
Red Hook Coastal Resiliency (RHCR)

Unified Land Use Review Procedure
FOR PRESENTATION PURPOSE ONLY

AGENDA

PROJECT OVERVIEW AND SCHEDULE

EXISTING CONDITIONS AND FLOOD RISK

DESIGN REVIEW

ENVIRONMENTAL REVIEW + LAND USE
ACTIONS

SUMMARY + NEXT STEPS

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

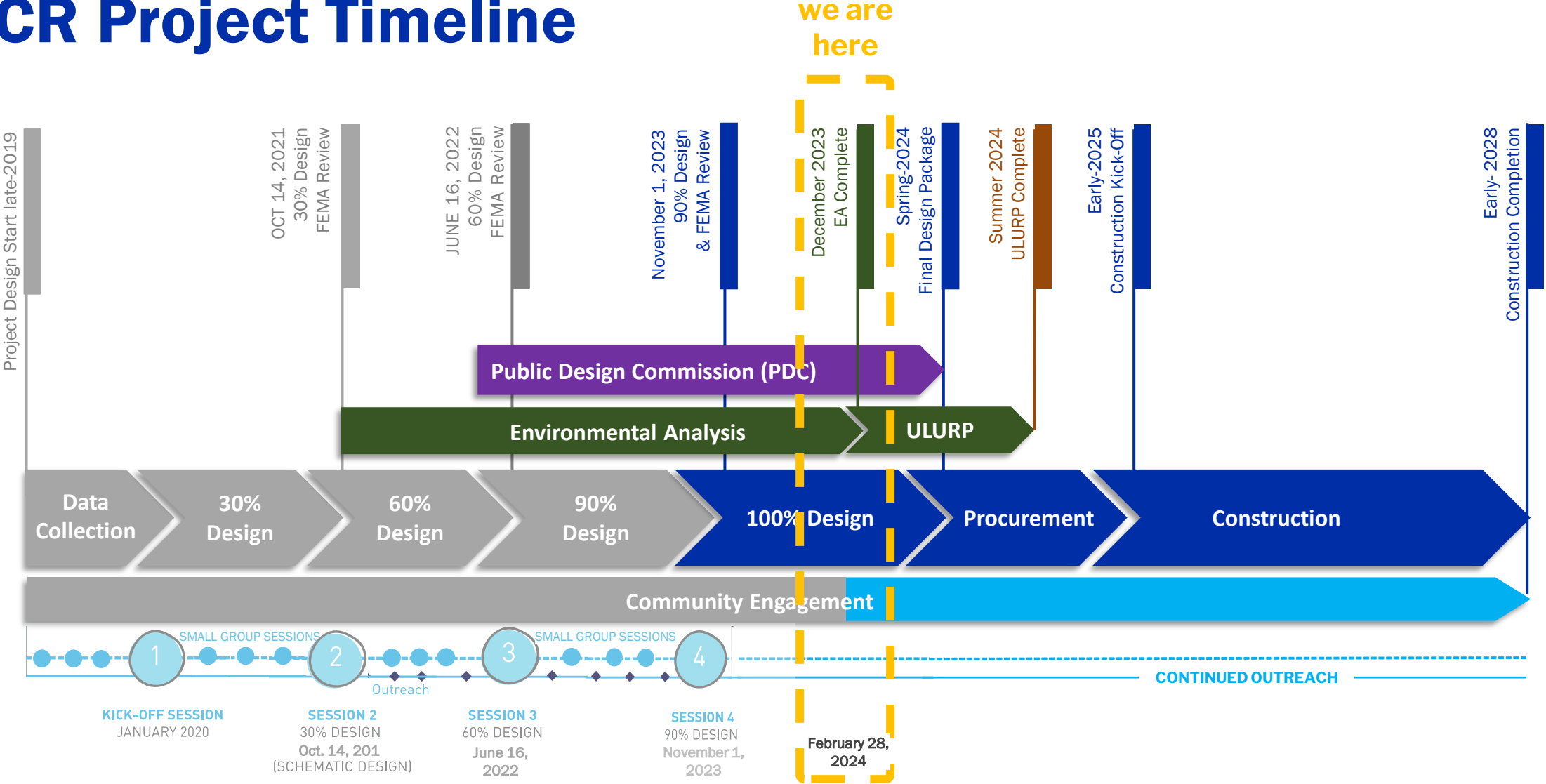
Maintain neighborhood connectivity and access to active waterfront

Enhance and incorporate the Brooklyn Waterfront Greenway

Reduce flood impacts to existing drainage system



RHCR Project Timeline



WHAT HAVE WE HEARD

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



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.**

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.

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.**

WHAT HAVE WE HEARD?

90% DESIGN WORKSHOP (NOVEMBER 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.

WHAT HAVE WE HEARD?

ADDITIONAL DETAIL ON DEP INITIATIVES

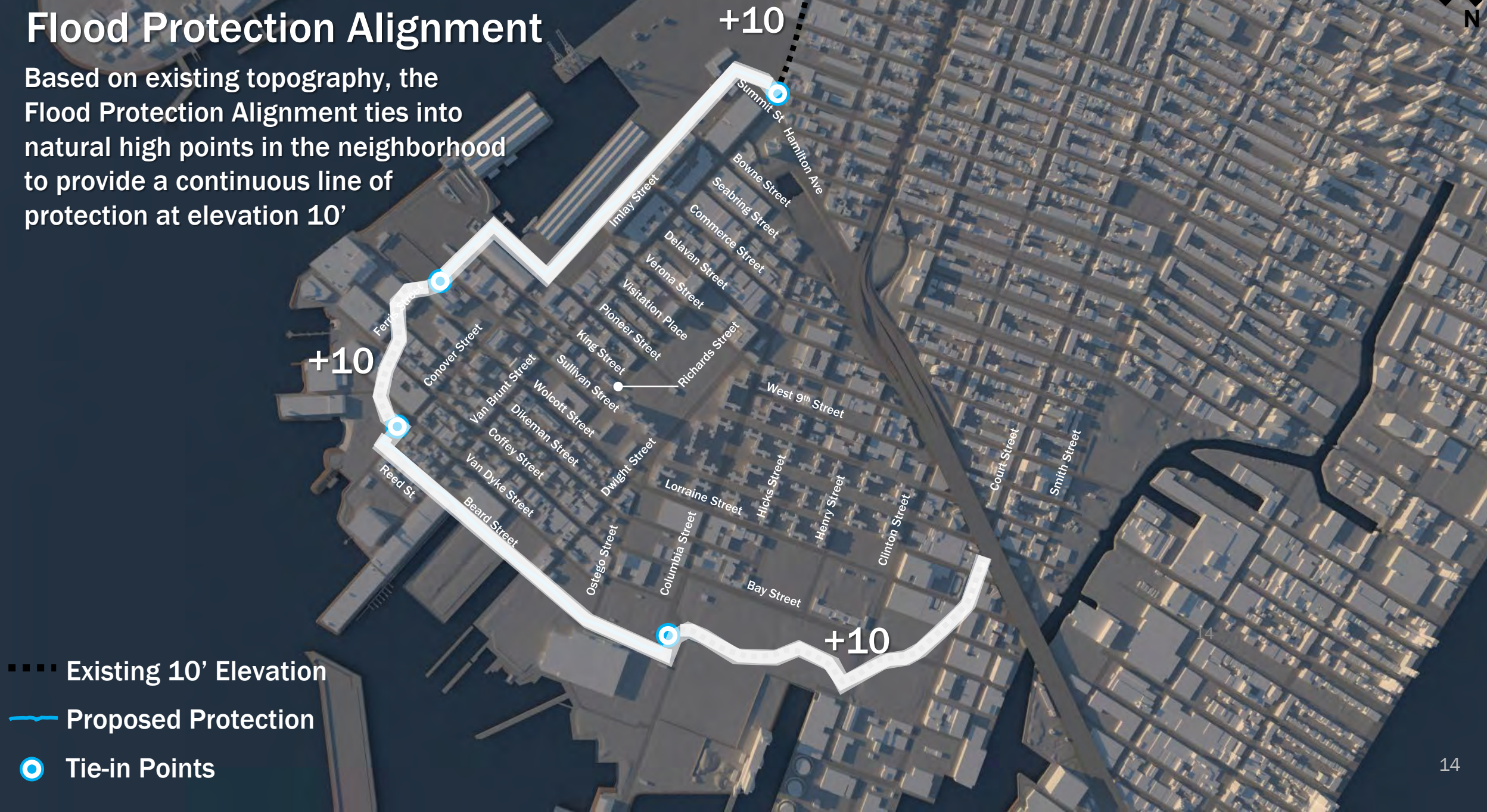
- DEP and DDC are completing designs on a second phase of sewer and watermain upgrades.
- Projected construction in 2027; \$50 million investment.
- Replaced sewers will be upsized between 20-25%.
- Increased sewer capacity will reduce sewer back ups and flooding.
- Water main upgrades will provide the community with more resilient water distribution.



