

BK Bridge - Montgomery Coastal Resilience

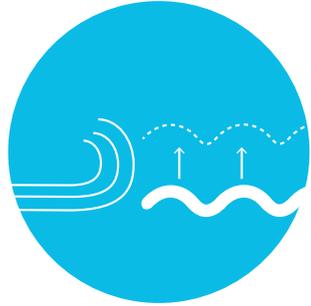
December 16, 2019
Design Progress for Two Bridges Neighborhood Project
Knickerbocker Village

Agenda

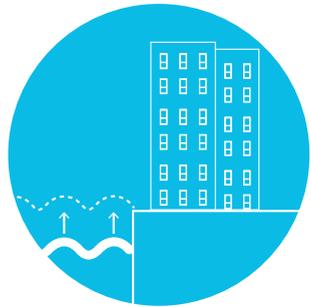
- ① Lower Manhattan Coastal Resiliency
- ② Project Recap
- ③ Design Updates
- ④ Q&A

1 Lower Manhattan Coastal Resiliency

Flood Risk



Storm Surge



Sea Level Rise (SLR)

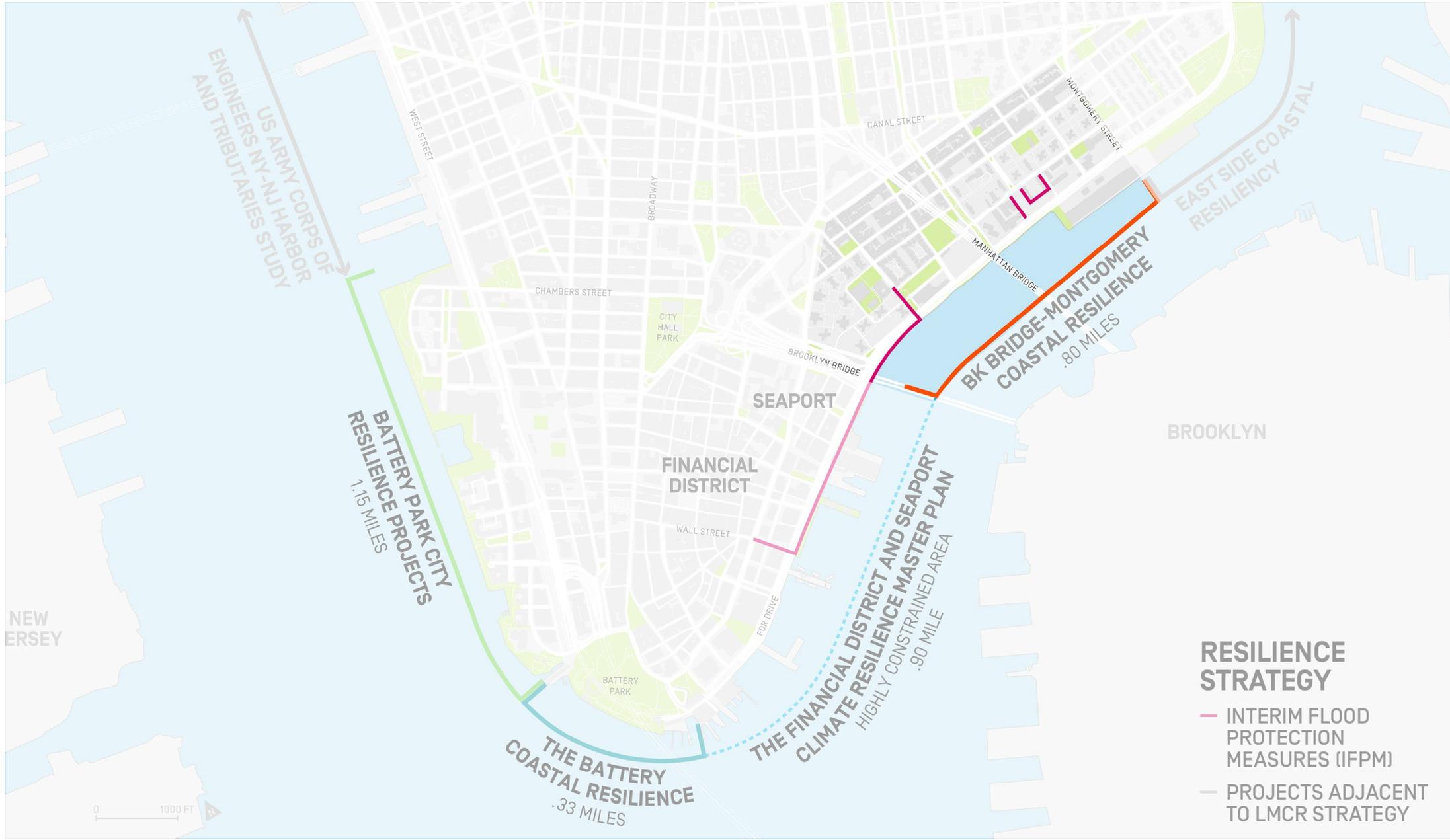


1 Lower Manhattan Coastal Resiliency



New York City is implementing **\$500M** in on-land capital projects in Lower Manhattan and advancing a Master Plan for FiDi-Seaport

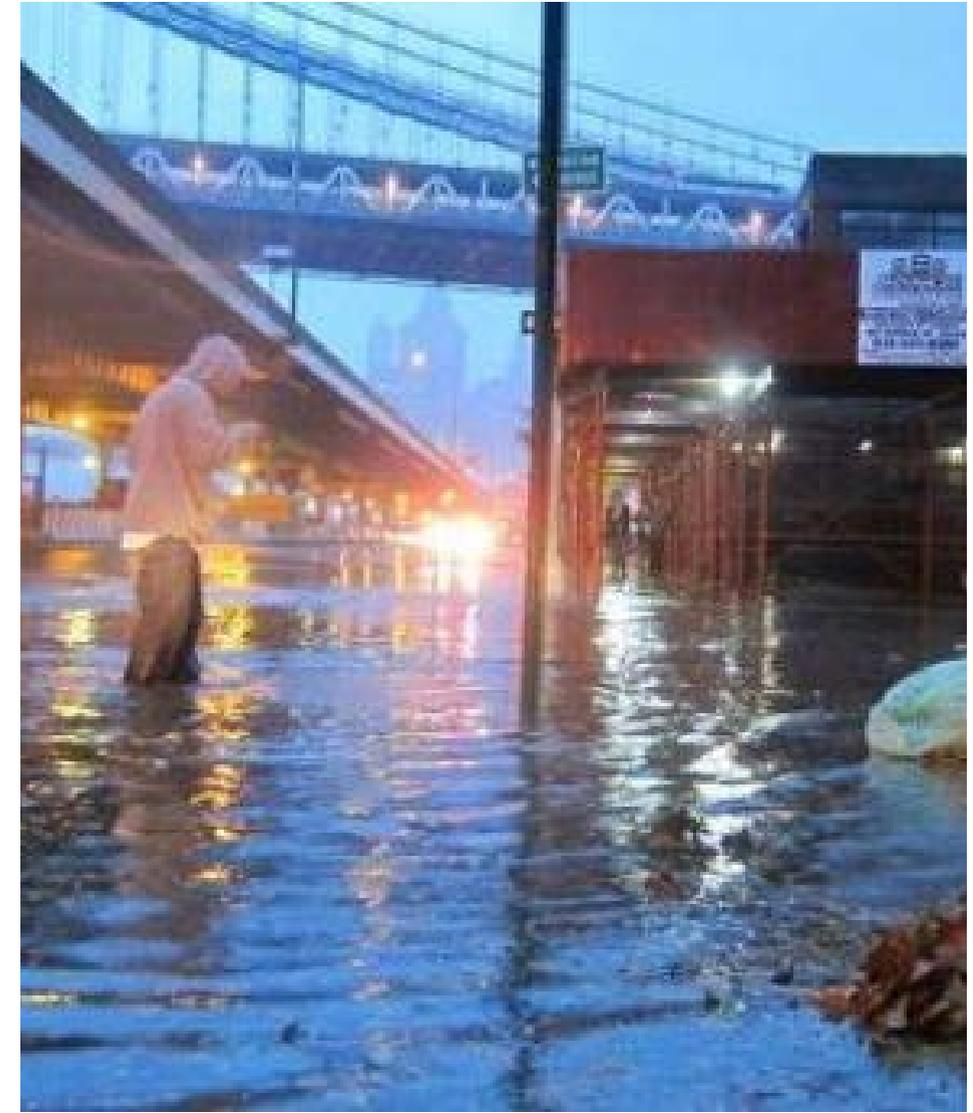
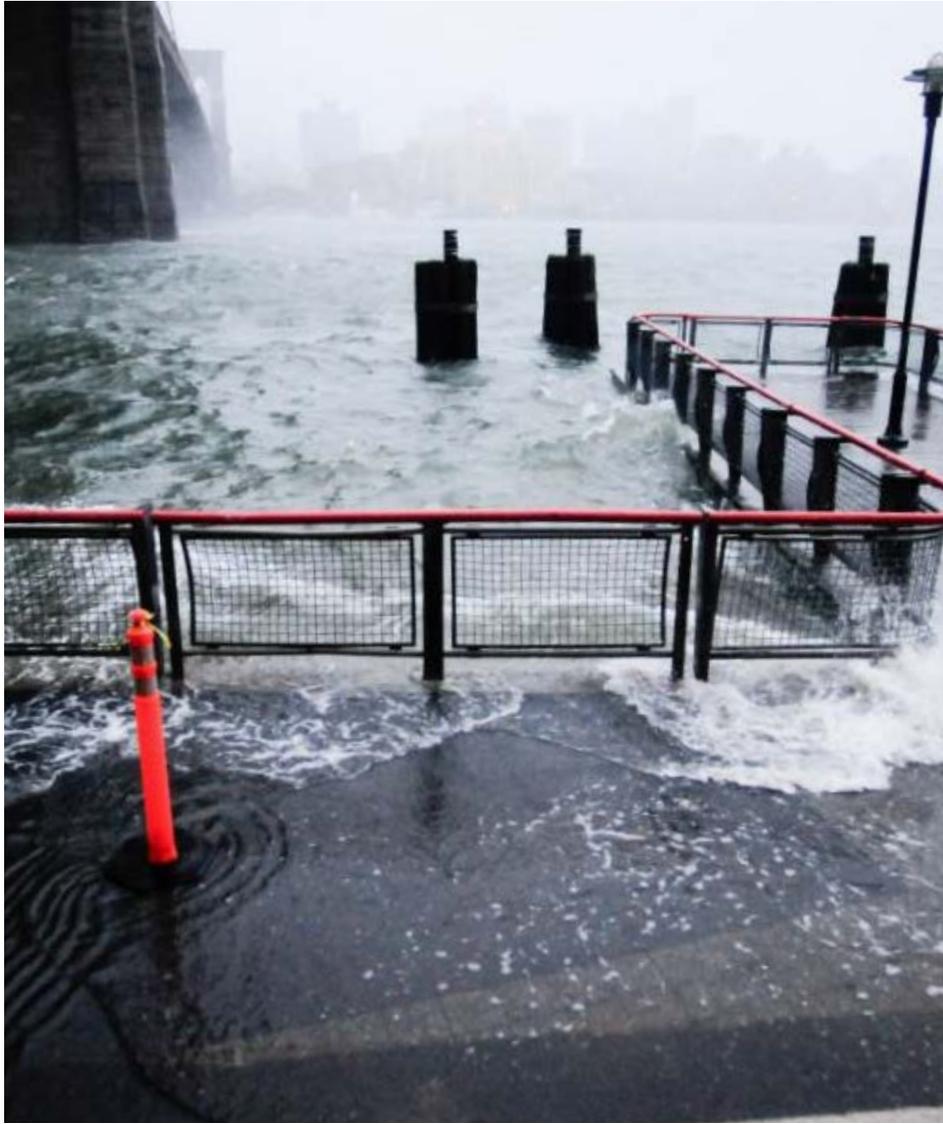
1 Lower Manhattan Coastal Resiliency



The **BK Bridge-Montgomery Coastal Resilience (BMCR)** project in the **Two Bridges neighborhood** will reduce flooding while maintaining the community's views and access to the waterfront.

