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# Red Hook Coastal Resiliency (RHCR)

City Planning Commission Public Meeting  
**FOR PRESENTATION PURPOSE ONLY**

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# AGENDA

PROJECT OVERVIEW AND SCHEDULE

EXISTING CONDITIONS AND FLOOD RISK

DESIGN REVIEW

LAND USE ACTIONS

SUMMARY + NEXT STEPS

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# PROJECT OVERVIEW AND SCHEDULE

# PROJECT GOALS

Developed in conjunction with community feedback and consultation

Maintain a passive system at elevation 8-ft

Activate deployable features to reach an elevation of 10-ft

Minimal impacts to pedestrian, bike, and vehicle circulation

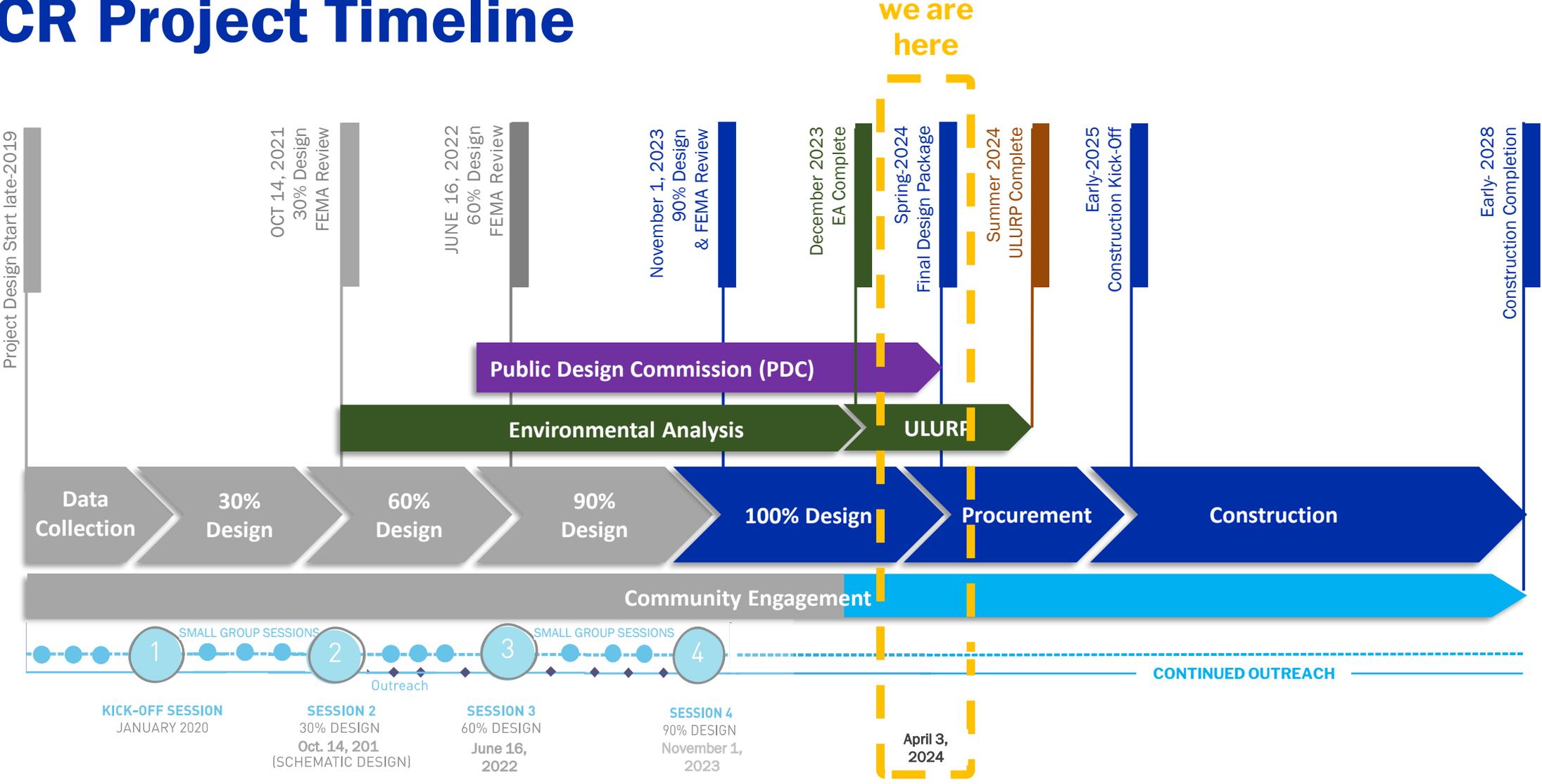
Maintain neighborhood connectivity and access to active waterfront

Enhance and incorporate the Brooklyn Waterfront Greenway

Reduce flood impacts to existing drainage system



# RHCR Project Timeline



# RHCR Community & Stakeholder Engagement

## What We've Done So Far

- 2016 – 2018** Feasibility study, four large public meetings, several focused-group meetings
- JAN 2020** Capital project kick-off meeting and recap of Feasibility Study
- JAN-MAR 2021** Introductory briefings with Elected Officials and stakeholders, including: Councilmember Menchaca, Congresswoman Velazquez, Assemblywoman Mitaynes, BK Borough President, BK CB6 District Manager, Red Hook Initiative, Resilient Red Hook, Red Hook West, Community Justice Center, MAP
- FEB-JUN 2021** Coordination meetings with private properties, including: Port Authority, O'Connell Group, Thor Equities, Amazon, UPS, IKEA
- SEP 2021** Design meetings with Elected Officials and key stakeholders, including: Councilmember Menchaca, Congresswoman Velazquez, Assemblywoman Mitaynes, BK Borough President, BK CB6 District Manager, Resilient Red Hook, Red Hook West and East, MAP
- OCT 2021** 30% Design Public Meetings / Workshops
- JAN-JUN 2022** Coordination meetings with private properties, including: Port Authority, O'Connell Group, Thor Equities, Amazon, UPS, IKEA
- JUNE 2022** 60% Design Meetings: Elected Officials, CB6, and Red Hook Community
- APR-JUN 2023** Design meetings with Elected Officials and Key Stakeholders, including: Assemblymember Mitaynes, Brooklyn Borough President Reynoso, Councilmember Aviles, Congressman Goldman, Senator Gounardes, Resilient Red Hook (RRH), Red Hook Initiative (RHI)
- OCT-NOV 2023** 90% Design Meetings: Elected Officials and Red Hook Community