EXISTING CONDITIONS + FLOOD RISK

Flood Protection Alignment

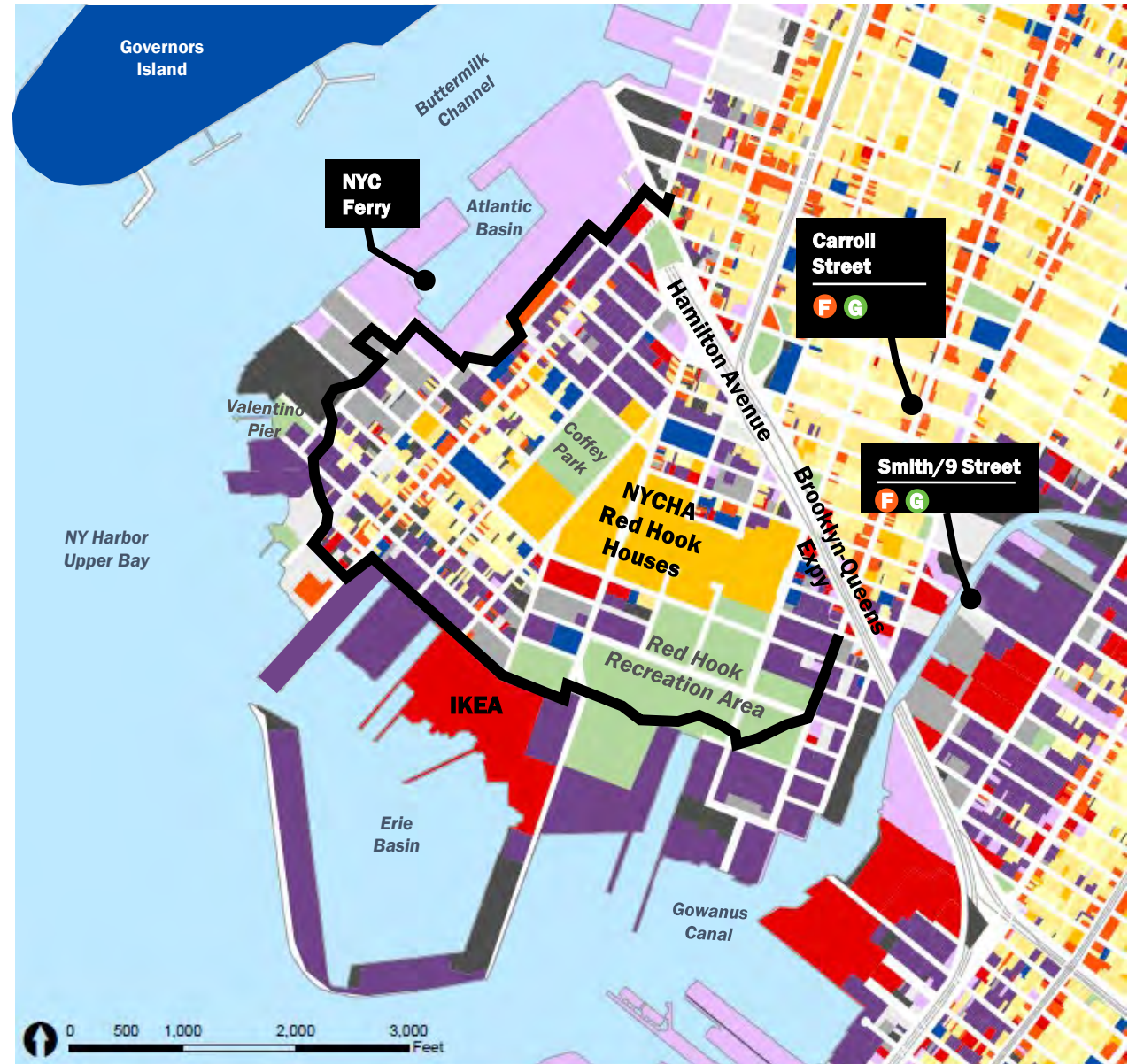
Based on existing topography, the Flood Protection Alignment ties into natural high points in the neighborhood to provide a continuous line of protection at elevation 10'



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 | Zoning

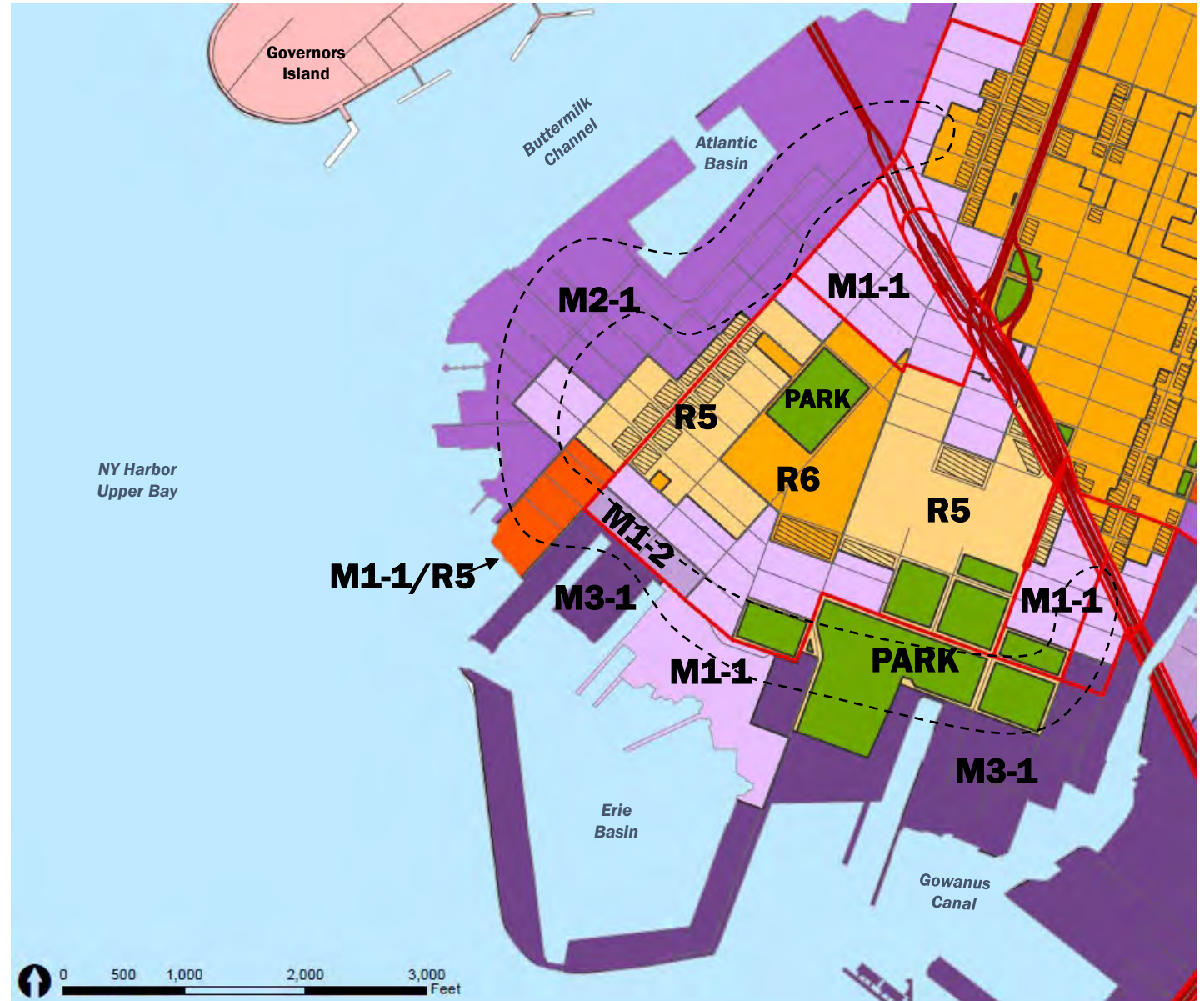
 RHCR Project Area

Zoning District

-  R5
-  R6; R6A; R6B
-  R7A
-  C4-1
-  M1-1
-  M1-1/R5; M1-4/R7-2
-  M1-2
-  M2-1; M2-3
-  M3-1
-  PARK; PLAYGROUND
-  Commercial Overlays

