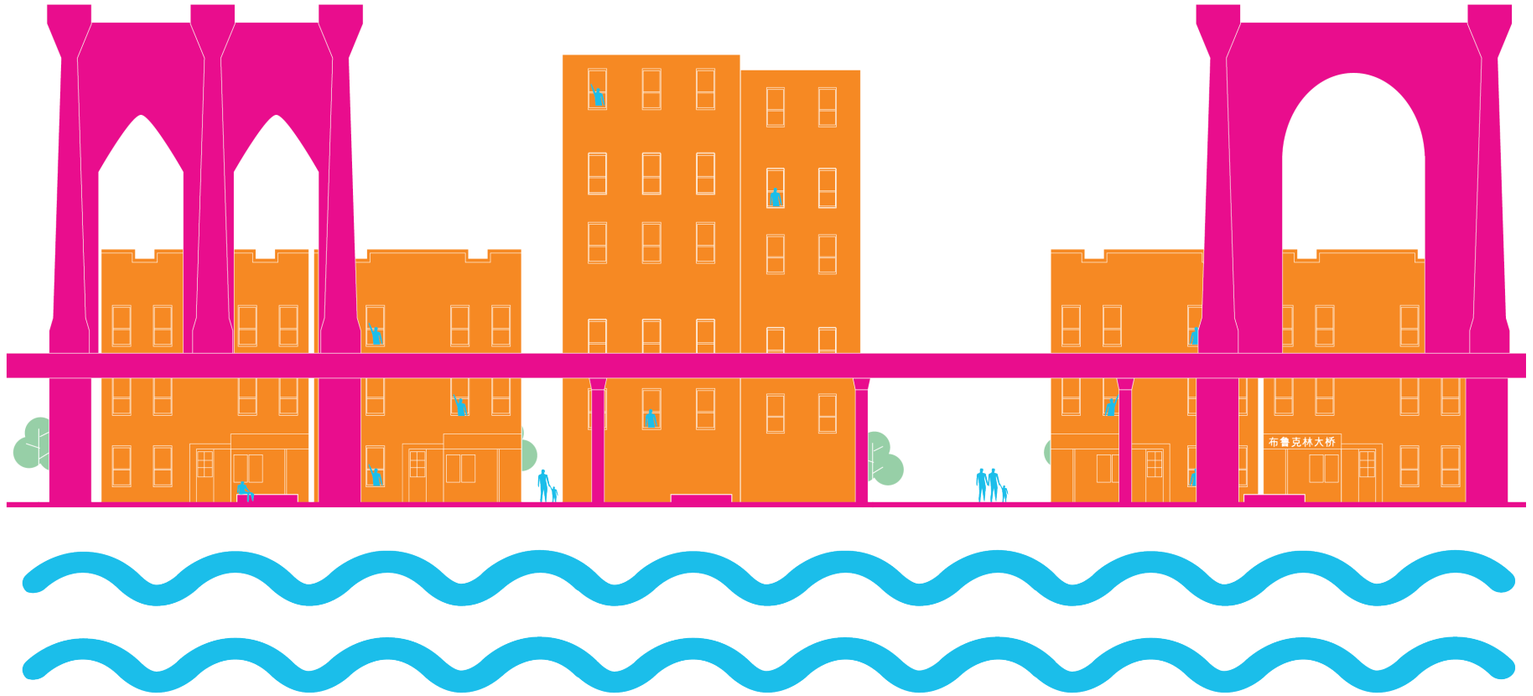

BK Bridge - Montgomery Coastal Resilience

Public Webinar Presentation

December 16, 2020

BK Bridge - Montgomery Coastal Resilience

NYC EDC

NYC Mayor's Office of Resiliency

NYC DDC Department of Design and Construction

NYC Parks

NEW YORK CITY DOT

AECOM

AGENDA

1. LOWER MANHATTAN COASTAL RESILIENCY
2. PROJECT INTRODUCTION
3. COMMUNITY FLOOD PROTECTION
4. RAISING THE PLATFORM
5. PROJECT DESIGN
6. INTERCEPTOR GATE BUILDING

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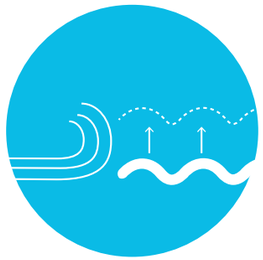
LOWER MANHATTAN COASTAL RESILIENCY

Types of Flood Risk Facing Lower Manhattan



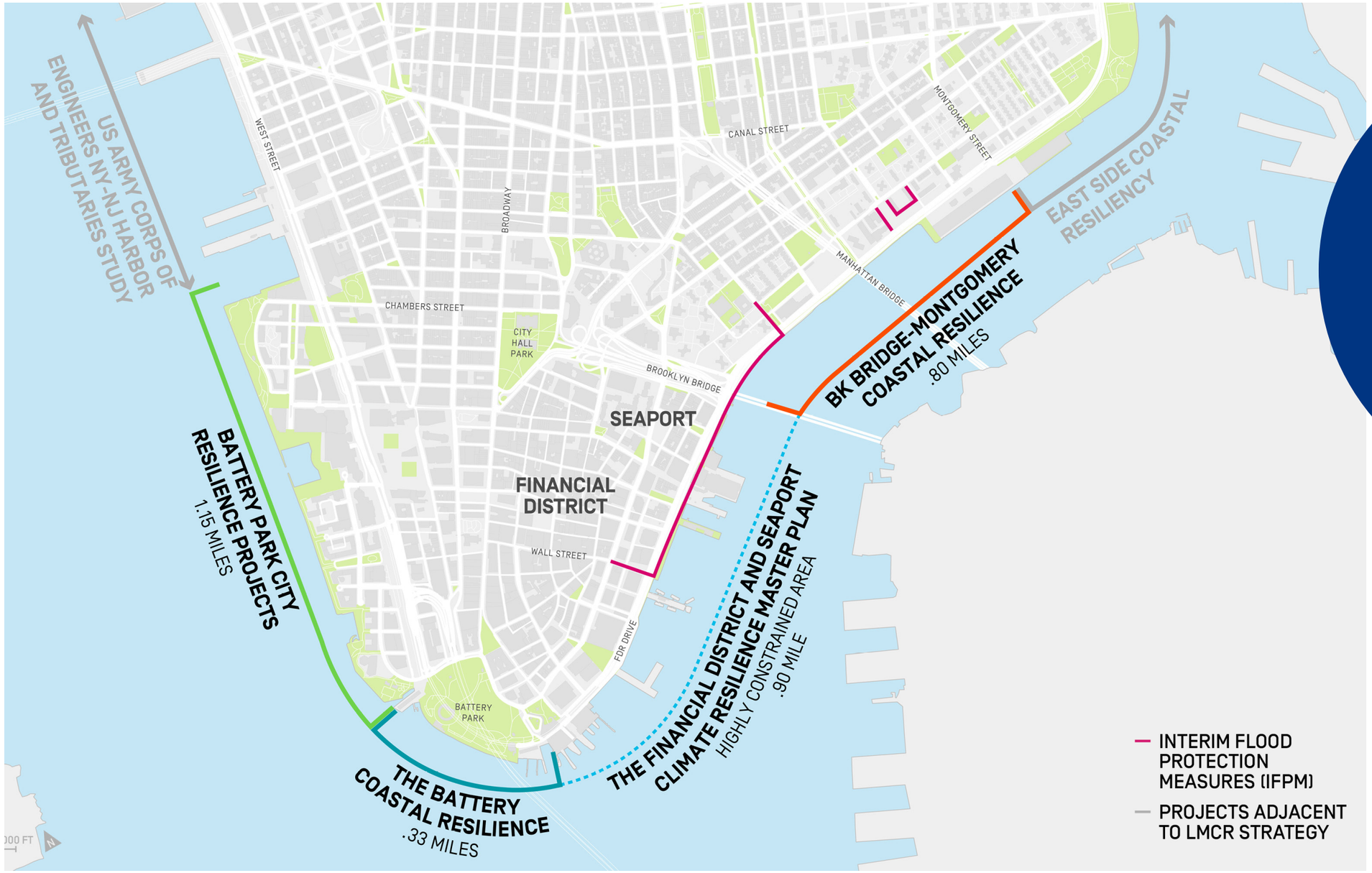
Storm Surge

The temporary increase, at a particular location, in the height of the sea due to extreme weather conditions.

Sea Level Rise (SLR)

Refers to the increase in sea level caused by a change in the volume of the world's oceans due to temperature increase, ice melt, and deglaciation (uncovering of glaciated land because of melting of the glacier).

LOWER MANHATTAN COASTAL RESILIENCY



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

Capital projects to protect 70% of the shoreline of Lower Manhattan, and Master Plan for remaining 30%

PROJECT DESCRIPTION

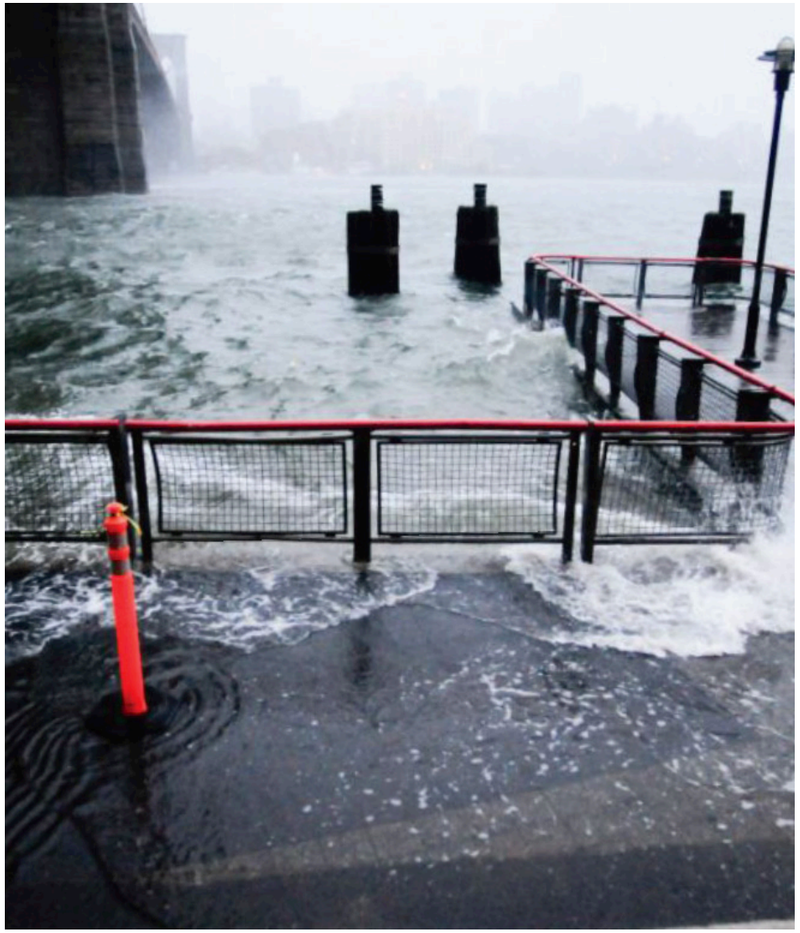
The **BK Bridge-Montgomery Coastal Resilience (BMCR)** project is a section of the LMCR project stretching from the Brooklyn Bridge to Montgomery Street.

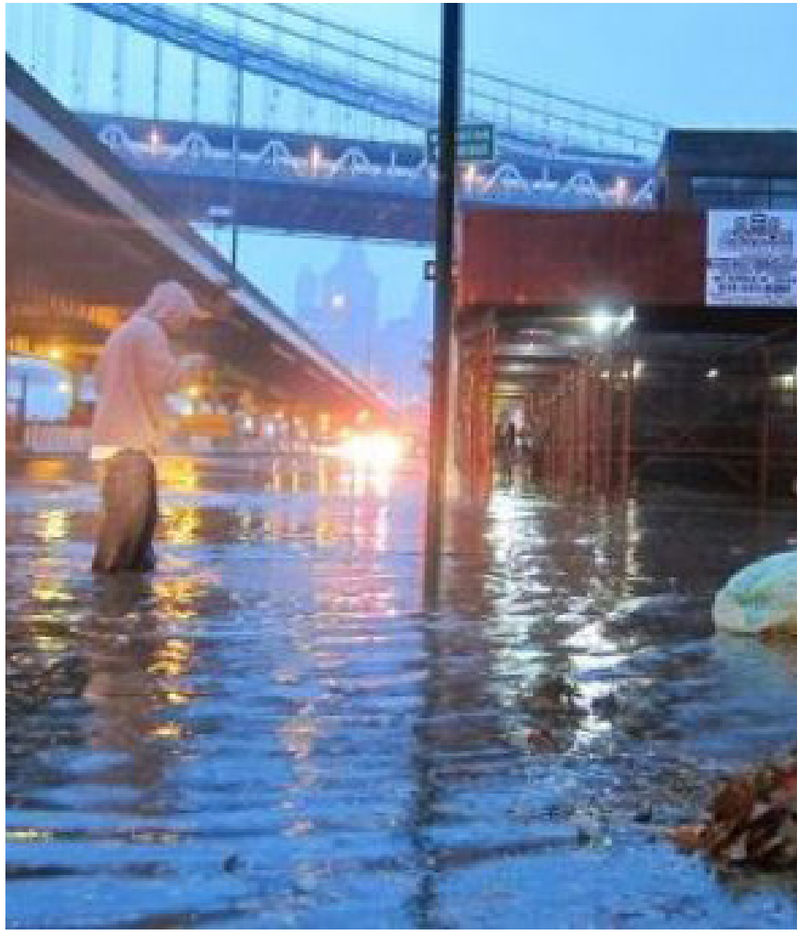
The infrastructure, when deployed, will protect the **Two Bridges neighborhood** from flooding while maintaining the community's views and access to the waterfront.

Project Team: NYC EDC · NYC Mayor's Office of Resiliency · NYC DDC Department of Design and Construction · NYC Parks · NEW YORK CITY DOT · AECOM

LOWER MANHATTAN COASTAL RESILIENCY

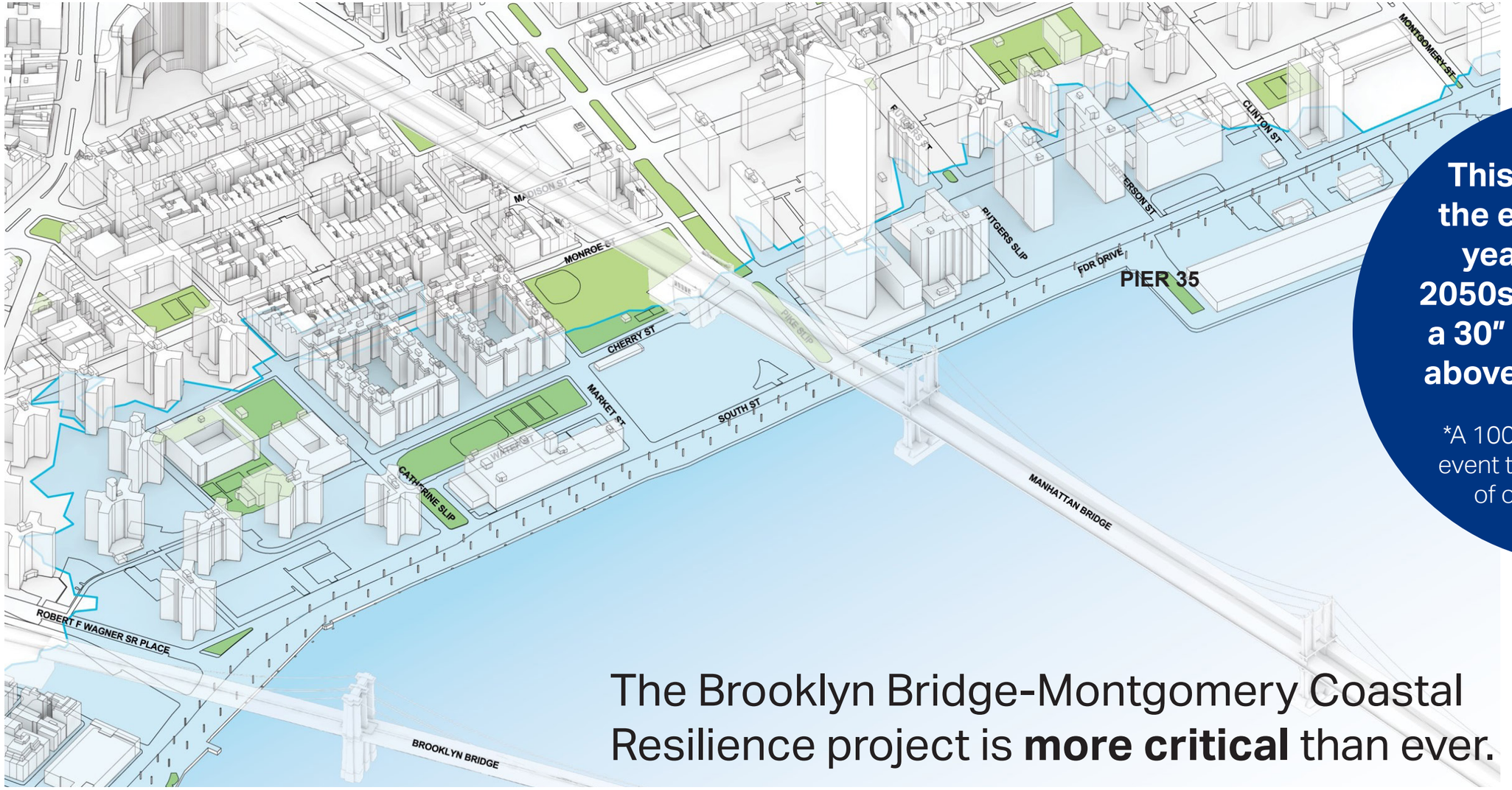
Flood damage in Two Bridges from Hurricane Sandy





LOWER MANHATTAN COASTAL RESILIENCY

Two Bridges Neighborhood - 2050s 100-Year Floodplain



This image shows the effect of a 100-year flood in the 2050s, accounting for a 30" rise in sea level above current height.