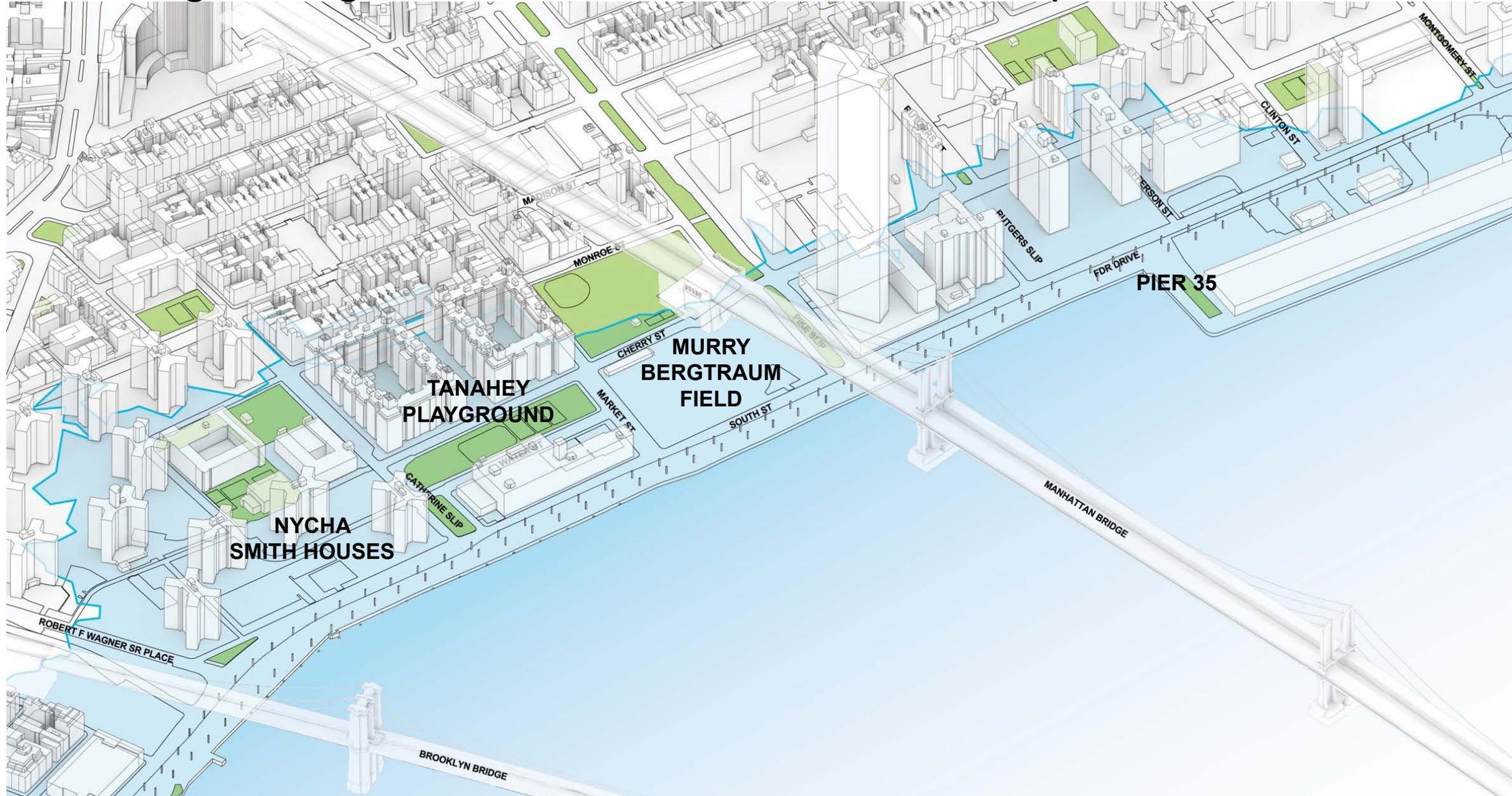
① Lower Manhattan Coastal Resiliency

Flood damage in Two Bridges from Hurricane Sandy



① Lower Manhattan Coastal Resiliency

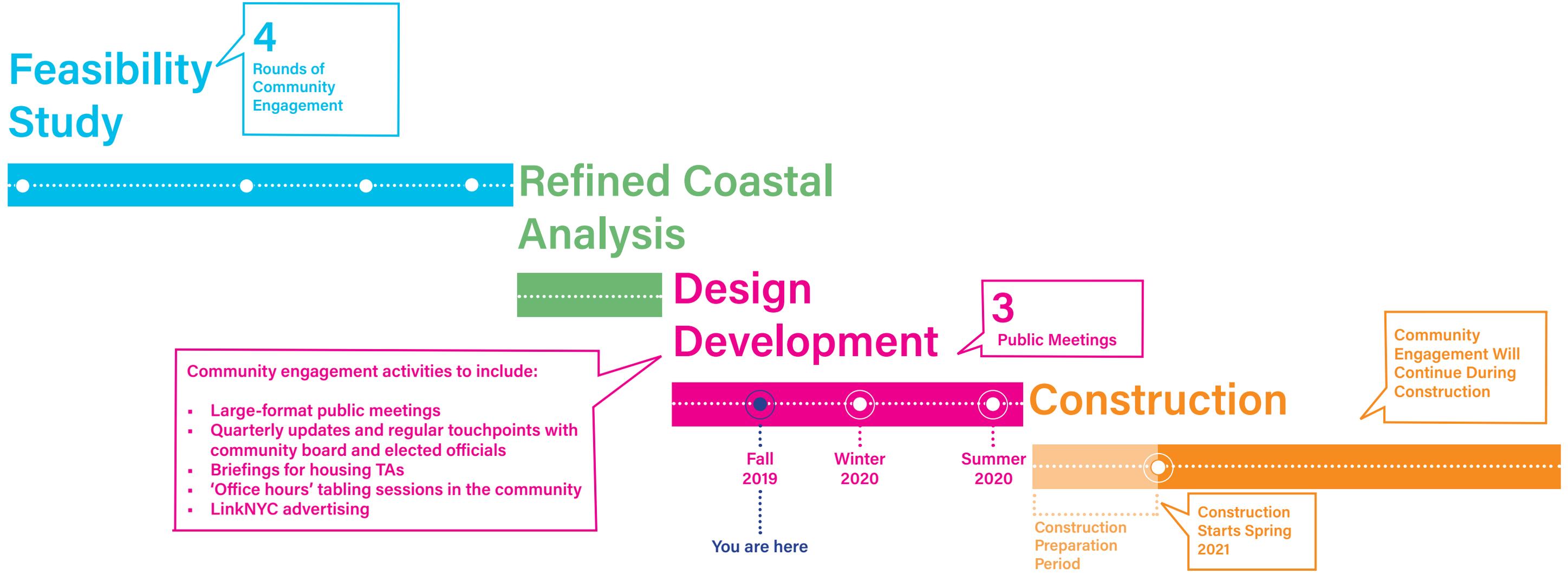
Two Bridges Neighborhood - 2050s 100-Year Floodplain



2 Project Recap

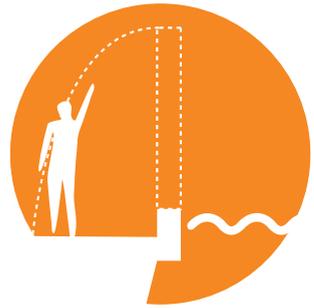
2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |

Brooklyn Bridge - Montgomery Coastal Resilience Timeline



2 Project Recap

We heard from the Two Bridges community that the project should try to achieve these goals:



Provide Flood Protection and Resilience



Preserve Views + Access



Distribute Program Equitably



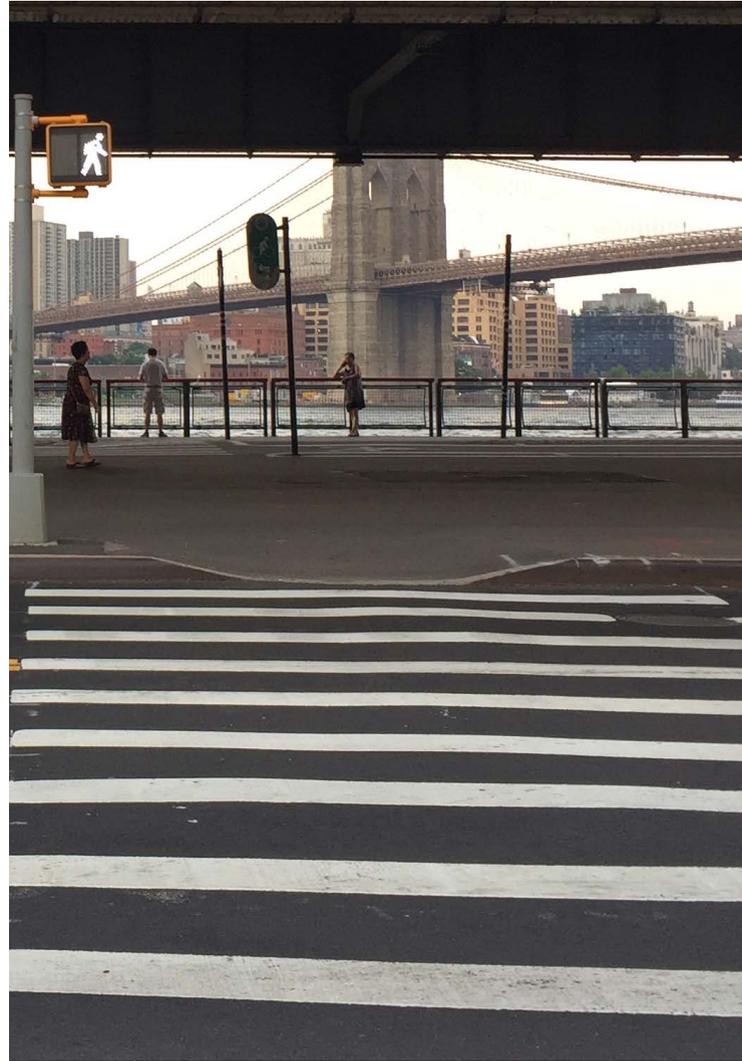
Integrate Infrastructure into Public Realm