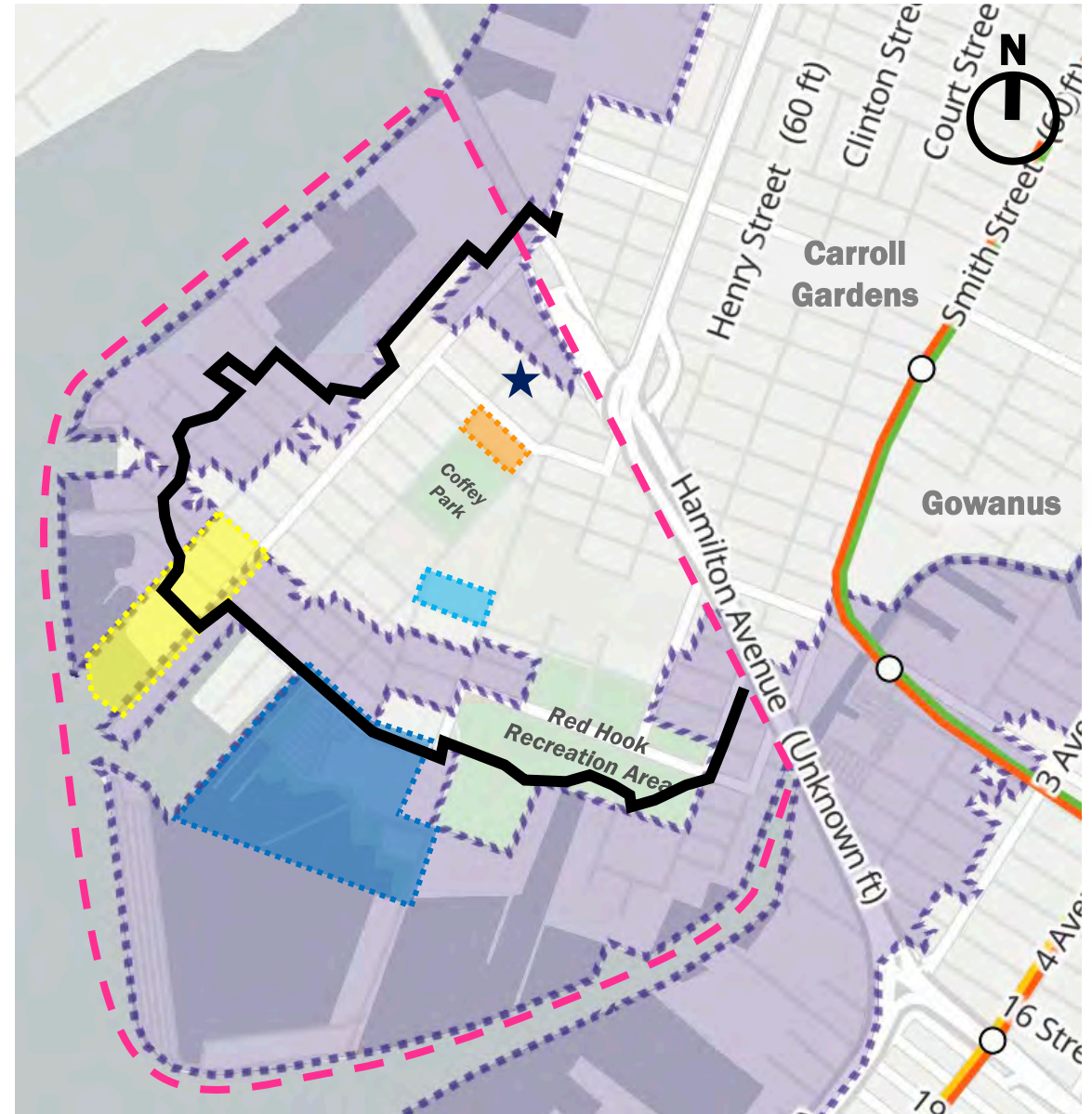
Truck Routes

-  Local Truck Route
-  Through Truck Route





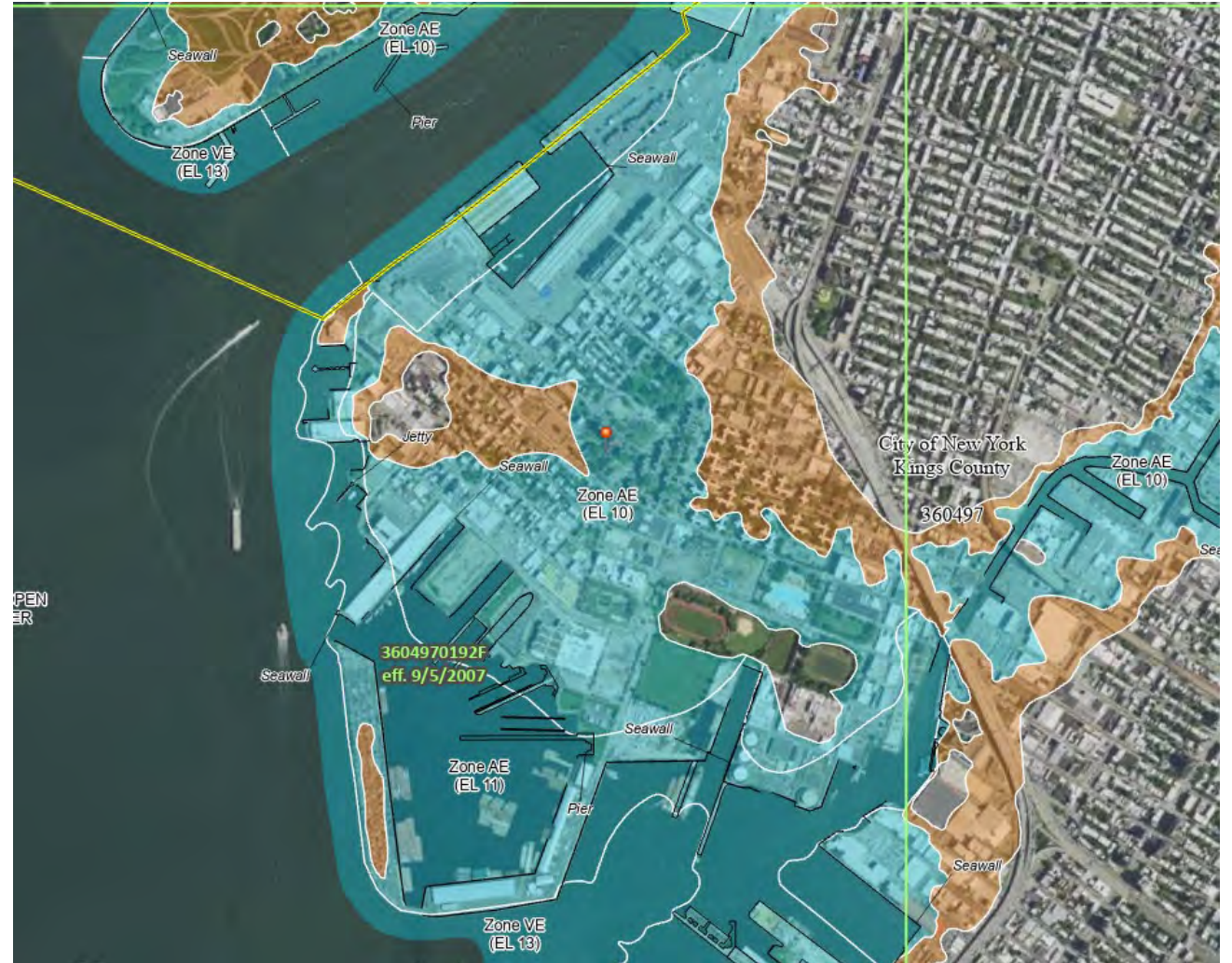
Project Area | Policy

- Proposed Project
- Big R Supermarket (1990)
- Red Hook 197a Plan (1996)
- Red Hook Stores (2002)
- Harbor Tech Rezoning (2002)
- IKEA (2004)
- Southwest Brooklyn IBZ (2006)
- ★ 41 Richards Street (in ULURP)



Project Area | Flood Risk

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



DESIGN REVIEW

Flood Protection Components

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



Coastal Resiliency Design Elements



Flood Wall —

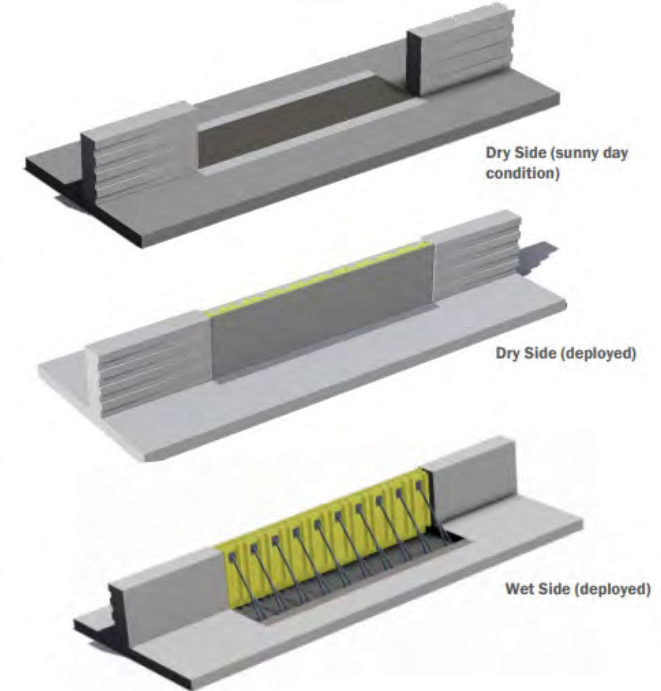
Concrete with banded pattern and published heights

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

ENVIRONMENTAL REVIEW + LAND USE ACTIONS

Environmental Review Standards

COORDINATED ENVIRONMENTAL REVIEW UNDER 3 STATUTES:

Environmental Assessment will satisfy requirements for National Environmental Policy Act (NEPA)

- Consultations and technical analyses required for the EA were performed to also comply with State Environmental Quality Review Act (SEQRA)
- Tasks for the City Environmental Quality Review (CEQR) were performed concurrently with preparation of EA documents

LEAD AGENCIES:

Environmental review coordinated by head agencies, with cooperating, involved and interested Federal, State and City agencies

- NEPA – Federal Emergency Management Agency (FEMA)
- SEQRA/CEQR – Office of the Mayor of the City of New York

ULURP

Proposed Actions

 **City Map Changes | MM**

 **Acquisitions | PQ**

 **Line of Protection (approx.)**

MM + PQ



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



SUMMARY + NEXT STEPS

Summary

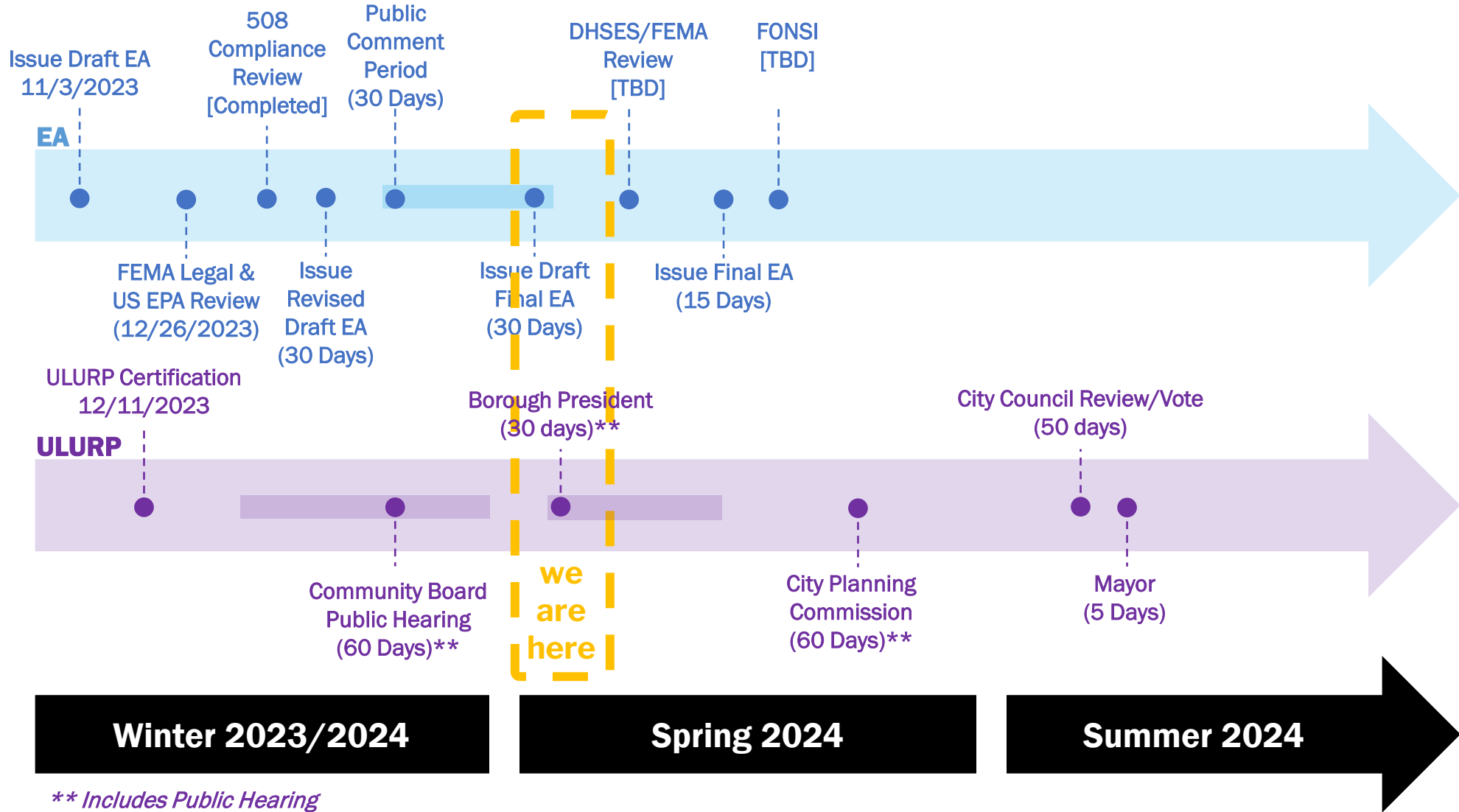
Red Hook Coastal Resiliency

- Maintain a passive system at elevation 8-ft
- Activate deployable features to reach an elevation of 10-ft
- System of floodwalls, raised street grades, deployable flood gates, and supporting infrastructure ties into existing topographic high points and takes advantage of public right-of-way
- Minimal impact on waterfront views, access, and maritime industrial uses
- Expansion of the Brooklyn Waterfront Greenway and other streetscape, green infrastructure, and drainage improvements