*A 100-year flood is a flood event that has a 1% chance of occurring in a year.

The Brooklyn Bridge-Montgomery Coastal Resilience project is **more critical** than ever.

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How we show up.

For over 4 years, the City has been meeting with Two Bridges community members.

10 Committee + Task Force Meetings

6 Public Meetings

4 Presentations at Local Housing Developments

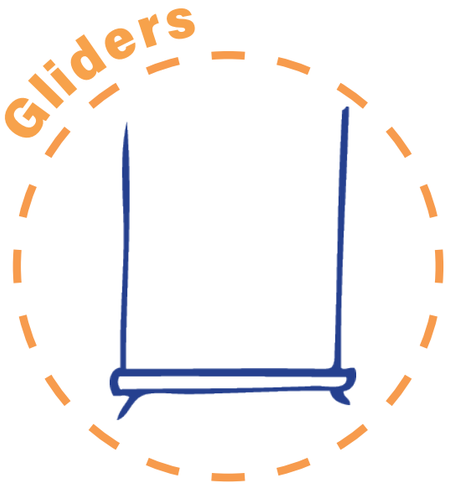
3 Community Tabling Sessions

3 Updates to Community Leaders

Incorporating your feedback.

In addition to providing flood protection, the new design incorporates your feedback on programming.

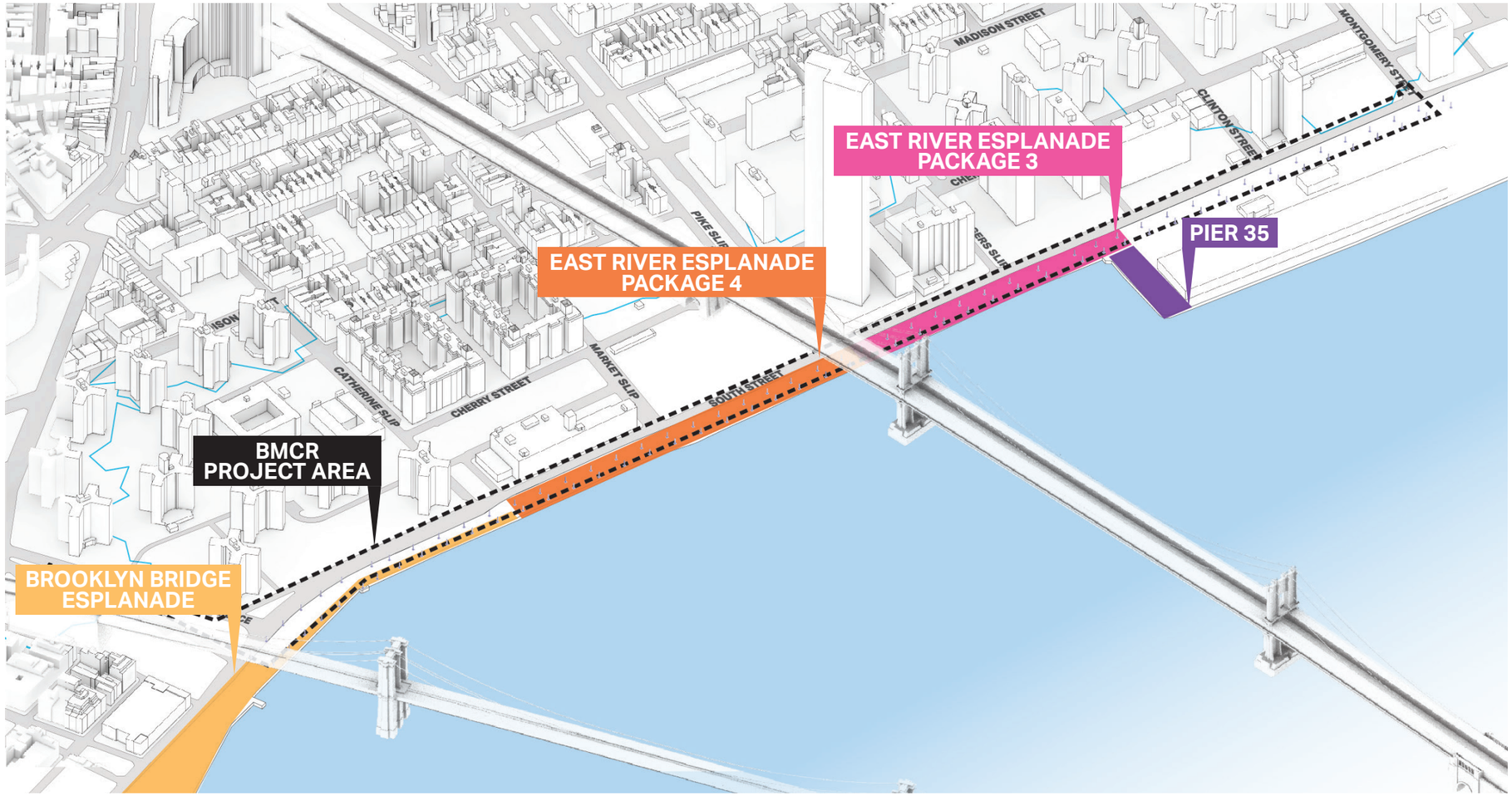
- [x] OPEN, FLEXIBLE SPACE
- [x] MORE UNIVERSAL FITNESS EQUIPMENT
- [x] PLAYGROUNDS AT THE WATERFRONT
- [x] MORE GLIDERS



BMCR PROJECT TIMELINE

This presentation is intended to show how we have integrated **your feedback**, collected from 2016 to 2020, into the design of **flood protection** systems and waterfront **public space** in the Two Bridges Neighborhood.

COORDINATING ACROSS PROJECTS



TIMELINES

PIER 35
2019 Completed

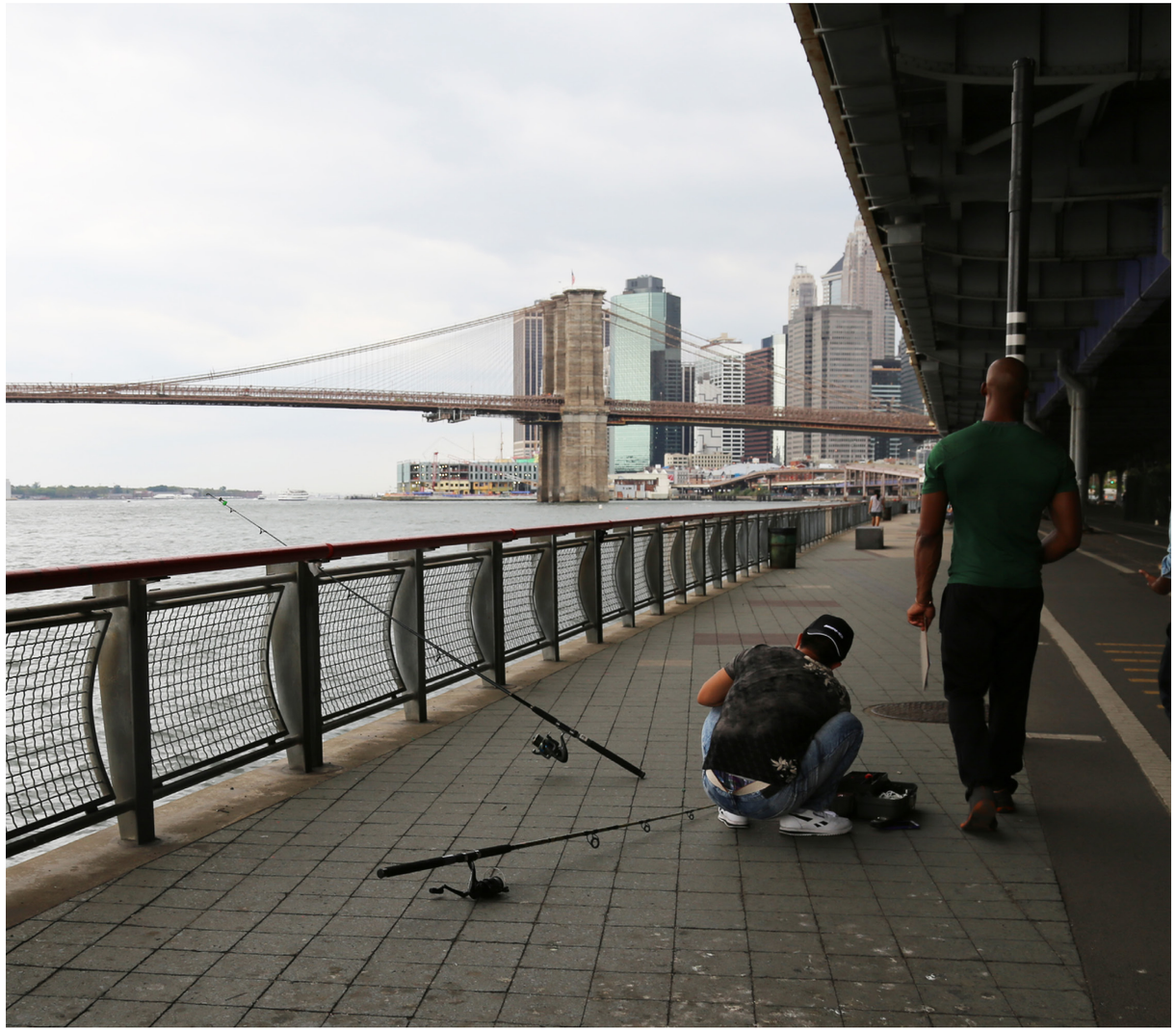
EAST RIVER ESPLANADE - PACKAGE 3
2014 Completed

EAST RIVER ESPLANADE - PACKAGE 4
Completed 2020

BROOKLYN BRIDGE ESPLANADE (BBE)
October 2019 - 100% Construction Documents
Currently - Paused in Construction Procurement

BROOKLYN BRIDGE-MONTGOMERY COASTAL RESILIENCE
Late 2019 - Schematic Design Complete
Mid 2021 - 100% Construction Documents and Bidding
Late 2021 - Construction Starts
Mid 2025 - Construction Complete

WHAT DOES THE EXISTING WATERFRONT LOOK LIKE?



1 - FISHING AREA, LOOKING WEST

2 - SEATING / OBSERVATION AREA, LOOKING EAST

WHAT DOES THE EXISTING WATERFRONT LOOK LIKE?

3 - CULTURAL PERFORMANCE IN OPEN SPACE

4 - BIKE PARKING UNDER FDR

WHAT DOES THE EXISTING WATERFRONT LOOK LIKE?

5 - BASKETBALL COURTS

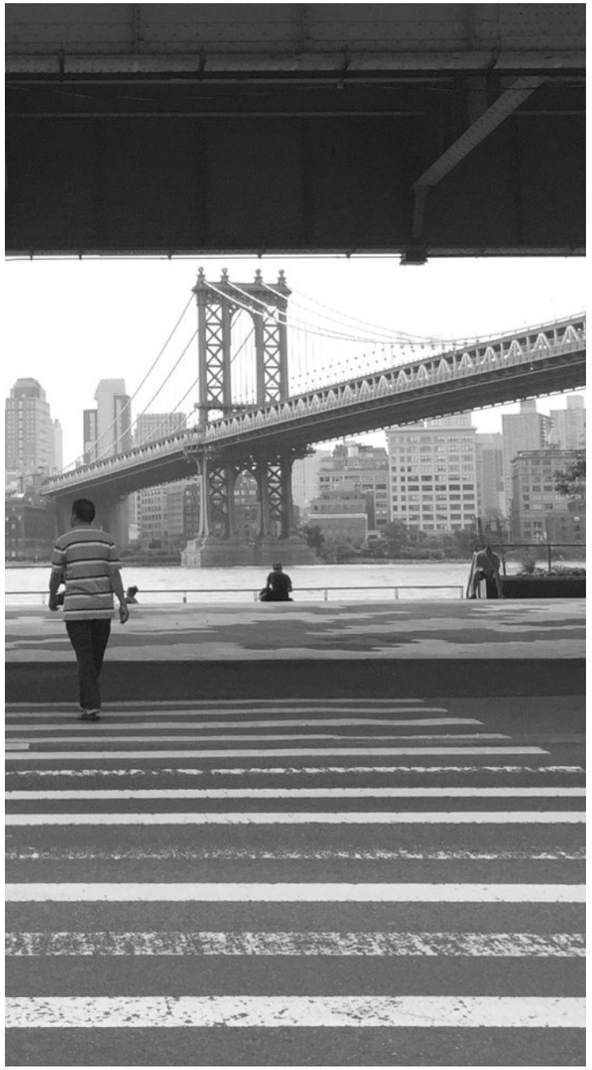
6 - EAST RIVER ESPLANADE FITNESS PARK

WHAT DOES THE EXISTING WATERFRONT LOOK LIKE?

7 - CATHERINE SLIP

8 - MARKET SLIP

9 - PIKE SLIP



10 - RUTGERS SLIP

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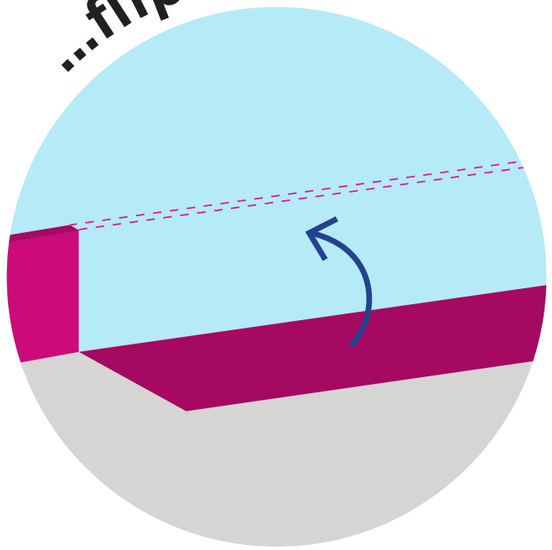
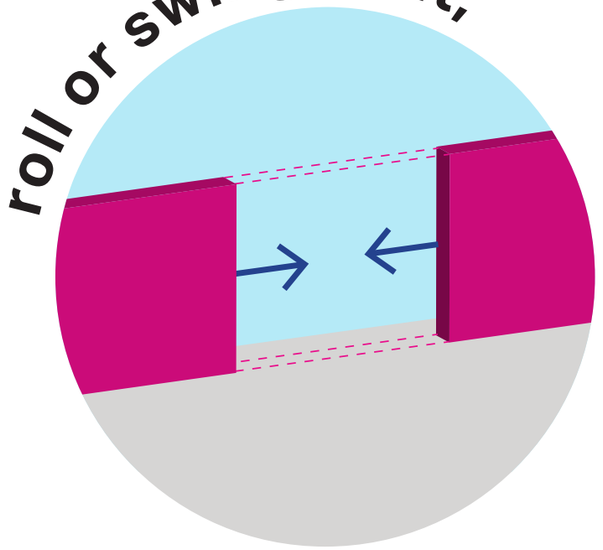
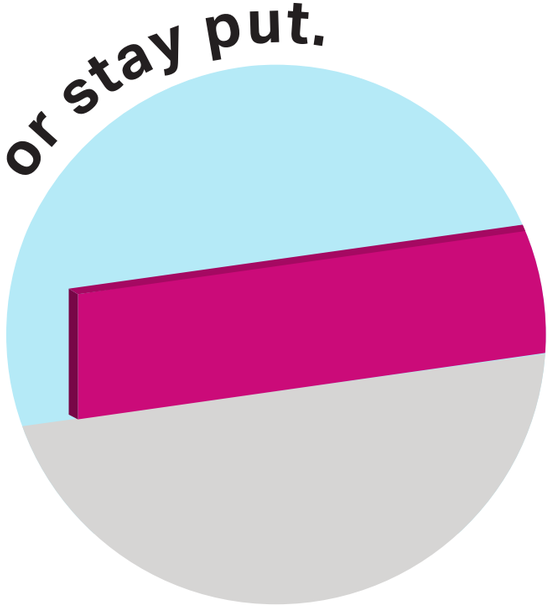
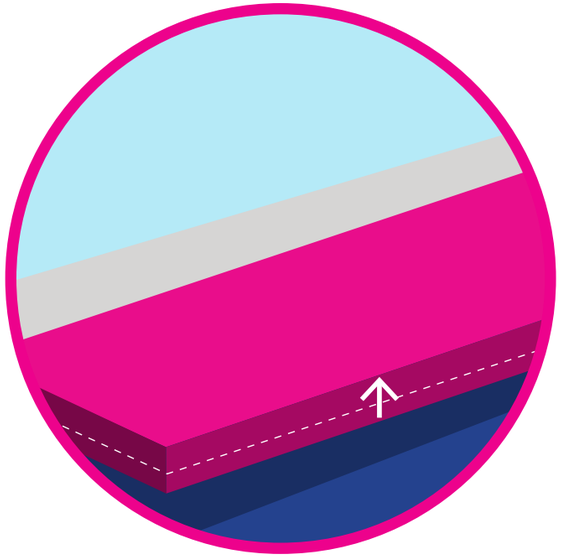
COMMUNITY FLOOD PROTECTION

During major flooding events and regular tidal flooding, the flood protection infrastructure, that varies in height from 8.5’-11’ along the waterfront and will either...





