division of Homeland Security and Emergency Services (DHSES)

Design Team

- NV5 Engineering
- Grain Collective

We have also consulted with:

- New York City Housing Authority (NYCHA)
- NY & NJ Port Authority (NYNJPA)

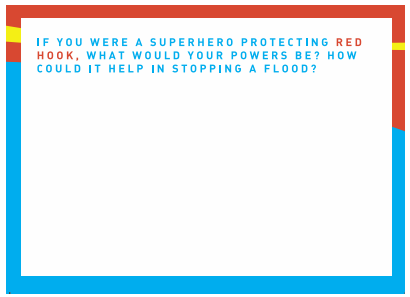
2. COMMUNITY ENGAGEMENT

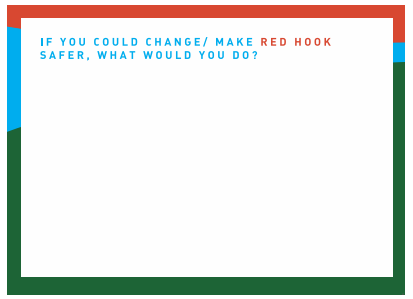
COMMUNITY ENGAGEMENT

Thank You:

- PS 676 Red Hook's neighborhood school for hosting us this evening

- Britanny Hartnett, PS 676 teacher and all the students from the Leadership team for your participation and partnership





COMMUNITY ENGAGEMENT

Importance of Community Partners and Engagement

- Successful community engagement is transparent and inclusive, iterative and proactive, equipping community members with the information they need to engage in determining the future of their community.

COMMUNITY ENGAGEMENT

DDC has partnered with three local community-based organizations:

- The Resilience, Education, Training and Innovation Center (RETI)
- Aesthetic Soul Community
- South Brooklyn Industrial Development Corporation (SBIDC)

COMMUNITY ENGAGEMENT

Robust Engagement Toolkit

- Compelling Visuals and Clear Language
- Translations and Multiple Languages
- Flexible Meeting Times to Accommodate Stakeholder Schedules
- Exhibitions
- Large Format Workshops
- Small Scale Focus Groups
- One-on-one Interviews
- Surveys and Feedback Cards

COMMUNITY ENGAGEMENT

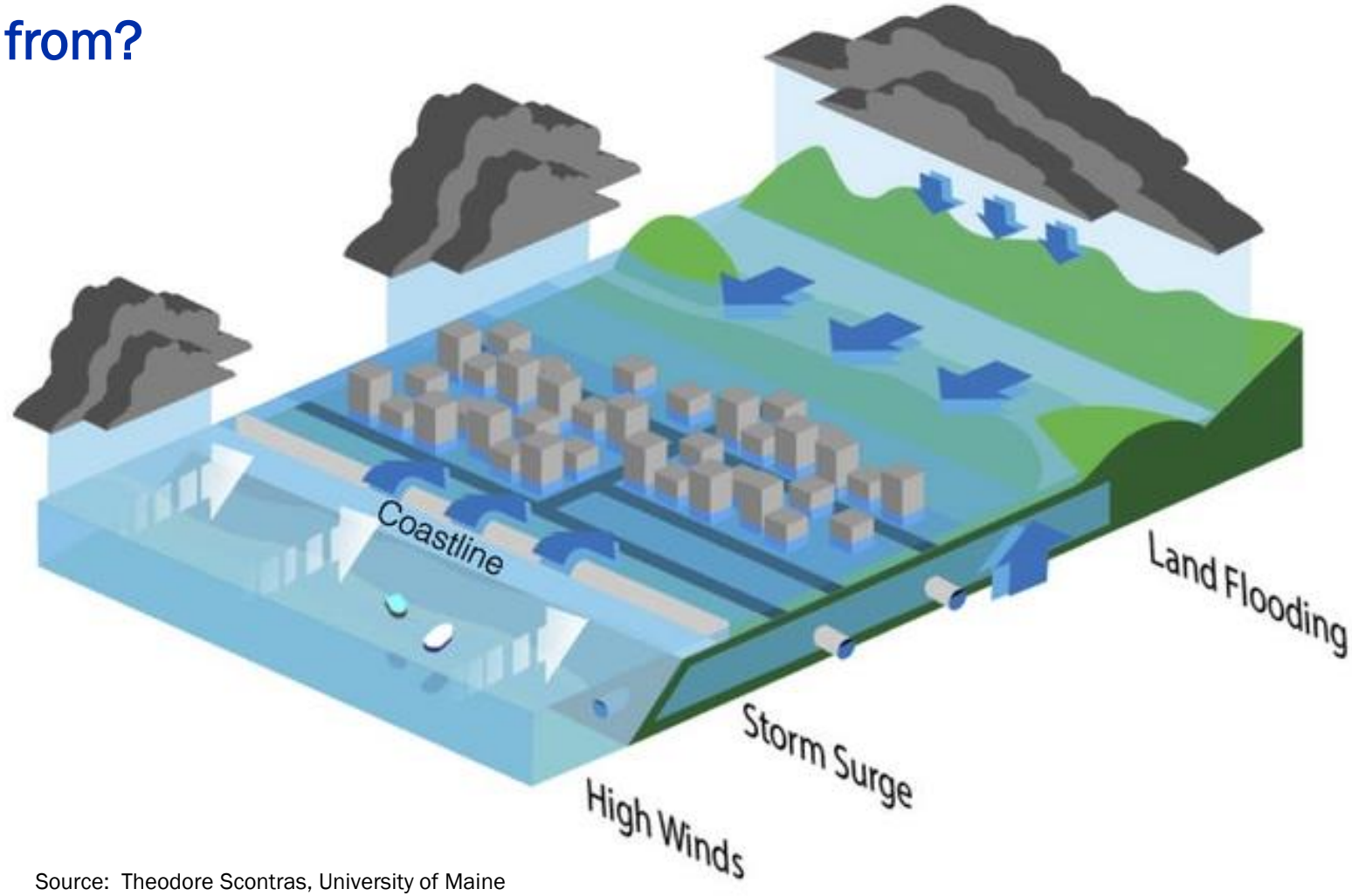
Extensive Outreach

- Partner with local groups
- Local place: schools, grocery stores, churches, etc.
- Tabling at local events: festivals, community meetings, gatherings etc.
- In-person announcements: TA meetings, CB6 meetings, CBO events, etc.
- Publicize: website, emails, social media, local press, bulletin boards, newsletters, etc.

3. CLIMATE RISKS AND HAZARDS

CLIMATE RISKS AND HAZARDS

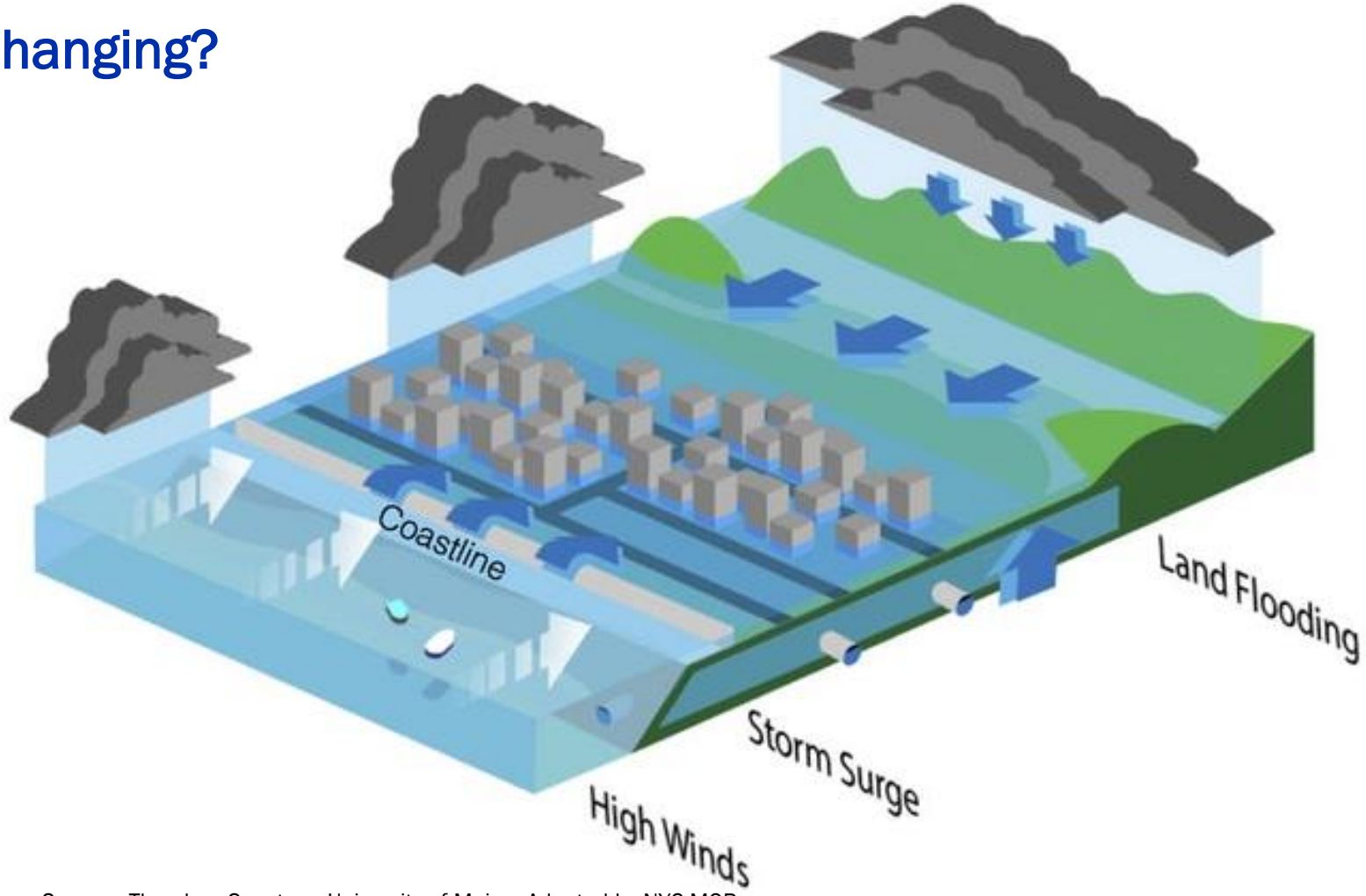
Where is the water coming from?



Source: Theodore Scontras, University of Maine

CLIMATE RISKS AND HAZARDS

How are these conditions changing?



Source: Theodore Scontras, University of Maine. Adapted by NYC MOR.