NEXT STEPS

PUBLIC INPUT TO THE EA/ULURP PROCESSES

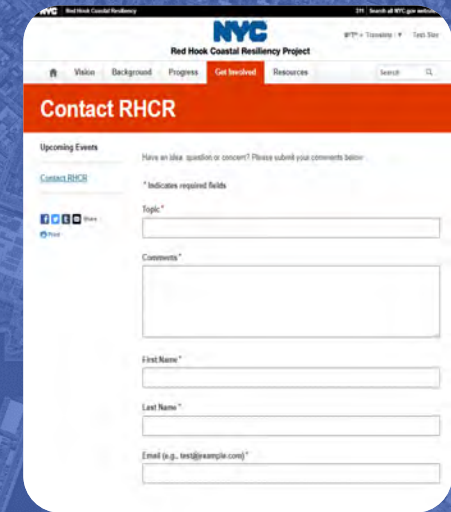
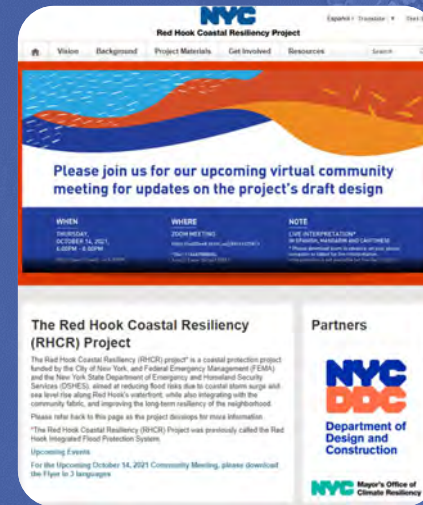
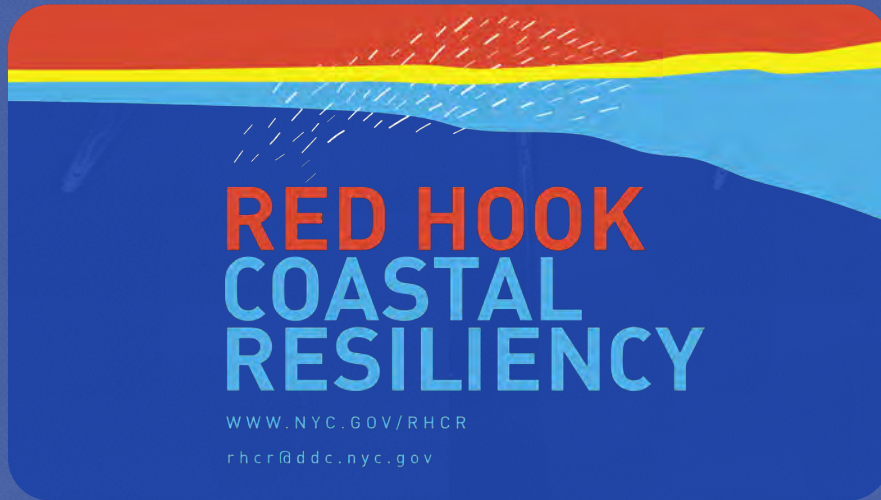


** Includes Public Hearing

CONTACT US

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rhcr@ddc.nyc.gov



APPENDIX

1

Summit, Imlay and Van Brunt Street

INTERIM
FLOOD
PROTECTION



Existing

BROOKLYN
WATERFRONT
GREENWAY

1

Summit, Imlay and Van Brunt Street



FLOOD WALL

RE-GRADE YARD ENTRANCE

BROOKLYN WATERFRONT GREENWAY

Proposed

2 Imlay and Bowne Streets

BROOKLYN WATERFRONT GREENWAY

NEW RAMP TO BROOKLYN CRUISE TERMINAL

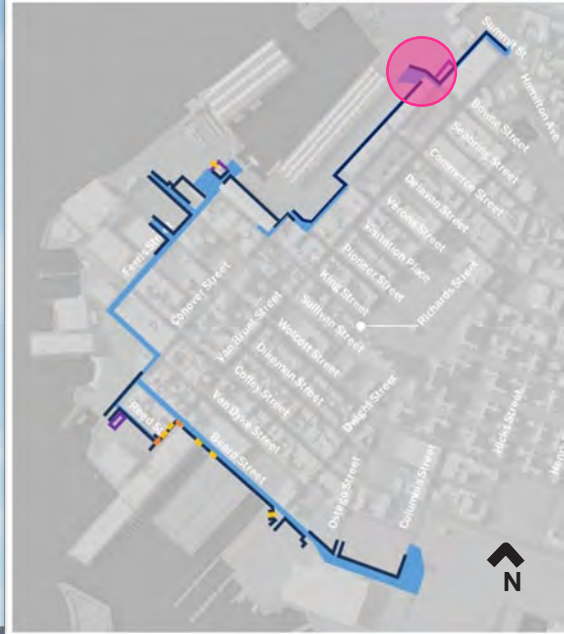
Existing



2 Imlay and Bowne Streets

**NEW RAMP TO
BROOKLYN CRUISE
TERMINAL**

**NEW FLOOD
PROTECTION WALL**



3 Imlay and Pioneer Streets

INTERIM FLOOD PROTECTION

BROOKLYN WATERFRONT GREENWAY

ENTRANCE TO FERRY TERMINAL

Existing



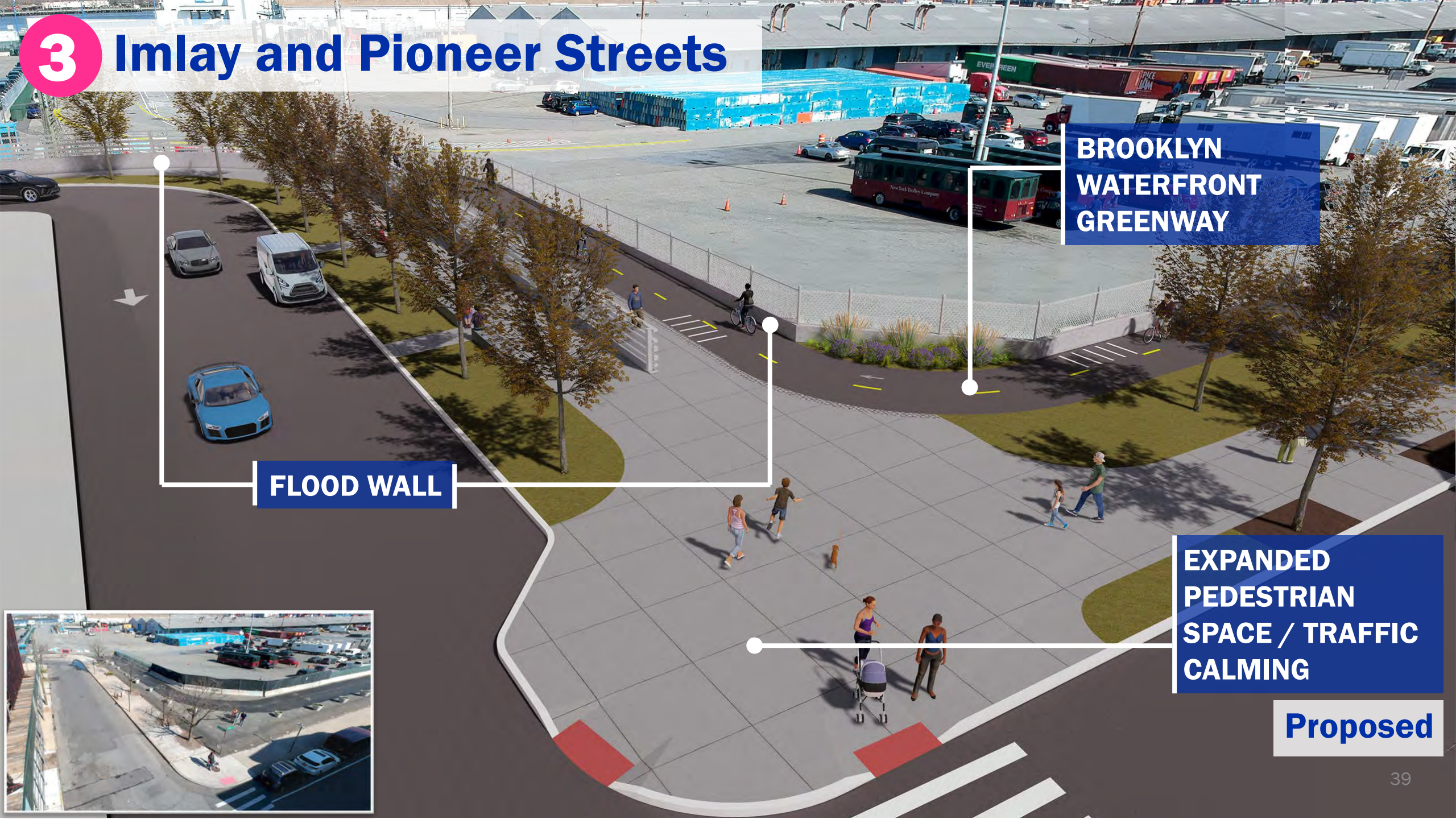
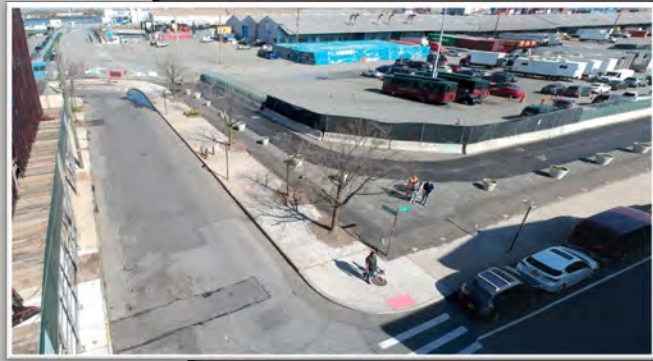
3 Imlay and Pioneer Streets