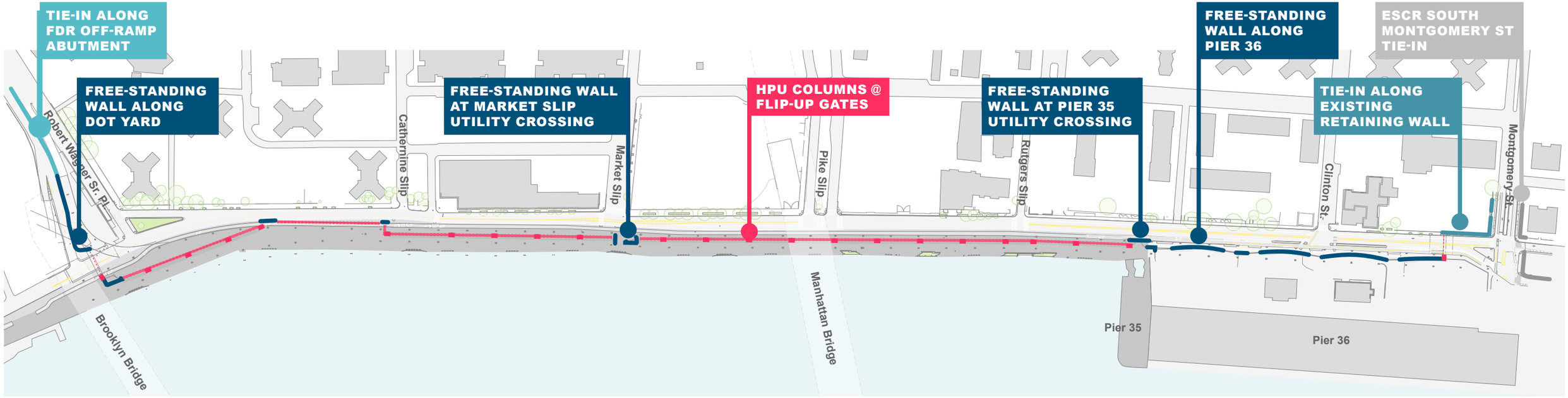




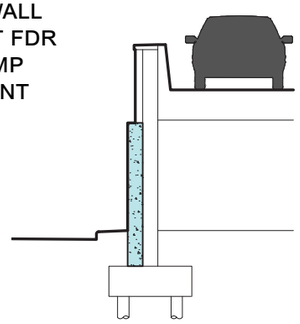
Key sections of the waterfront will also be raised to protect the community from tidal flooding.

FLOOD PROTECTION

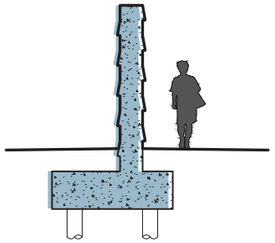
Exposed Floodwall Overview



FLOODWALL AGAINST FDR OFF-RAMP ABUTMENT

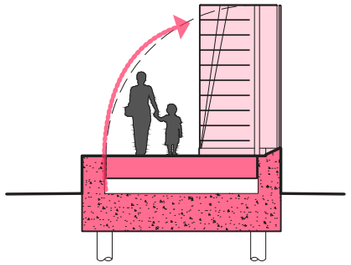


FREE-STANDING FLOODWALL

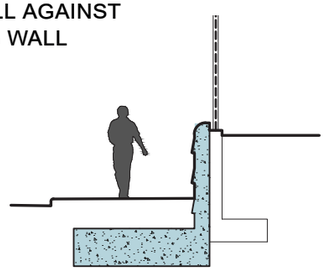


HPU COLUMNS

FLIP-UP GATES



FLOODWALL AGAINST RETAINING WALL



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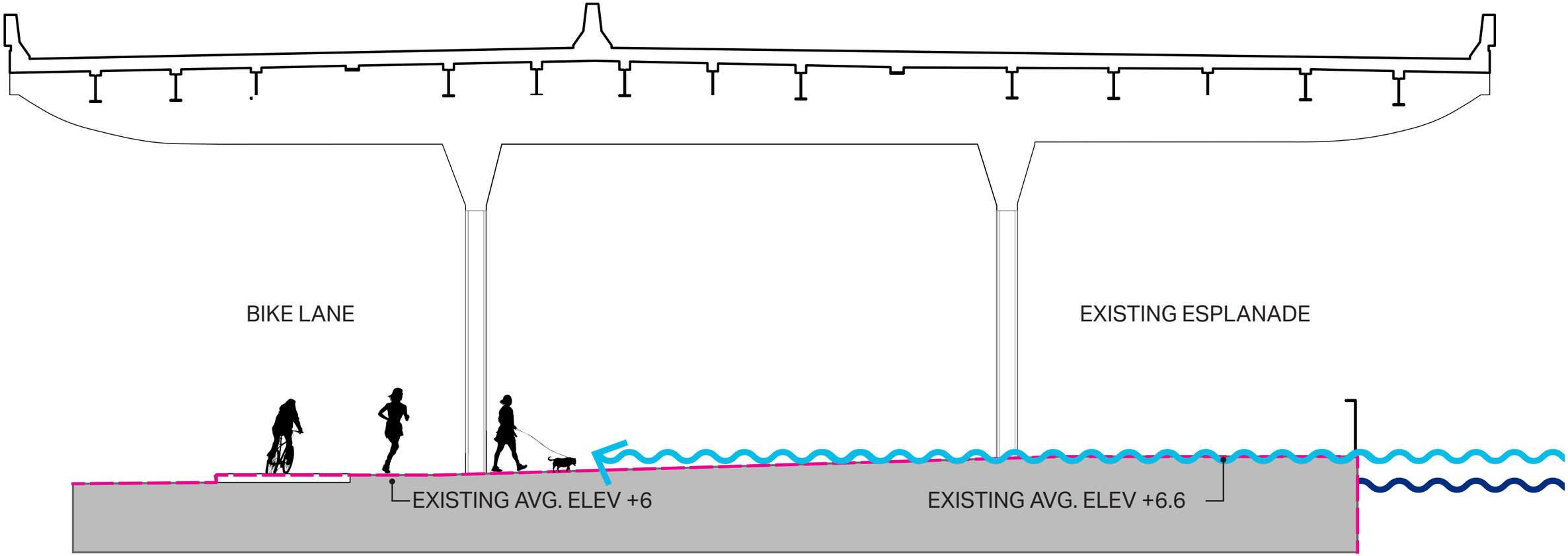
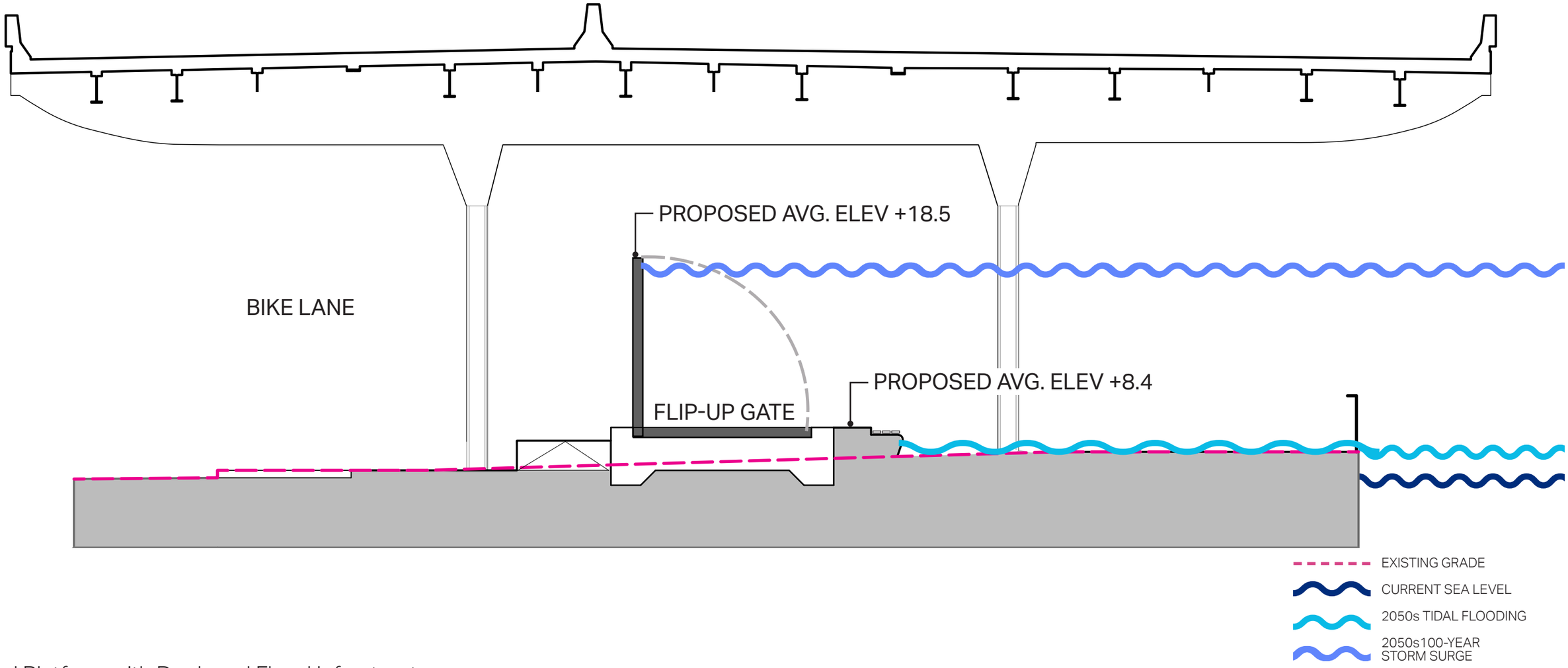
RAISING THE PLATFORM WILL ADDRESS FLOODING DUE TO SEA LEVEL RISE



- Raised Platform to Address Fair Weather Tidal Flooding from SLR
- Approximately 10-15 low-level inundation events per year in 2050s

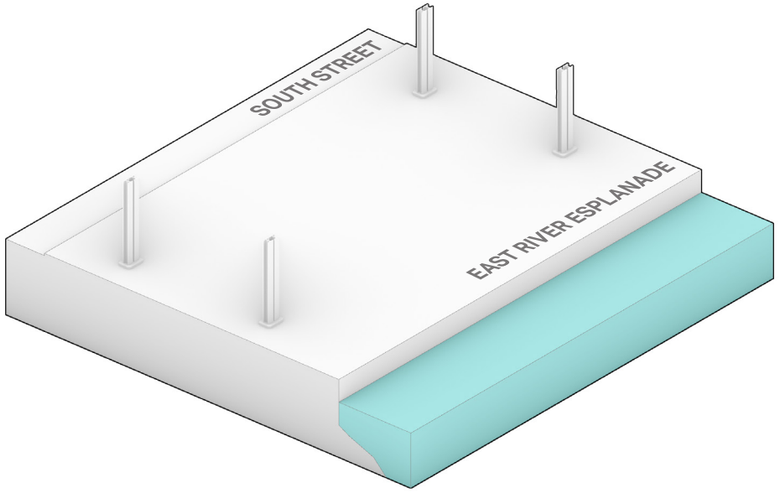
PROPOSED FLOOD PROTECTION IN ACTION



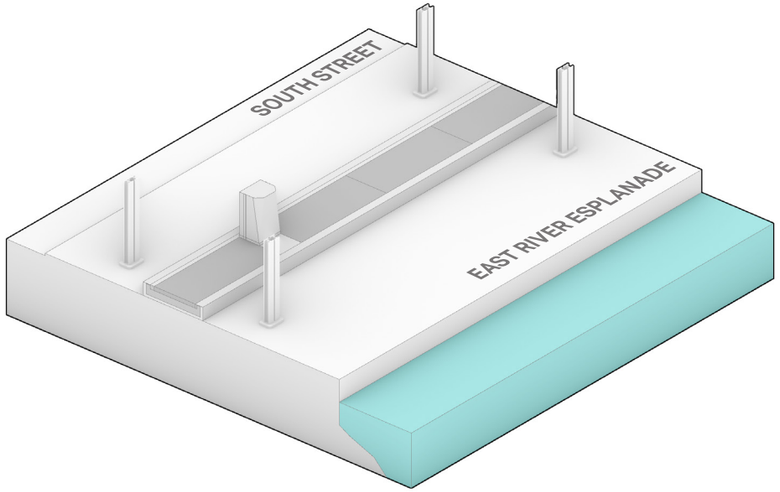
Raised Platform with Deployed Flood Infrastructure

RAISING THE PLATFORM TO MITIGATE FAIR WEATHER TIDAL FLOODING

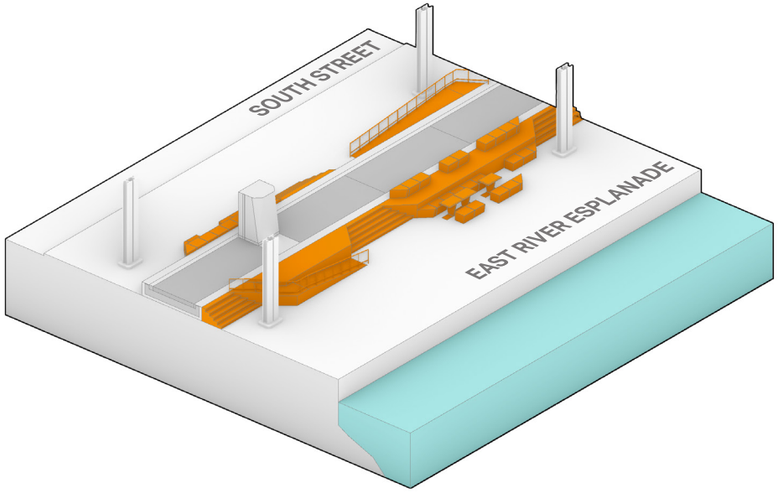
1. EXISTING WATERFRONT



2. RAISE THE PLATFORM TO A MAXIMUM OF 2.5 FT HIGH



3. CONNECT PUBLIC REALM



ACTIVATE RAISED PLATFORM AND CREATE UNIVERSALLY ACCESSIBLE SPACES

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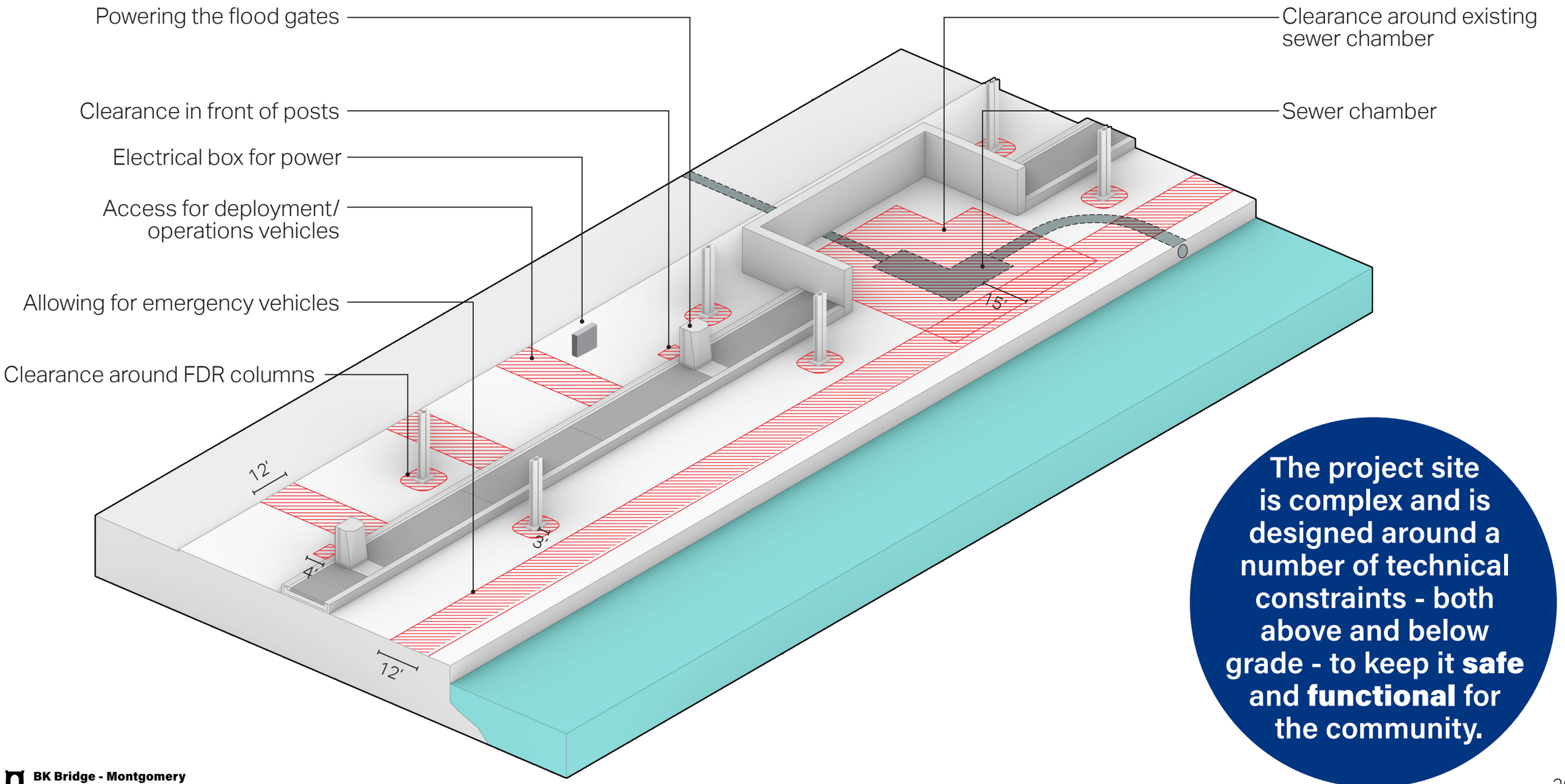
TYPICAL SITE CONSTRAINTS



The project site is complex and is designed around a number of technical constraints - both above and below grade - to keep it safe and functional for the community.