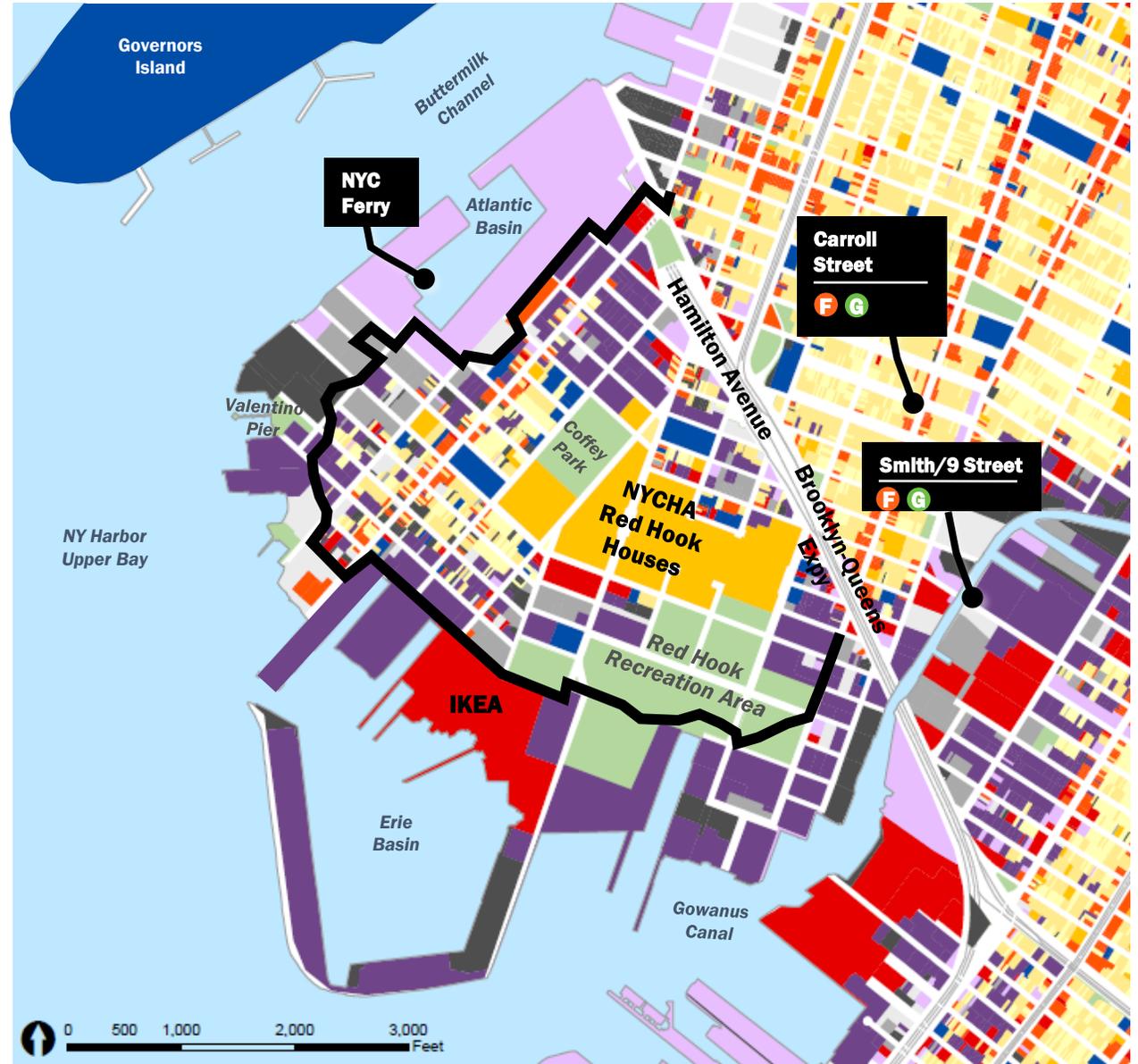


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# EXISTING CONDITIONS + FLOOD RISK

# Project Area | Land Use

- Proposed Project**
- One & Two Family
- MultiFamily Walkup
- MultiFamily Elevator
- Mixed Commercial/Residential
- Commercial/Office
- Industrial/Manufacturing
- Transportation/Utility
- Public Facilities & Institutions
- Open Space
- Parking
- Vacant Land
- No Data/Other