② Project Recap

Preserve Views + Access



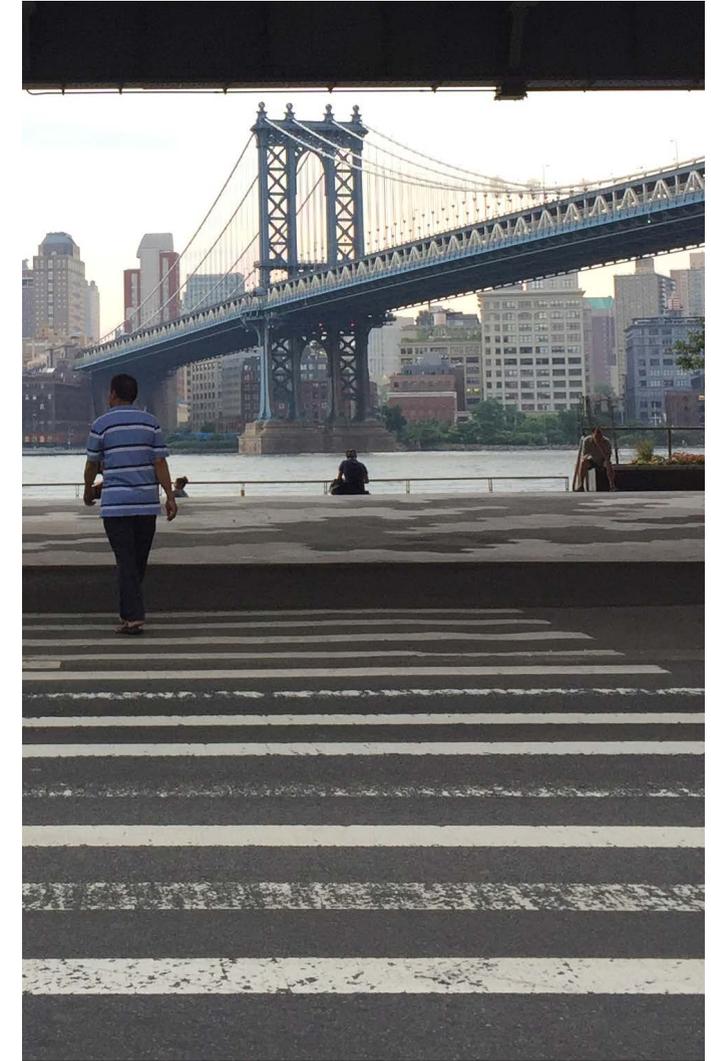
CATHERINE SLIP



MARKET SLIP



PIKE SLIP



RUTGERS SLIP

2 Project Recap

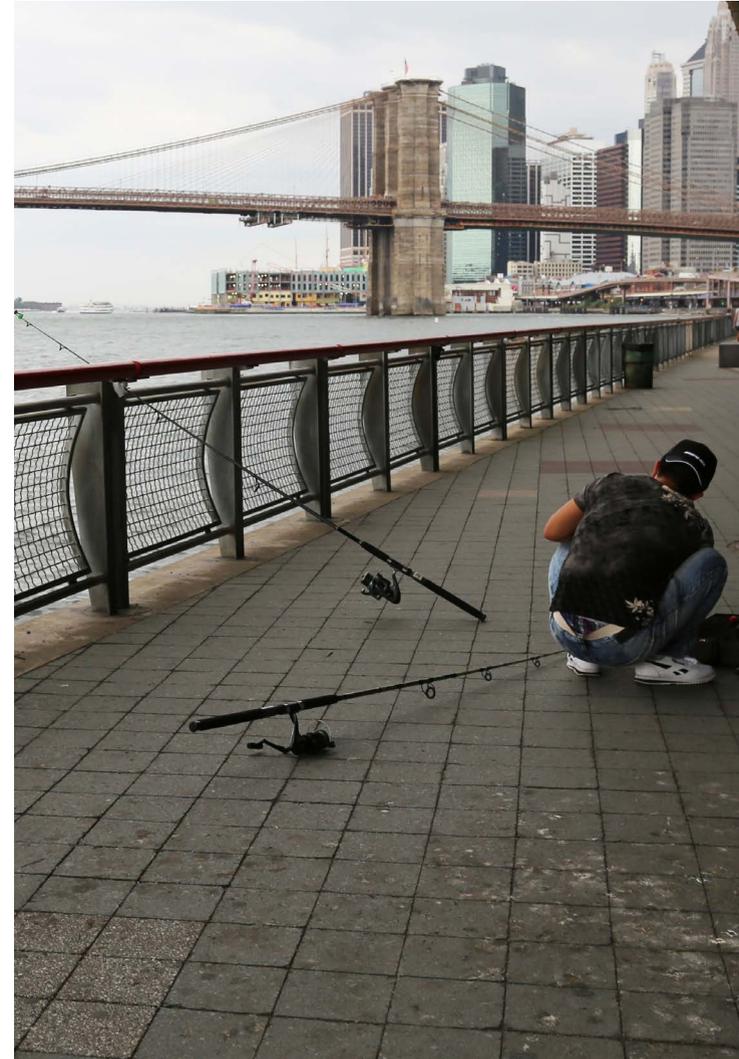
Distribute Program Equitably



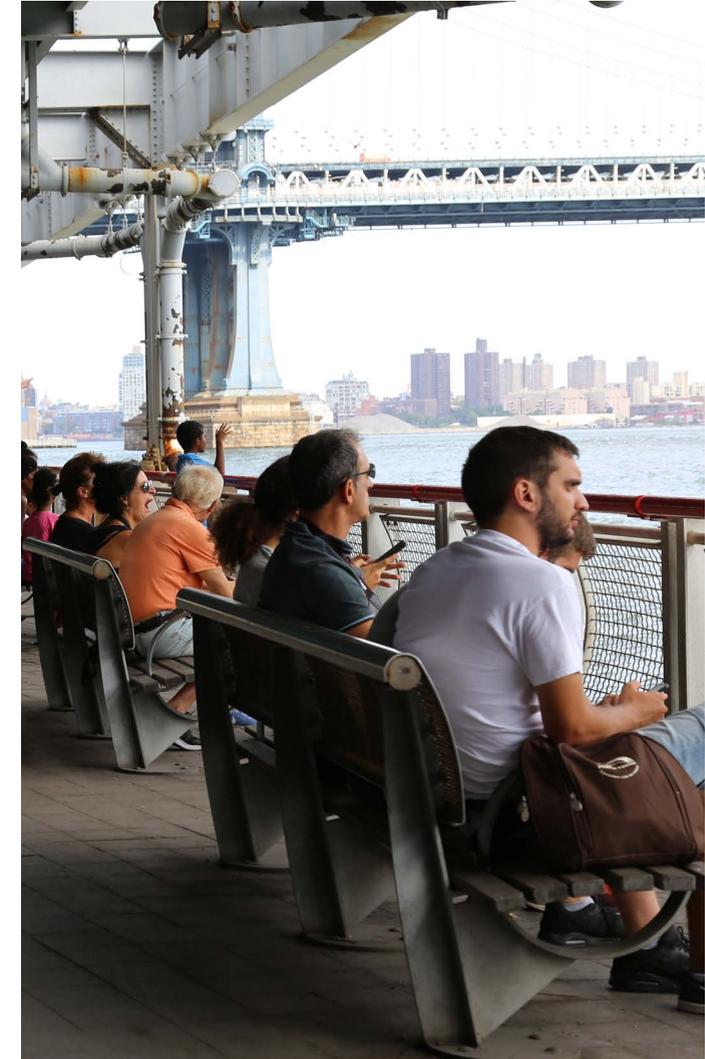
FITNESS PARK



BASKETBALL COURTS



FISHING AREA



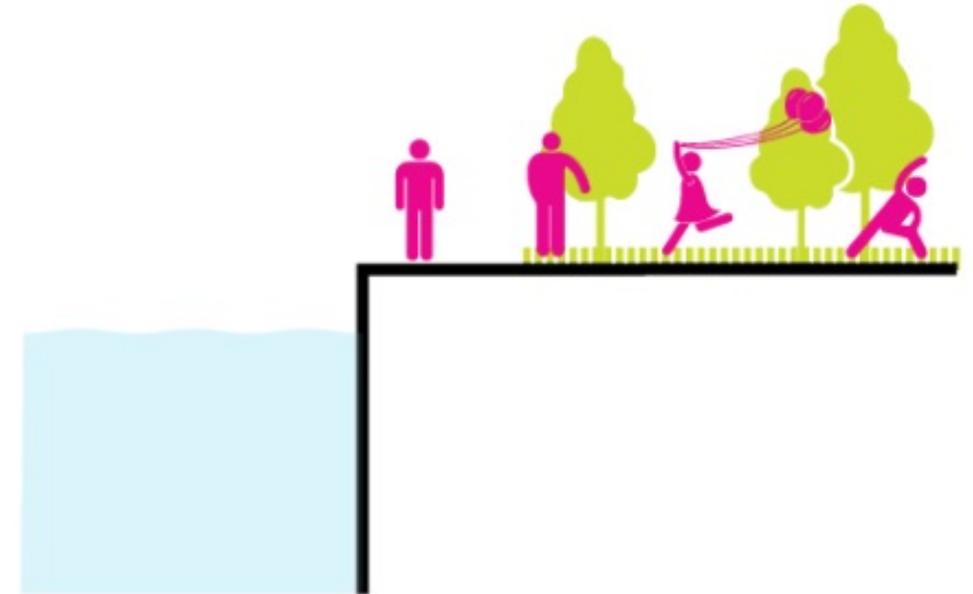
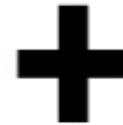
SEATING / OBSERVATION AREA

② Project Recap

Integrate Infrastructure into Public Realm

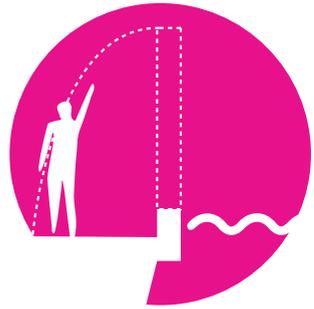


FLOOD REDUCTION

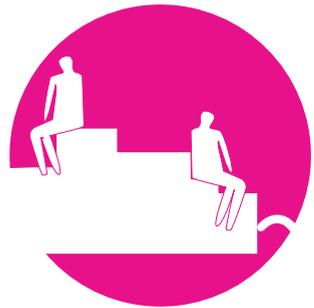


PUBLIC SPACE

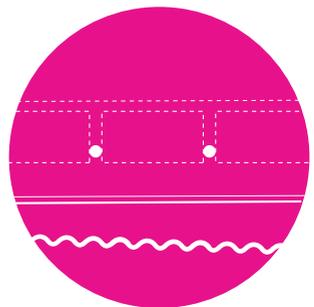
3 Design Updates



Resilience Infrastructure



Raised Platform (Sea Level Rise)



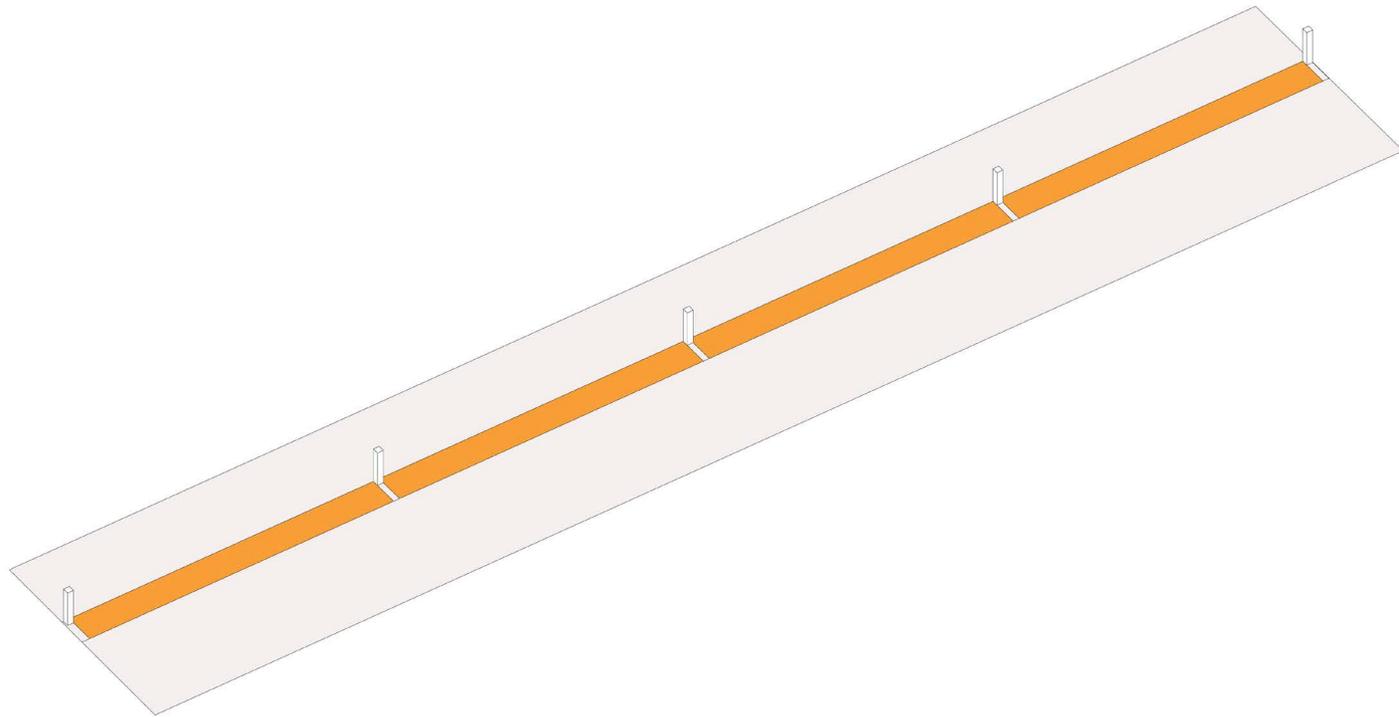
Alignment - Location of Infrastructure

③ Design Updates

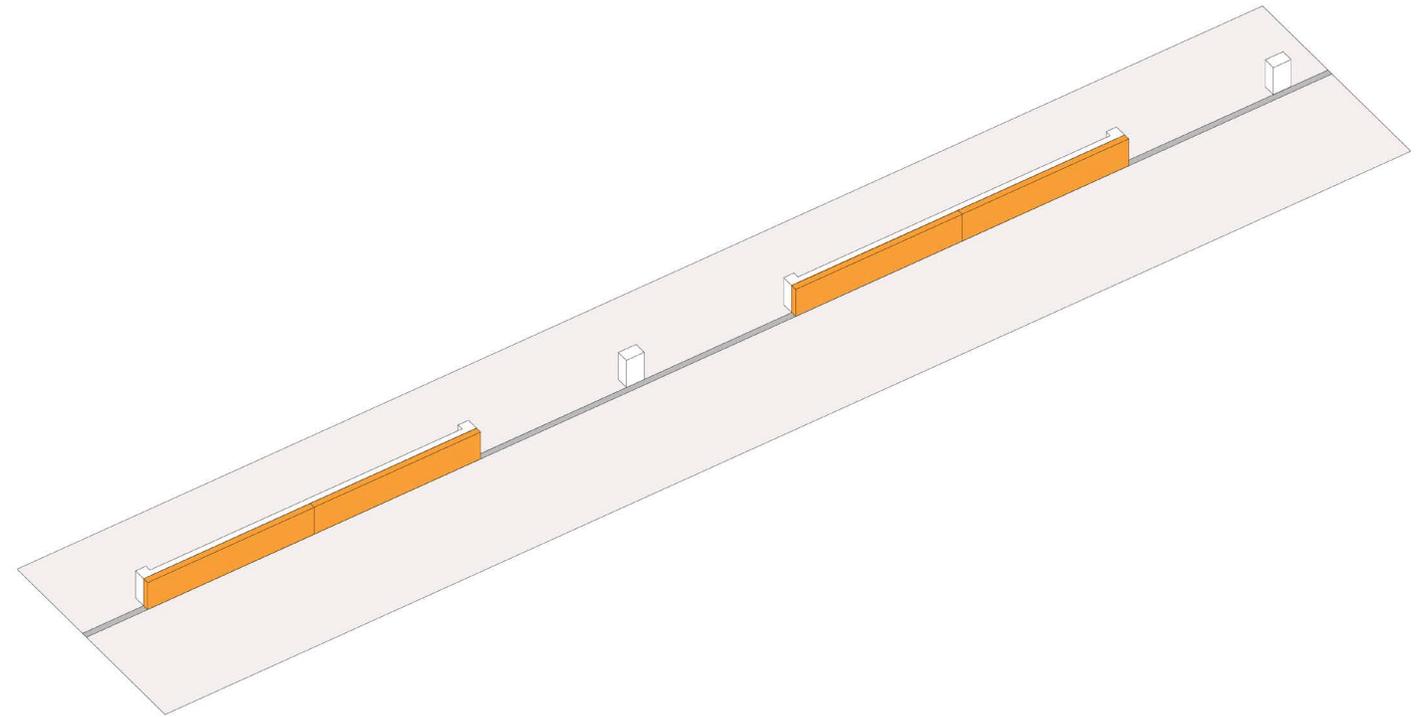
Infrastructure Toolkit

To preserve views and access along the waterfront, the project will utilize an infrastructure toolkit that combines fixed structures with deployable flood gates.