DESIGN FEATURES

The design features spaces to socialize, spaces to sit and relax, spaces to move, and spaces to play.

spaces to socialize,

spaces to sit and relax,

spaces to move,

and spaces to play.

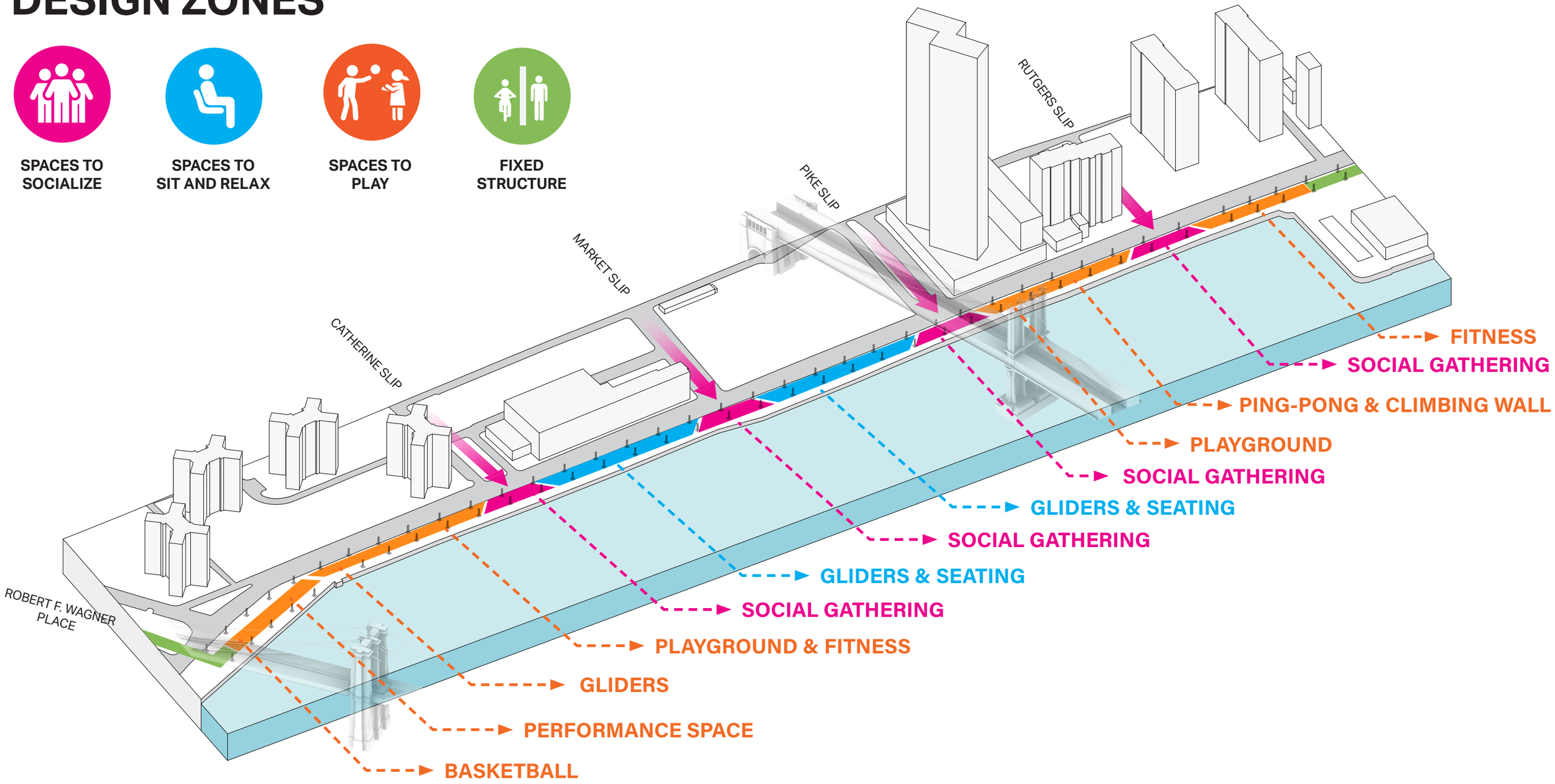
DESIGN ZONES

SPACES TO SOCIALIZE

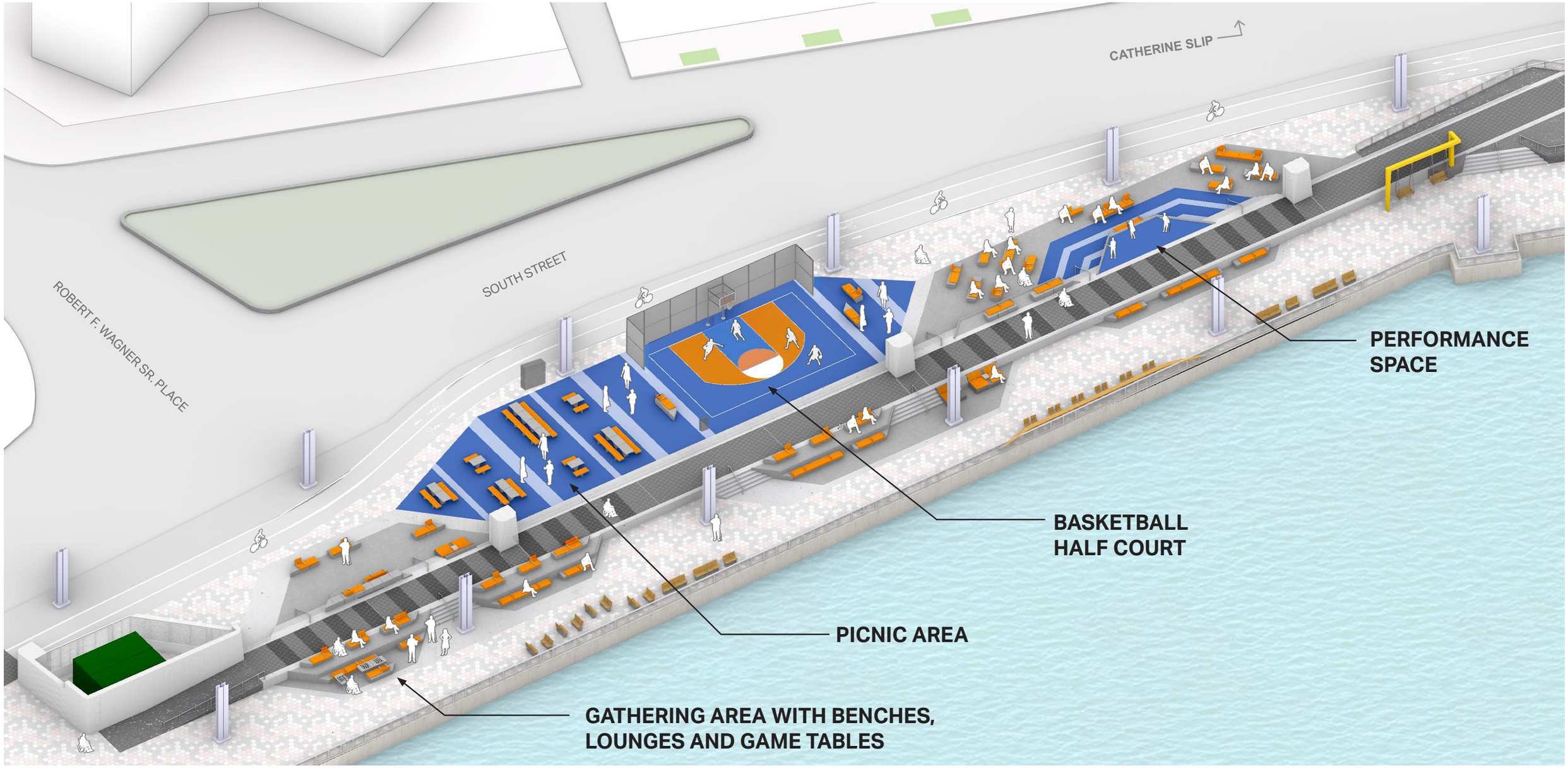
SPACES TO SIT AND RELAX

SPACES TO PLAY

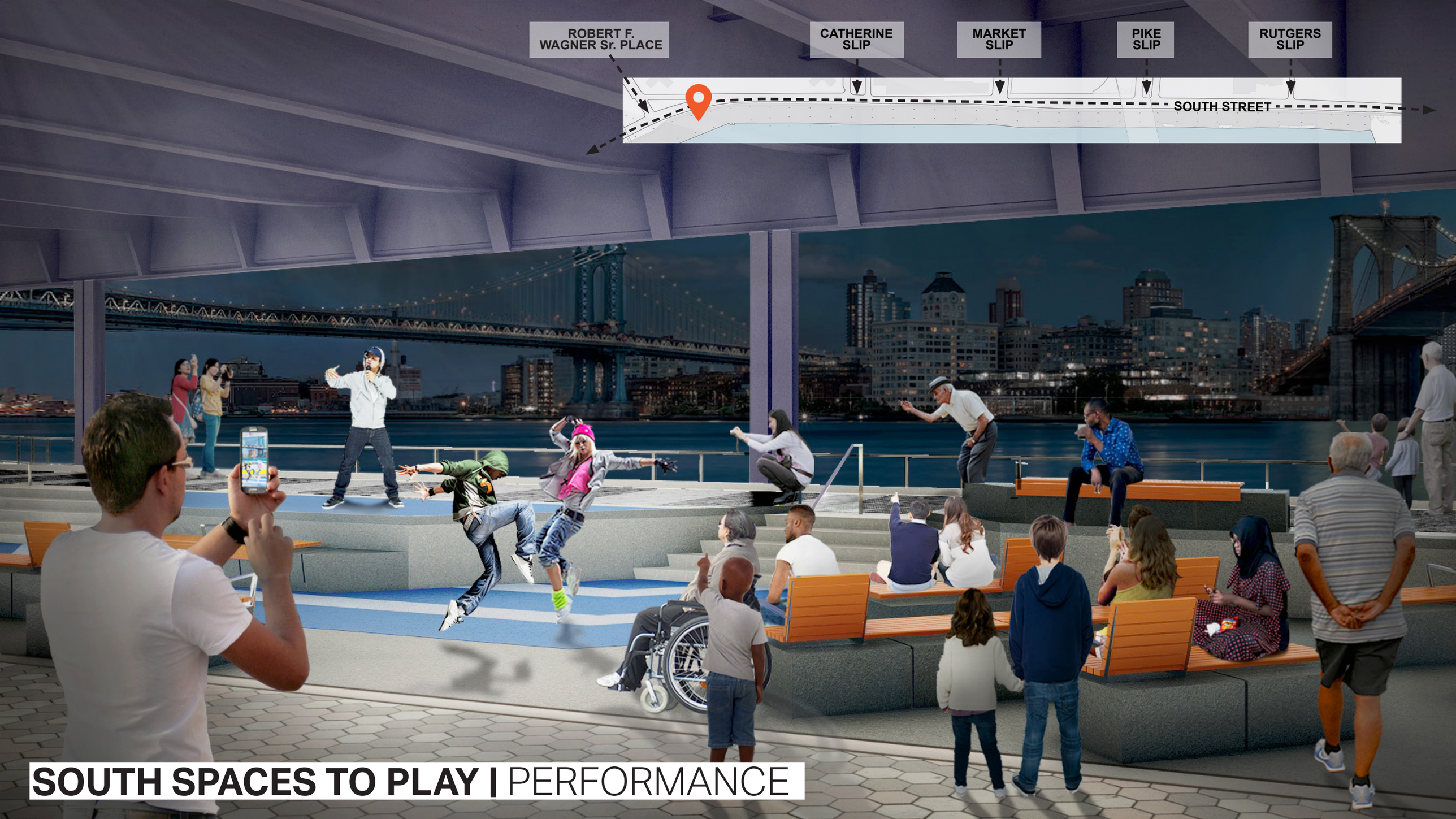
FIXED STRUCTURE