**BROOKLYN
WATERFRONT
GREENWAY**

FLOOD WALL

**EXPANDED
PEDESTRIAN
SPACE / TRAFFIC
CALMING**

Proposed



4 Pioneer and Conover Streets

**BROOKLYN
WATERFRONT
GREENWAY**

**INTERIM FLOOD
PROTECTION**

**ENTRANCE TO
FERRY
TERMINAL**

Existing



4 Pioneer and Conover Streets

**BROOKLYN
WATERFRONT
GREENWAY**

FLOOD WALL

**FLOOD
WALL**

Proposed



5 Clinton Wharf and Ferris Street

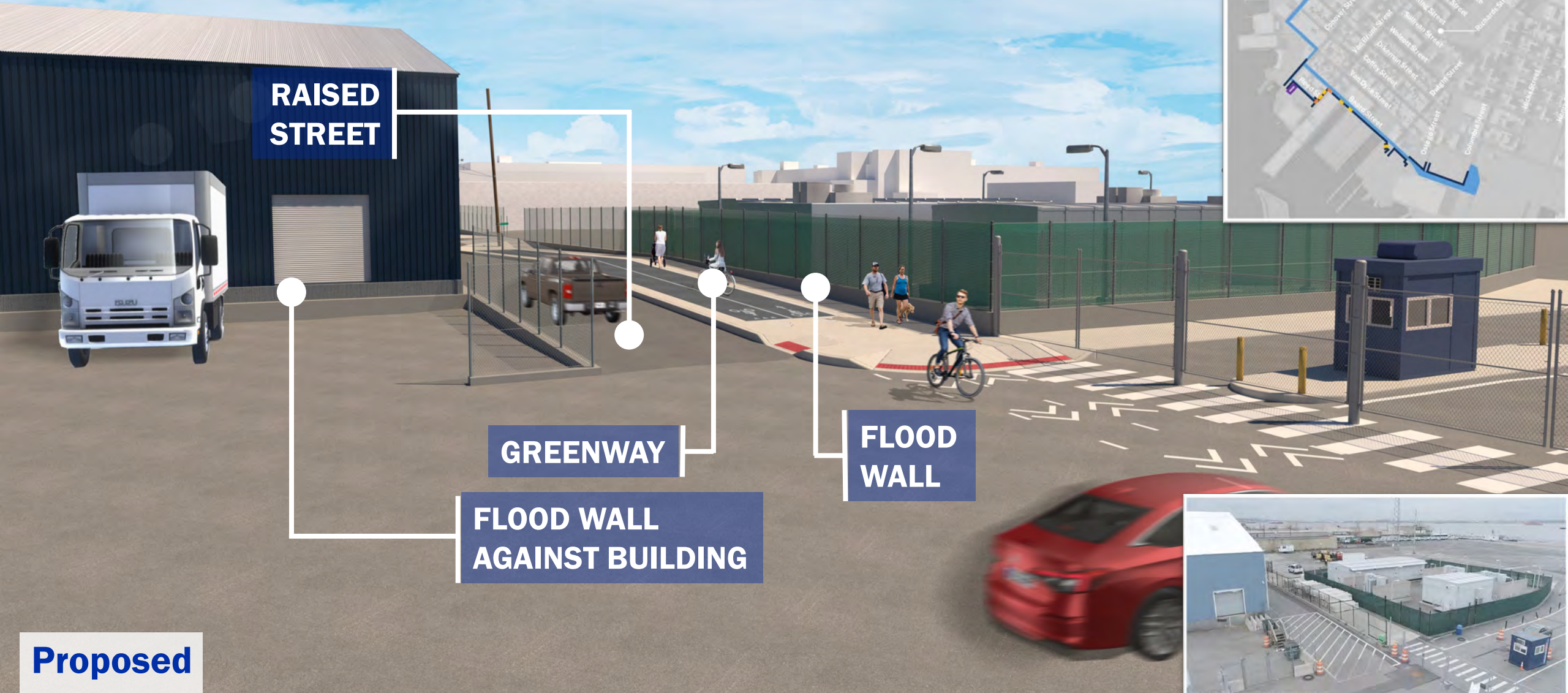


SIDEWALK NOT ACCESSIBLE / NO GREENWAY

BROOKLYN CRUISE TERMINAL

Existing

5 Clinton Wharf and Ferris Street



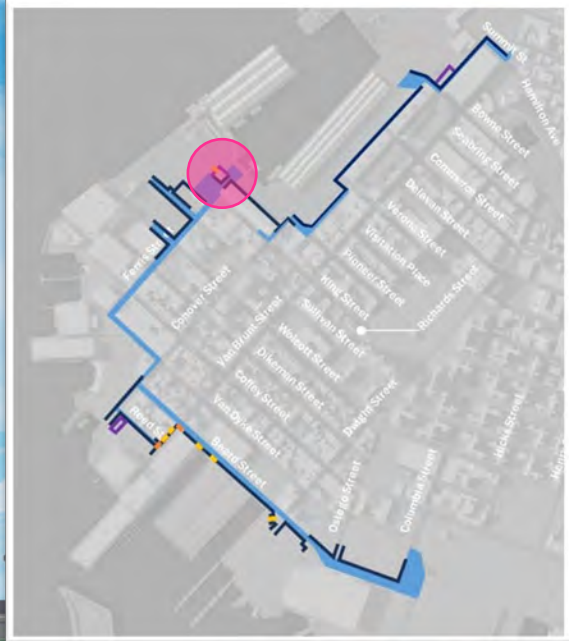
RAISED STREET

GREENWAY

FLOOD WALL AGAINST BUILDING

FLOOD WALL

Proposed



6 Ferris Street

INTERIM FLOOD PROTECTION

NARROW NON ADA COMPLIANT SIDEWALKS / NO GREENWAY



Existing

6 Ferris Street

FLOOD WALL AGAINST BUILDING