Flip Up Barrier: Sunny Day



Roller Gates & Fixed Structures: Sunny Day

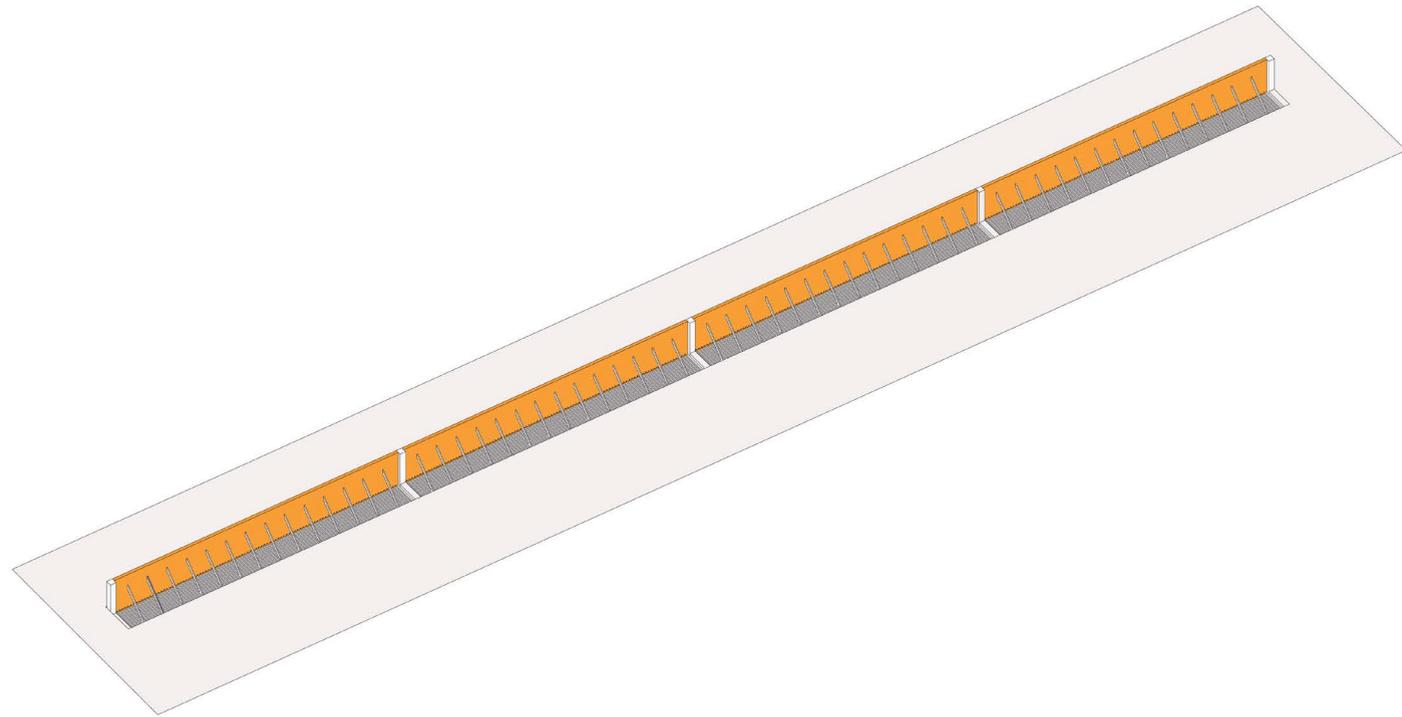


③ Design Updates

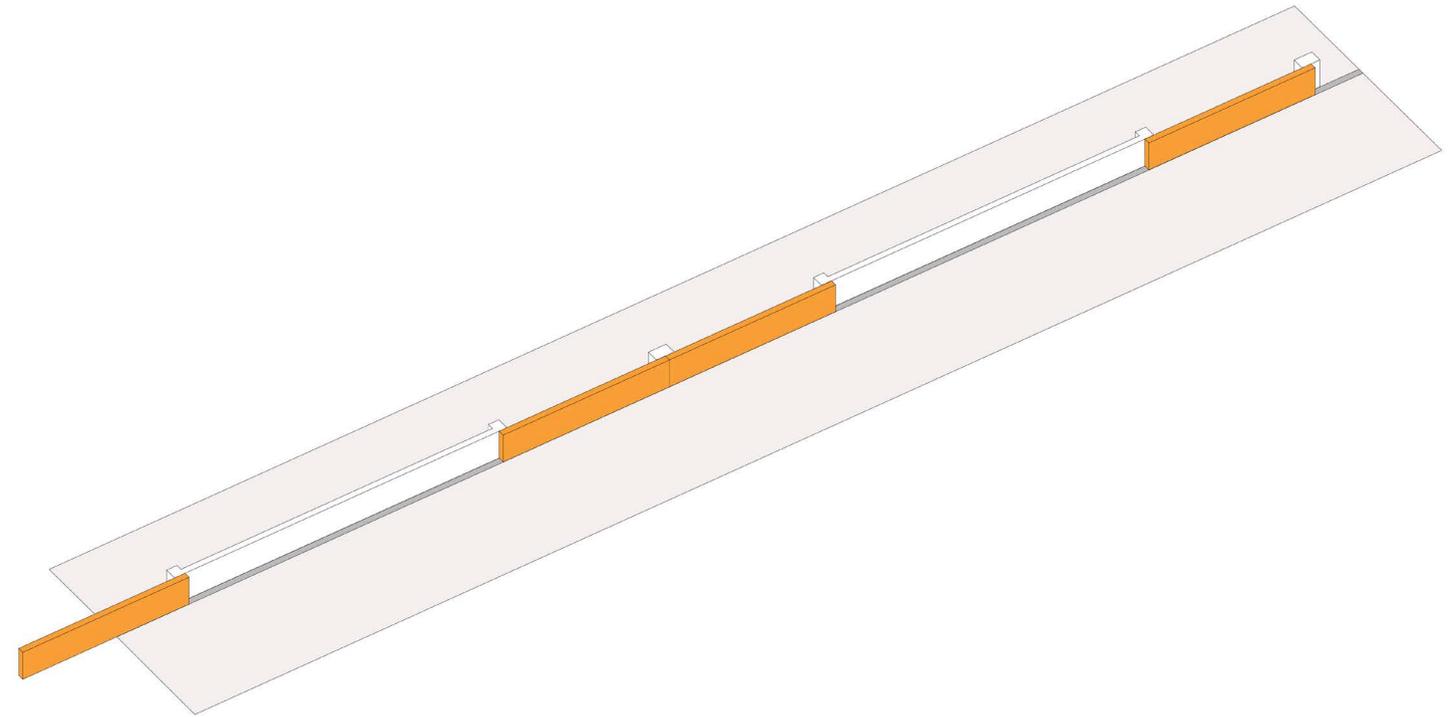
Infrastructure Toolkit

To preserve views and access along the waterfront, the project will utilize an infrastructure toolkit that combines fixed structures with deployable flood gates.