SPACES TO PLAY | SPORT / PERFORMANCE

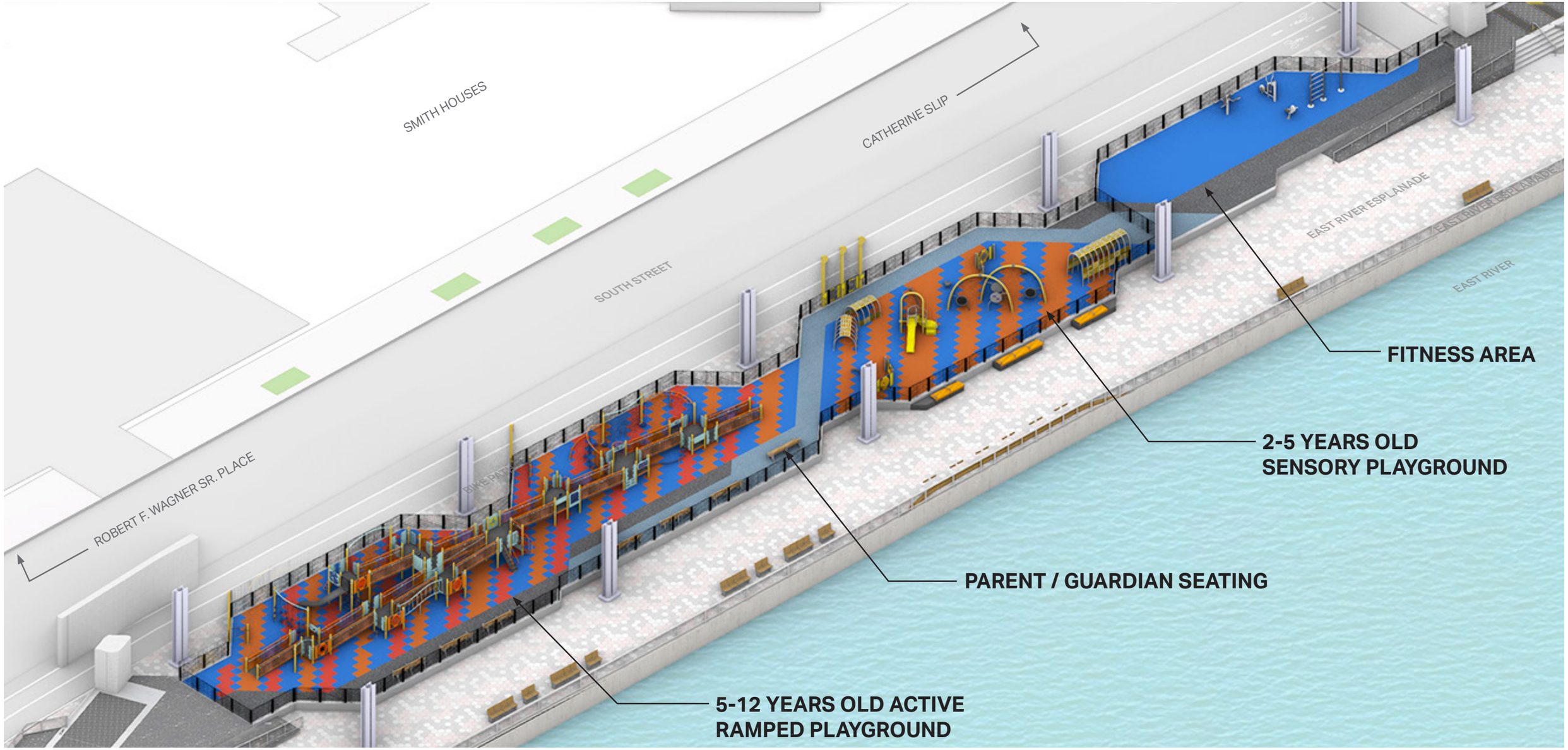


SOUTH SPACES TO PLAY | SPORT



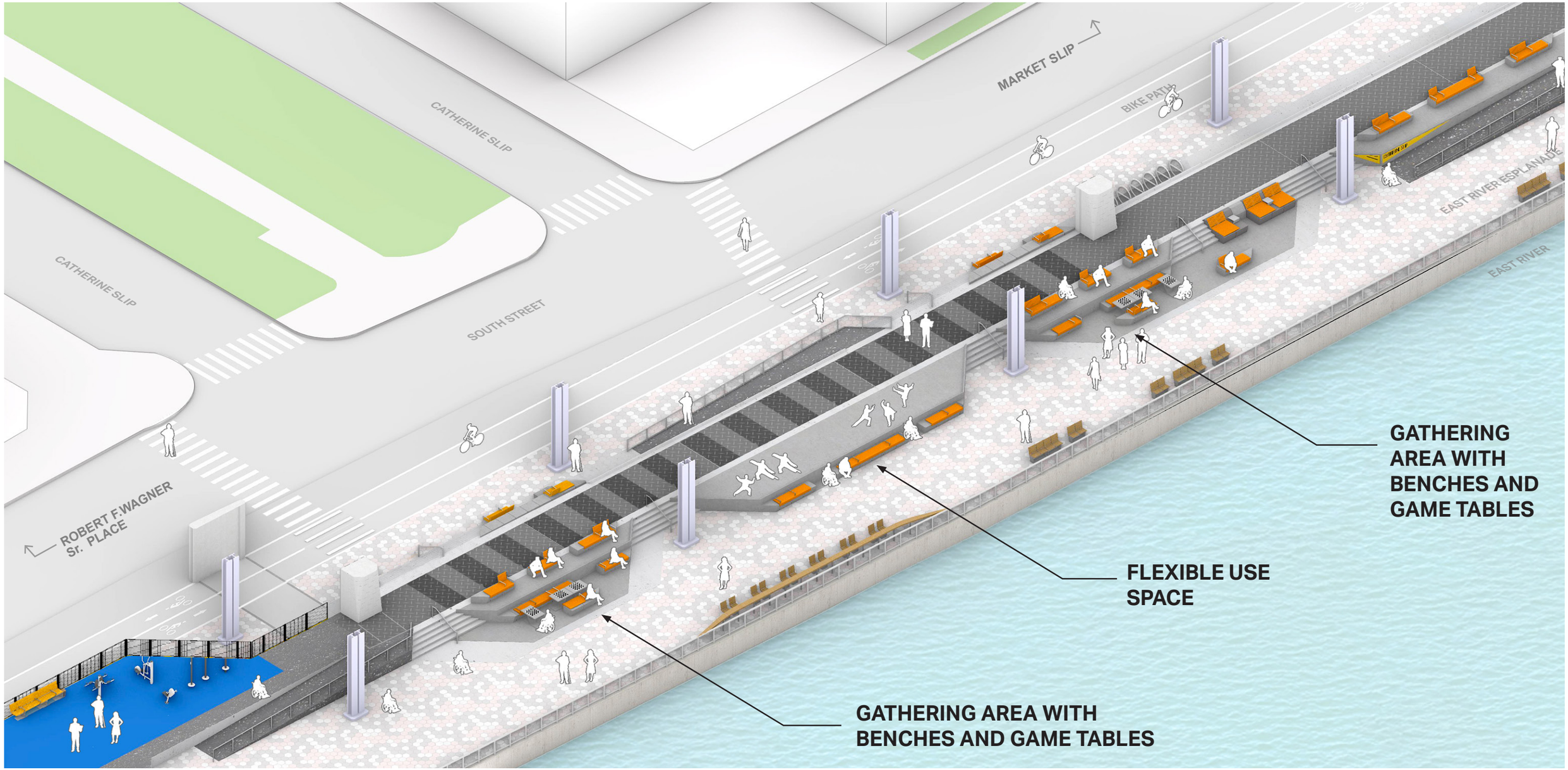
SOUTH SPACES TO PLAY | PERFORMANCE

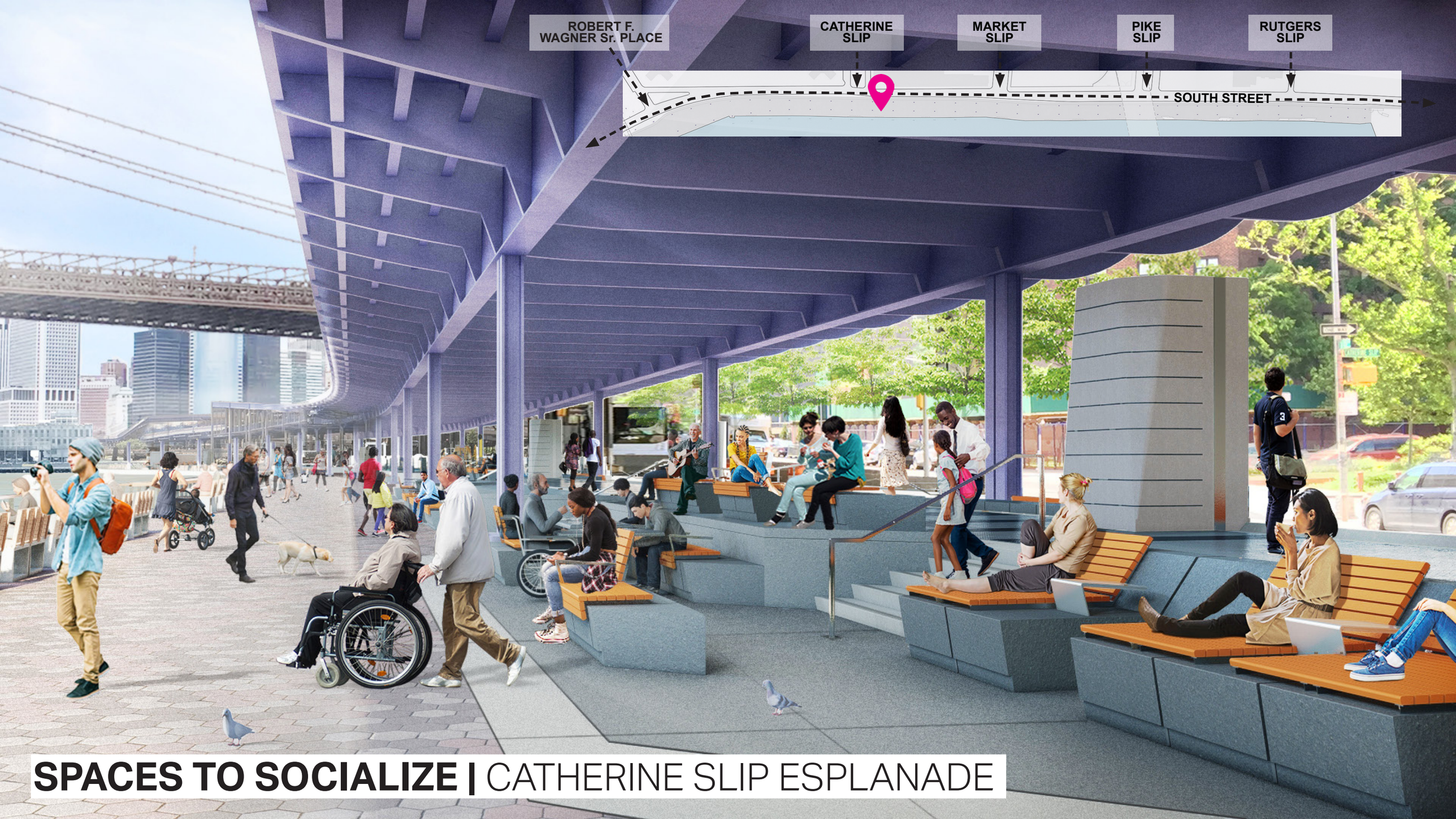
SOUTH SPACES TO PLAY | PLAY & FITNESS



SOUTH SPACES TO PLAY | PLAY

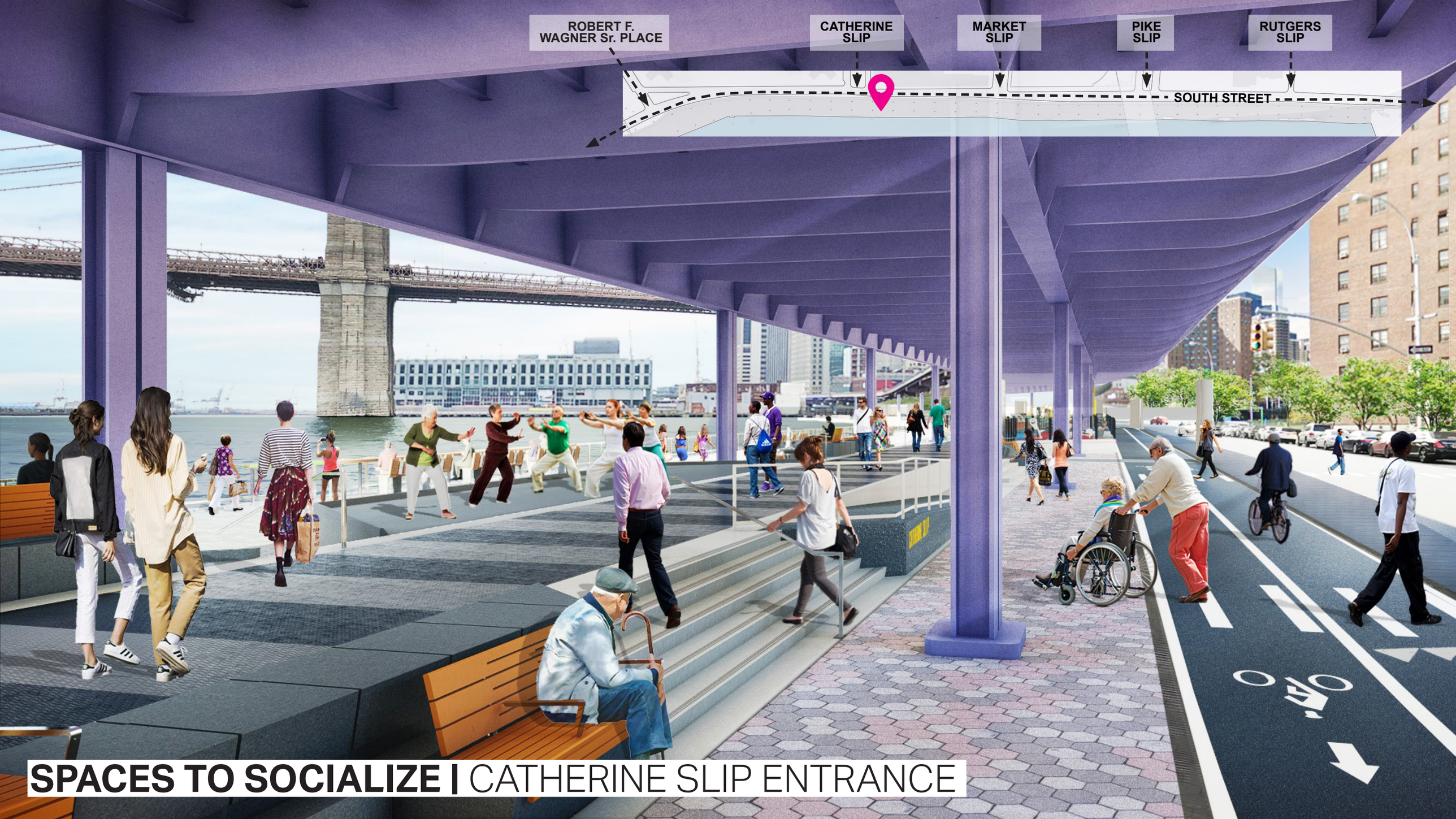
SPACES TO SOCIALIZE | CATHERINE SLIP



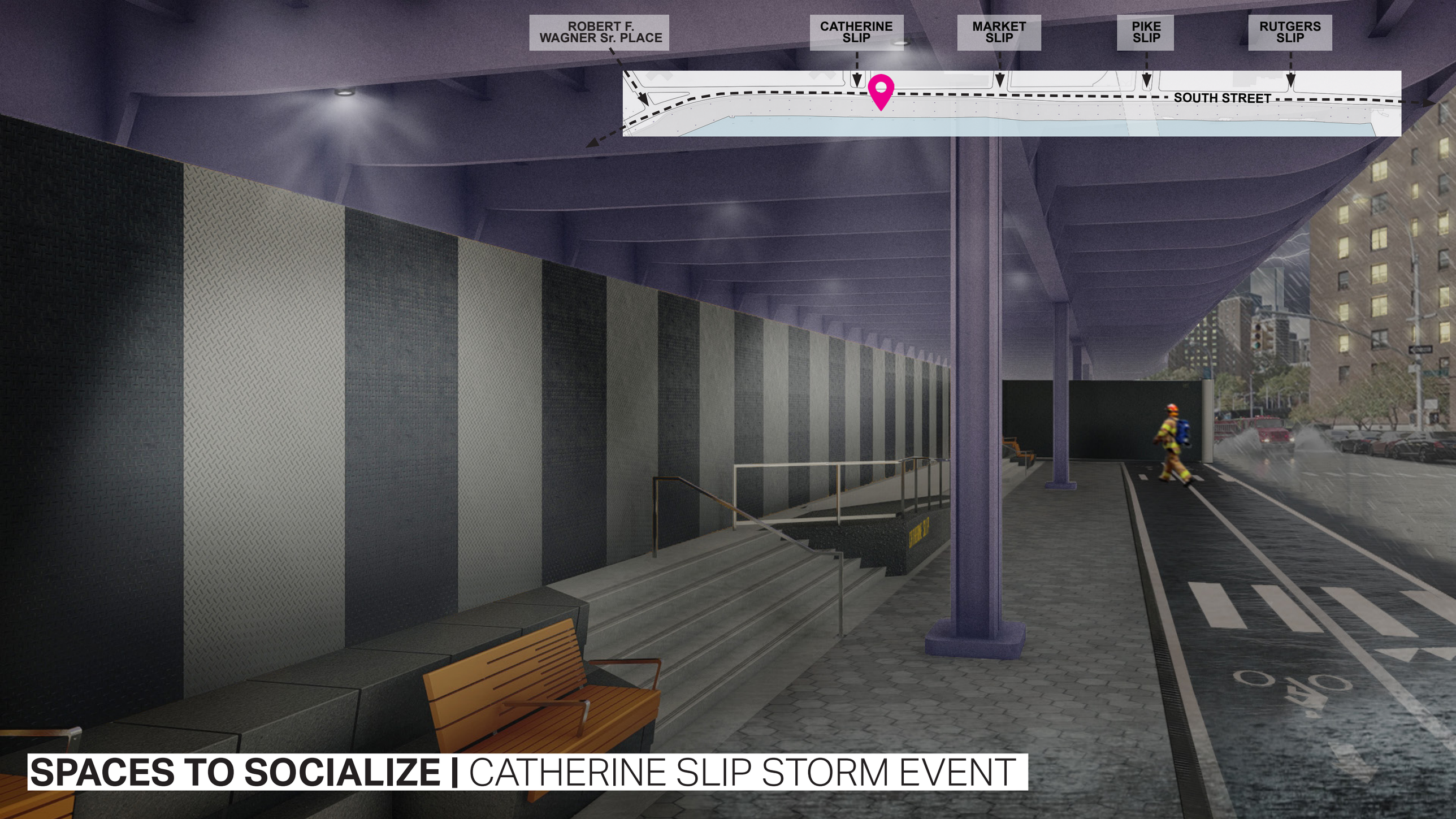