4. UPDATE: INTERIM FLOOD PROTECTION MEASURES (IFPM)

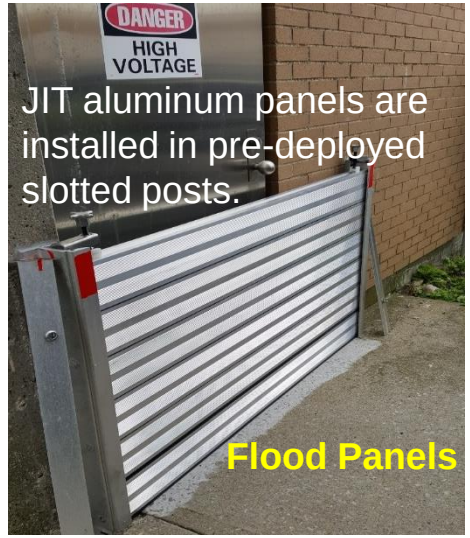
Interim Flood Protection Measures (IFPM) Program Overview

- **Goal**: Reduce low-level, high recurrence coastal flood risks while NYC continues to advance longer-term coastal protection needs

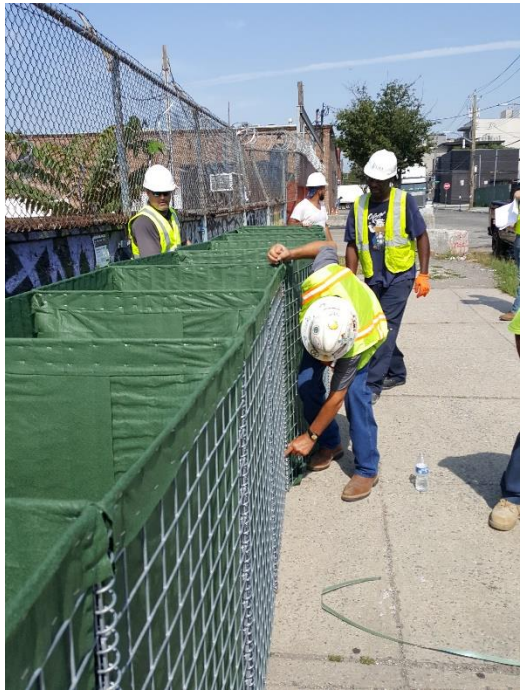
- **53** operational sites:
  - 17 critical facility sites: (wastewater treatment, hospitals, sanitation, roadwork, fire, police)
  - 4 neighborhood sites
  - 32 DEP-managed pump stations
  - Protection at critical facilities is intended to allow agencies to continue to serve New Yorkers immediately after a storm.

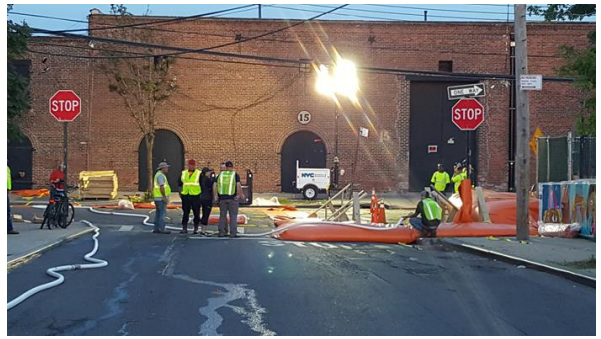
IFPM Measures

- IFPM measures provide up to ***4 feet*** of protection above ground elevation.
- Pre-Deployed & Just-in-Time (JIT)
  - Pre-deployed measures are installed where there is no impact to traffic or daily operations/use of a site.
  - Just-in-Time measures are installed in the 72-12 hours before expected onset of tropical storm force winds.
    - Wherever possible, IFPM “pre-deploys” measures to minimize pre-storm deployment activity and timeline.



Red Hook – Beard Street





IFPM Alignments in Red Hook and Status

Installed 2017

Anticipated 2020 coastal storm season

Atlantic Basin

Clinton Wharf – Existing conditions

Atlantic Basin:

Clinton Wharf – “Blue Sky” conditions (Engineer’s rendering)

Atlantic Basin

Clinton Wharf – Pre-storm conditions (Engineer's rendering)

Atlantic Basin

Clinton Wharf – Storm surge conditions (Engineer's rendering)

Van Brunt and Reed Street

Existing conditions (engineer's renderings)

Van Brunt and Reed Street

Pre-storm conditions (engineer's renderings)

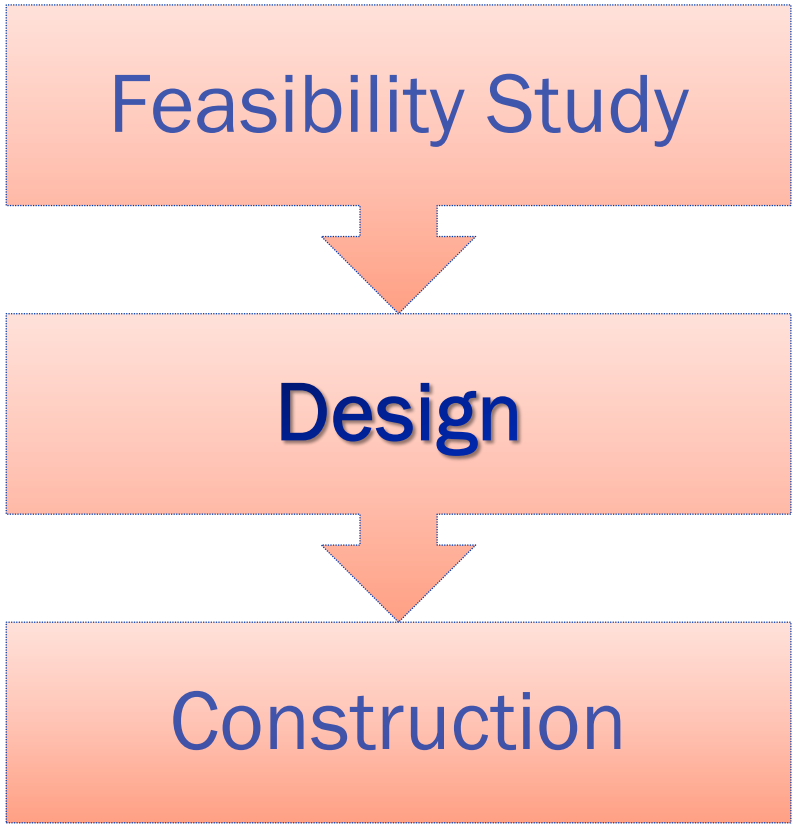
5. OVERVIEW: FEASIBILITY STUDY (IFPS)

FEASIBILITY STUDY BACKGROUND

- The City was awarded $50M in FEMA funding and contributed $50M in local match to build an integrated flood protection system.

- FEMA also awarded an additional $4 million in funding to first study the feasibility of an integrated flood protection system (IFPS) which was conducted from 2015-2017.

FEMA REVIEW PROCESS



i. The City had to propose a feasible and implementable project, and submit to FEMA for review and approval.

ii. After the proposed project was approved by FEMA, it entered the design phase.

iii. The proposed design must be reviewed and approved by FEMA to start the construction phase.

FEMA REQUIREMENTS

- Must have independent utility – cannot depend on other separate projects or features to fully function
- Cannot have a negative impact on existing conditions or worsen flooding in other nearby locations
- The quantified benefits must be greater than the quantified costs
- Must be permanent - no temporary measures such as sandbags

WHAT IS ANALYZED?

FEASIBILITY STUDY COMMUNITY ENGAGEMENT

To garner a representative variety of opinions and input, we held large public meetings, and several small meetings with specific groups.

4 large public meeting from 2016 – 2017

- Targeted Community Meetings
- Resilient Red Hook
- Red Hook Initiative
- Community Board 6
- Conversations with large waterfront private businesses/property owners

SUMMARY: FEASIBILITY STUDY COMMUNITY FEEDBACK

- Positive integration with the community and streets to allow for pedestrian and vehicle traffic flow
- Maintain and improve maritime capacity and waterfront access
- Consider drainage issues
- Provide jobs and job training for local residents
- Keep the community engaged and informed, and continue to focus on storm preparedness
- Create a system that works and provides storm surge protection
- Enhance bike-friendly environment, including the Brooklyn Greenway
- Coordinate and keep informed of other major projects in the neighborhood.

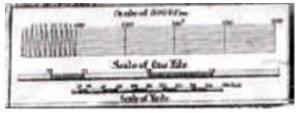
FEASIBILITY STUDY

What are Red Hook's Flood Risks?

HISTORICAL DEVELOPMENT

- Much of the Red Hook rests on low-lying former marshland, with a high groundwater table, making it vulnerable to weather-related flooding events.

2013 Shoreline

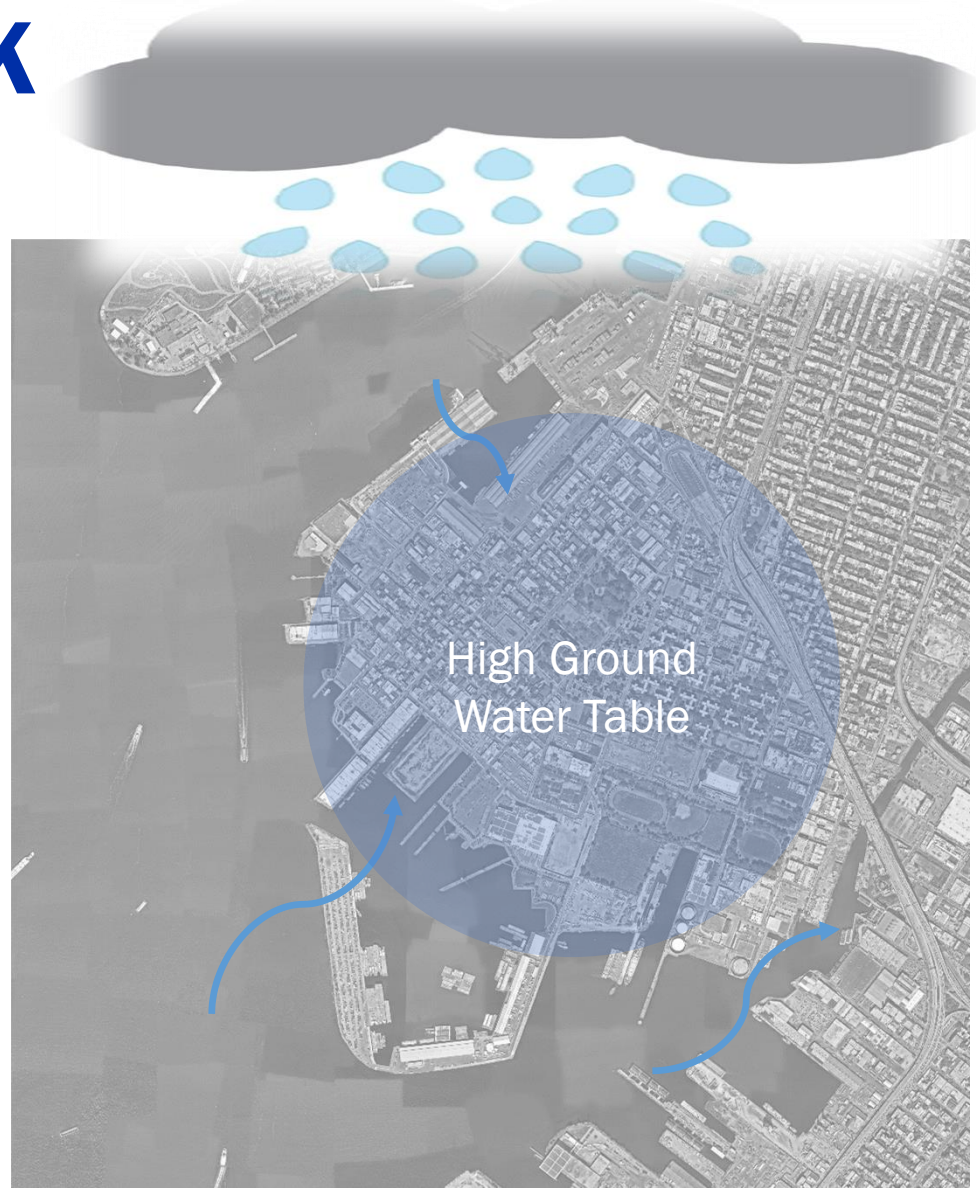


FLOODING RISKS IN RED HOOK

Red Hook can flood from 5 ways:

- Rain flooding from above
- Ground water flooding from below
- Coastal flooding from Buttermilk Channel
- Coastal flooding from the harbor
- Coastal flooding from Gowanus Canal

All flood risks must be considered when developing a coastal protection project.