STREET REGRADING

BROOKLYN WATERFRONT GREENWAY

Proposed



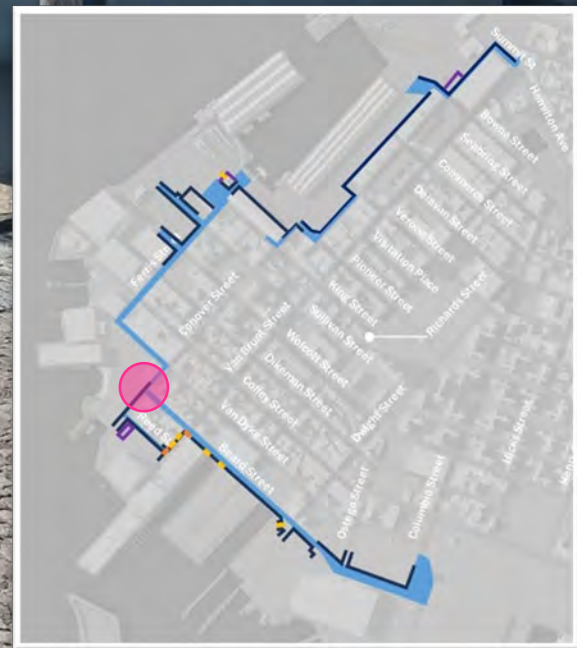
7 Beard and Conover Streets



**NARROW NON
ADA COMPLIANT
SIDEWALKS / NO
GREENWAY**

**POORLY GRADED
/ PRONE TO
PONDING
PAVEMENT**

Existing

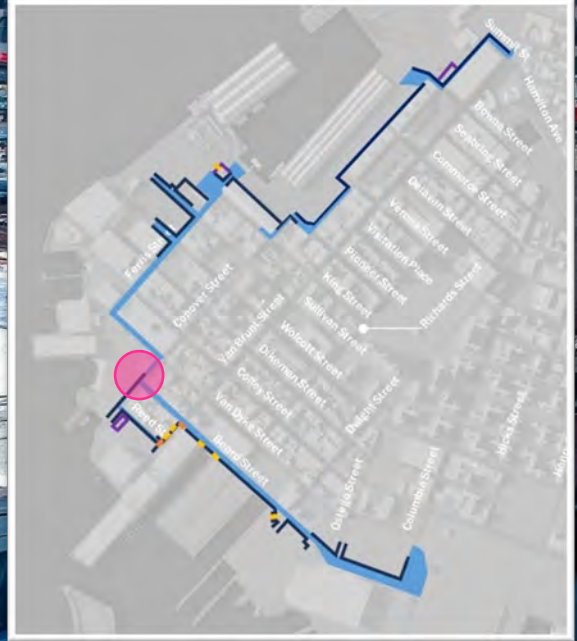


7 Beard and Conover Streets

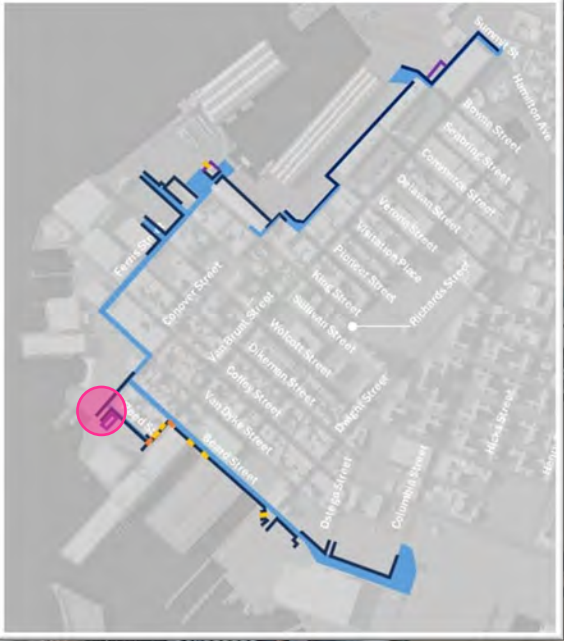


**BROOKLYN
WATERFRONT
GREENWAY**

Proposed



8 Reed and Conover Streets



Existing

8 Reed and Conover Streets

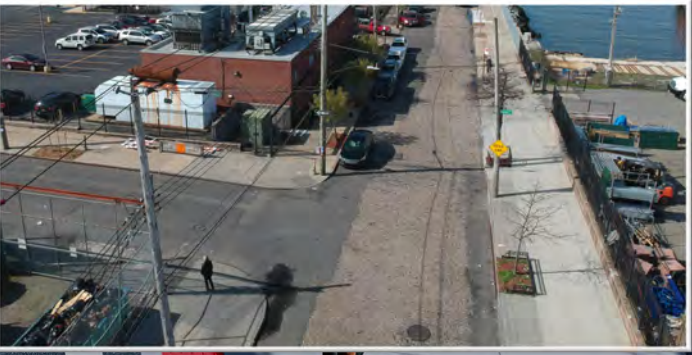
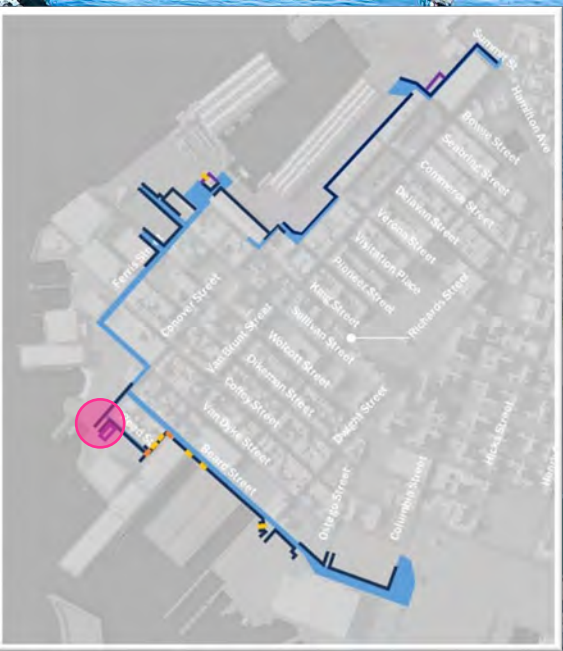


FLOOD WALL

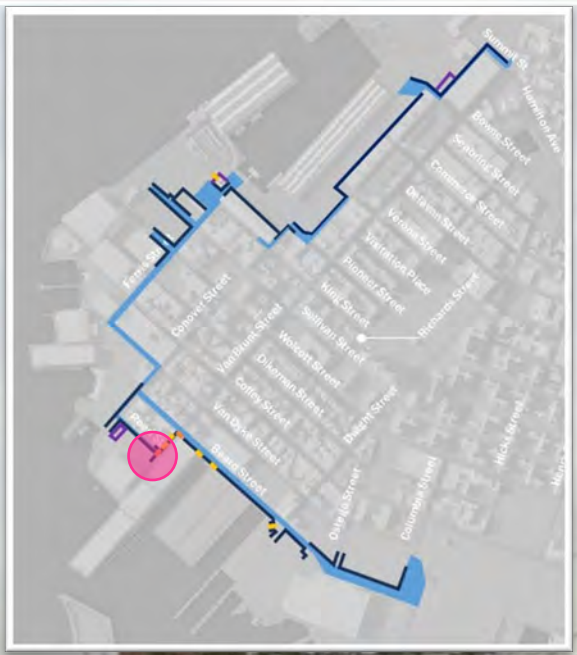
RAISED CROSSWALK

FLOOD WALL

Proposed



9 Van Brunt and Reed Streets



Existing

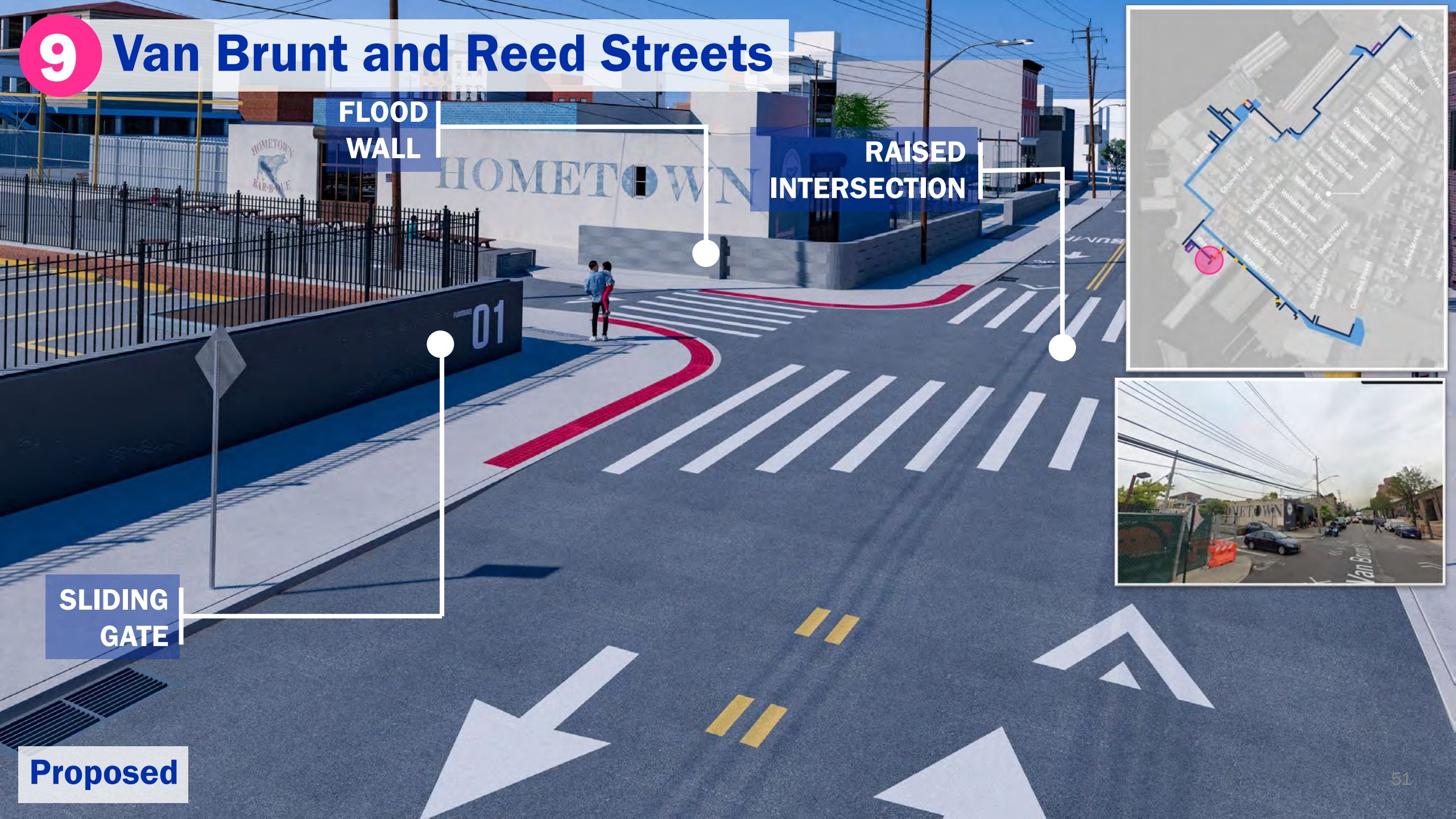
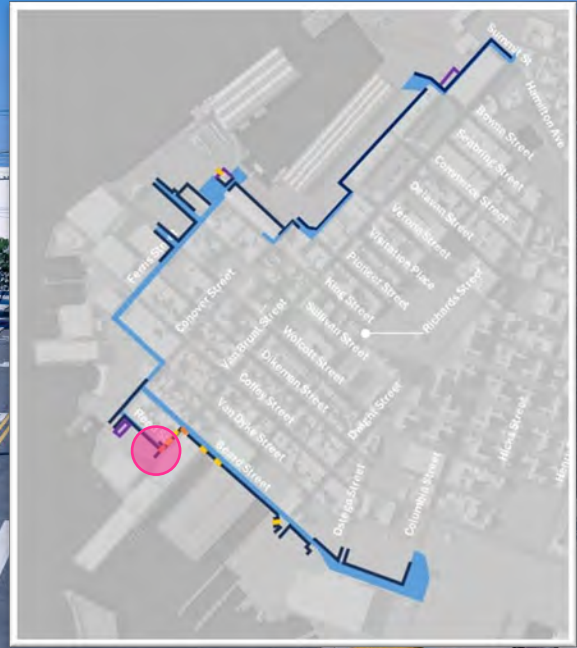
9 Van Brunt and Reed Streets