# Project Area | Flood Risk

-  1% Annual Chance Flood Hazard
-  0.2% Annual Chance Flood Hazard

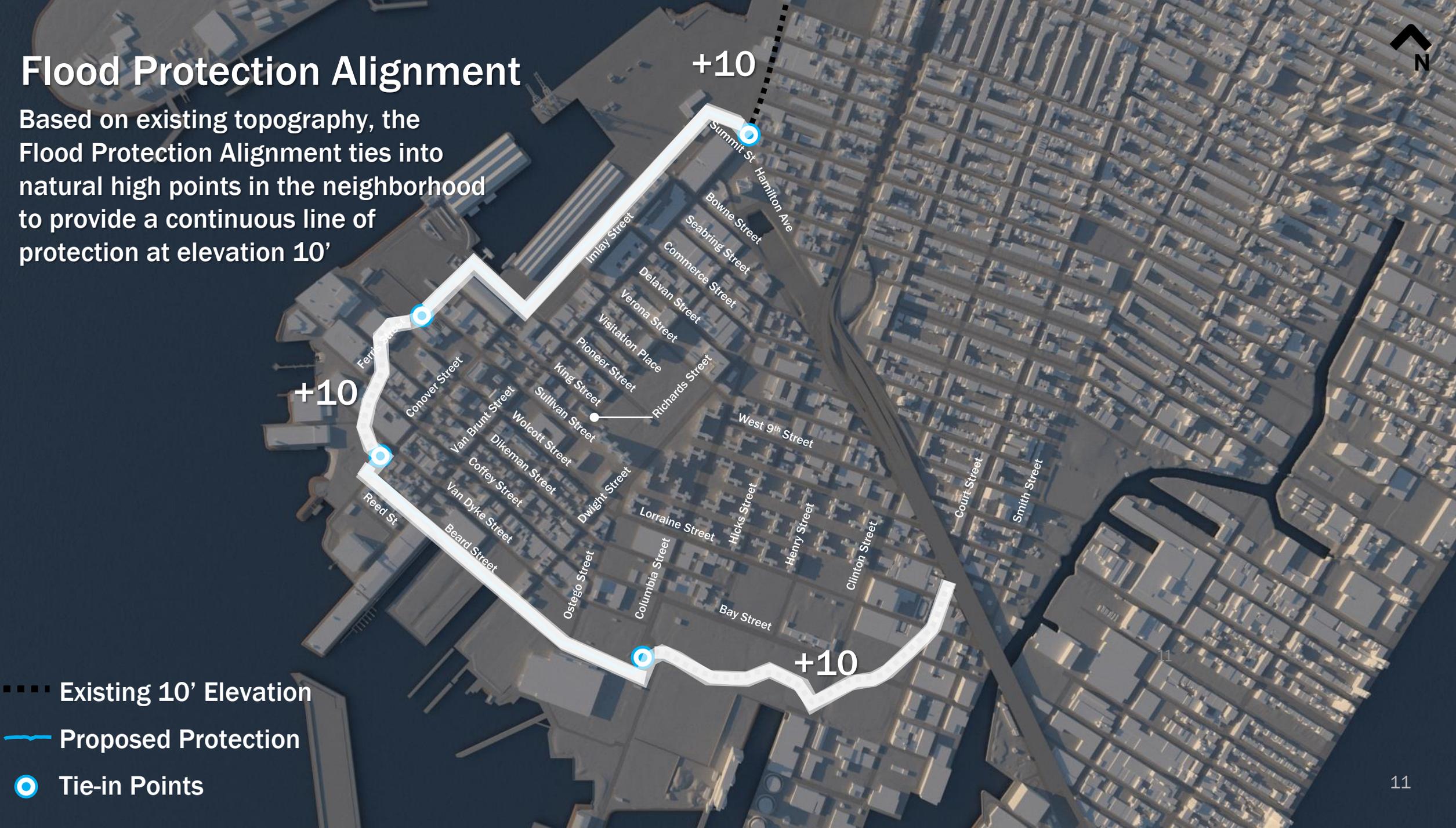


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# DESIGN REVIEW

# Flood Protection Alignment

Based on existing topography, the Flood Protection Alignment ties into natural high points in the neighborhood to provide a continuous line of protection at elevation 10'

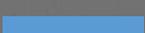


- Existing 10' Elevation
- Proposed Protection
- Tie-in Points

# Flood Protection Components

Generalized Map of Flood Protection Elements and Reconstruction Limits Along the Full Alignment of the Project

## LEGEND

-  Floodwall
-  Flip-up Gate
-  Sliding Gate
-  Sidewalk/Roadway Improvement
-  Independent Flood Protection System



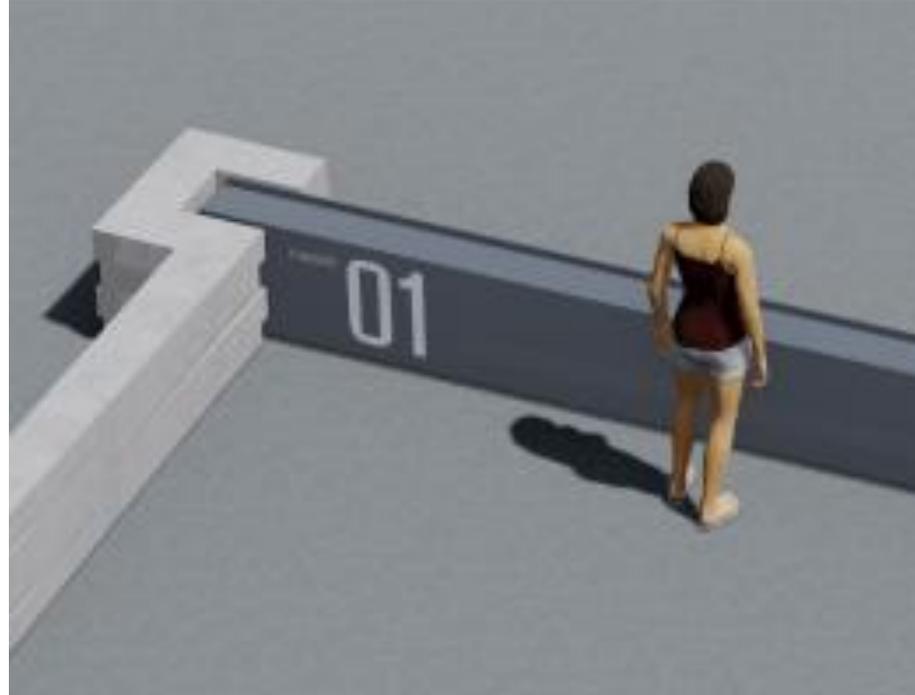
# Coastal Resiliency Design Elements



## Flood Wall —

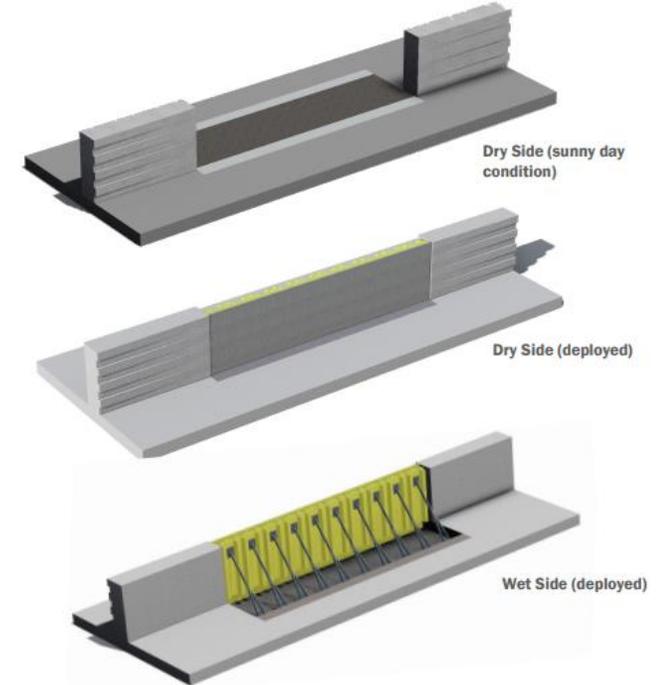
Concrete with banded pattern and published heights