SPACES TO SOCIALIZE | CATHERINE SLIP ESPLANADE

SPACES TO SOCIALIZE | CATHERINE SLIP ESPLANADE

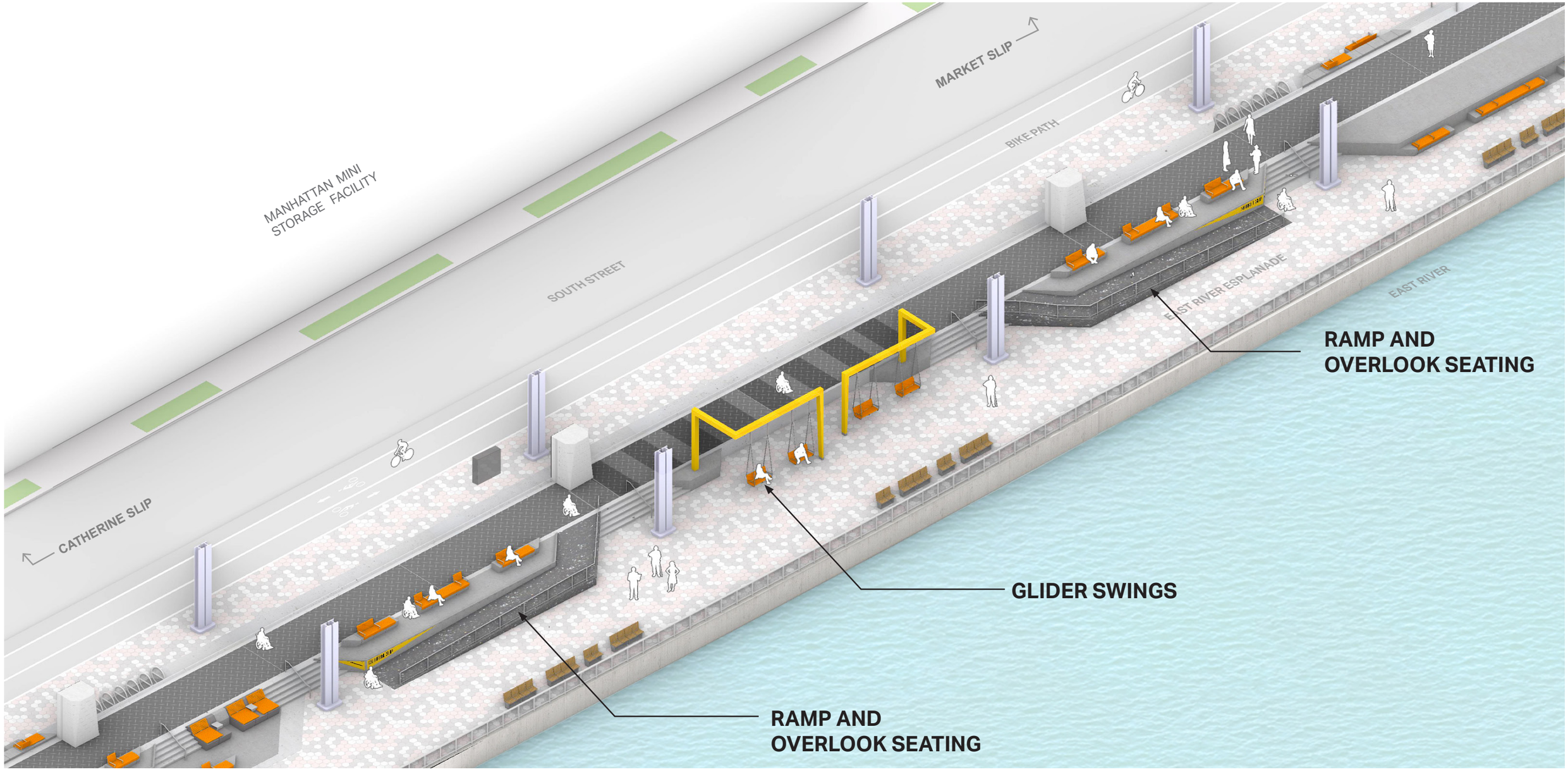


SPACES TO SOCIALIZE | CATHERINE SLIP ENTRANCE



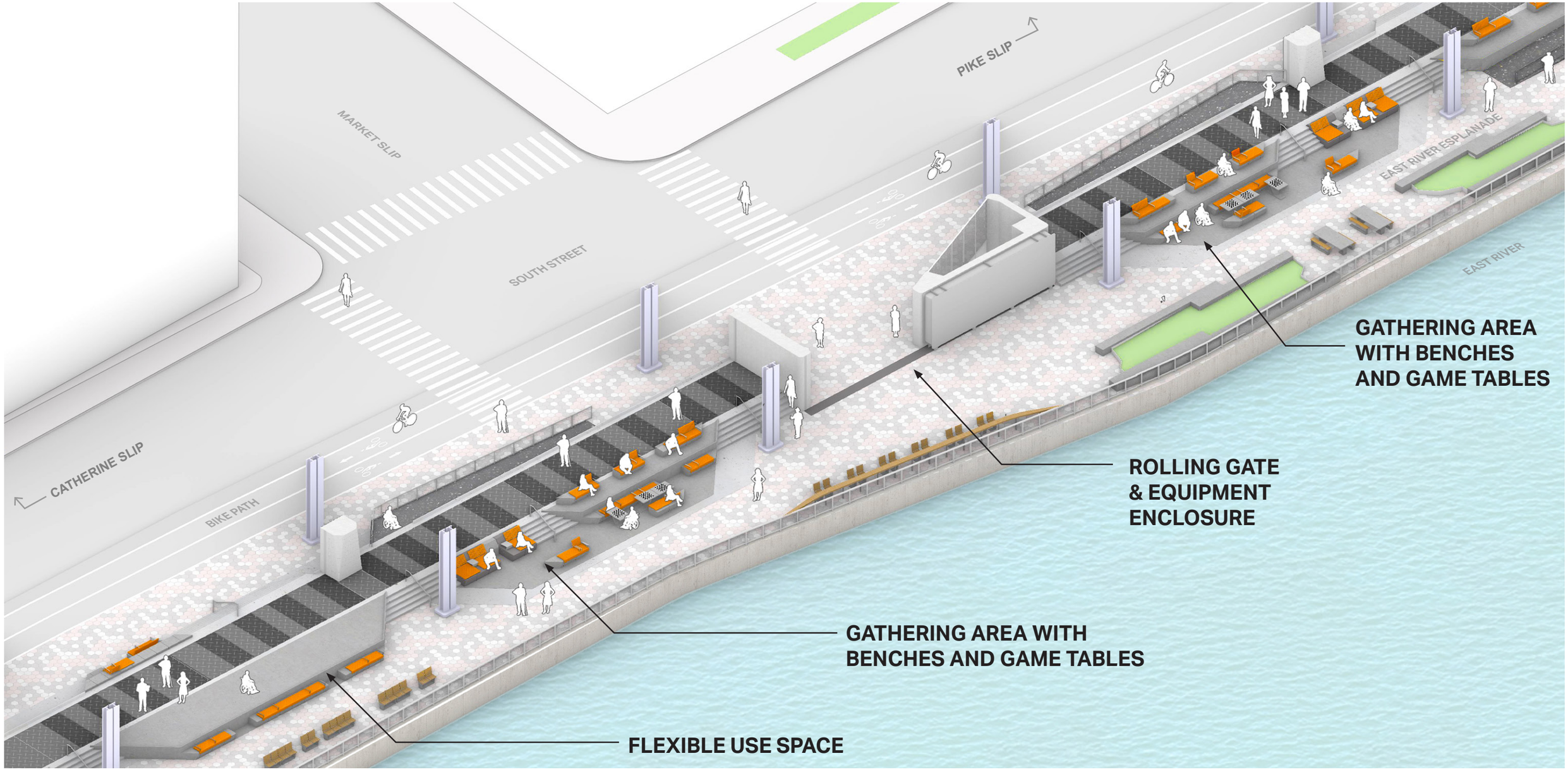
SPACES TO SOCIALIZE | CATHERINE SLIP STORM EVENT

SPACES TO SIT AND RELAX | CATHERINE / MARKET



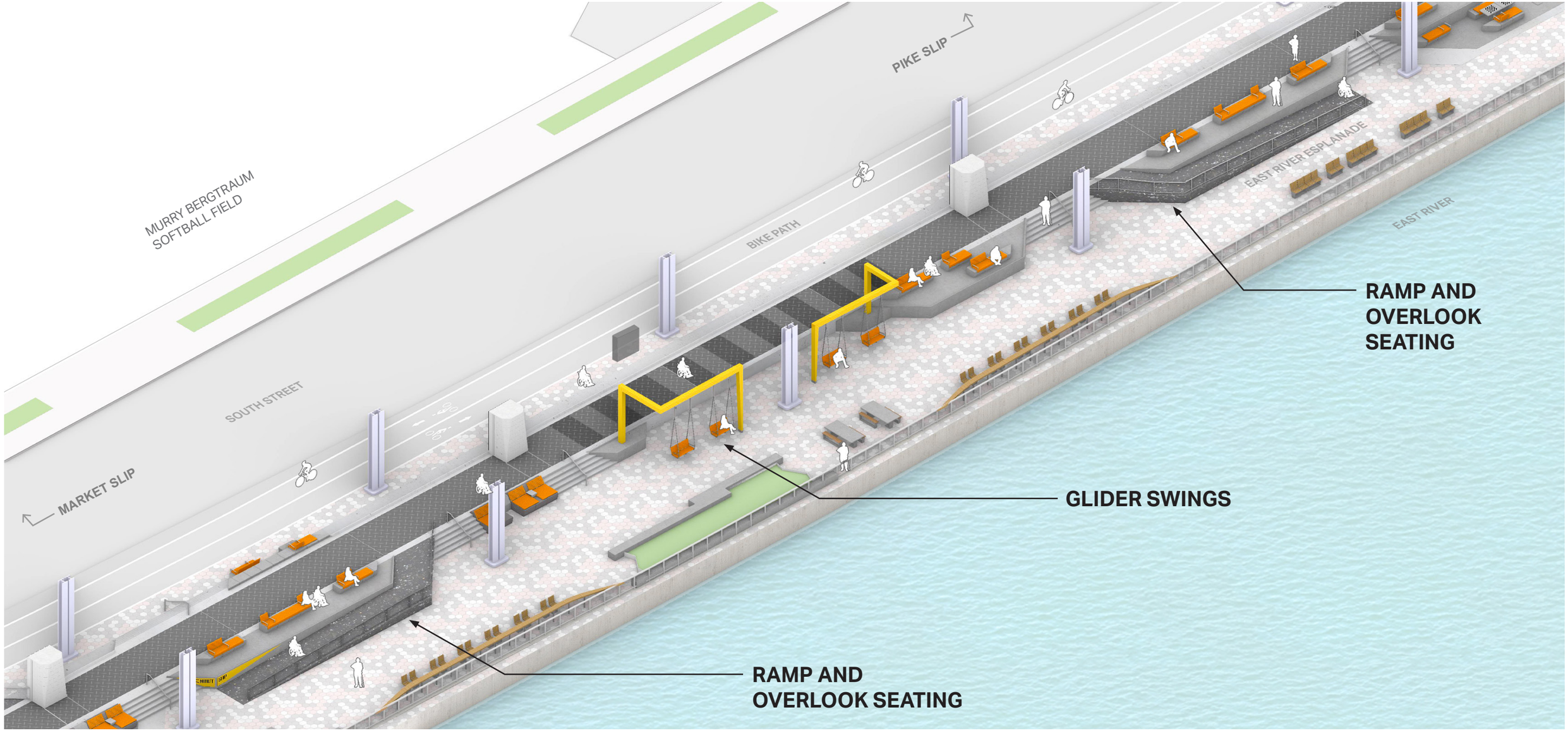
SPACES TO SIT AND RELAX | CATHERINE / MARKET