FLOOD WALL

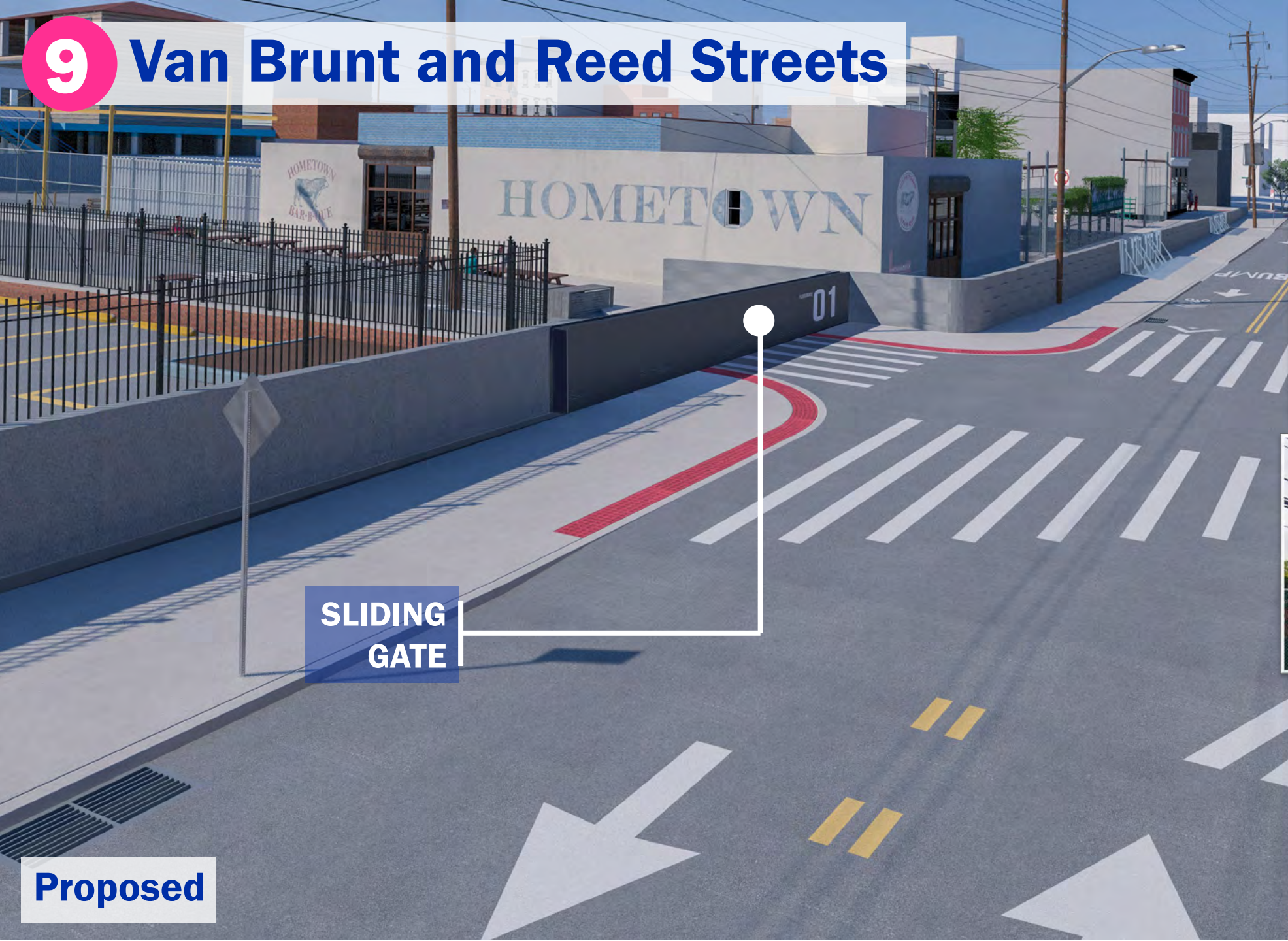
RAISED INTERSECTION

SLIDING GATE

Proposed

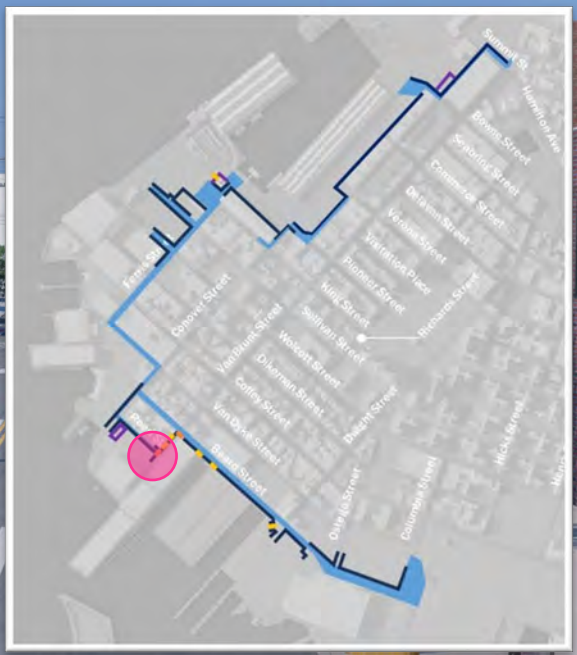


9 Van Brunt and Reed Streets



SLIDING
GATE

Proposed

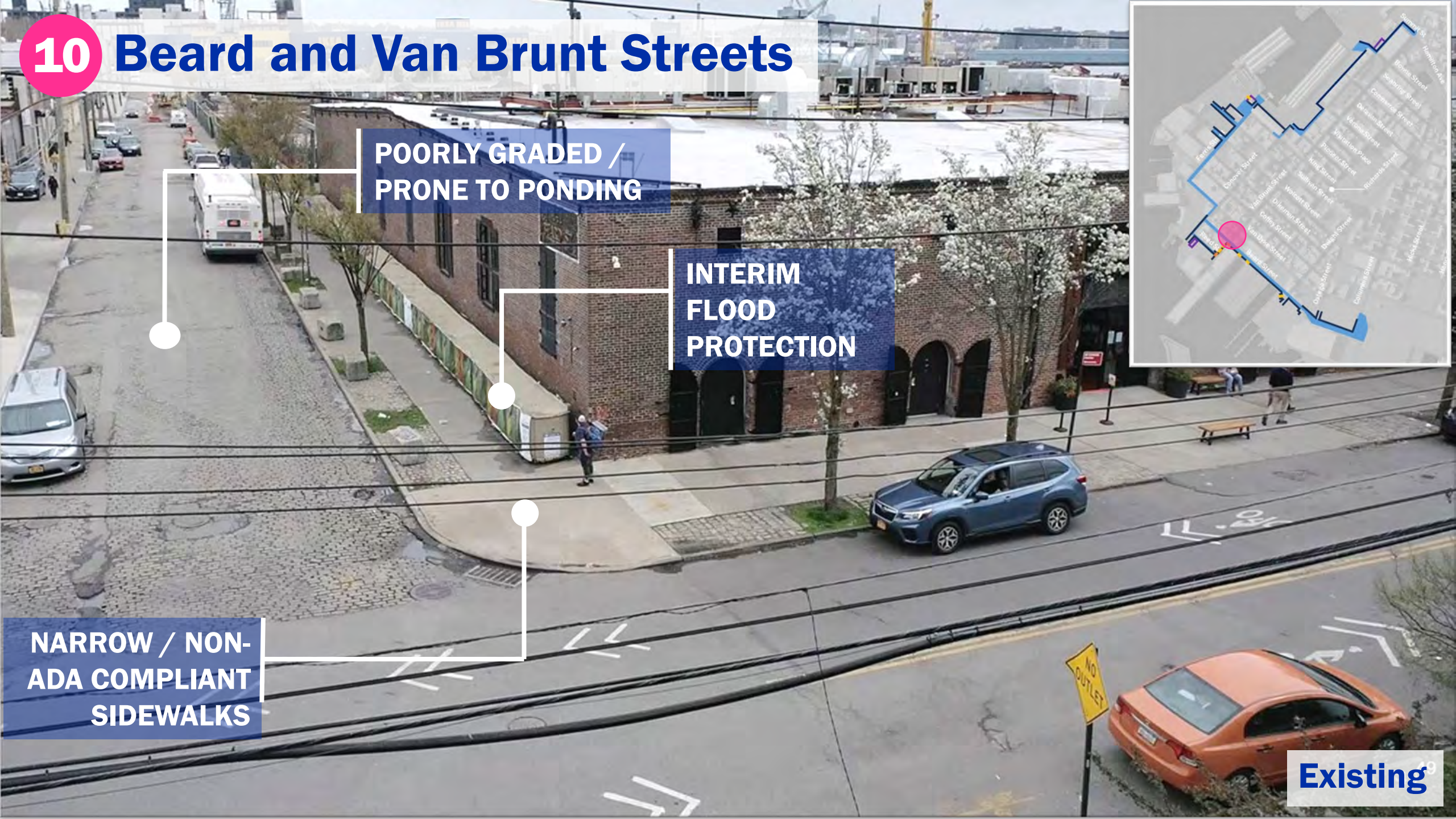
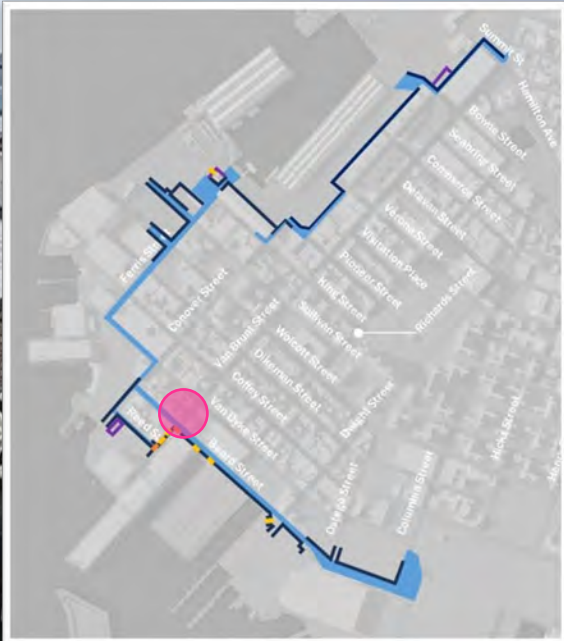