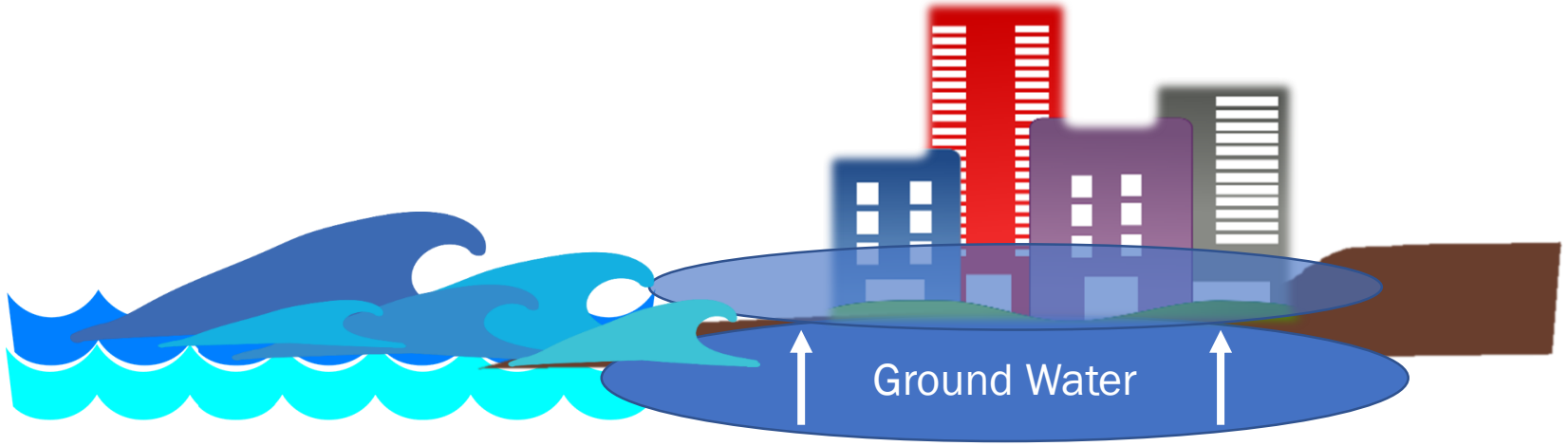


FEASIBILITY STUDY

How can we reduce flood risks?

HURRICANE SANDY

- Hurricane Sandy caused coastal storm surge flooding and also caused ground water to rise from below.



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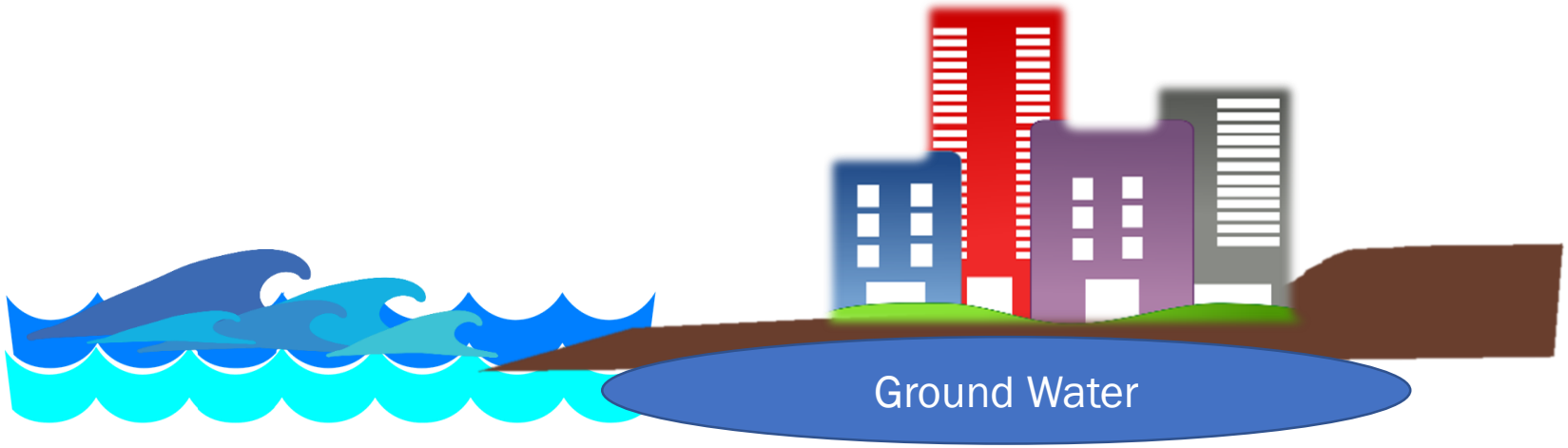
HURRICANE SANDY

- After the storm, the water flowed back out into the ocean.



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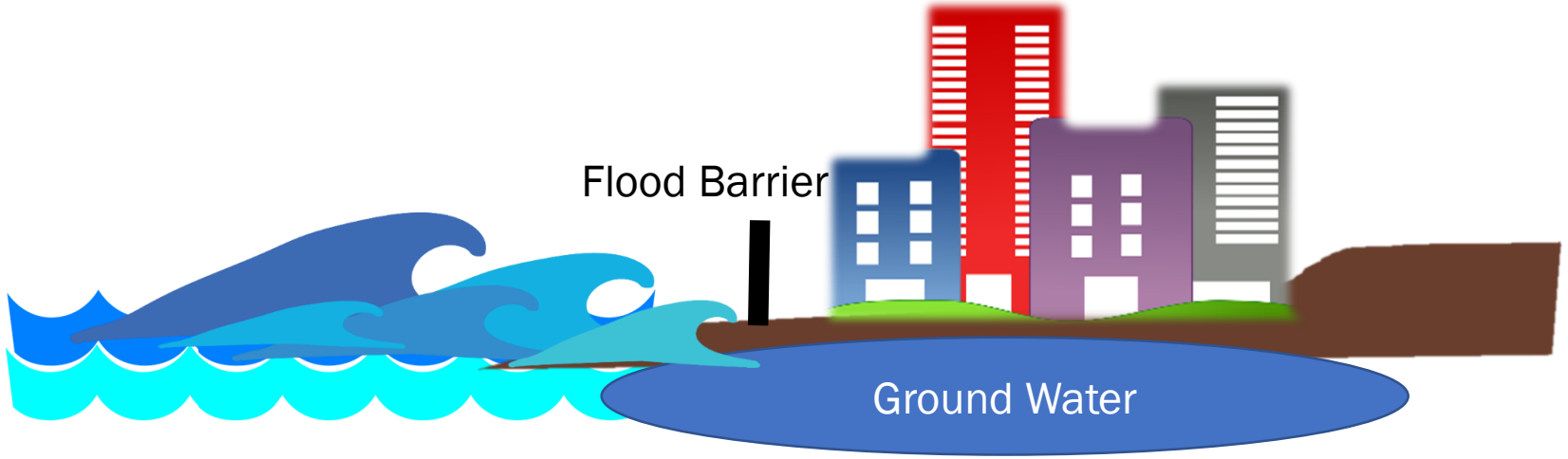
FLOOD BARRIER

- A flood barrier (or wall) of varying heights and locations was analyzed to defend the neighborhood from coastal flooding.



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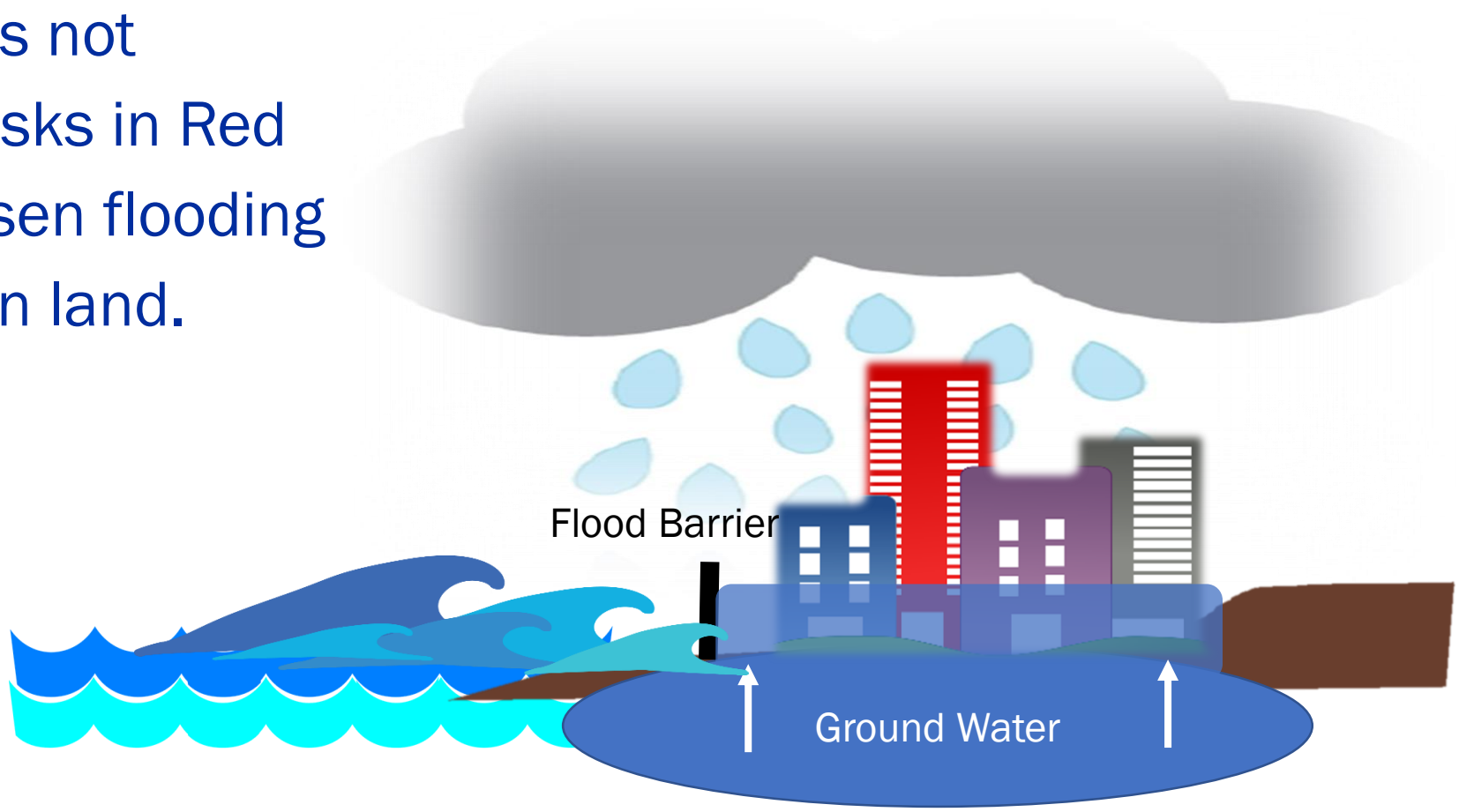
A FLOOD BARRIER CAN TRAP WATER ON LAND

- A flood barrier does not address all flood risks in Red Hook and can worsen flooding by trapping water in land.