Continue 4 ft. below grade and supported on pile foundations



## Roller Gate —

Grey painted steel with rounded corners and labeled numbers



## Flip-up Gate —

Alloy aluminum with stainless steel components

Hydraulically deployed or manual

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# LAND USE ACTIONS

# ULURP

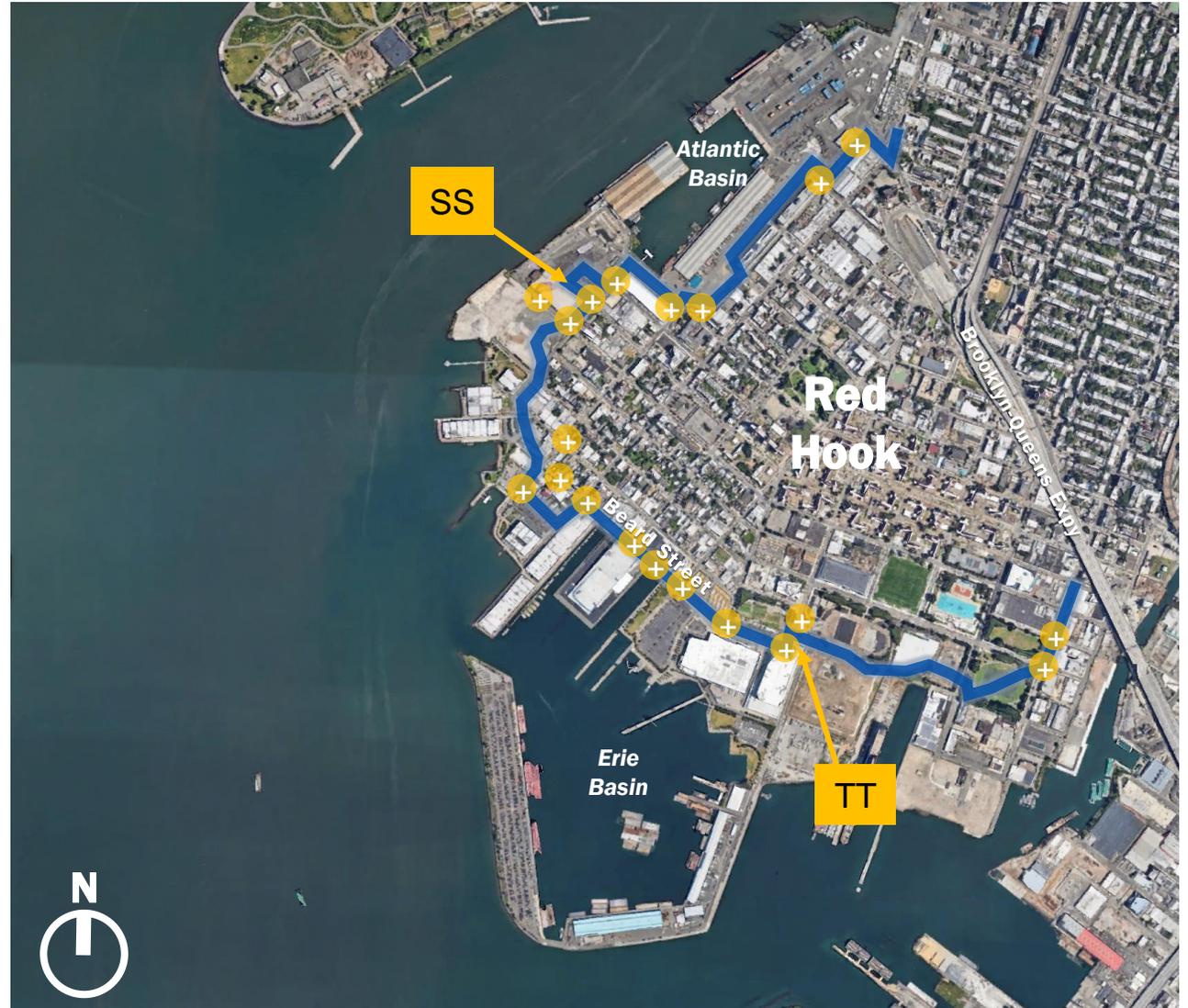
## Proposed Action - Change to City Map

**+** Changes in legal street grades

**SS** Mapping Sullivan Street west of Ferris Street

**TT** Mapping new parkland to enlarge Todd Triangle

**—** Line of Protection (approx.)



# ULURP

## Proposed Action – Acquisitions (to facilitate easements)

 Acquisitions to facilitate easements on 20 private lots, enabling the City to operate, inspect, and maintain the proposed floodwall and gates.

 Line of Protection (approx.)