10 Beard and Van Brunt Streets

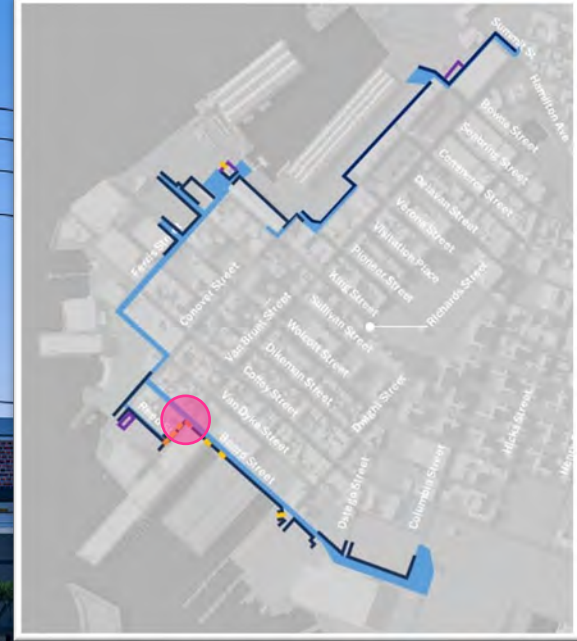
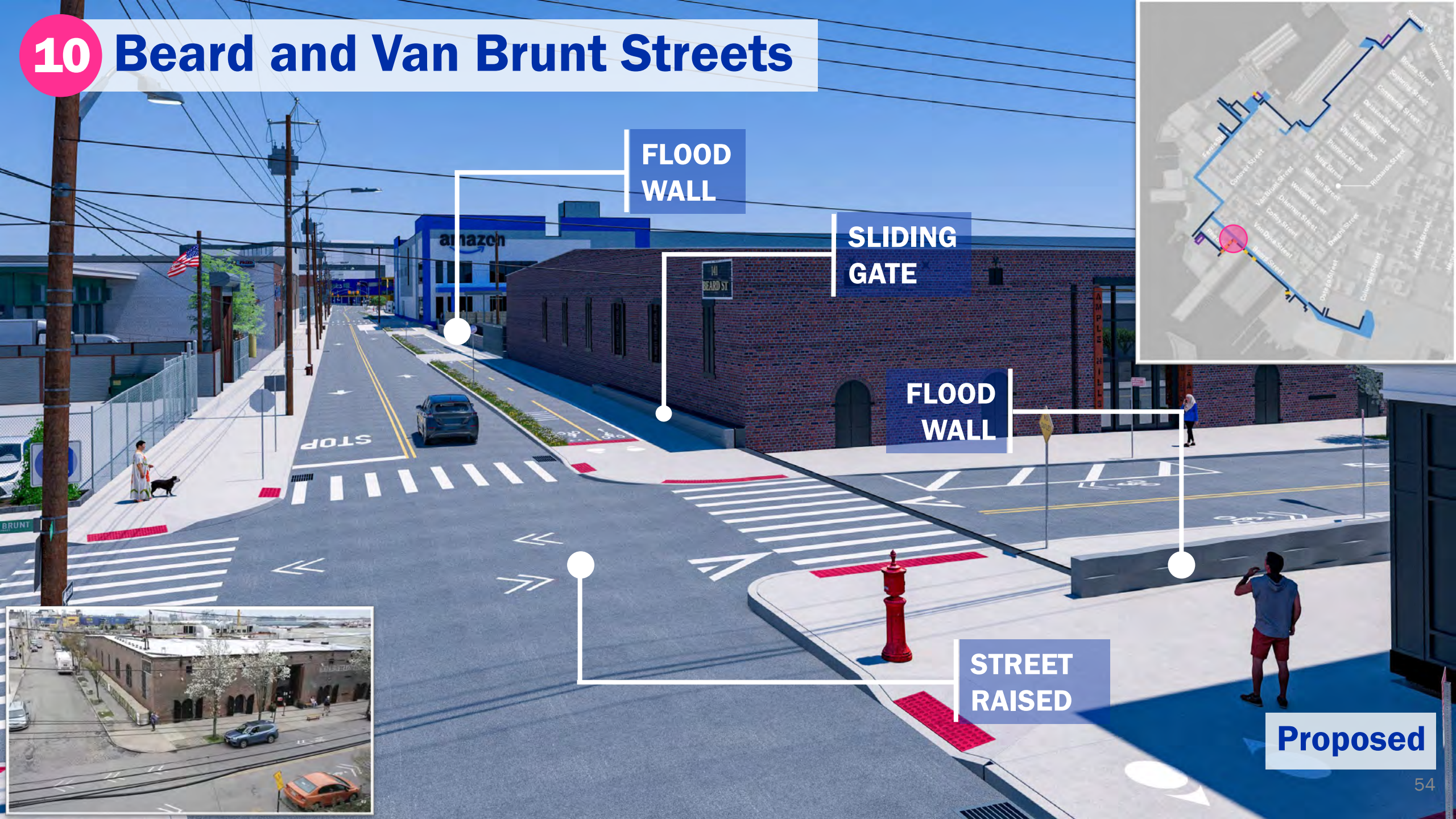
POORLY GRADED / PRONE TO PONDING

INTERIM FLOOD PROTECTION

NARROW / NON-ADA COMPLIANT SIDEWALKS



10 Beard and Van Brunt Streets



Proposed

10 Beard and Van Brunt Streets

BROOKLYN
WATERFRONT
GREENWAY

SLIDING
GATE

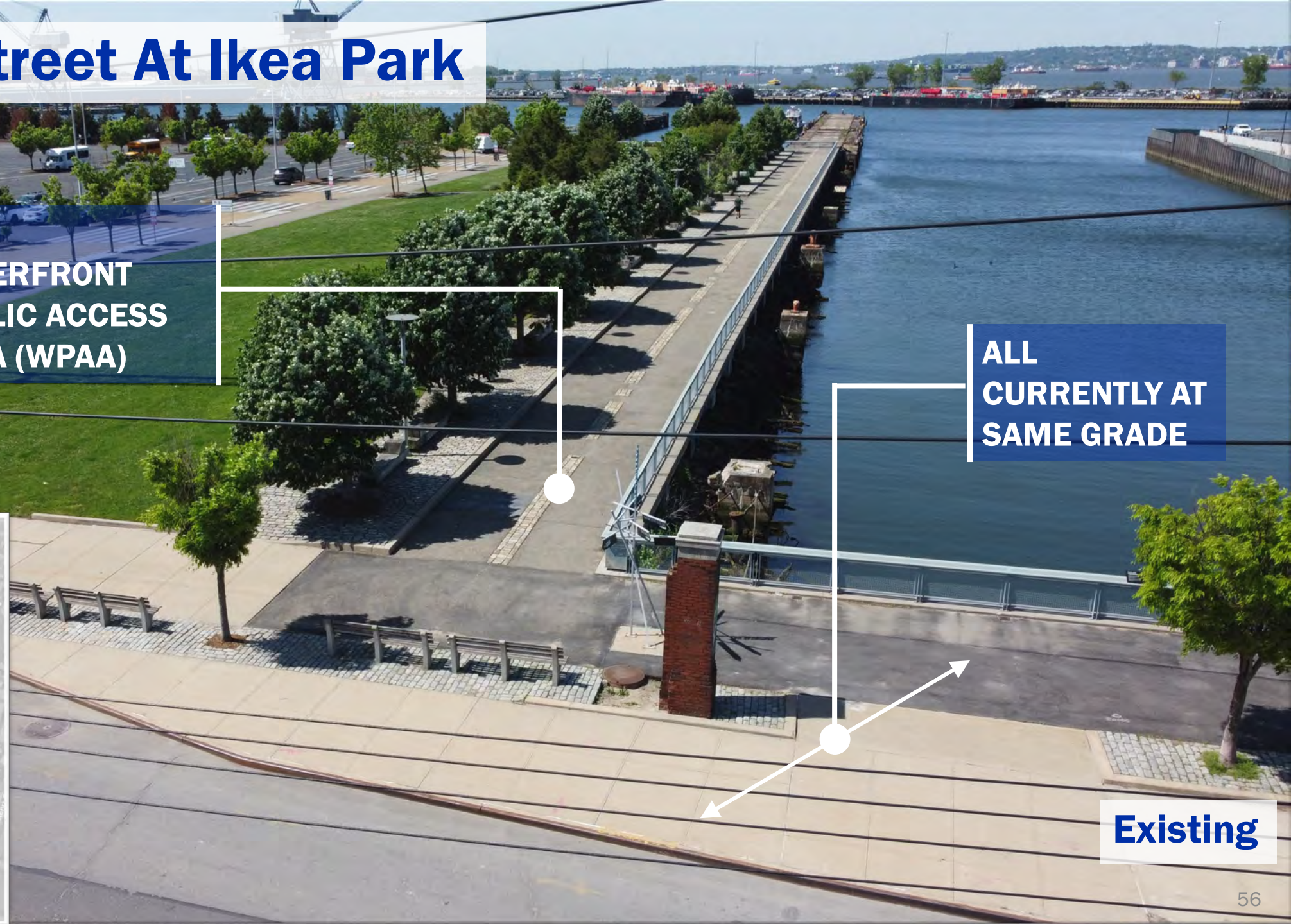
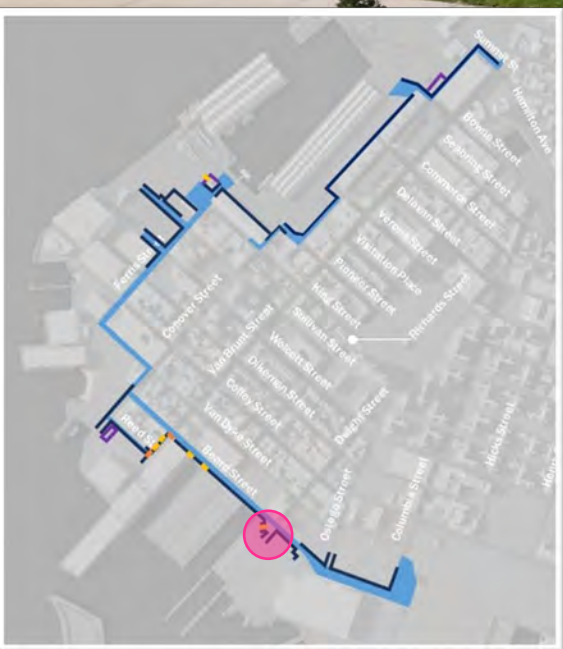
Proposed



11 Beard Street At Ikea Park

**IKEA
WATERFRONT
PUBLIC ACCESS
AREA (WPAA)**

**ALL
CURRENTLY AT
SAME GRADE**



Existing

11 Beard Street At Ikea Park

**MODIFIED
PARK
ENTRANCE**

**FLOOD
WALL**

**ADA RAMP
TO PIER**

Proposed



11 Beard Street At Ikea Park

Additional Visualizations of the Esplanade, Pier, and Brooklyn Waterfront Greenway on Beard Street

- 1 At the Entrance to Park
- 2 At the Pier / Park
- 3 At the Pier

1



Proposed



12 Todd Triangle (Columbia Street)



Existing

12 Todd Triangle (Columbia Street)



Proposed