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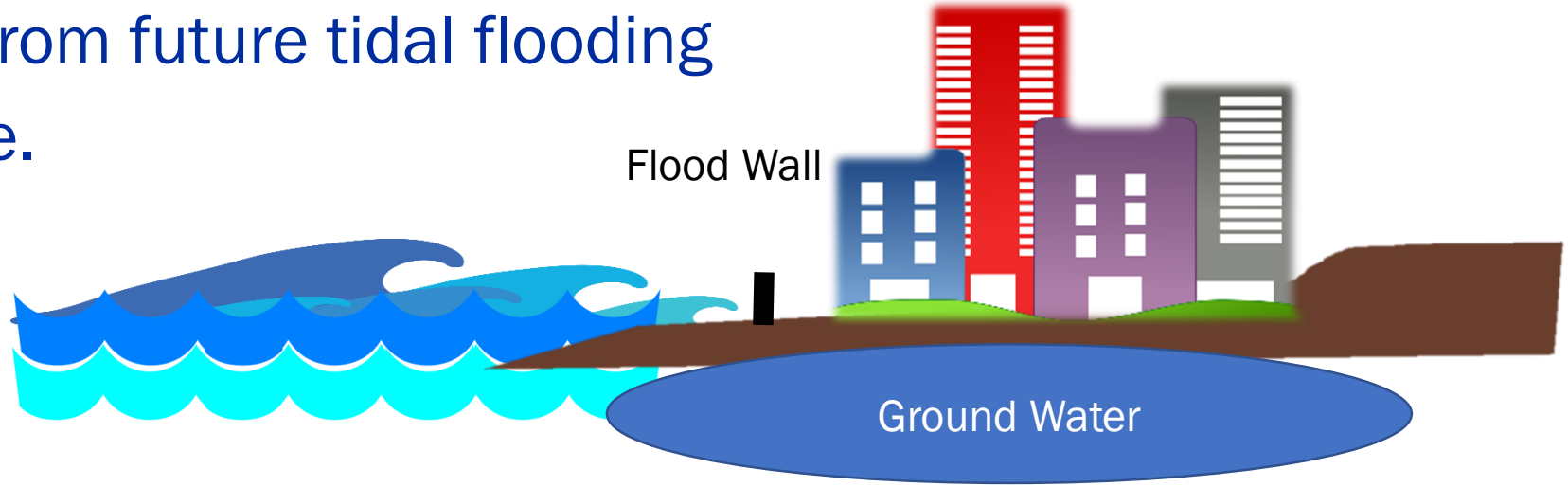
LOWER FLOOD BARRIER

- If We had to lower the flood barrier height to reduce flooding risks.
- A lower flood wall can still protect against more frequent, lower intensity storm surge.
- It can also protect from future tidal flooding due to sea level rise.



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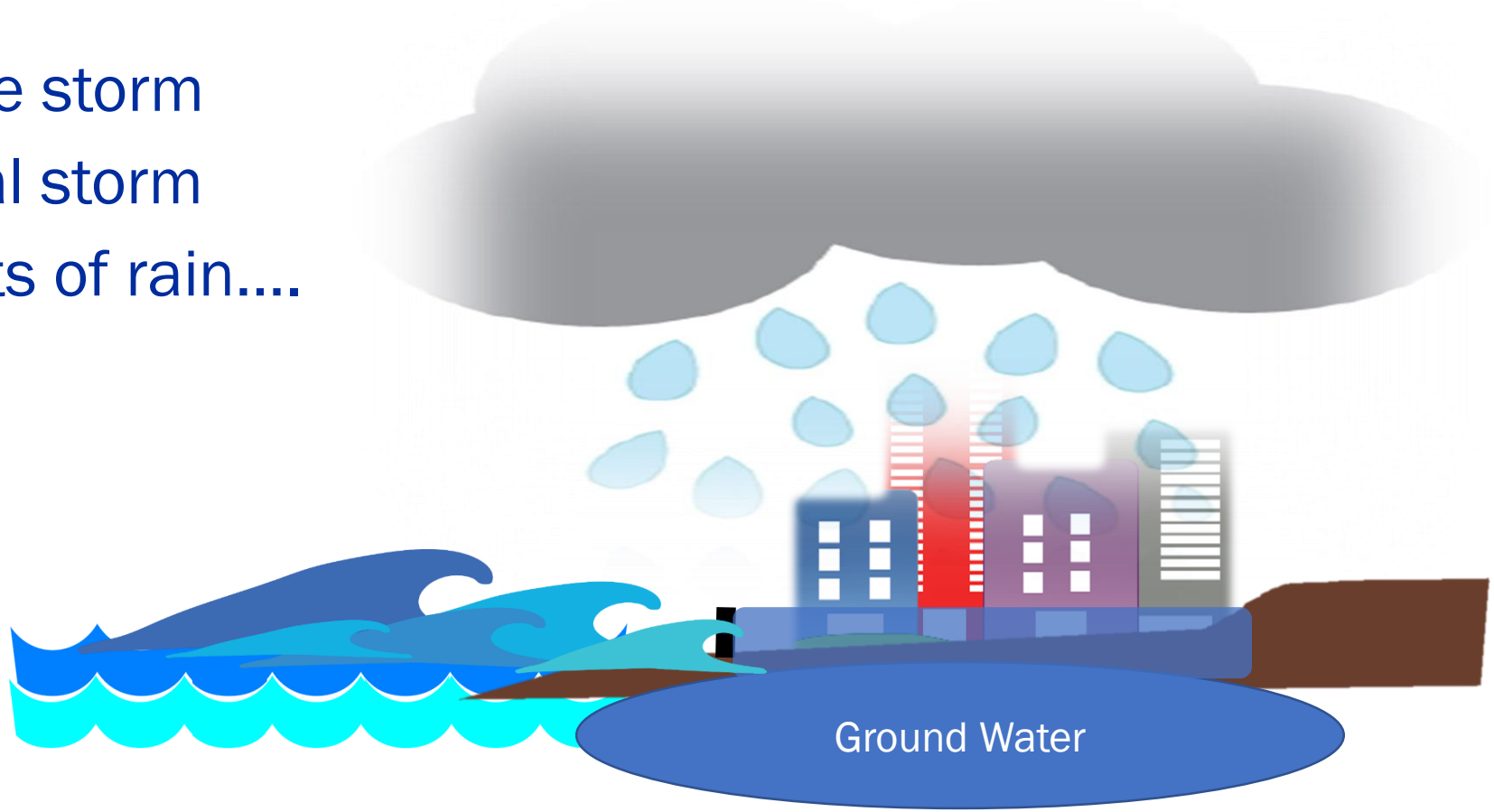
LOWER FLOOD BARRIER

- If there is a large storm with high coastal storm surge and/or lots of rain….



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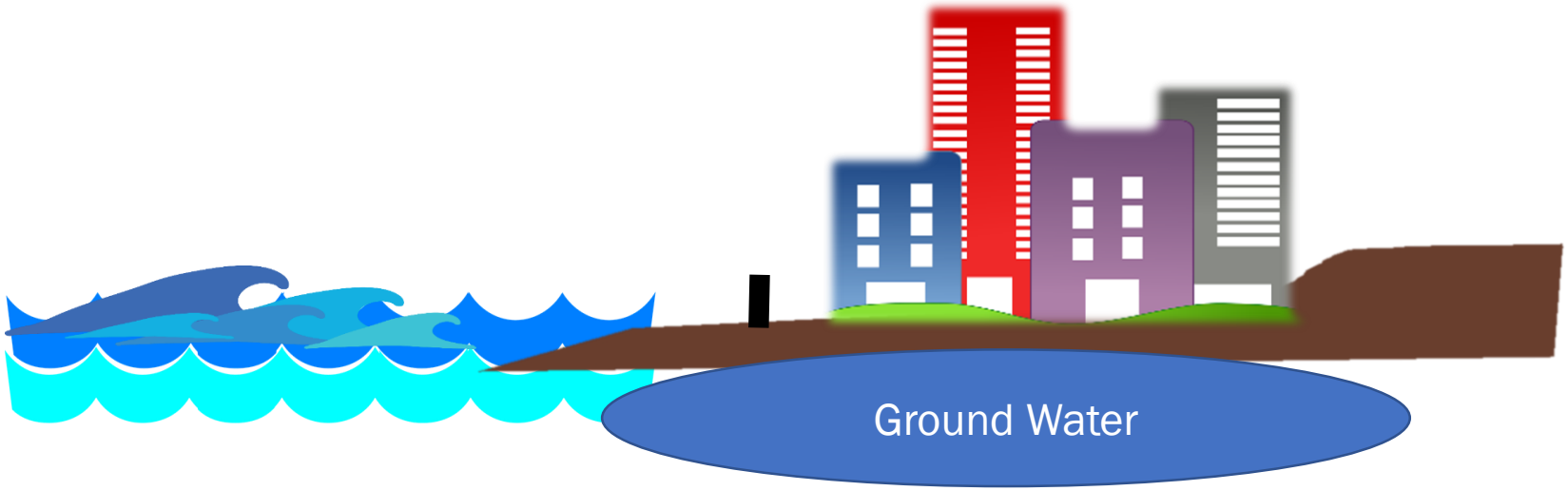
LOWER FLOOD BARRIER

- ...the water can more easily drain back out into the ocean.



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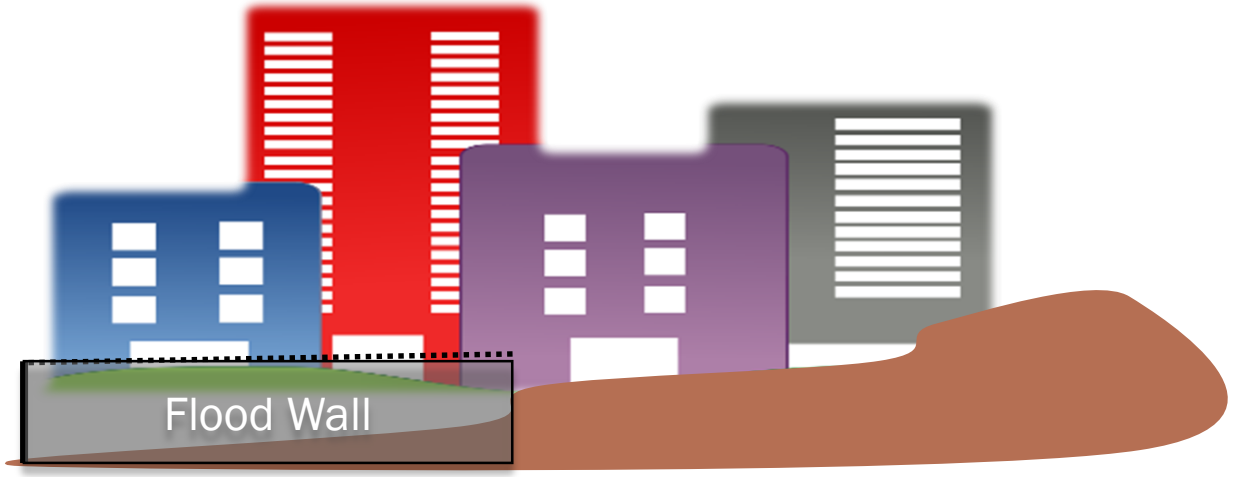
FEASIBILITY STUDY