SPACES TO SOCIALIZE | MARKET SLIP



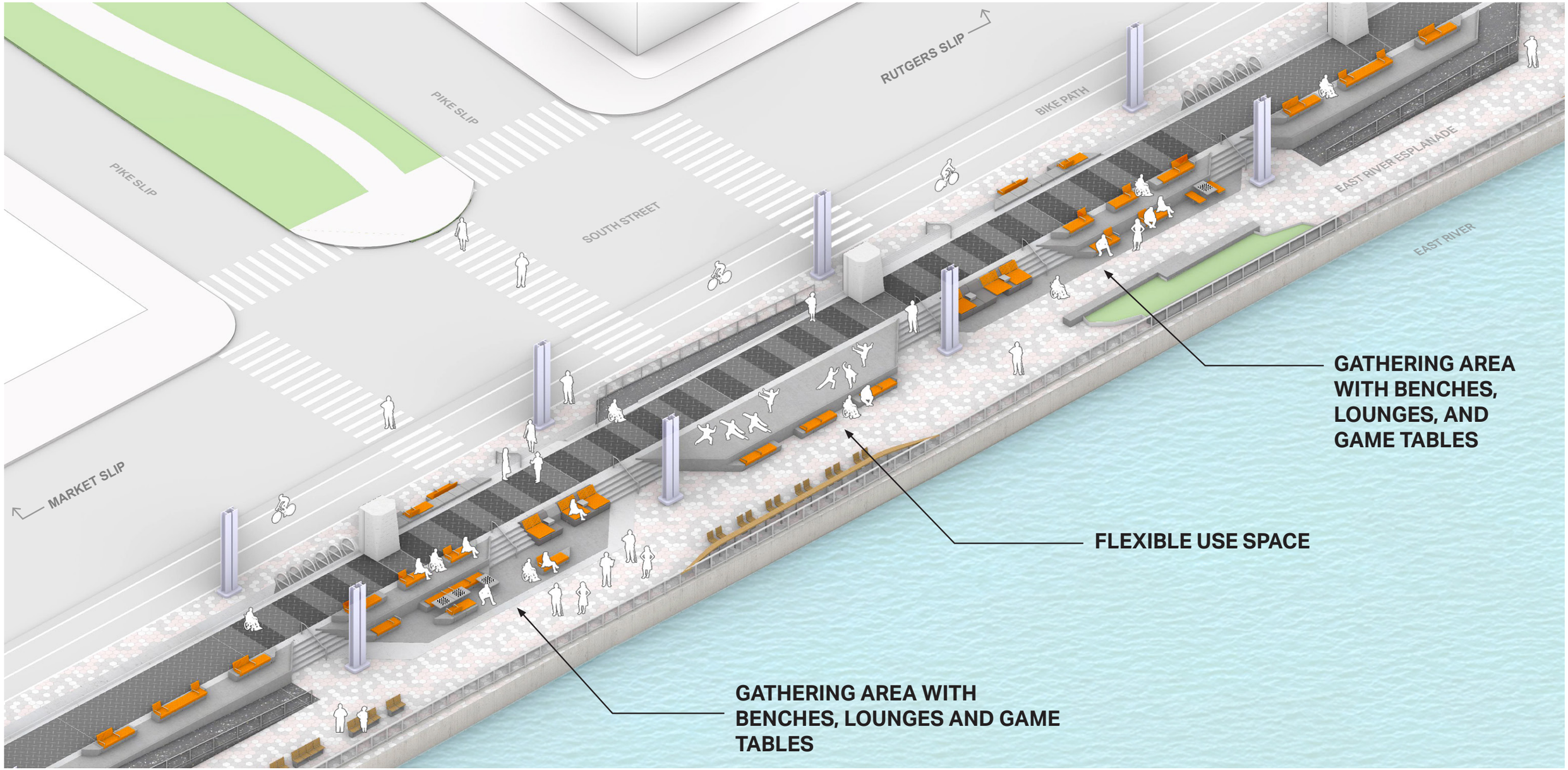
SPACES TO SOCIALIZE | MARKET SLIP

SPACES TO SIT AND RELAX | MARKET / PIKE



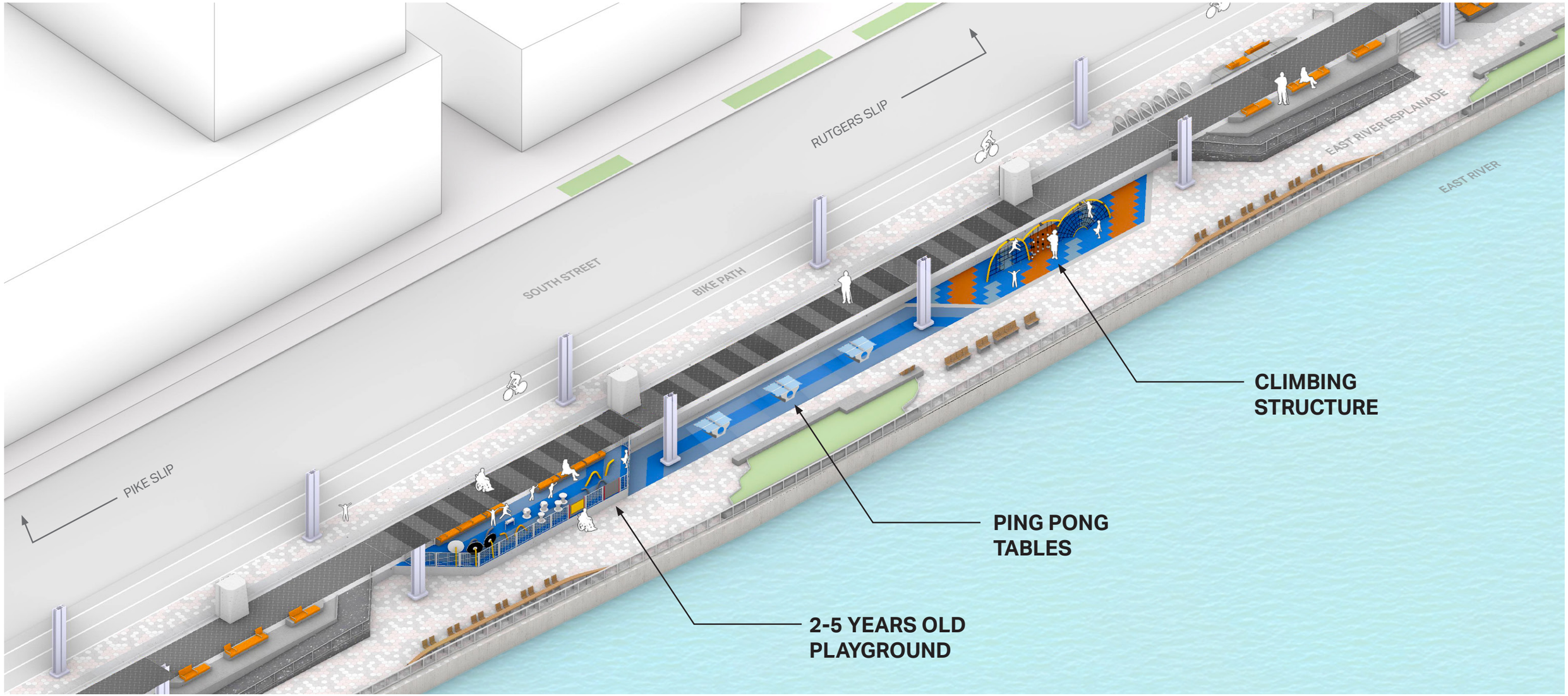
SPACES TO SIT AND RELAX | MARKET / PIKE

SPACES TO SOCIALIZE | PIKE SLIP



SPACES TO SOCIALIZE | PIKE SLIP

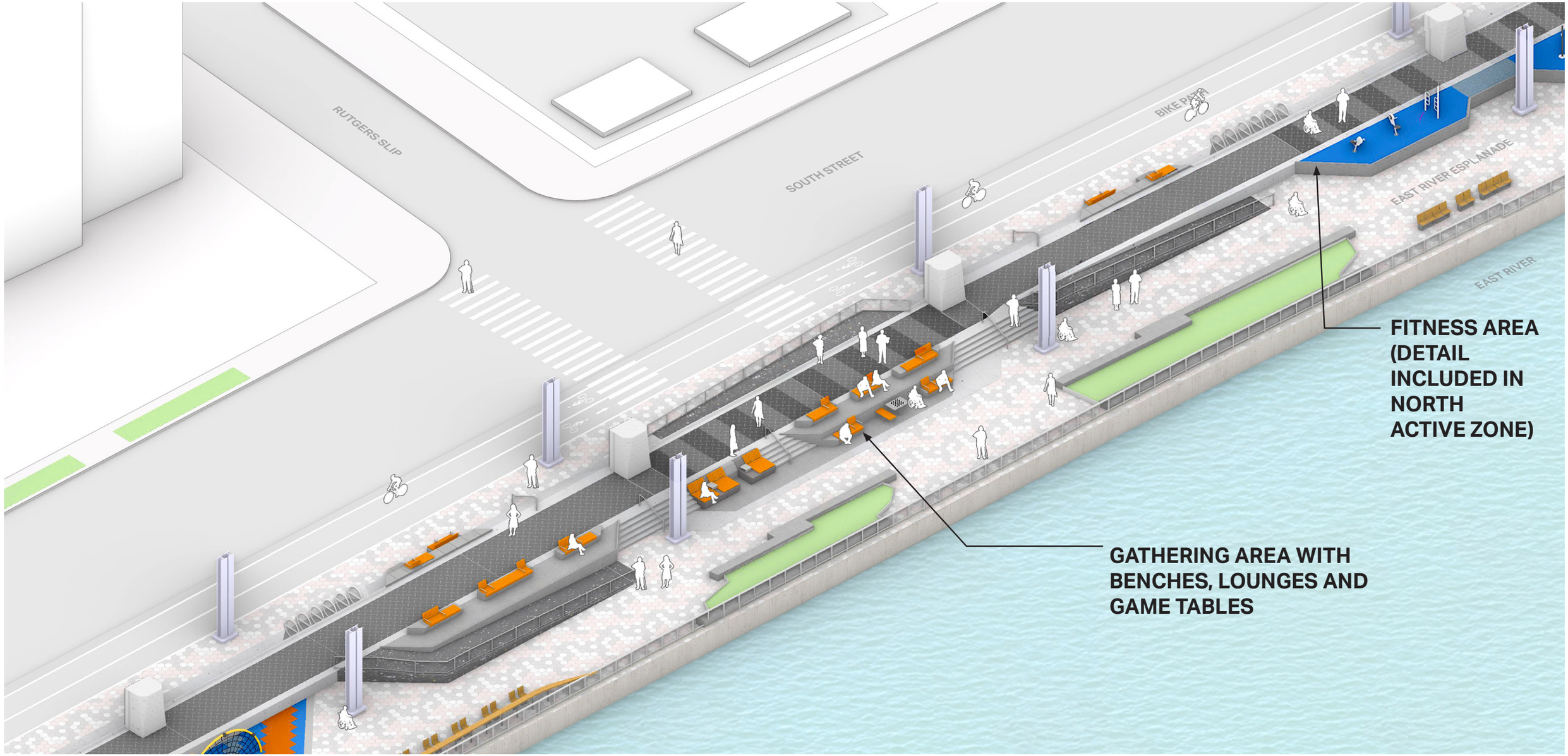
NORTH SPACES TO PLAY | PLAY & CLIMB



NORTH SPACES TO PLAY | PLAY

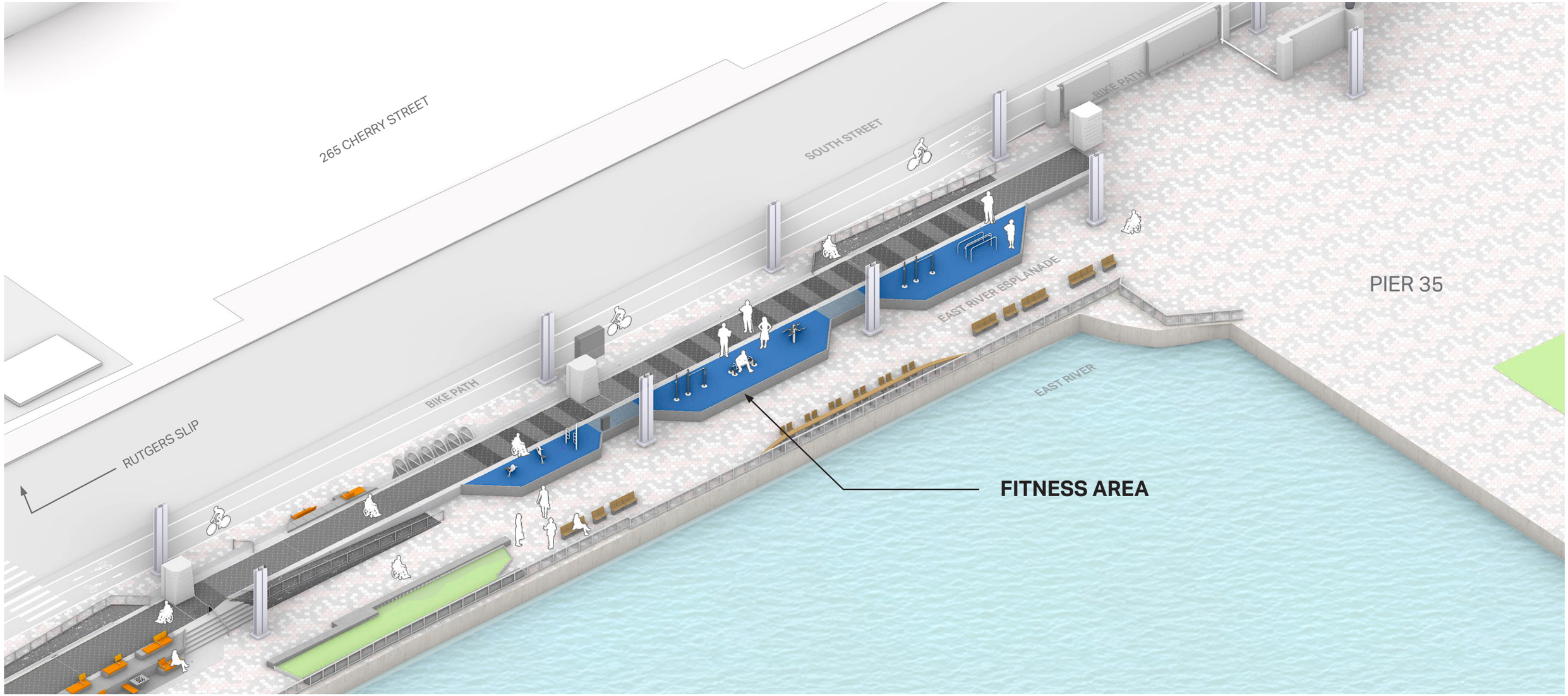
NORTH SPACES TO PLAY | CLIMBING AND SPORTS

SPACES TO SOCIALIZE | RUTGERS SLIP



SPACES TO SOCIALIZE | RUTGERS SLIP

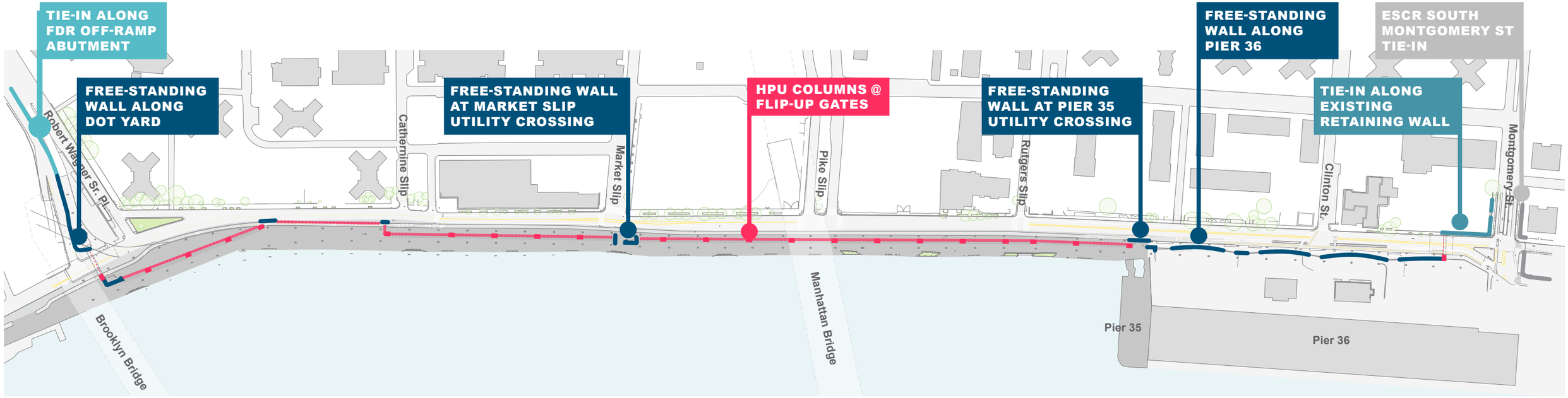
NORTH SPACES TO PLAY | FITNESS



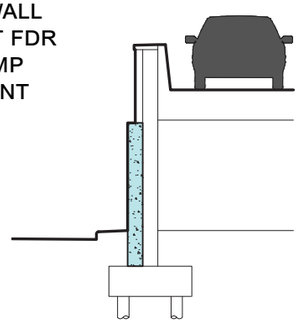
NORTH SPACES TO PLAY | FITNESS

FLOOD PROTECTION

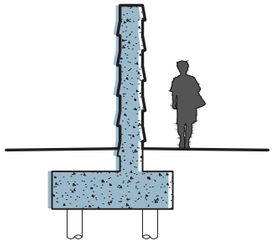
Exposed Floodwall Overview



FLOODWALL AGAINST FDR OFF-RAMP ABUTMENT

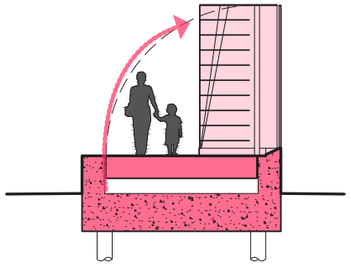


FREE-STANDING FLOODWALL

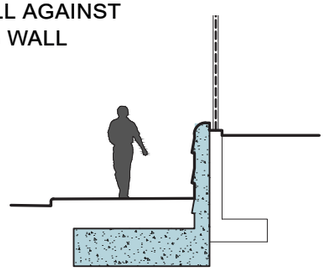


HPU COLUMNS

FLIP-UP GATES



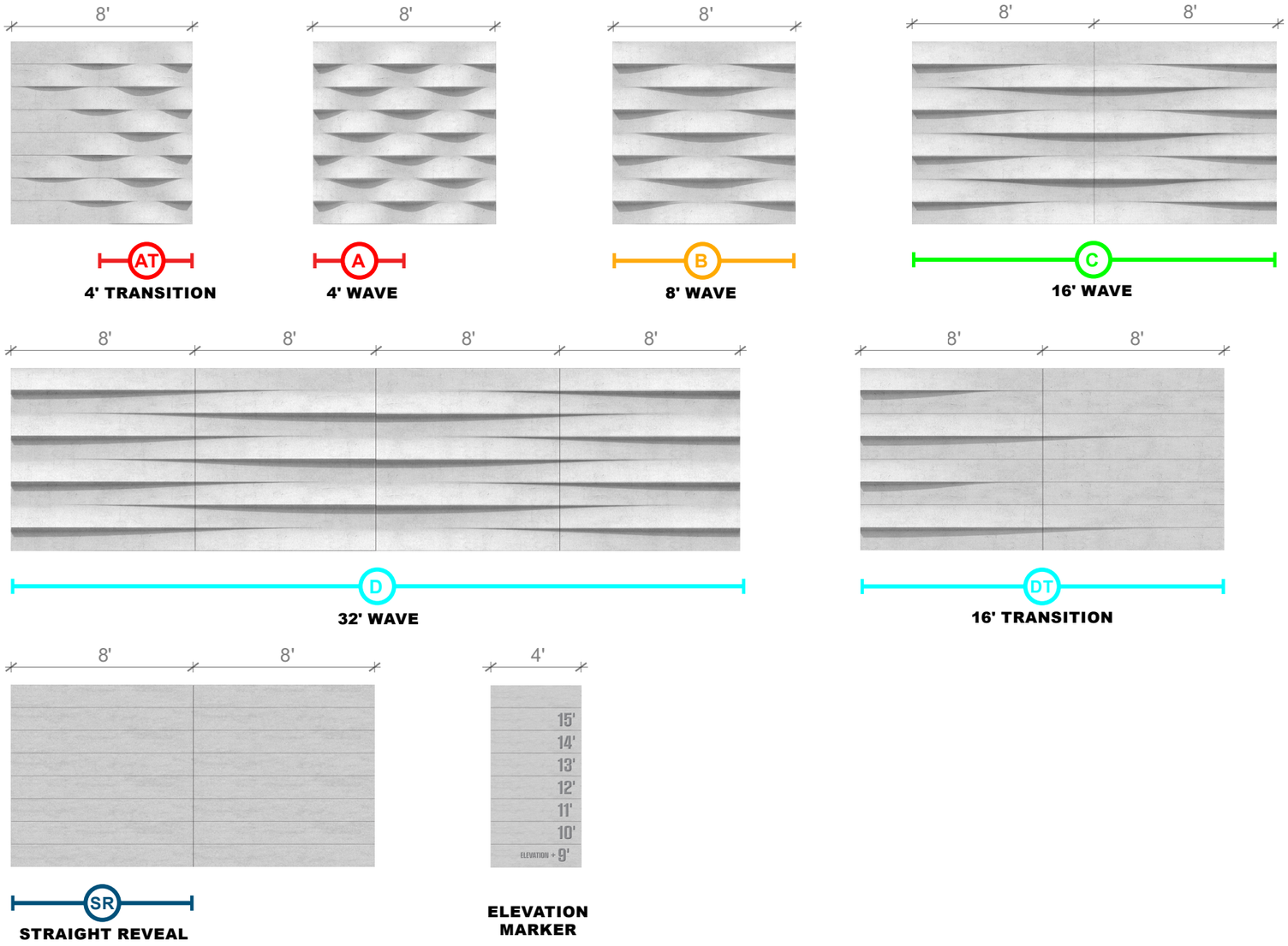
FLOODWALL AGAINST RETAINING WALL



FLOOD PROTECTION

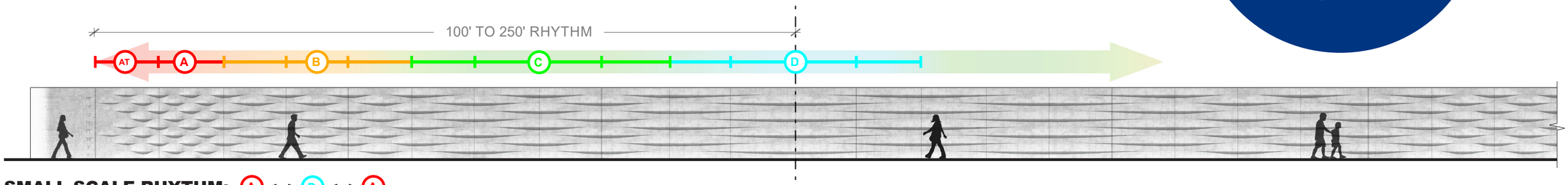
Wall Relief Module Toolkit

Typical walls that you might see along the BMCR waterfront will have the same design as the ESCR portion featuring elevation markers.