# ULURP Proposed Actions | Atlantic Basin Area

MM + PQ



# ULURP Proposed Actions | Beard Street Area

MM + PQ

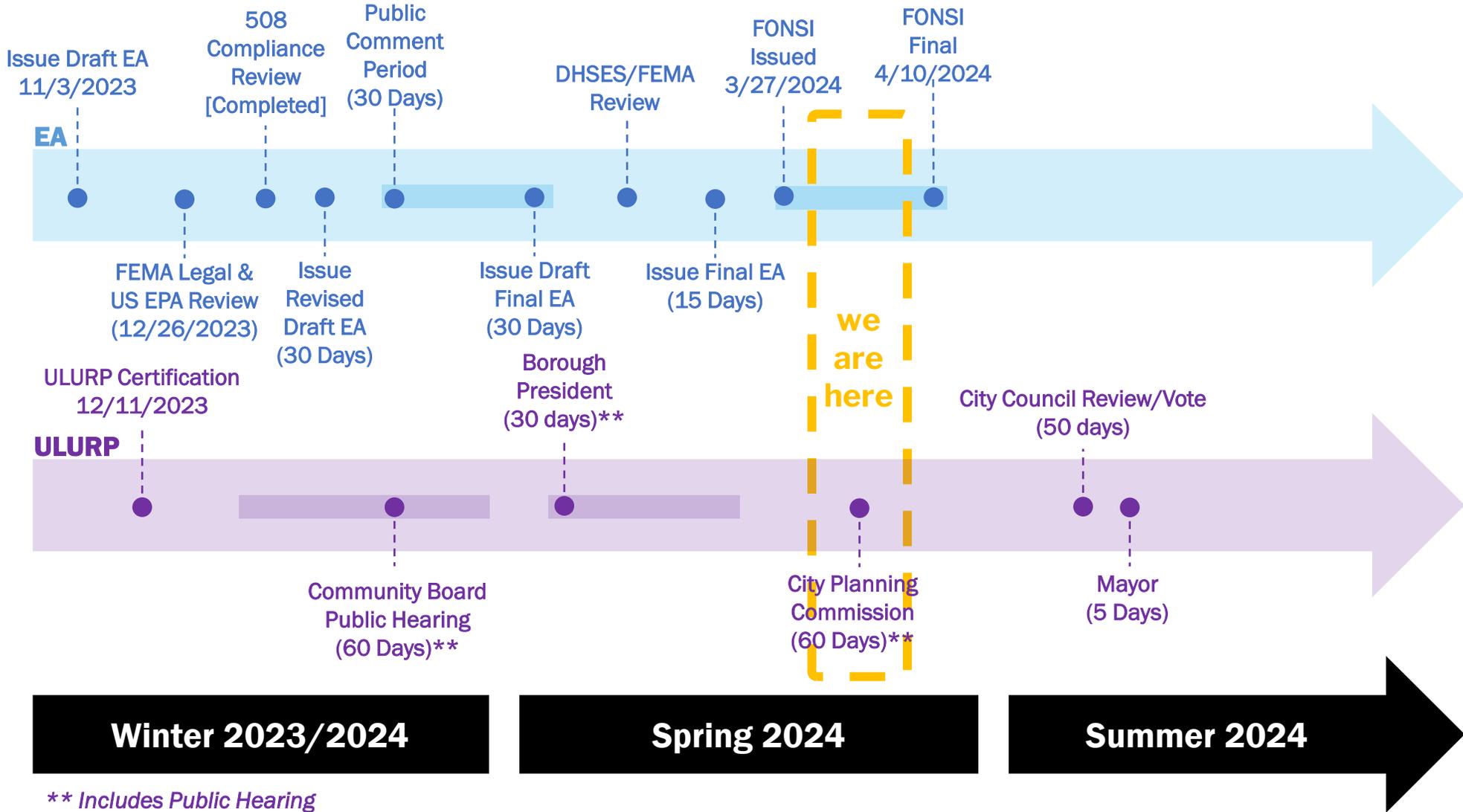


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# SUMMARY + NEXT STEPS

# NEXT STEPS

## PUBLIC INPUT TO THE EA/ULURP PROCESSES



Winter 2023/2024

Spring 2024

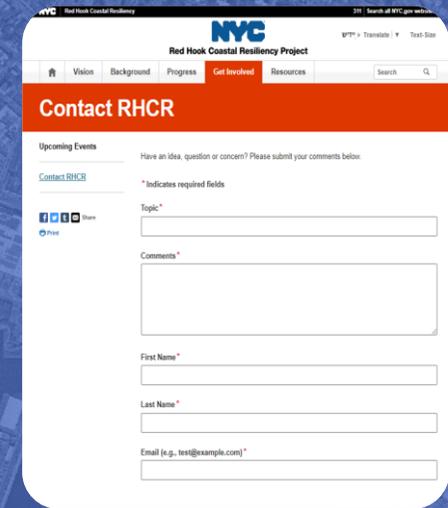
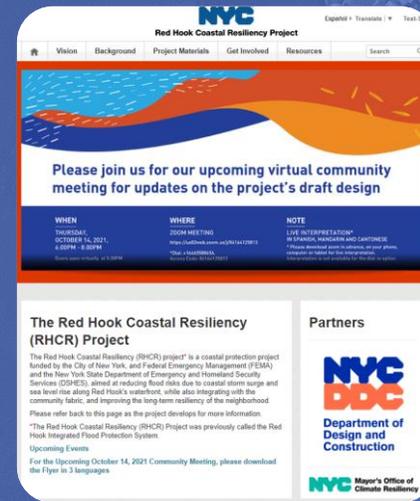
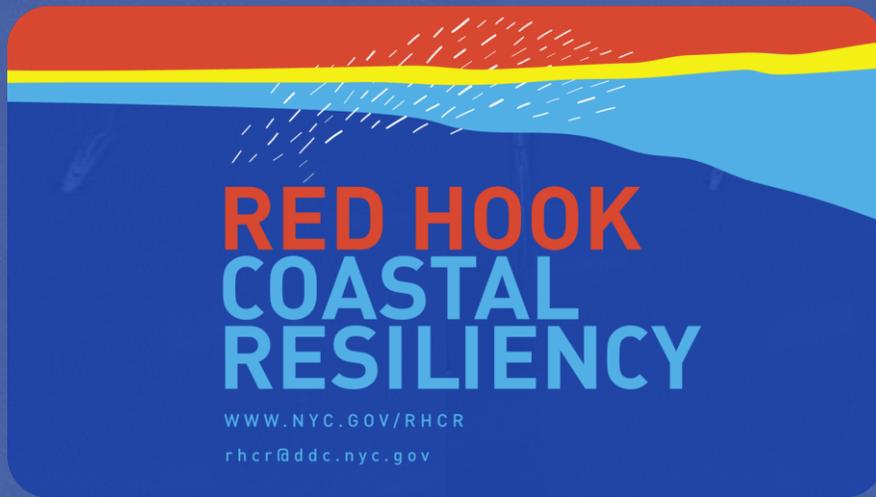
Summer 2024

\*\* Includes Public Hearing

# CONTACT US

www.nyc.gov/rhcr

rhcr@ddc.nyc.gov



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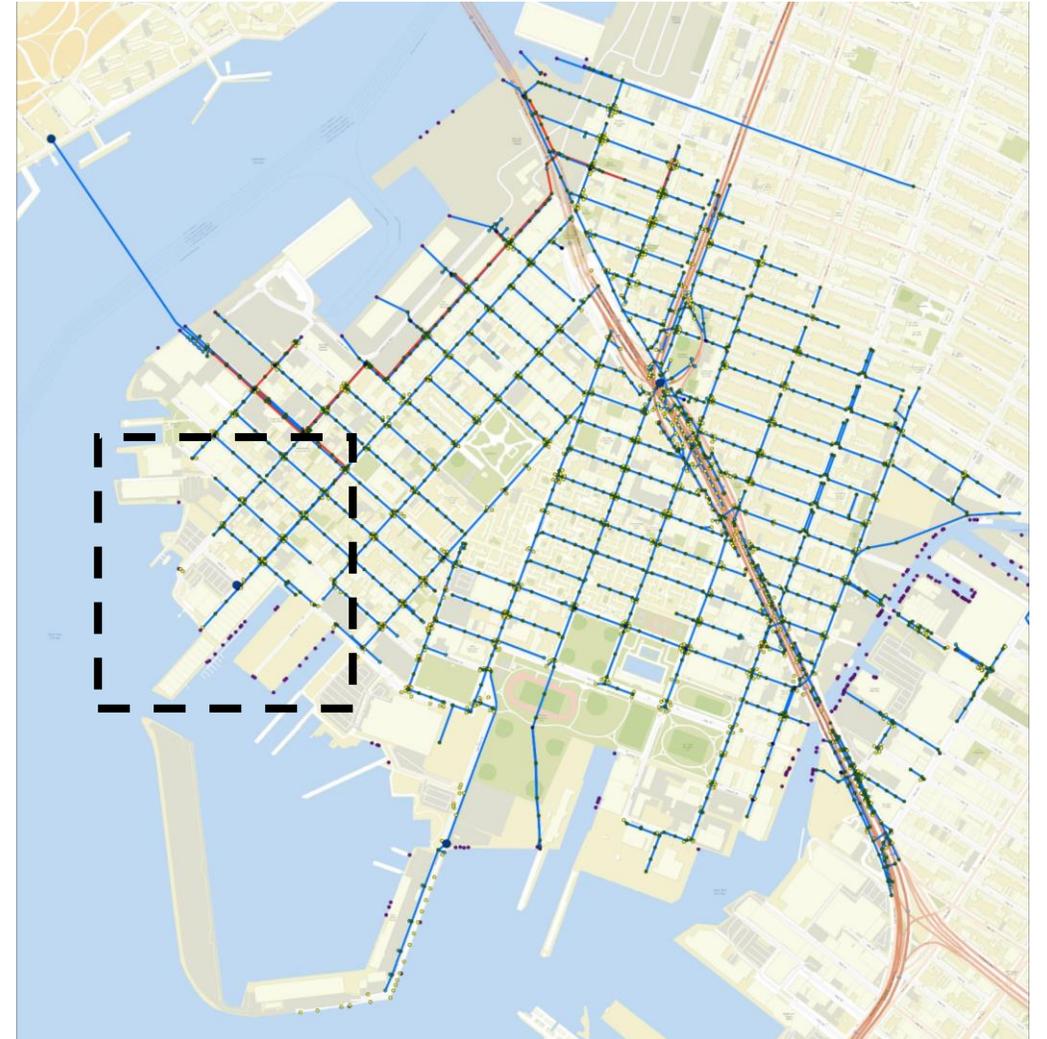
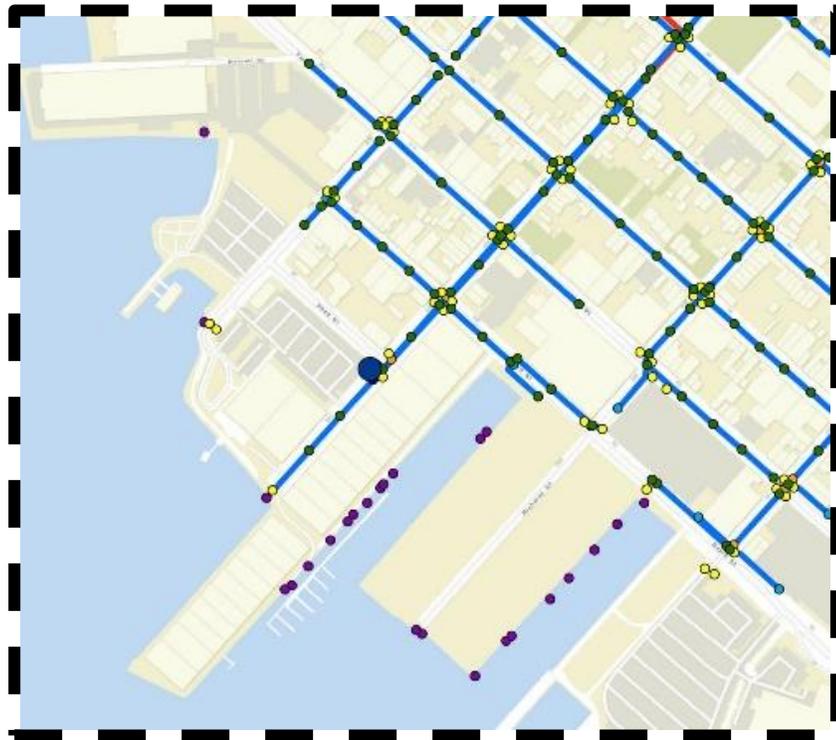
# APPENDIX