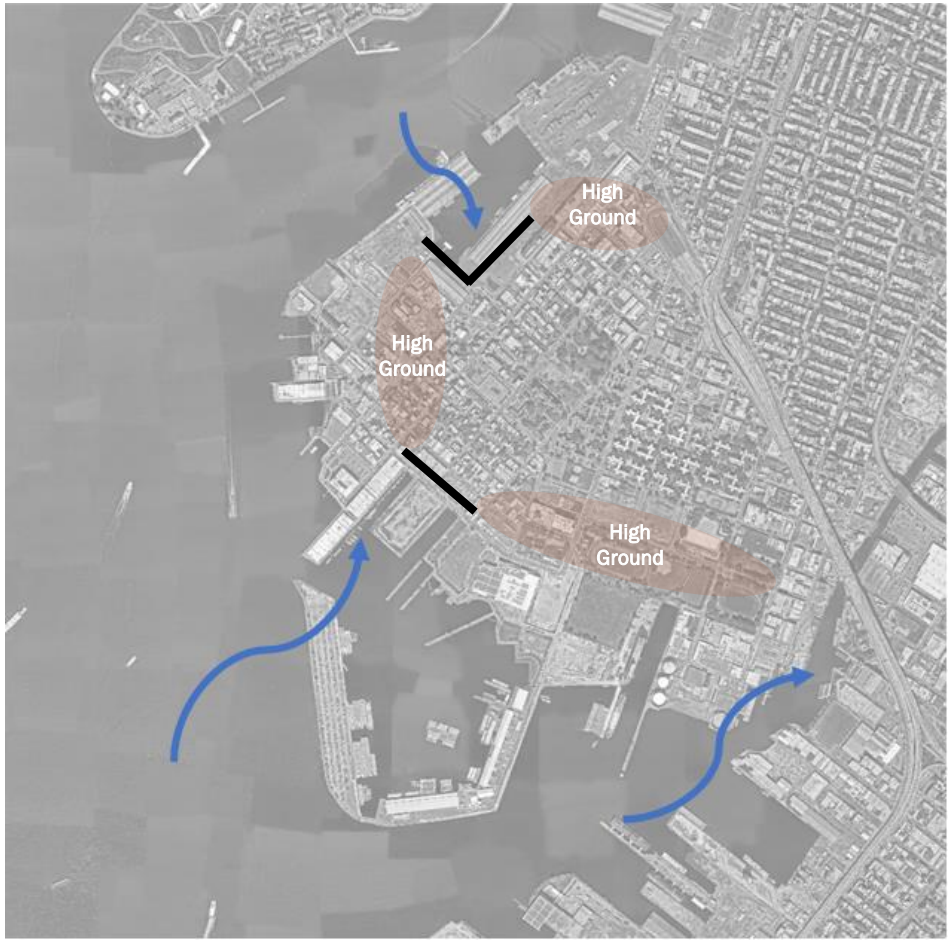
What are other potential impacts of a coastal defense barrier in Red Hook?

1. Impacts on sidewalks and streets
2. Reliability

1. IMPACTS ON SIDEWALKS AND STREETS

A lower flood barrier decreases the length of the walls needed.





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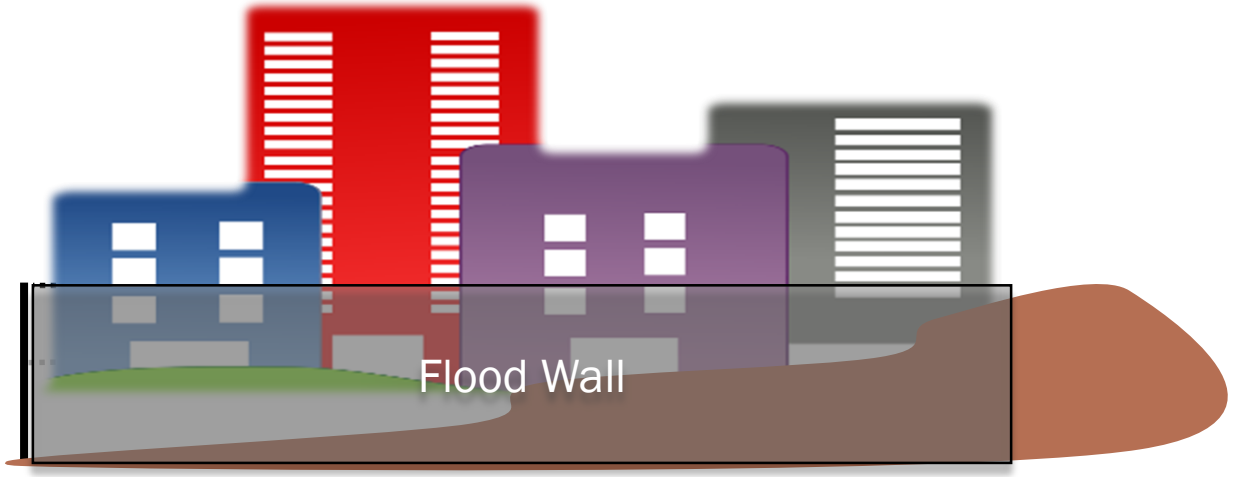
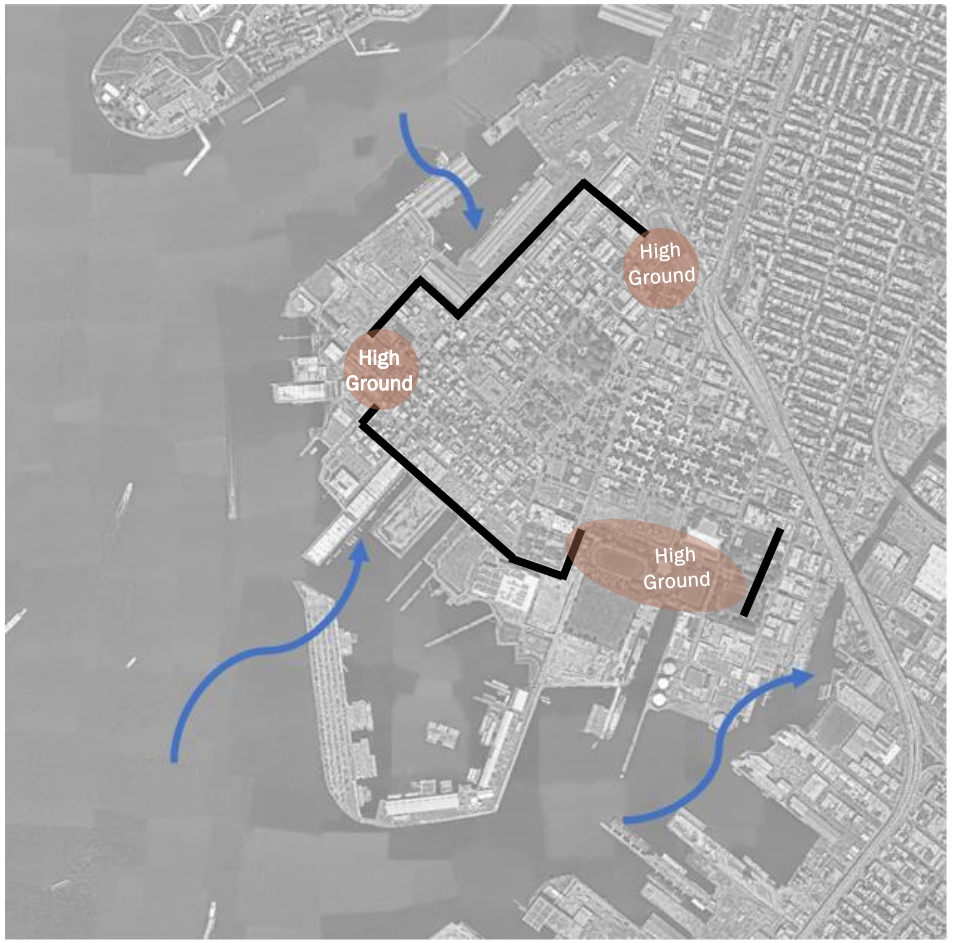
1. IMPACTS ON SIDEWALKS AND STREETS

A higher barrier would be longer and impact more of the neighborhood.





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1. IMPACTS ON SIDEWALKS AND STREETS

A higher barrier would also be longer and impact more of the neighborhood.

- May have an impact on pedestrian and vehicle circulation
- Creates a visual barrier between most of the neighborhood and the waterfront

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2. RELIABILITY

- A higher barrier would need to go on City Right of Way (ROW)
- Deployable flood gates would need to be built at driveways and/or intersections to tie into the flood alignment

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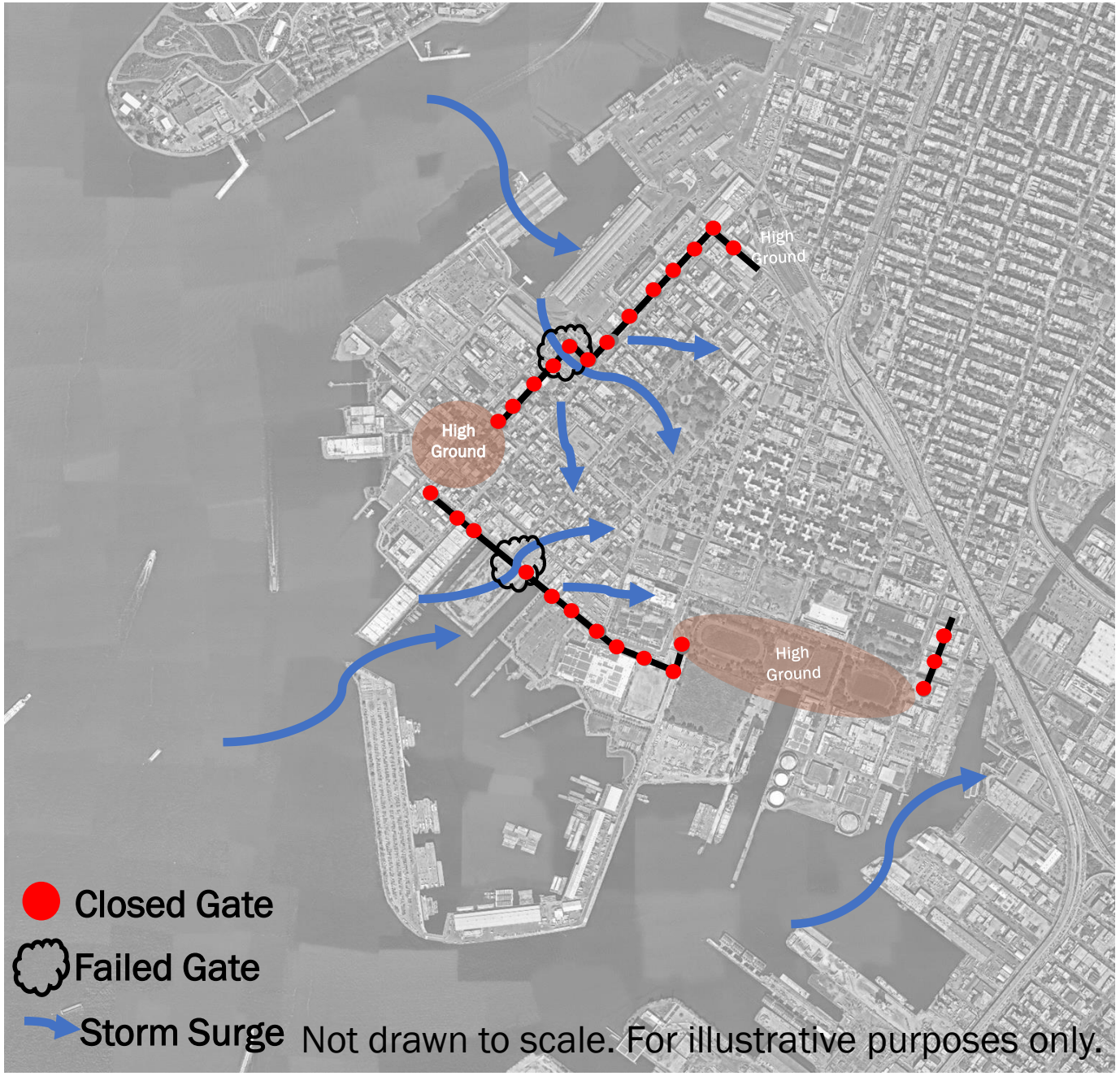
- In advance of a storm, the gates would need to be closed.