Flip Up Barrier: Deployed

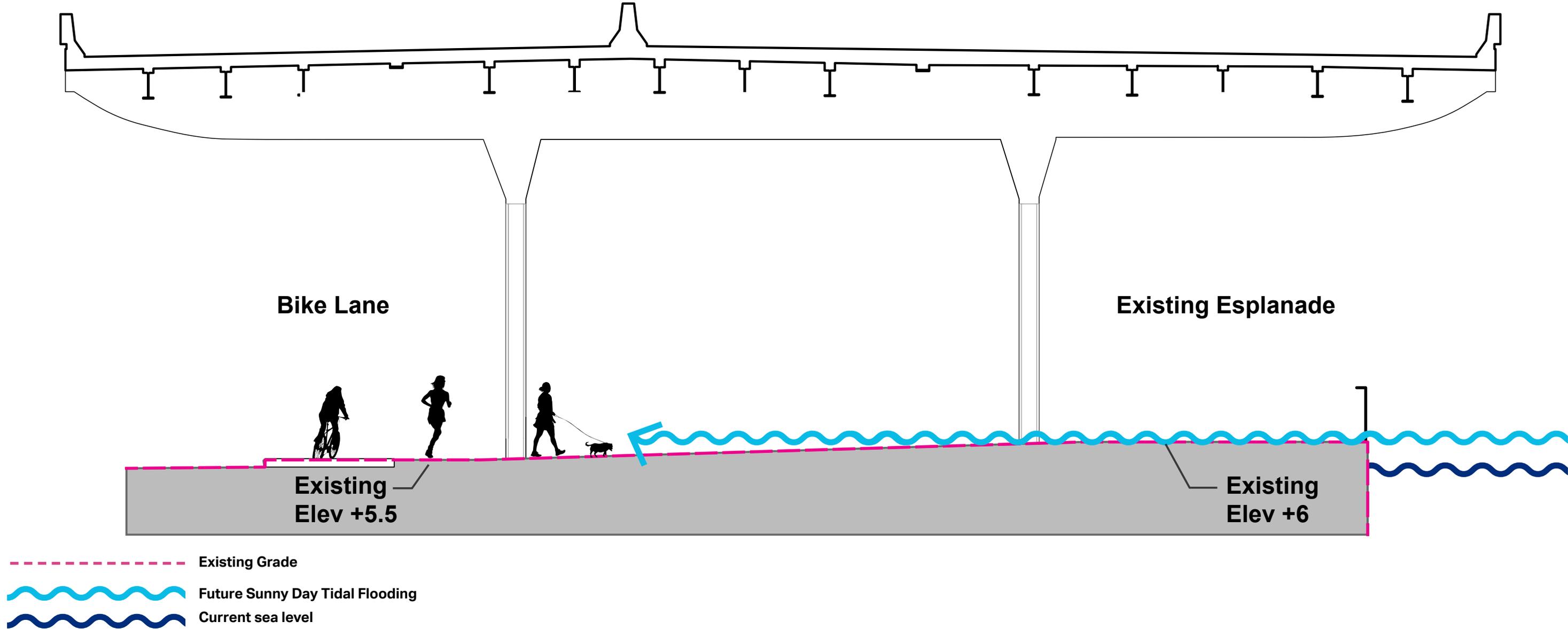


Roller Gates & Fixed Structures: Deployed



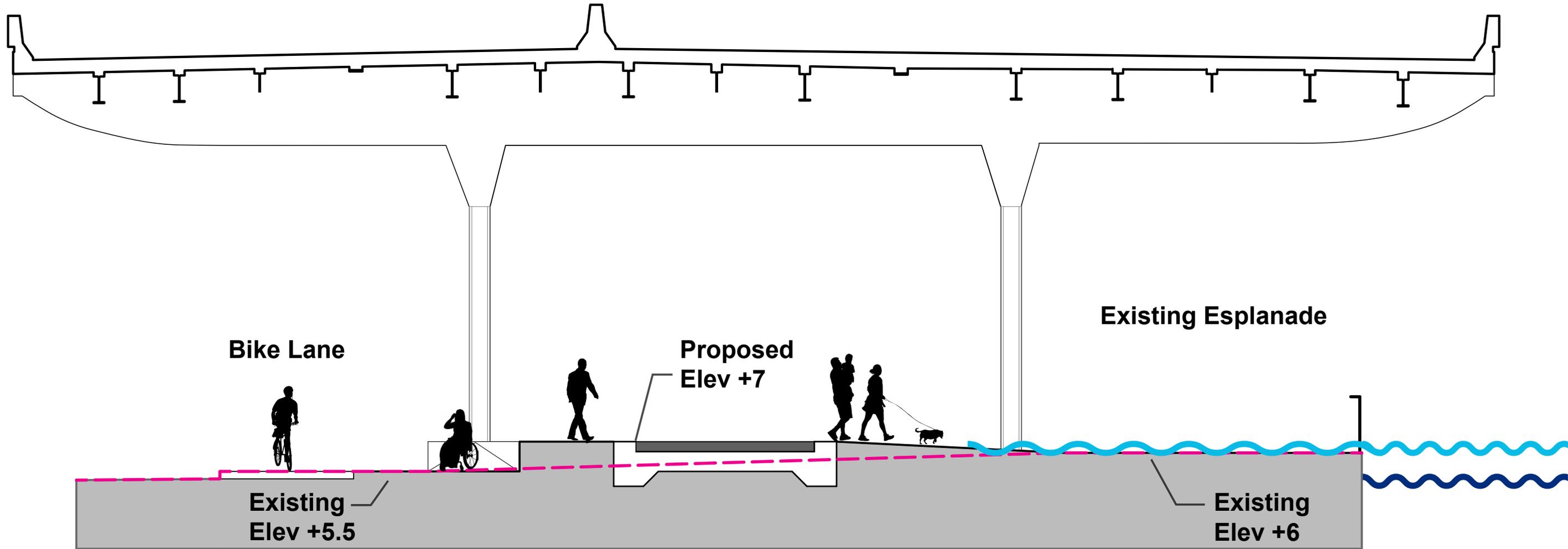
3 Design Updates

Raised Platform to Address Sunny Day Tidal Flooding from SLR



3 Design Updates

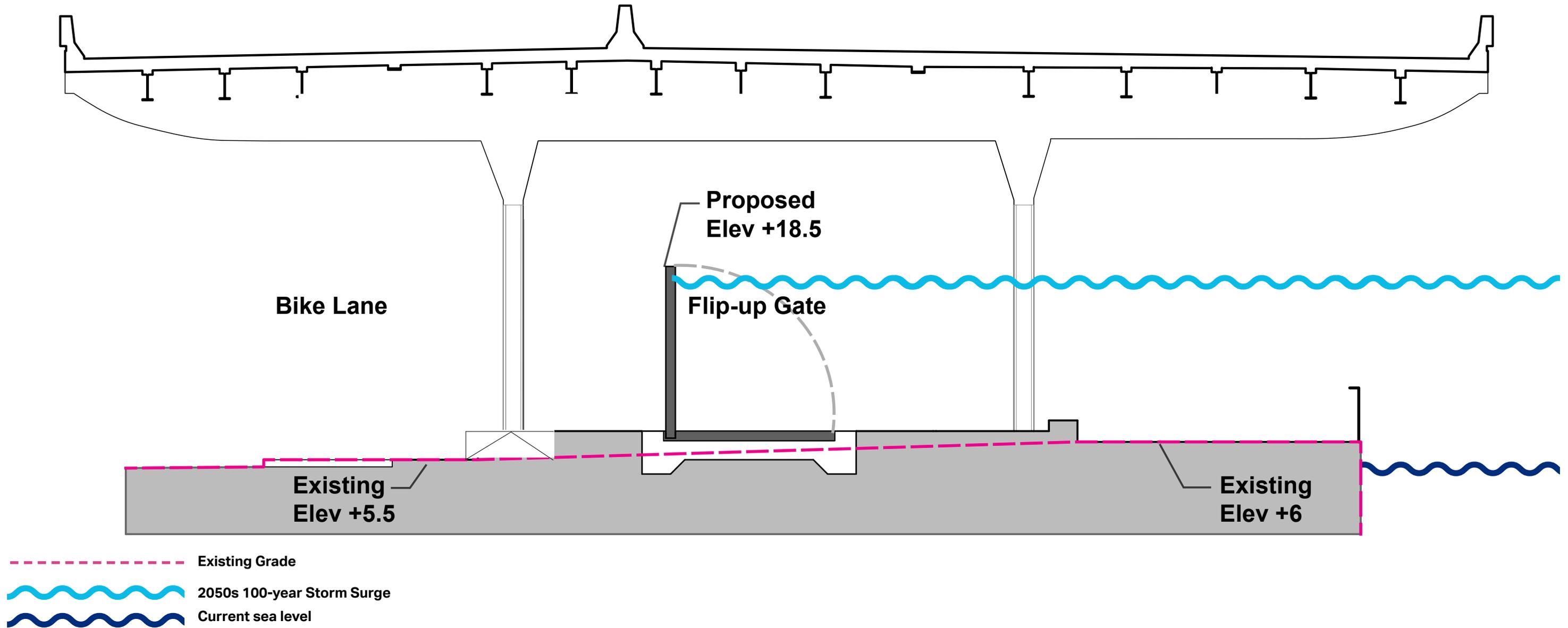
Raised Platform to Address Sunny Day Tidal Flooding from SLR



- Existing Grade
- Future Sunny Day Tidal Flooding
- Current sea level

3 Design Updates

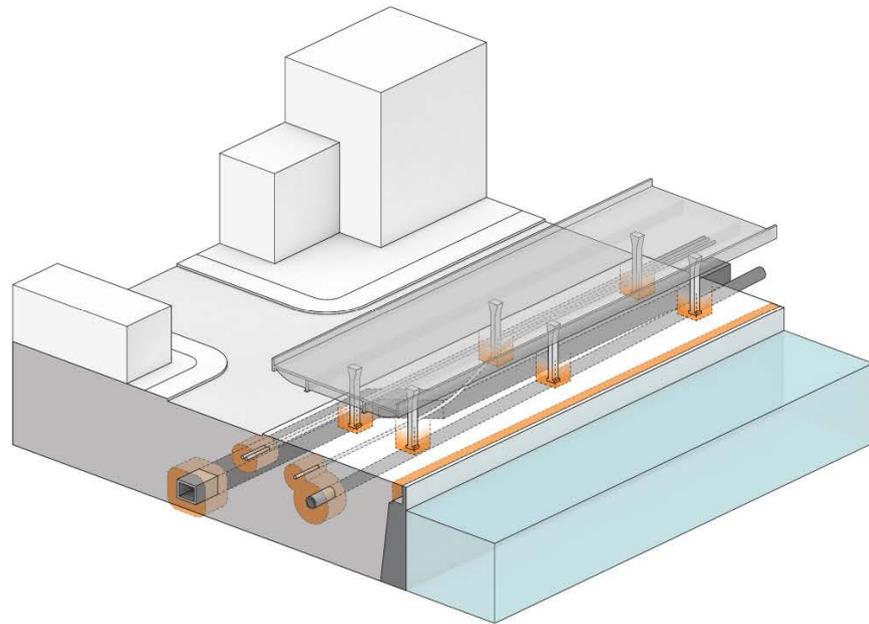
Deployed Flood Infrastructure



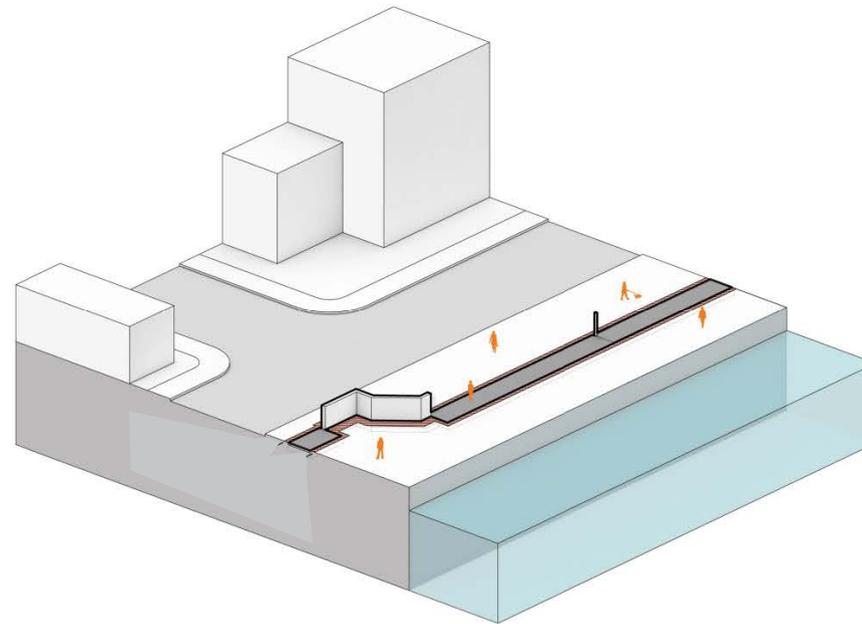
3 Design Updates

Flood Protection Alignment - Location of Infrastructure

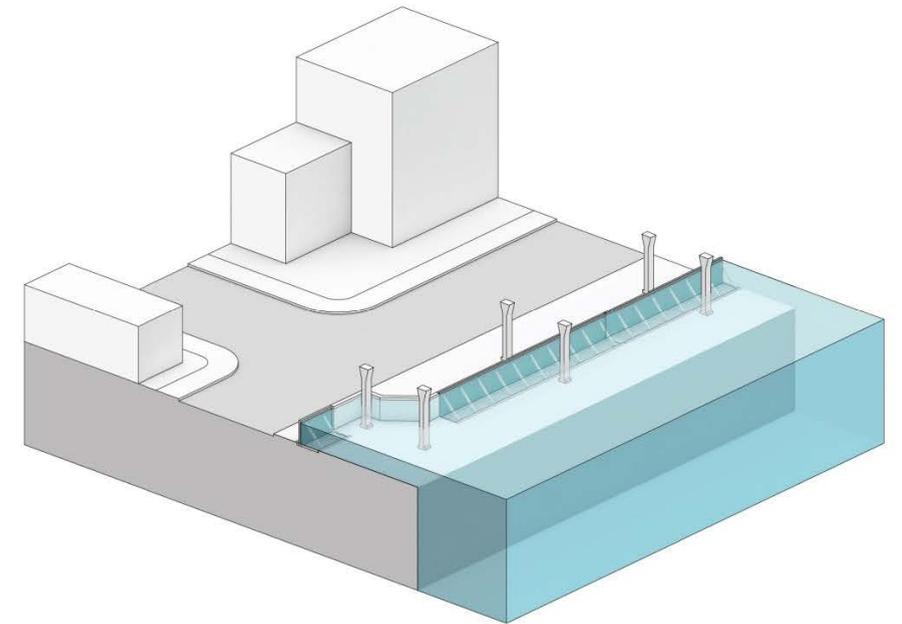
Site Constraints
Existing Infrastructure