# DEP STORM/SEWER/COMBINED SYSTEM

## Map of Drainage Structures, Piping, and Outfalls

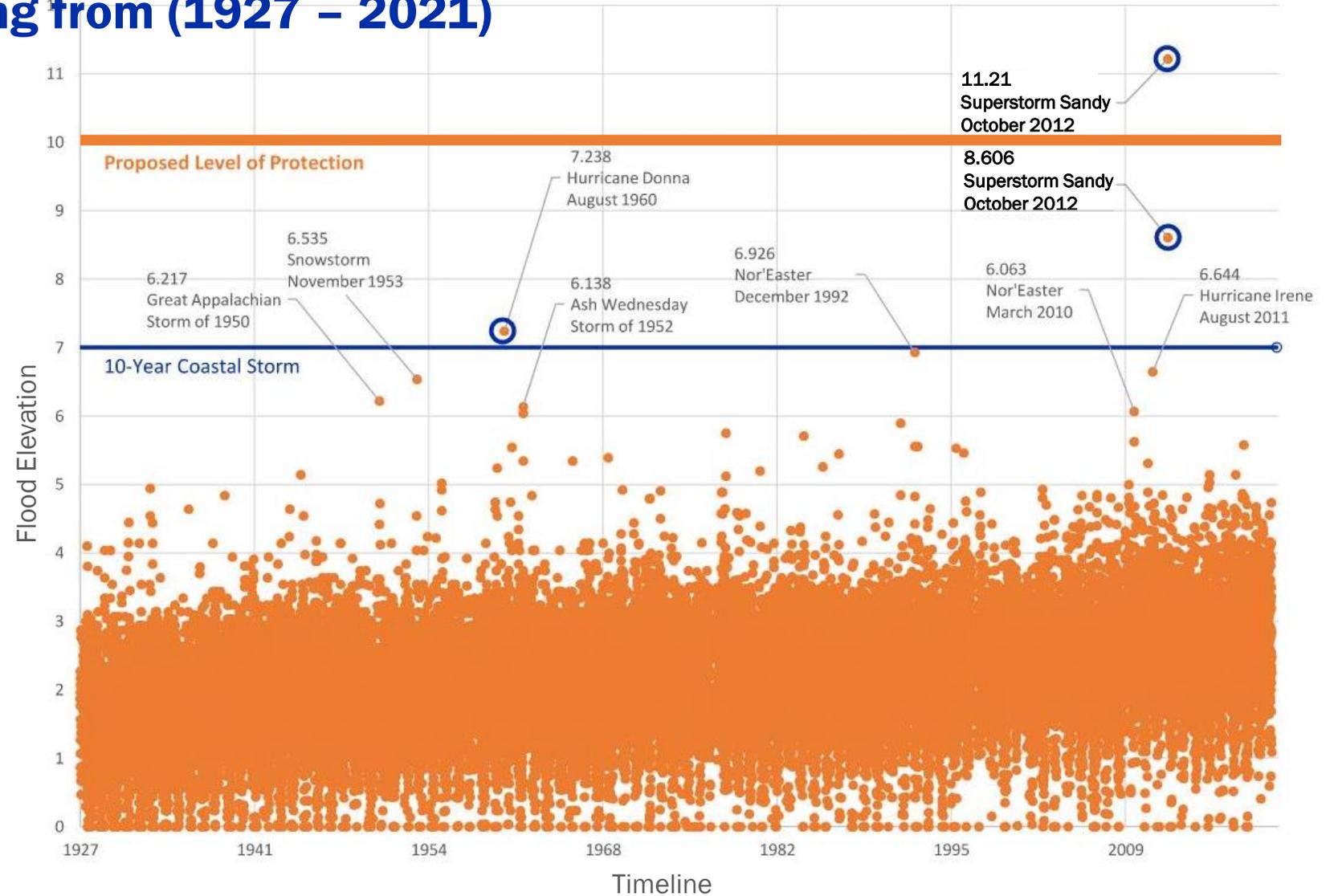
### Legend

- |                    |                              |
|--------------------|------------------------------|
| — Sewer Main       | • Other Connections          |
| — Interceptor      | • Catch Basin Connection     |
| • Pump Station     | • Inlet Structure Connection |
| • Sewer Structures | • Structural Connection      |
| • Manholes         |                              |
| • Catch Basins     |                              |
| • Outfalls         |                              |