2. RELIABILITY

- A higher barrier would need to go on City Right of Way (ROW)
- Deployable flood gates would need to be built at driveways and/or intersections to tie into the flood alignment
- In advance of a storm, the gates would need to be closed.
- More gates can reduce reliability of the barrier if one fails.



6. PROJECT DESIGN PHASE (RHCR)

RHCR Project GOALS

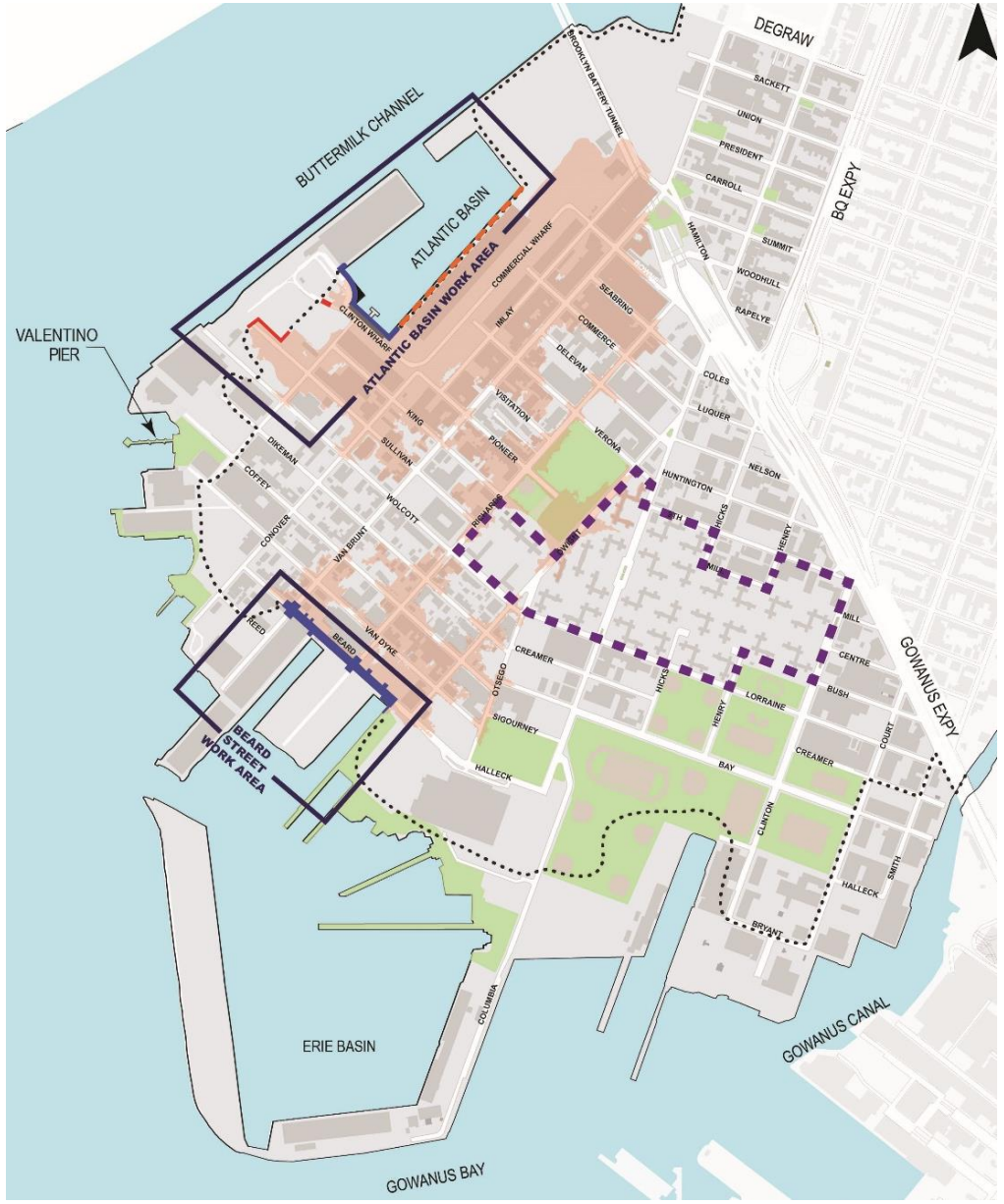
The City will focus the project on the two lowest points:

Atlantic Basin – a flood wall under regraded streets and an upgraded bulkhead

Beard Street – a flood wall under a raised and regraded street

The project will have a protect against more frequent less intense storms (appx. current 20-year storm), and future tidal flooding. This approach has:

- Minimal drainage impacts
- Does not require deployables
- Does not block foot and car traffic
- Does not block off the waterfront

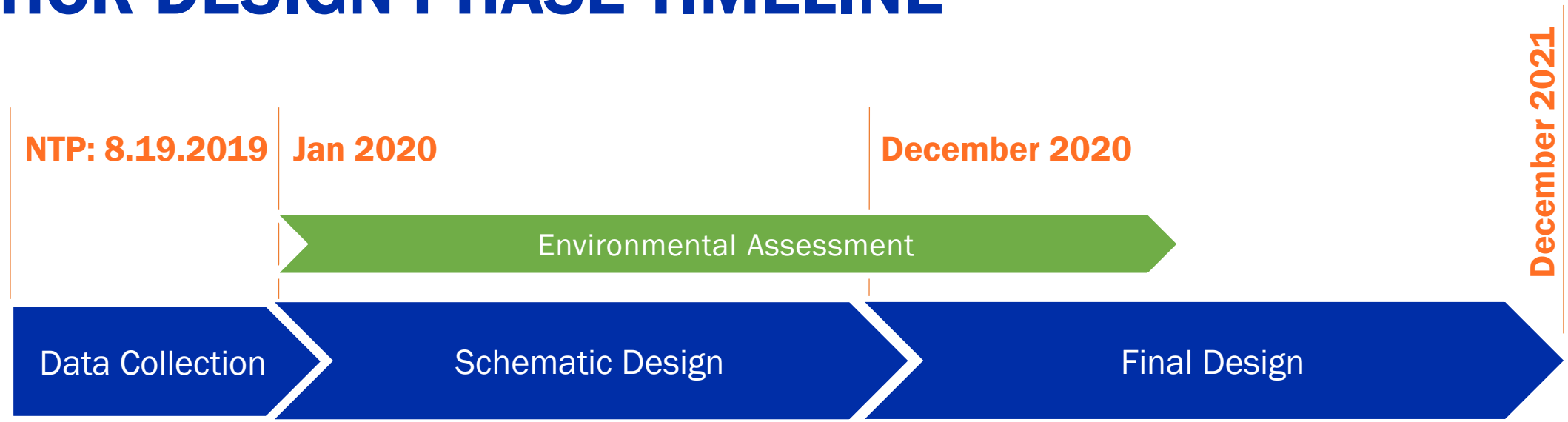


RHCR Project GOALS

Ensure a more resilient Red Hook community, by developing a FEMA approved design for a project that will reduce coastal flood risk with minimal impact to the neighborhood.

- Compliance with FEMA Grant Award
- Incorporate community and stakeholder priorities
- Achieve a Benefit-Cost Ratio (BCR) greater than 1.0 according to FEMA BCA
- Prepare an Environmental Assessment (EA) / Finding of No Significant Impact (FONSI)
- Prepare Hydraulic and Hydrologic Models of Pre- and Post project condition

RHCR DESIGN PHASE TIMELINE



- Condition Inventories
- Bulkhead Inspection
- Record Research
- Initial Community Engagement

- 30% Design
- Hydraulic & Hydrologic Modeling
- PDC Preliminary Presentation
- Preliminary Envision Assessment
- Continued Community Engagement

- 60%, 90%, and 100% Design
- Submit for FEMA Approval
- Continued PDC Coordination
- Continued Envision Assessment
- Continued Community Engagement

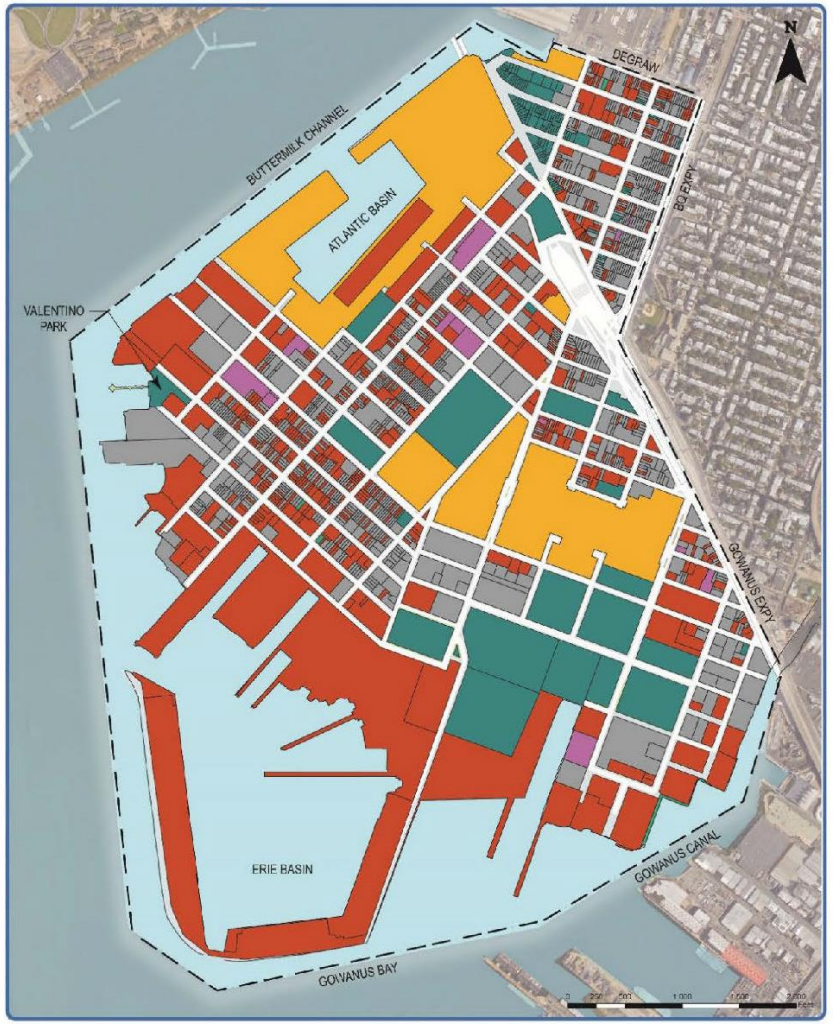
RHCR PROJECT DESIGN PARAMETERS / CONSTRAINTS