Line of Protection
Sunny Day

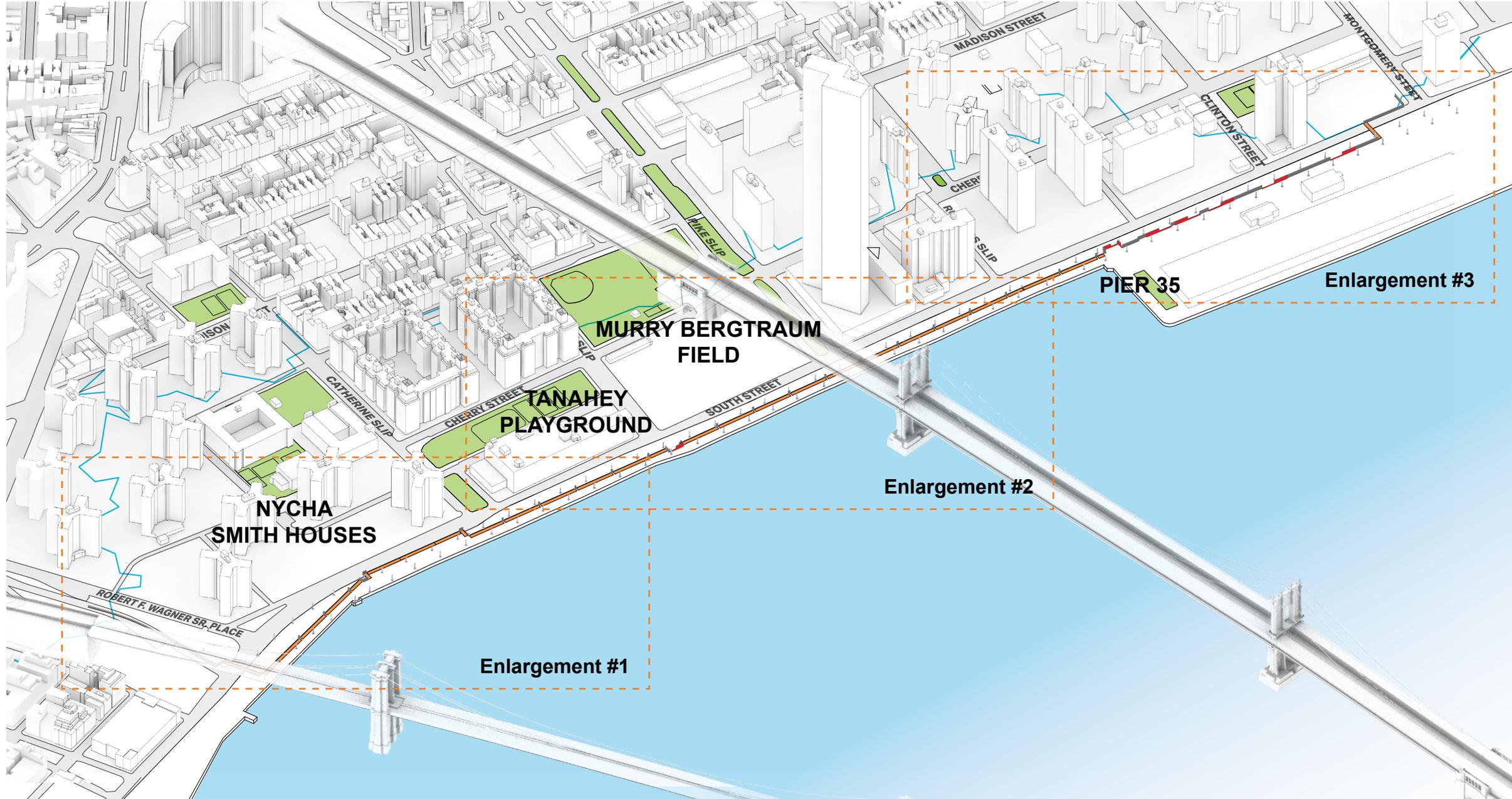


Line of Protection
Deployed



③ Design Updates

Flood Protection Alignment

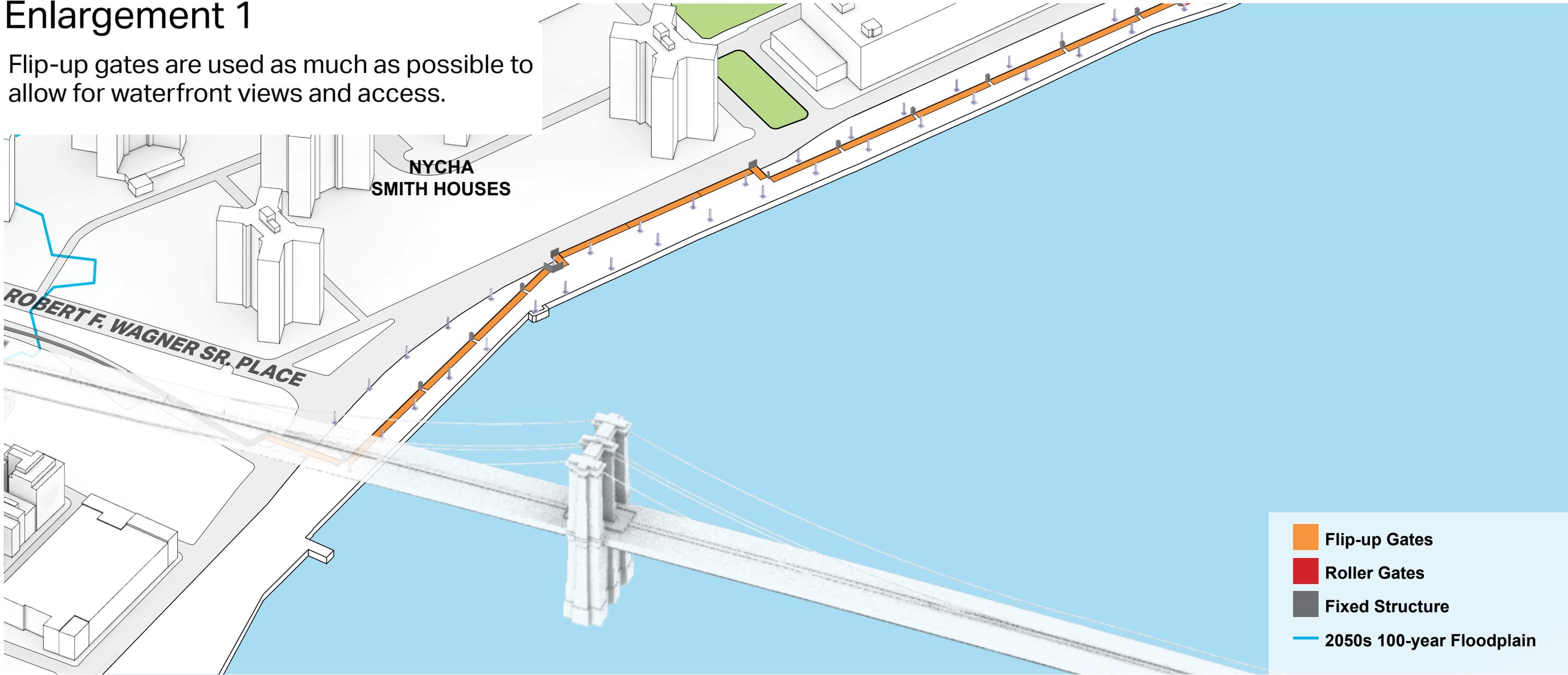


- Flip-up Gates
- Roller Gates
- Fixed Structure
- 2050s 100-year Floodplain

3 Design Updates

Enlargement 1

Flip-up gates are used as much as possible to allow for waterfront views and access.

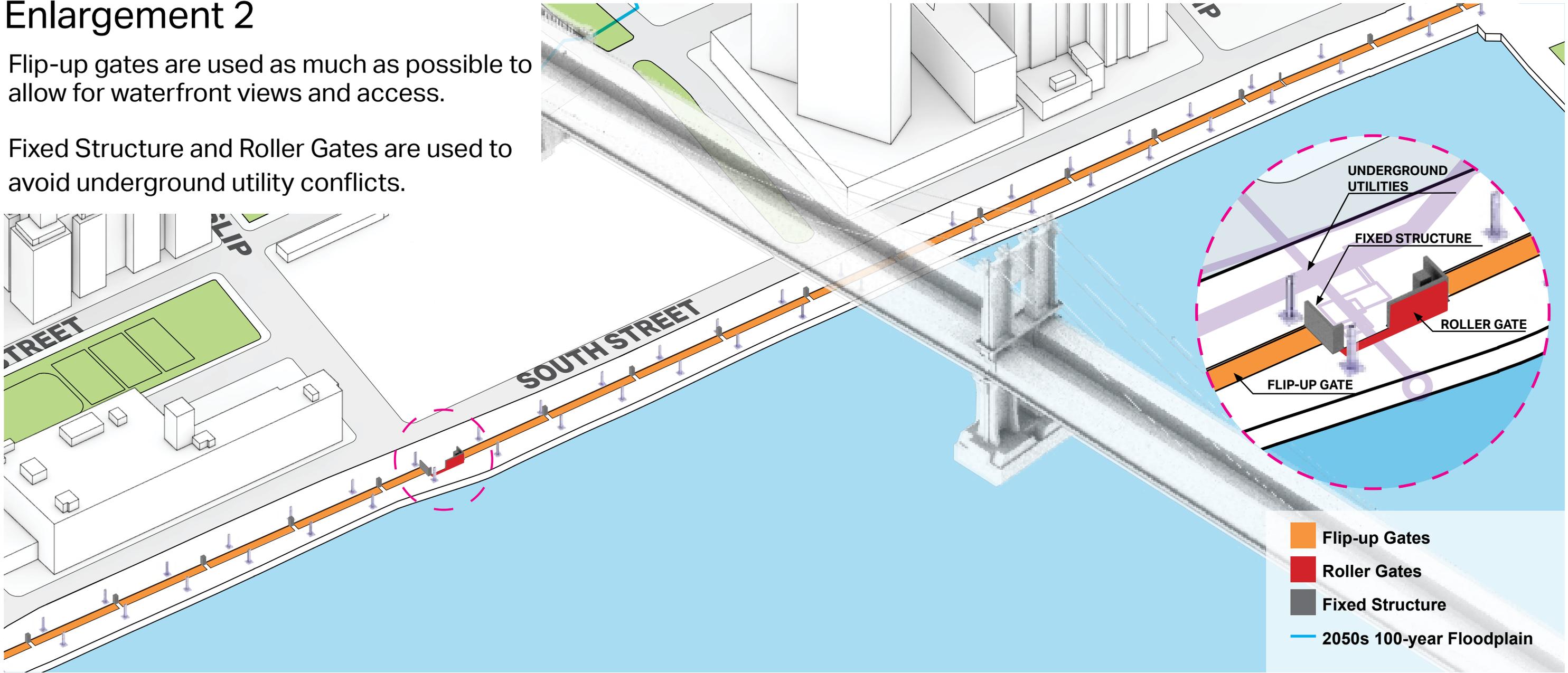


3 Design Updates

Enlargement 2

Flip-up gates are used as much as possible to allow for waterfront views and access.

Fixed Structure and Roller Gates are used to avoid underground utility conflicts.



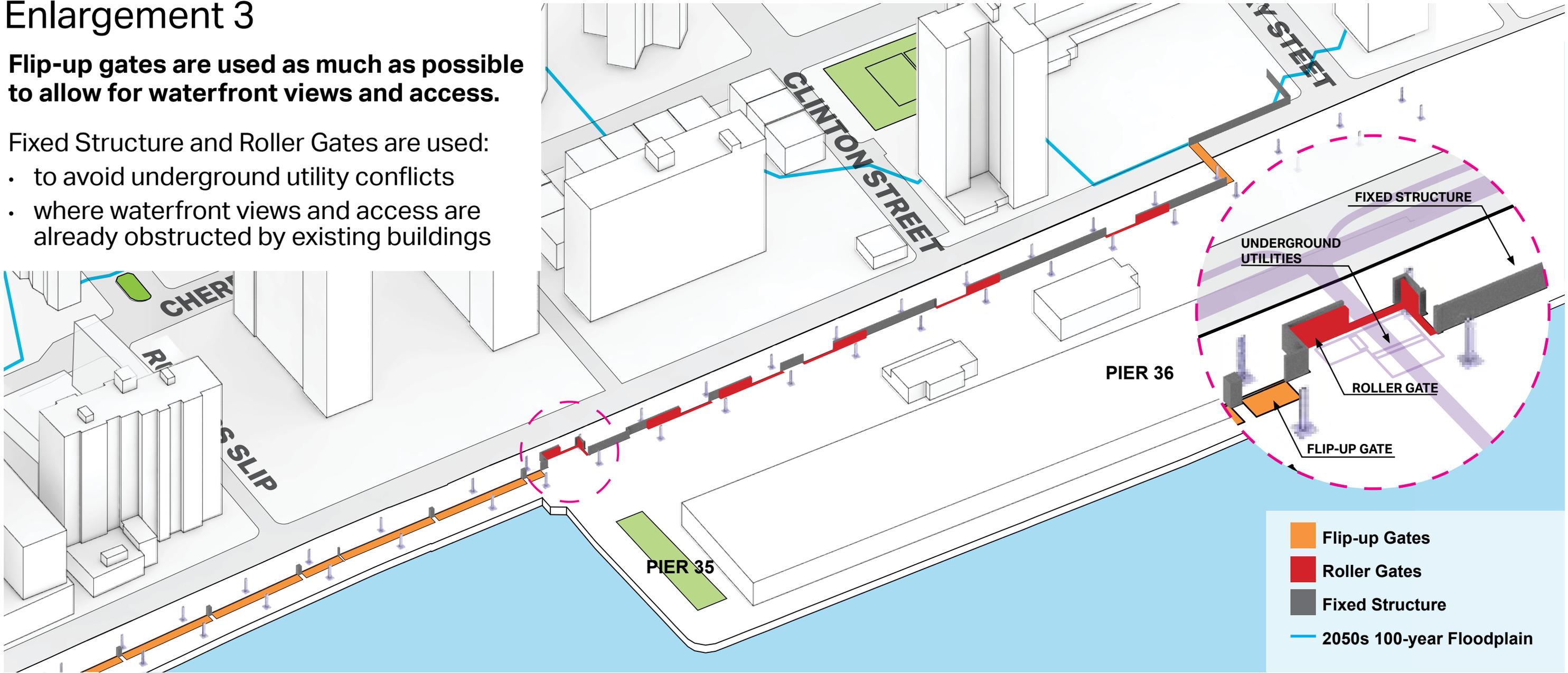
3 Design Updates

Enlargement 3

Flip-up gates are used as much as possible to allow for waterfront views and access.

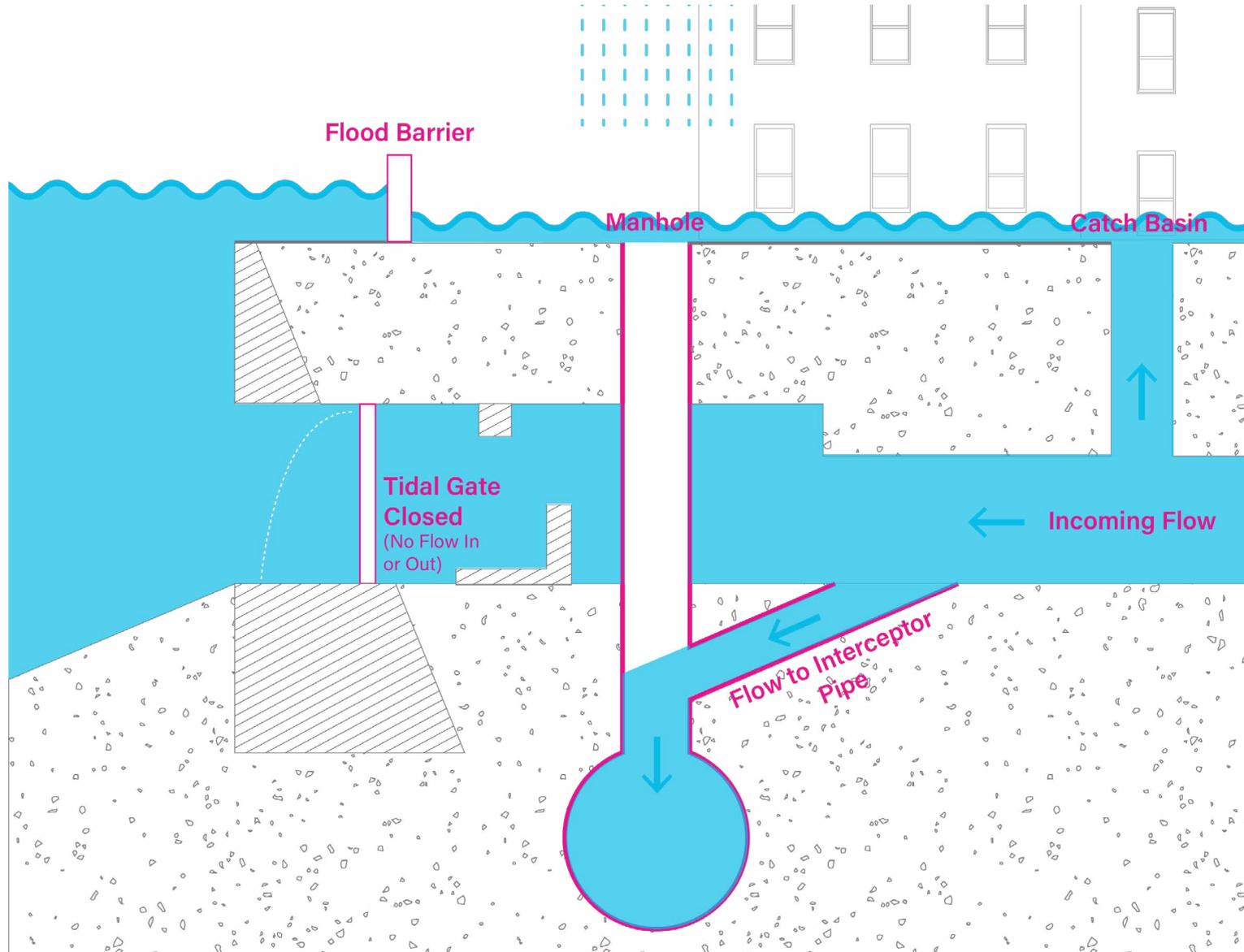
Fixed Structure and Roller Gates are used:

- to avoid underground utility conflicts
- where waterfront views and access are already obstructed by existing buildings



3 Design Updates

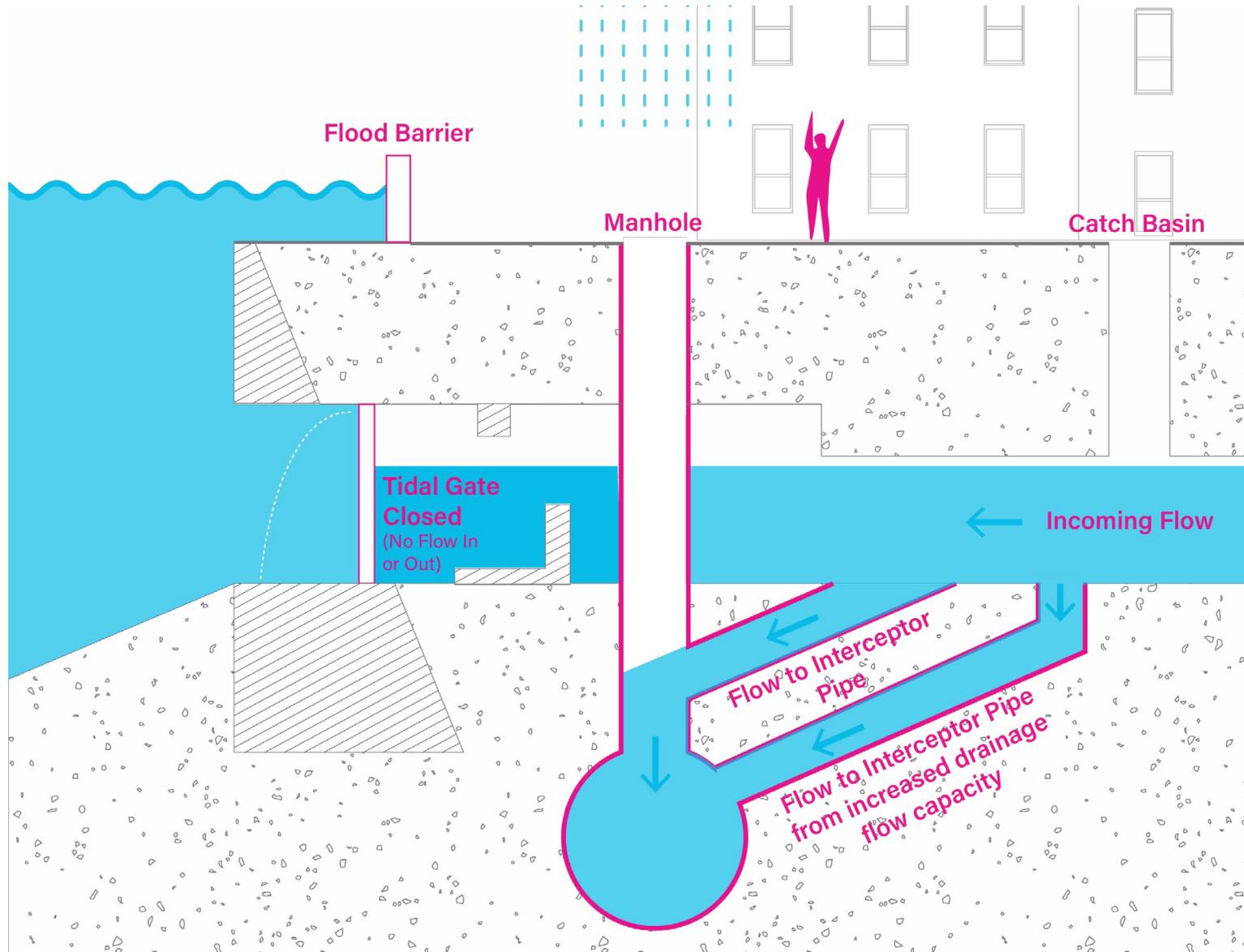
BMCR Without Drainage Intervention



Storm surge and sea level rise decrease the system's ability to discharge, leading to **street and basement flooding.**

3 Design Updates

BMCR With Drainage Intervention



The proposed drainage system will allow **additional flow capacity** to the interceptor pipe, **reducing the risk of street and basement flooding.**

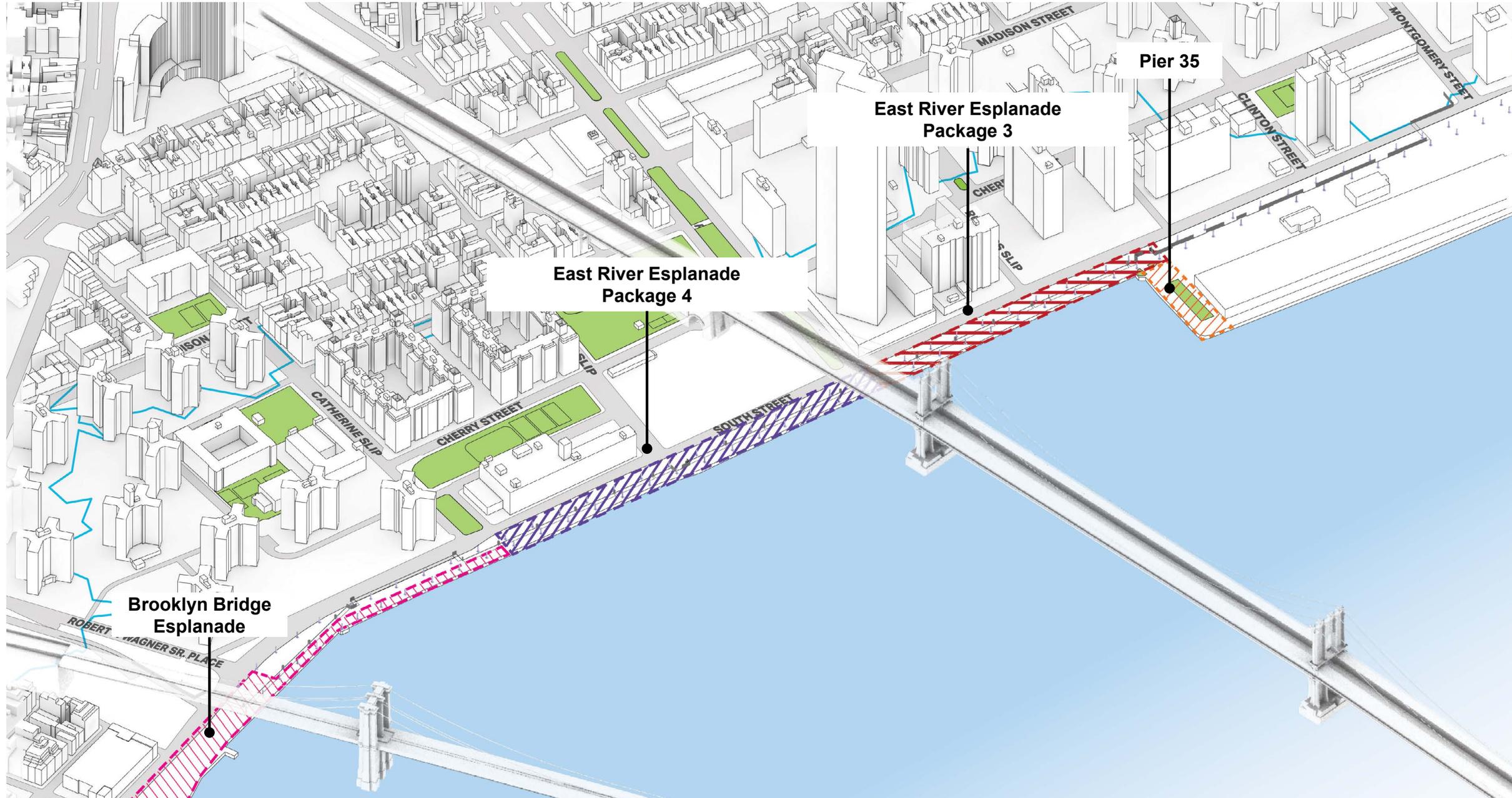
3 Design Updates

The BMCR and ESCR **drainage systems will be connected** so that stormwater flows to the Manhattan Pump Station and gets pumped to and treated at the Newtown Creek Wastewater Treatment Plant.