# HISTORICAL FLOODING WITHIN RED HOOK

## 95 Years of Data, Dating from (1927 – 2021)





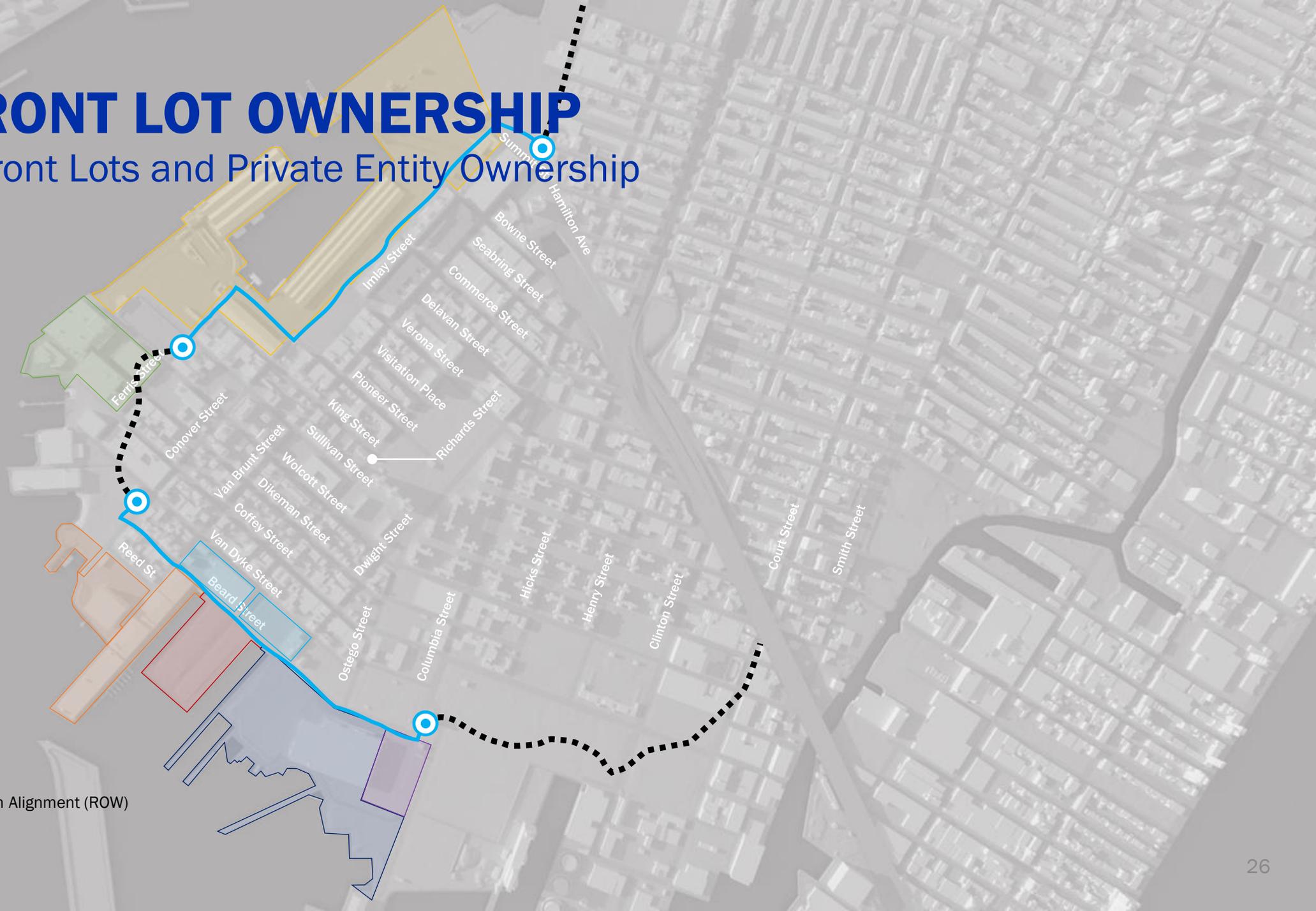
**Red Hook Flooding**  
**Existing Conditions**  
**Elev. 10-ft**



# WATERFRONT LOT OWNERSHIP

## Map of Waterfront Lots and Private Entity Ownership

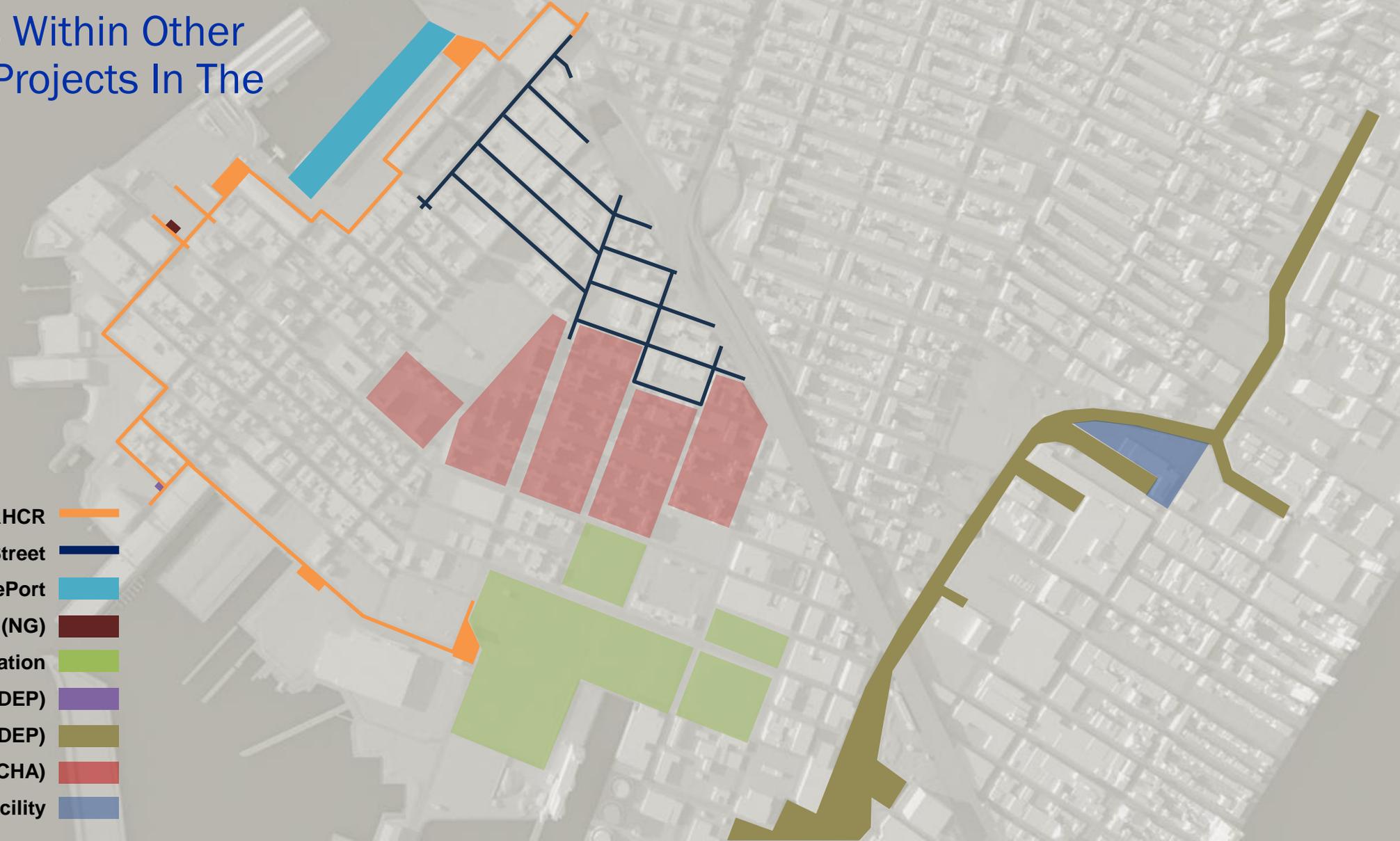
- PA NY/NJ
- UPS
- O'Connell Properties
- Thor Equities (Amazon)
- Ikea
- Goldman Sachs (Amazon)
- Other Private Owners
- 10' Contour
- Proposed 10' Flood Protection Alignment (ROW)
- Tie in Locations