RHCR Project Design

Parameters / Constraints

LEGEND

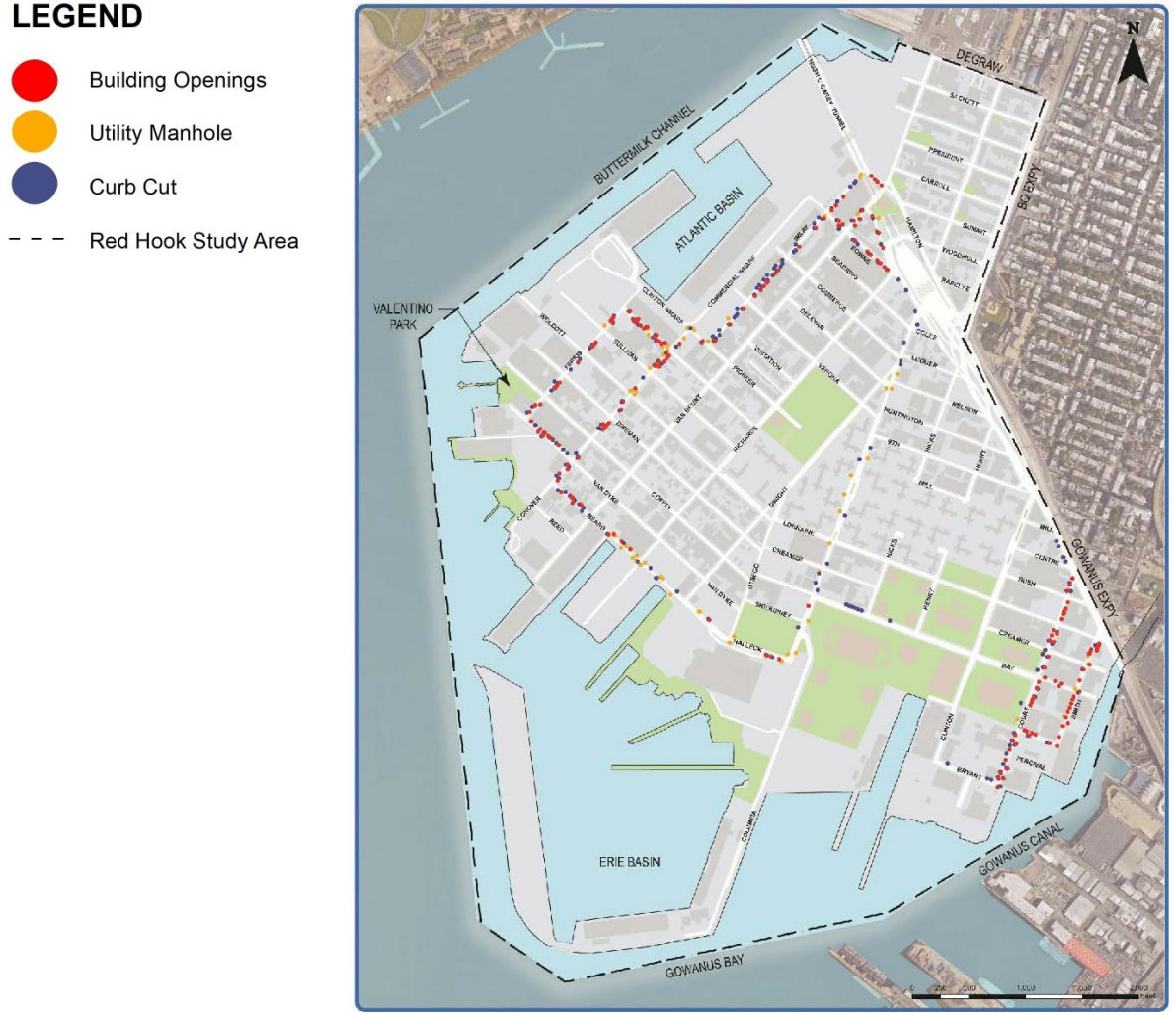
- Private
- Other - Public Authority, State or Federal
- City
- Mixed City and Private
- Unknown
- – – – Red Hook Study



Property Ownership

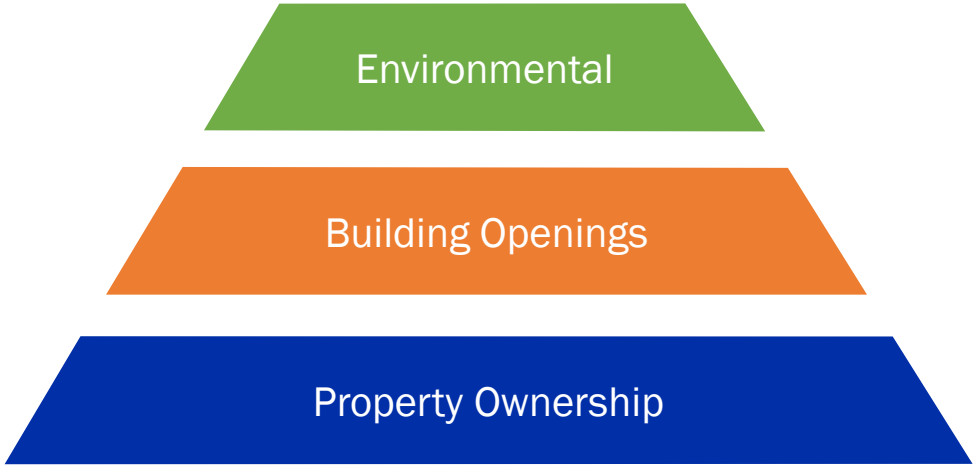
RHCR Project Design

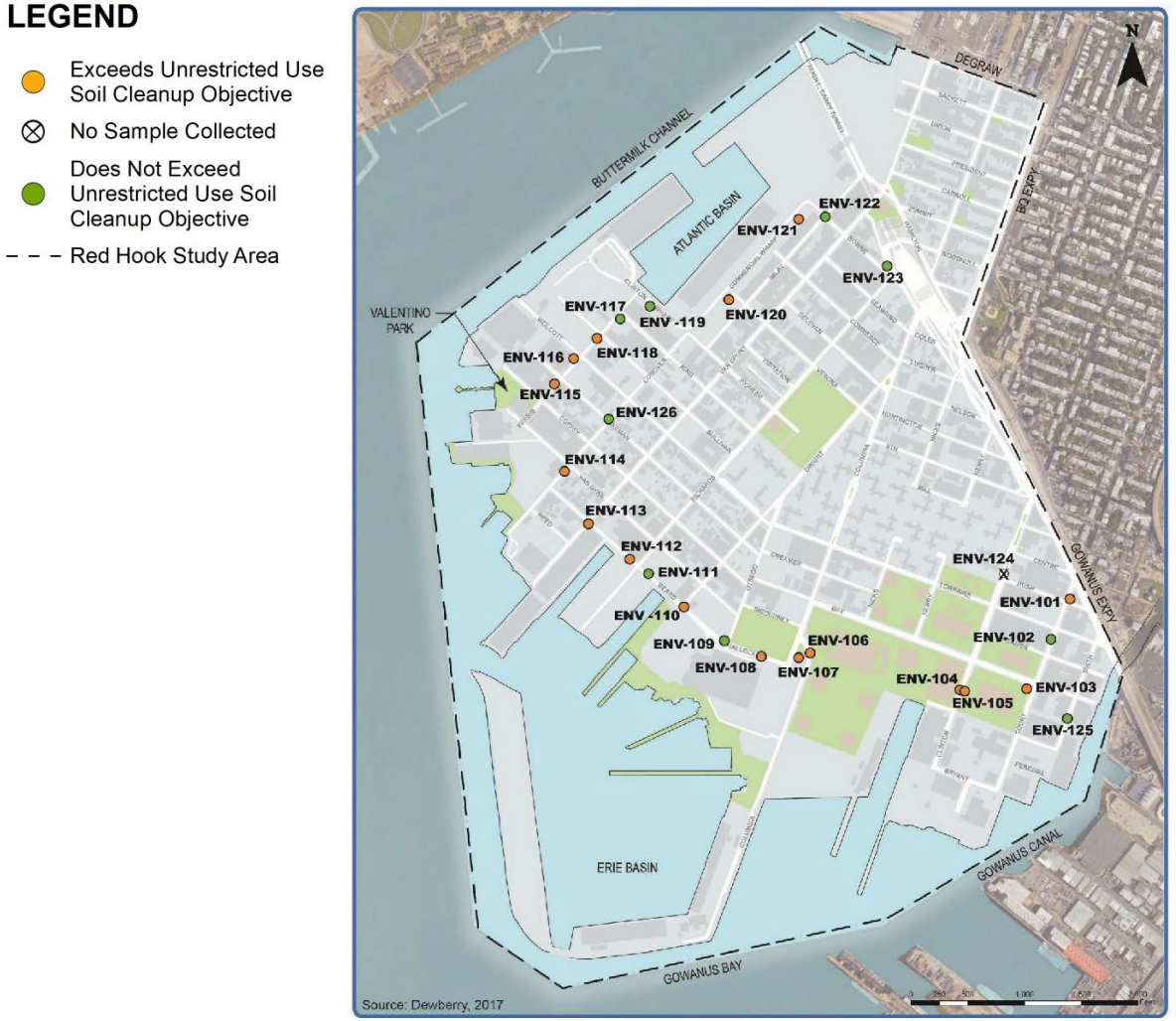
Parameters / Constraints



Project Design Parameters / Constraints

Project Parameters/ Constraints





Project Design Parameters / Constraints

Project Parameters/ Constraints

Project Design Parameters / Constraints

Project Parameters/ Constraints

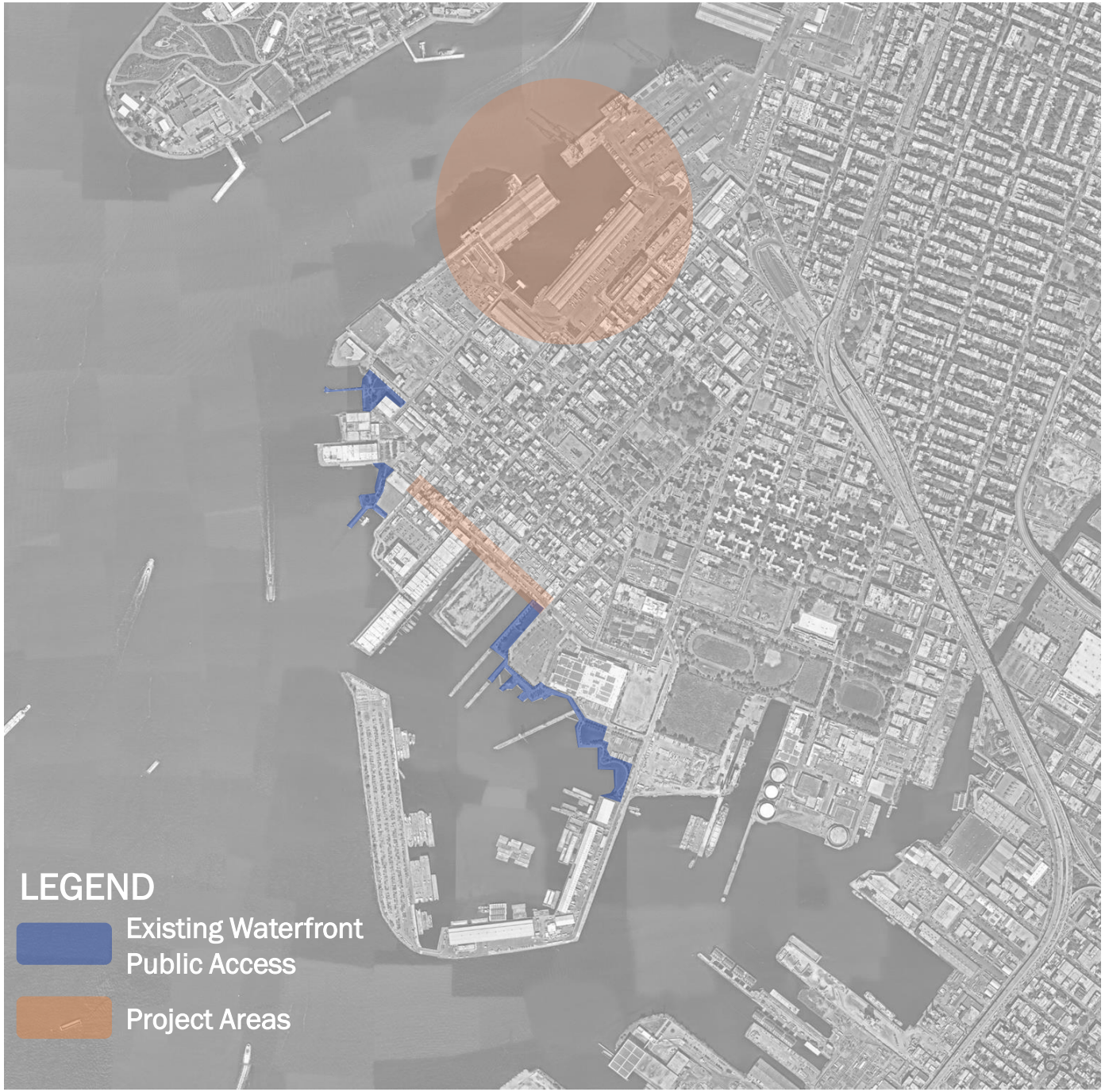
Prior to awarding a mitigation grant, FEMA requires a Benefit-Cost Analysis (BCA) that compares a project's future benefit to its costs