③ Design Updates

Project Coordination



3 Design Updates

Existing and Planned Public Amenities



③ Design Updates

2016-2018 Community Input



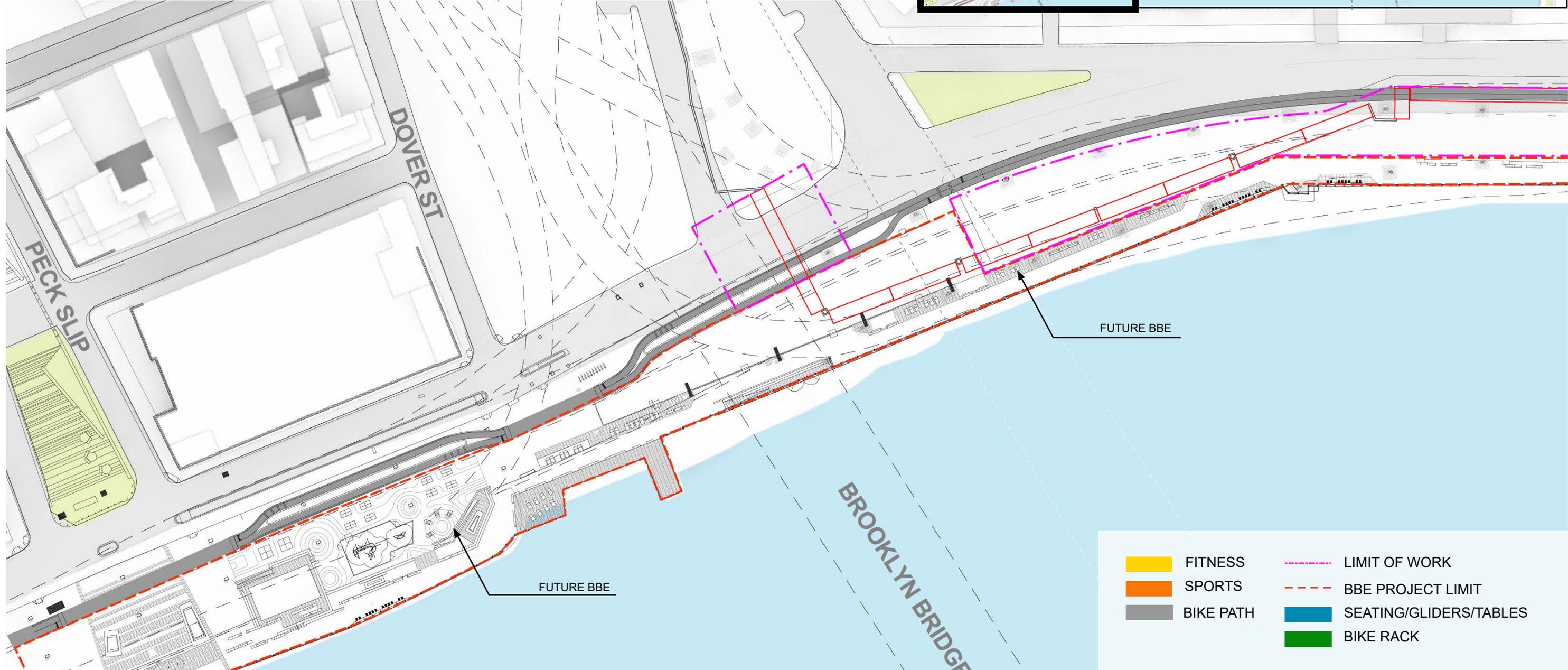
3 Design Updates

Impacted Program to Replace or Remove



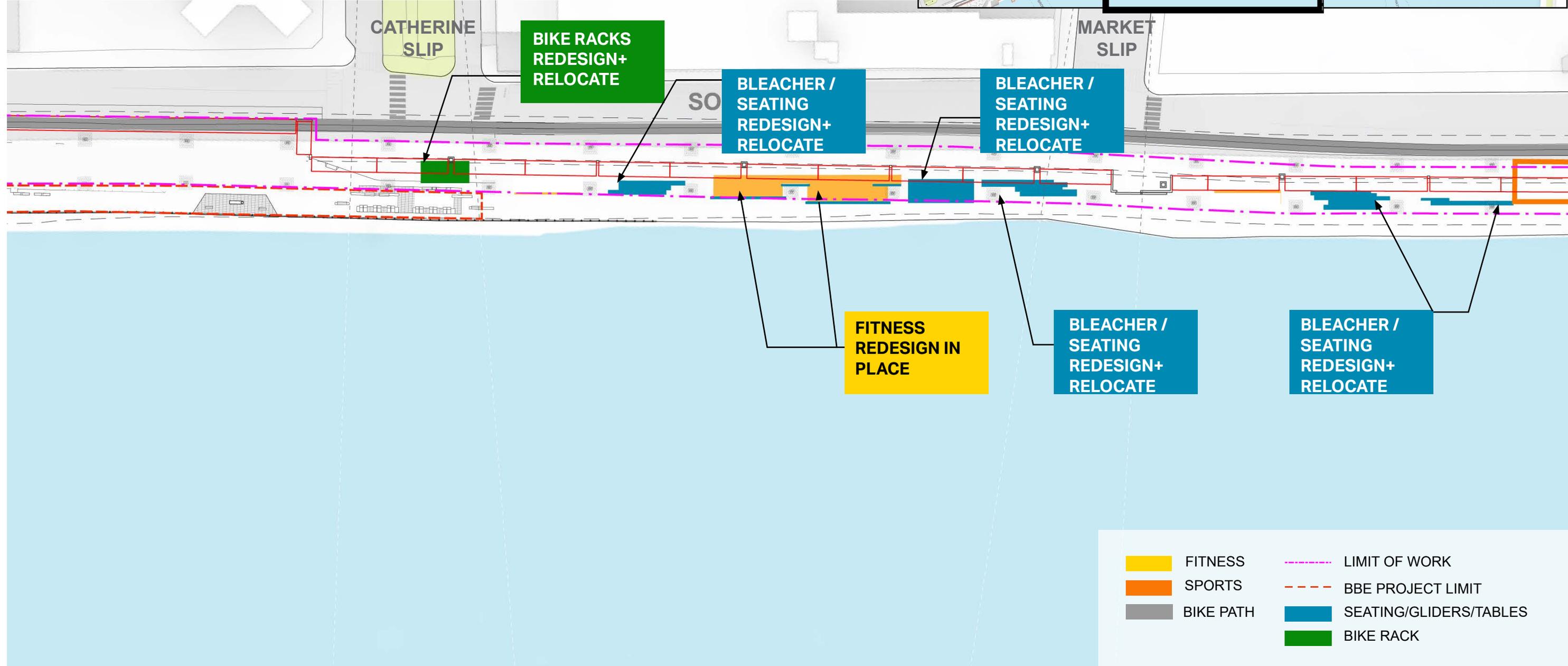
③ Design Updates

Impacted Program to Replace or Remove



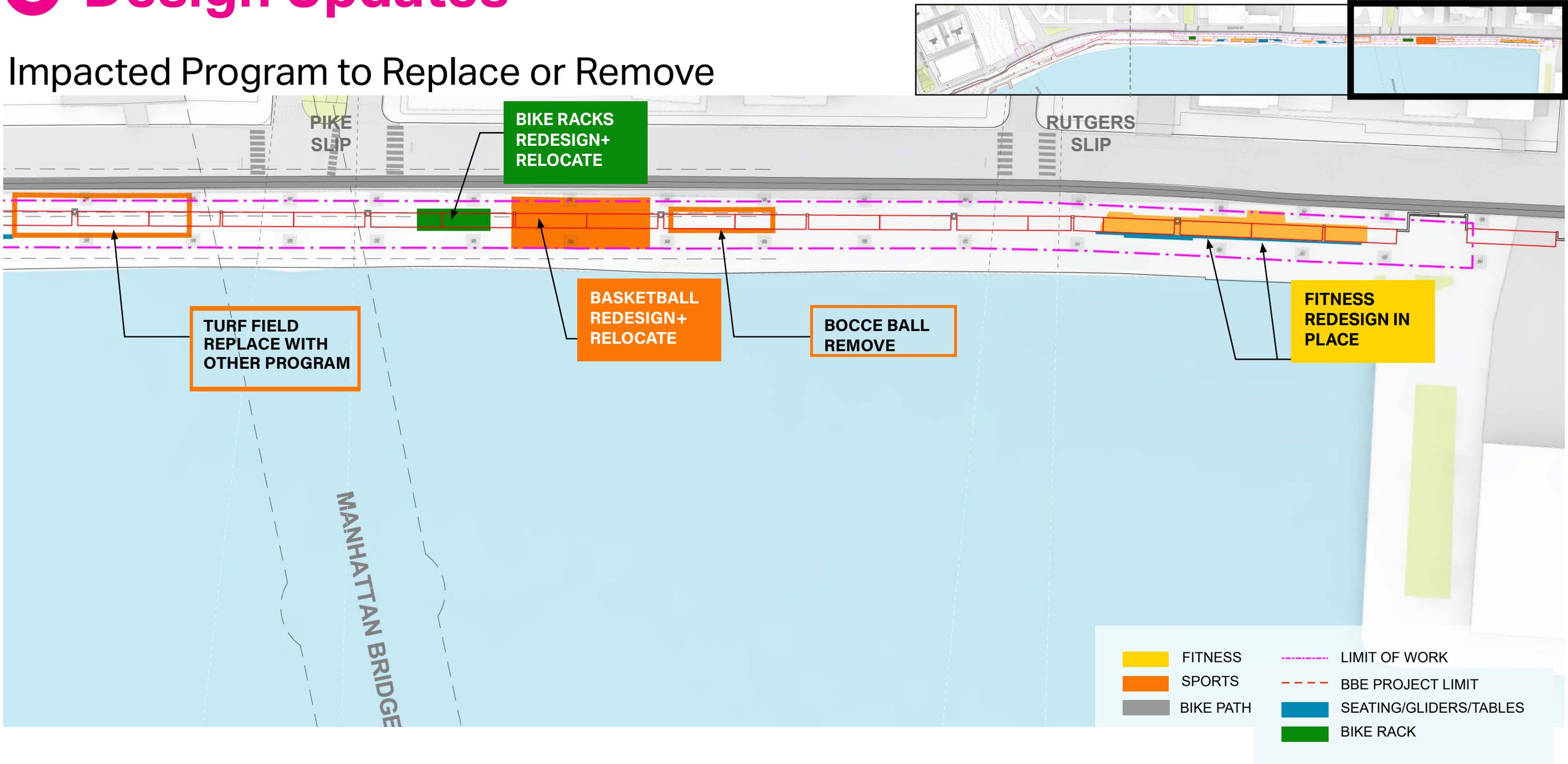
3 Design Updates

Impacted Program to Replace or Remove



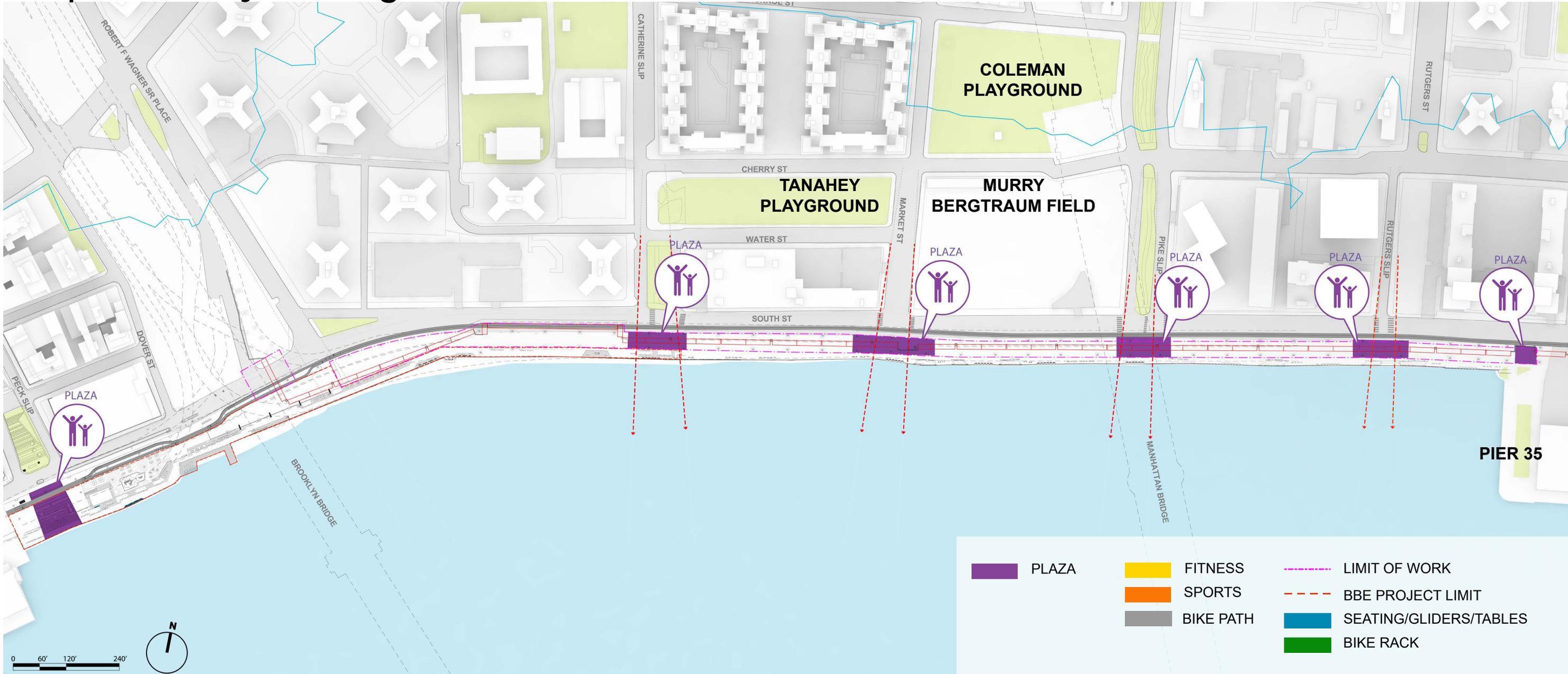
③ Design Updates

Impacted Program to Replace or Remove



3 Design Updates

Proposed Project Program



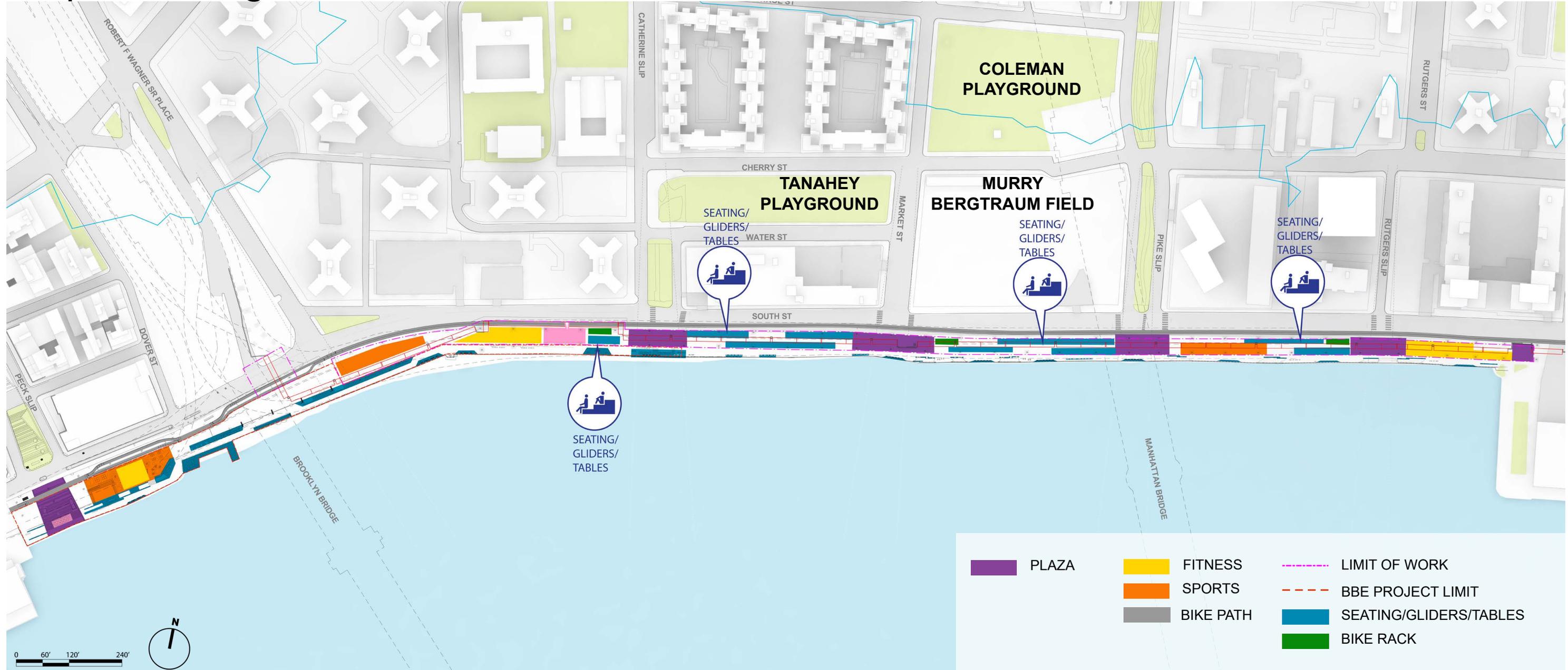
③ Design Updates

Proposed Project Program



③ Design Updates

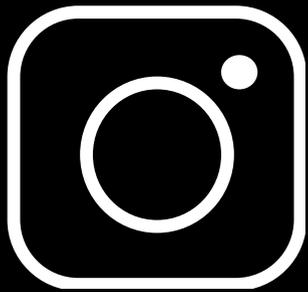
Proposed Program



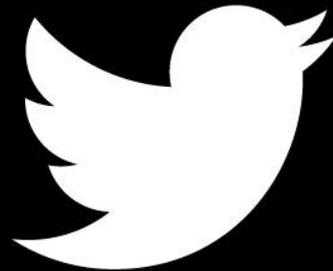
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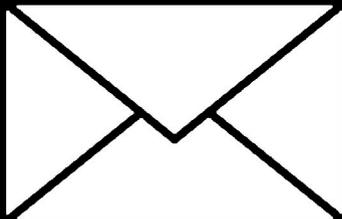
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