# INFRASTRUCTURE INVESTMENTS IN THE NEIGHBORHOOD

How RHCR Fits Within Other Infrastructure Projects In The Neighborhood

- RHCR
- Columbia Street
- HomePort
- Substation (NG)
- Red Hook Park Ballfield Remediation
- Pump Station (DEP)
- Gowanus Superfund Site (DEP)
- Red Hook Houses Resiliency(NYCHA)
- Owls Head CSO Facility



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# WHAT HAVE WE HEARD?

## KICK-OFF SESSION JANUARY 2020

**The Recommended level of Protection, from the Feasibility Study (8-feet) is not adequate to Protect Red Hook**  
-> **Design Team went back to Drawing Boards and developed a new Flood Protection System that protects the community to 99.9% of all historical storms at Elevation 10.**

### **Red Hook Needs Better Public Transportation**

-> **The project incorporated a robust integration of the Brooklyn Waterfront Greenway (BWG) to provide an alternative form of Transportation**

### **Make sure Flood Protection is not just a Seawall**

-> **The Flood Protection System is a series of elements including raising street grades to minimize the height of the system above sidewalk elevation.**

### **Can bike lanes be considered /they should not be elevated to block the waterfront**

-> **Integration of the BWG is at Street level, and was not elevated, blocking the waterfront**

### **Considering buying the development sites like Thor+UPS to build retention ponds or restore the wetlands.**

-> **Sites were not for sale at the start of this project and Federal funding appropriated for this project was allocated for Flood Protection Systems (FPS), not property acquisition.**

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# WHAT HAVE WE HEARD?

## **30% DESIGN WORKSHOP October 2021 (30%)**

**Many Residents questions the FPS Alignment being in from the shoreline, leaving some business and residents on the ‘wet side’ of the system**

**-> This prompted an extensive alternative alignment study, however the requirements of the FEMA grant requiring inspections and M&O could not be satisfied with the FPS outside the Publicly owned R.O.W.**

**Many Residents questions were concerned with “bathtub effect” or from rising waters infiltrating the neighborhood from outfalls backing.**

**-> In conjunction with DEP we have added backflow prevention on all the outfalls that have a connection to open drainage structures within dry side of the FPS. DEP has initiated a larger study to address rainfall events and interior drainage, however this project is specifically to address coastal flooding.**

**There were a number of concerns regarding the elevation of the protection and if it could be higher than is currently proposed.**

**-> The protection was increased from 2-feet from the original feasibility study to address 99.9% of the historical storms and Sea Level Rise out 50 more years. Increasing the level of protection beyond that would start to include walls 5-feet and higher, cutting people off from the waterfront and expanding the footprint of the protection into more of the neighborhood. These alternatives were explored but ultimately, per the cost-benefit analysis requirements of the federal funding, found not feasible.**

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# WHAT HAVE WE HEARD?

## **60% DESIGN WORKSHOP (JUNE 2022)**

**Concern was expressed over the re-routing of truck routes and incorporation of one-way streets**

- > **The design of Ferris Street was changed, the proposed one-way conversion eliminated.**
- > **DOT has undertaken a neighborhood wide study on trucking as a separate project and results/recommendations of that study will be implemented as a separate future project**

**The design of Todd Triangle was questioned as an impediment to a future Halleck Street Connection**

- > **The idea raises several complexities, including issues of parkland alienation, environmental remediation, and mapping actions, all of which the Todd Triangle re-design does not impact or complicate. Until such time as this idea becomes a real project Todd Triangle offers an incredible amenity to the community**

**Mitigate the removal of existing trees and add more trees / greening of the neighborhood.**

- > **We have worked very closely with parks to revise the alignment to preserve trees. The configuration of the greenway along Beard Street from Conover to VanBrunt is a good example. In addition, the project is now planting many more trees than it is removing**

**Consider Nature based solution (permeable pavements, rain gardens, wetlands) in the design**

- > **We have worked with DEP to include BMP's within the project area. Per their guidelines we are siting a series of infiltration basins along the flood alignment to allow infiltration into the subsurface and reduce overland runoff and flooding.**

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# WHAT HAVE WE HEARD?

## **90% DESIGN WORKSHOP (NOVEMEBR 2023)**

**How is this project addressing the increased number of trucks and potential to revise the truck route through an extension of Halleck Street through Red Hook Park.**

**-> This project is focused on coastal flooding only. DOT has undertaken a neighborhood wide study on trucking as a separate project and results/recommendations of that study will be implemented as a separate future project. Nothing this project is building, including redevelopment of Todd Triangle will impede the study or potential changes to the street network to accommodate recommendations of the study**

**Many request to address/upgrade the stormwater system and flooding associated with precipitation events in this project**

**-> The project funding was specifically allocated for coastal flood protection. DEP has an independent project water and sewer Main Project currently in Design for Red Hook (see attached following slide for details)**

**Additional request to include green infrastructure/permeable surfaces**

**-> A series of infiltration basins along the flood alignment to allow infiltration into the subsurface and reduce overland runoff and flooding have been sited.**

**Historic Preservation and retaining cobblestone streets**

**-> The cobblestone roadways pose maintenance, ADA, and safety concerns and can not be retained. NYCDOT has looked at options to reuse the cobblestones but ultimately does not currently have the space to store them.**