WHAT WE'VE HEARD

What We've Heard

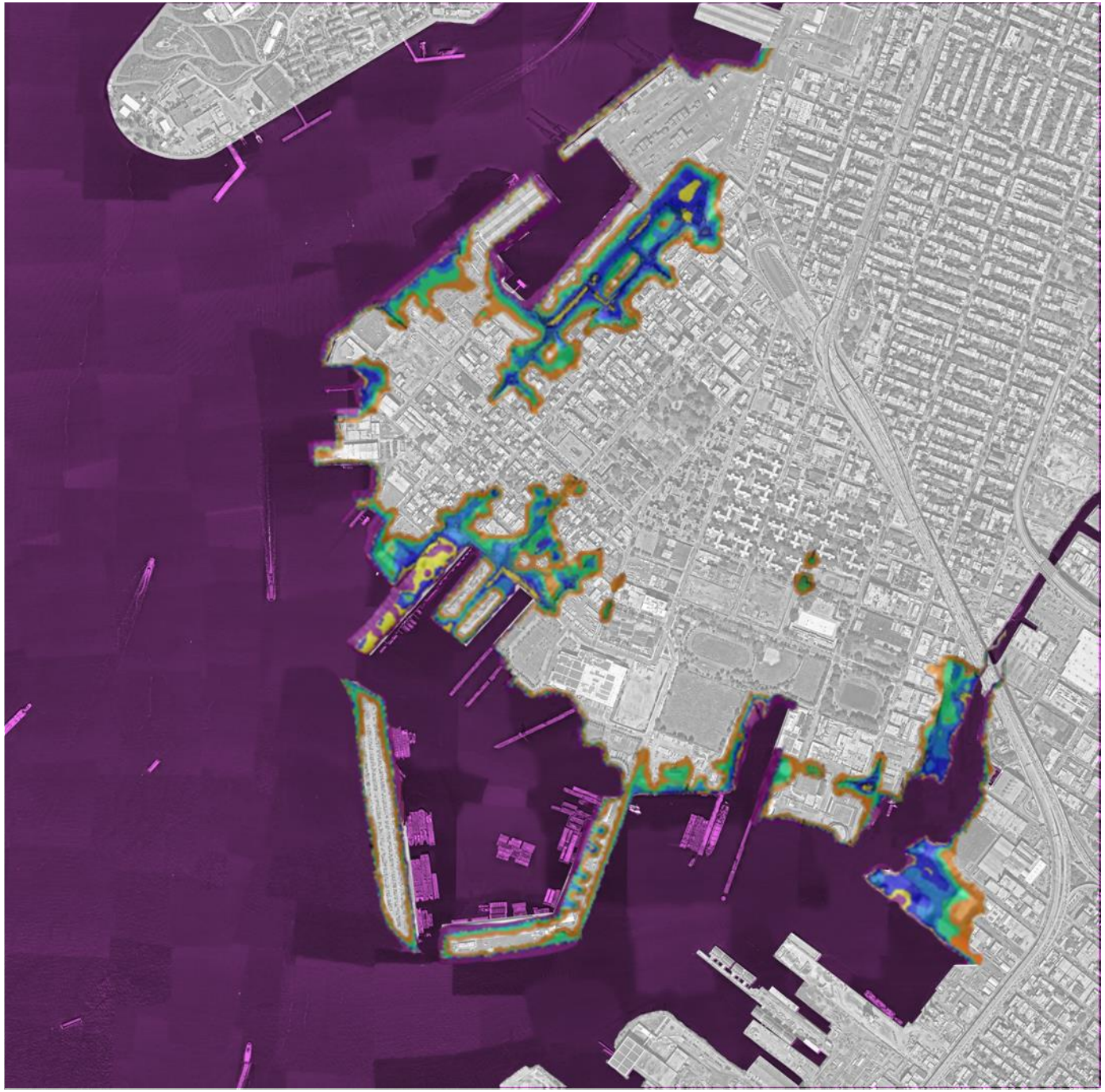
- **Waterfront Access & Neighborhood Character**
  - Public access to waterfront
  - Identity of Red Hook as a seaside community
  - Waterfront-based assets

- Drainage
- Infrastructure
- Parks/Recreation
- Coordination With Other Projects



What We've Heard

- Waterfront Access & Neighborhood Character
- Drainage
  - Street drainage
  - Combined sewer overflows
  - Localized ponding
- Infrastructure
- Parks/Recreation
- Coordination With Other Projects



What We've Heard

- Waterfront Access & Neighborhood Character
- Drainage
- Infrastructure
  - Maintain Parking where Feasible
  - Elevate Bike Lanes where possible and integrate into protection
  - Protect the neighborhood physically as much as possible
- Parks/Recreation
- Coordination With Other Projects

What We've Heard

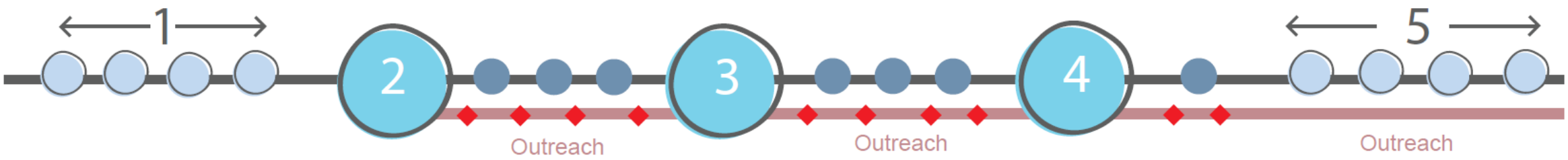
- Waterfront Access & Neighborhood Character
- Drainage
- Infrastructure
- Parks/Recreation
  - Coordinate with Parks Improvements
  - Integrate seating with views and water interventions
- Coordination With Other Projects

What We've Heard

- Waterfront Access & Neighborhood Character
- Drainage
- Infrastructure
- Parks/Recreation
- Coordination With Other Projects
  - One-on-One Meetings with Agencies
  - One-On-One Meetings with Developers
  - Continued Community Engagement

COMMUNITY ENGAGEMENT

Design Phase Timeline

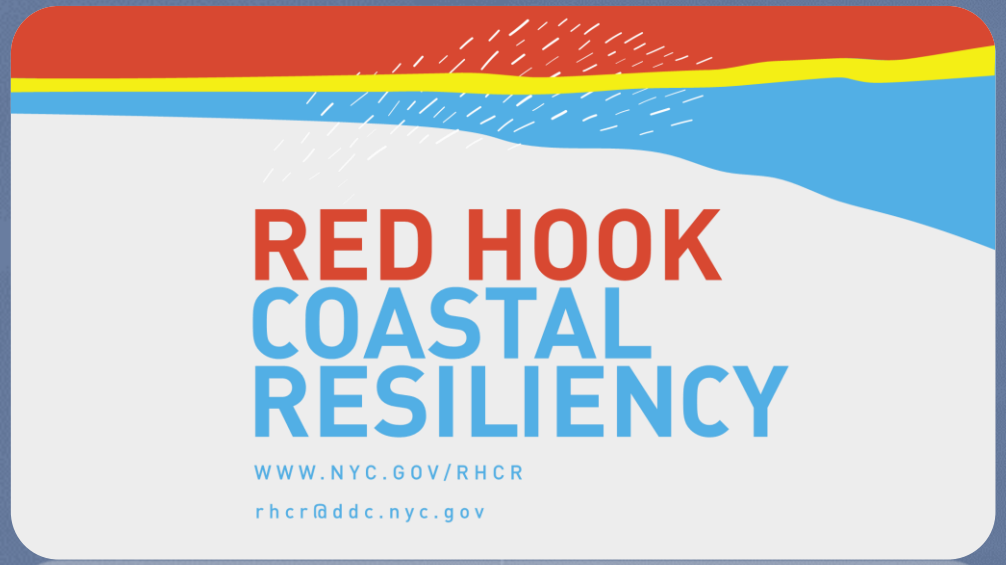


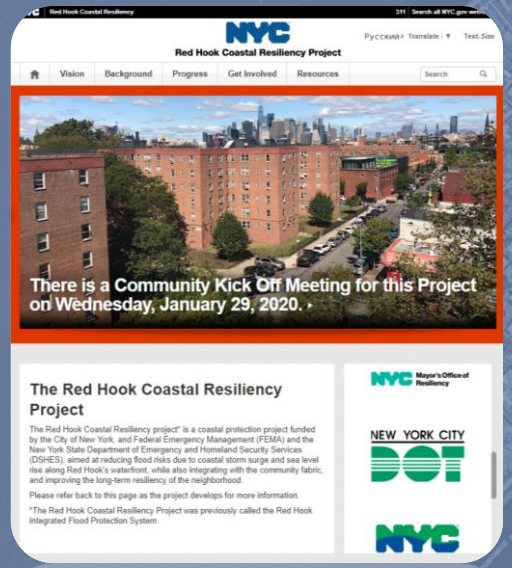
SMALL GROUP MEETINGS	COMMUNITY ENGAGEMENT KICK-OFF	COMMUNITY ENGAGEMENT DESIGN UPDATE	COMMUNITY ENGAGEMENT DESIGN UPDATE	CONTINUED ENGAGEMENT PRESENTATIONS/ DISCUSSIONS
WINTER 2019*	WINTER 2020*	SPRING 2020*	SUMMER 2020*	FALL-WINTER 2020*

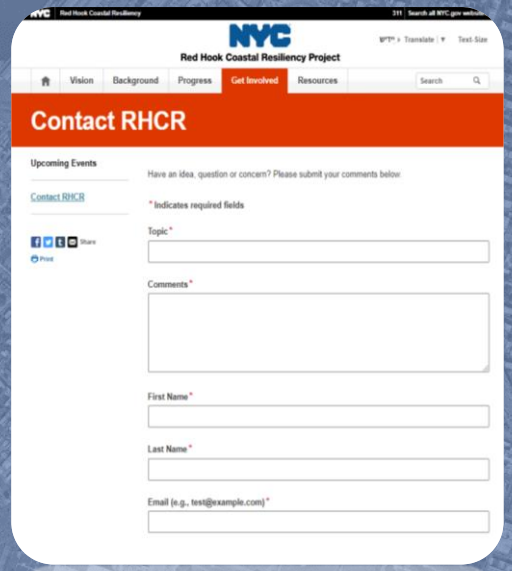
**Schedule as per January 2020*

Small Group Sessions | Large Group Gathering | Target Focus Groups | Individual Stakeholder Interviews | Outreach: Tabling/ Announcements

VISIT US







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7. QUESTIONS