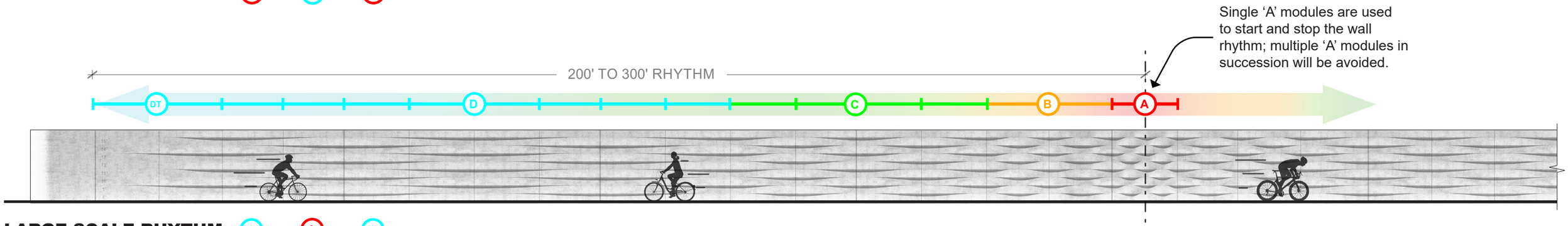


FLOOD PROTECTION

A typical wall might include **a few different patterns** like the ones displayed here:



SMALL SCALE RHYTHM: A ↔ D ↔ A

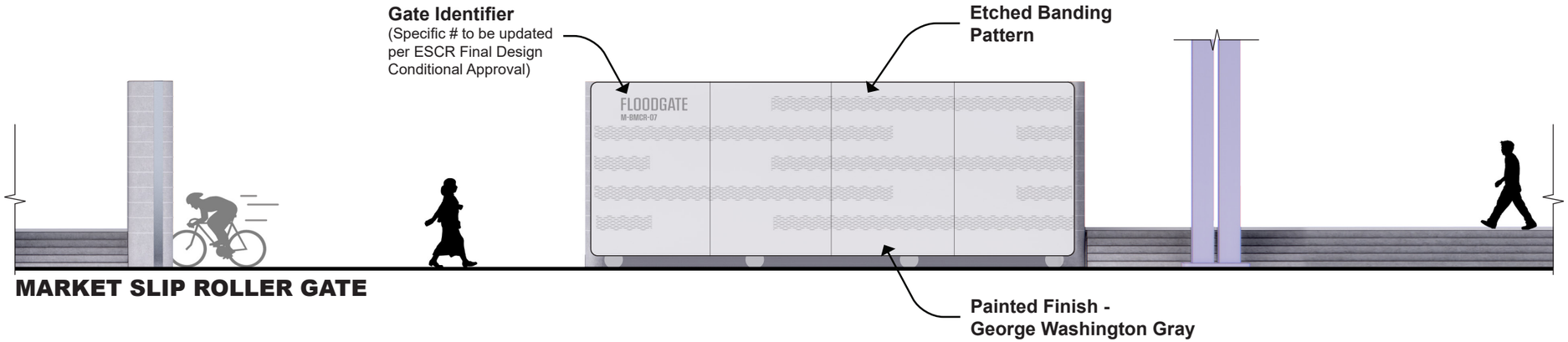


LARGE SCALE RHYTHM: D ↔ A ↔ D

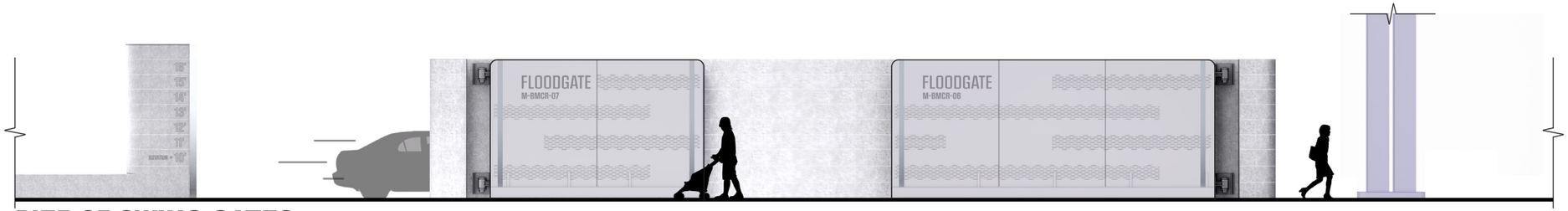
FLOOD PROTECTION

Above Grade Gates

BMCR's roller and swing gates will be similar to those in ESCR, featuring similar patterns and gate ID numbers.



MARKET SLIP ROLLER GATE

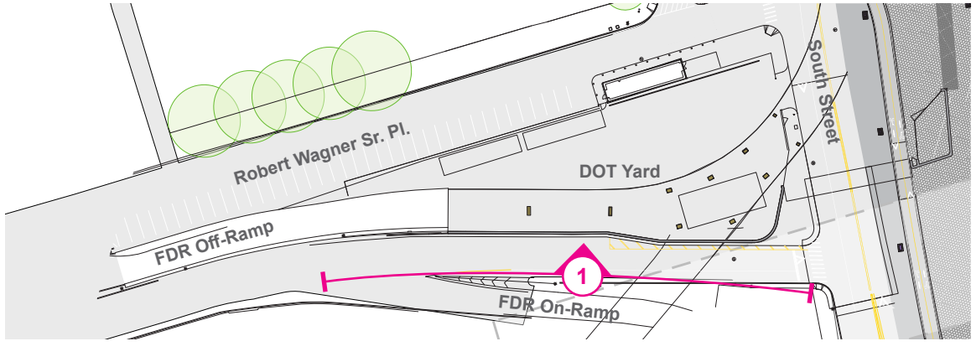


PIER 35 SWING GATES

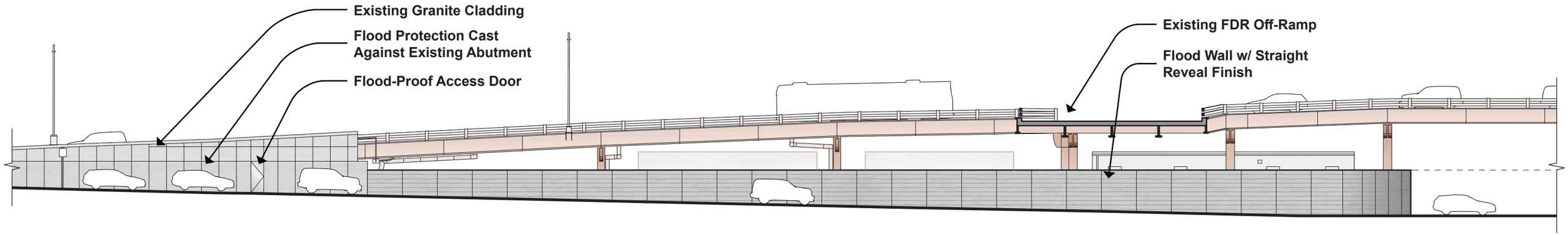
TYPICAL PIER 36 ROLLER GATE

FLOOD PROTECTION WALKTHROUGH

Brooklyn Bridge Tie-In



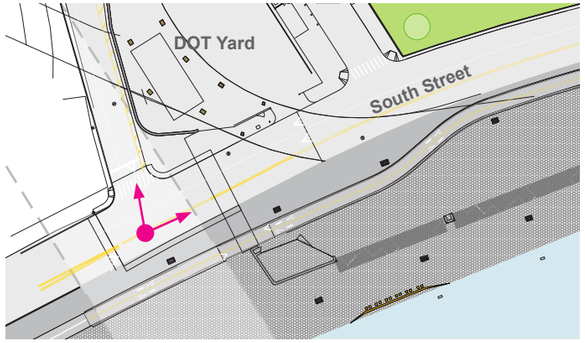
KEY N



1. EXPOSED WALL ELEVATION - FLOOD SIDE ALONG ROBERT WAGNER SR. PL

FLOOD PROTECTION WALKTHROUGH

South Street Crossing - Upland Side

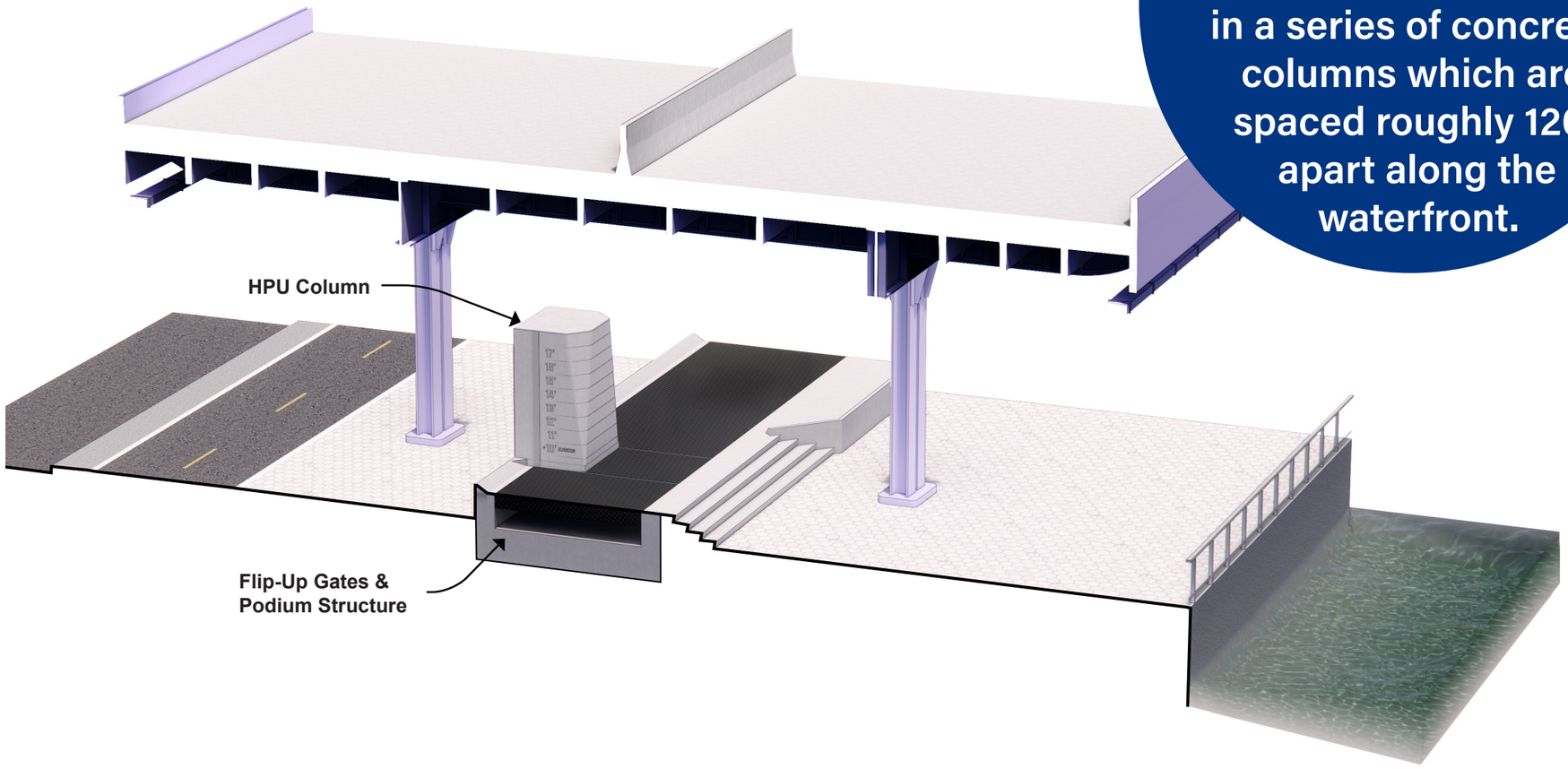


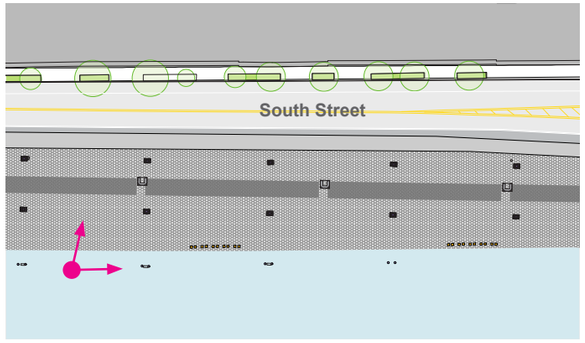
KEY

FLOOD PROTECTION WALKTHROUGH

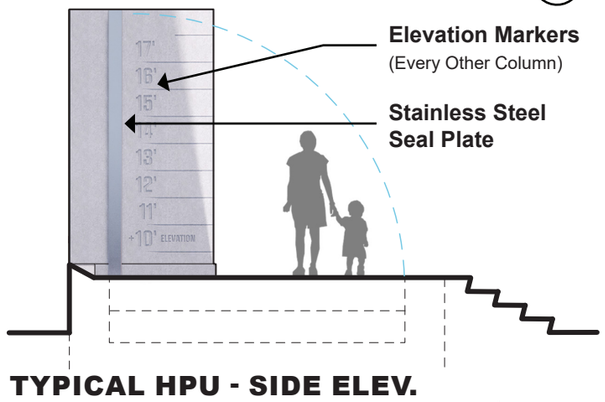
Typical HPU Column

Hydraulic Power Units (HPUs) provide power for the flip-up gates. They are housed in a series of concrete columns which are spaced roughly 120' apart along the waterfront.

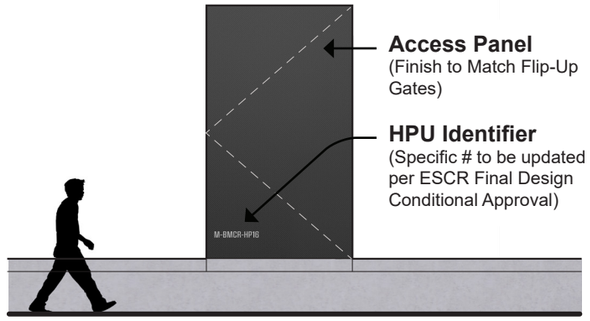




KEY



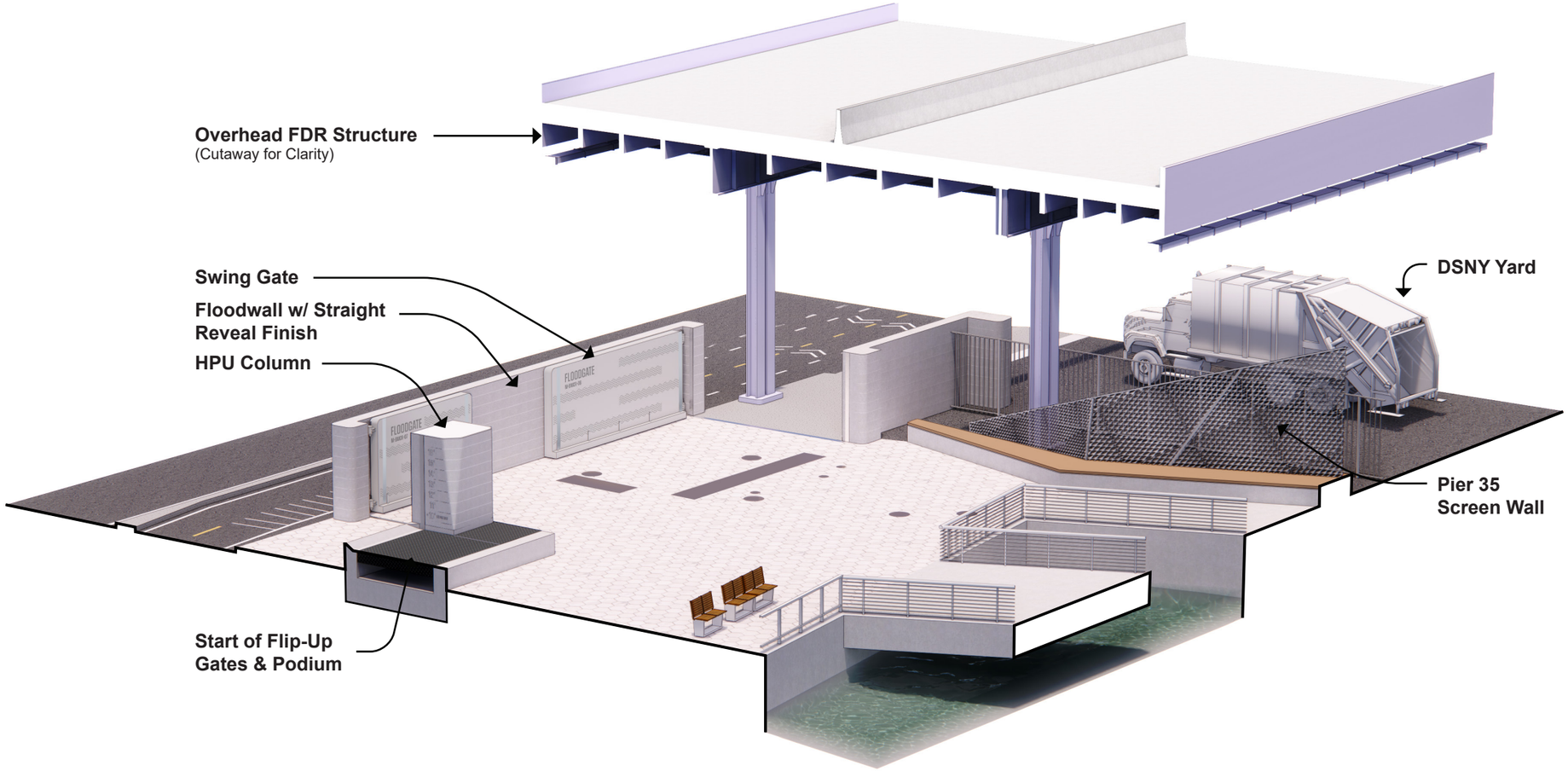
TYPICAL HPU - SIDE ELEV.

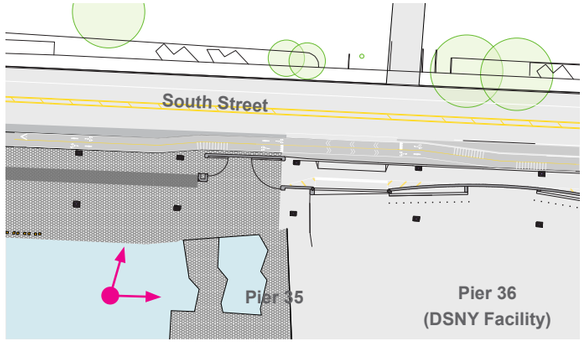


TYPICAL HPU - DRY SIDE ELEV.

FLOOD PROTECTION WALKTHROUGH

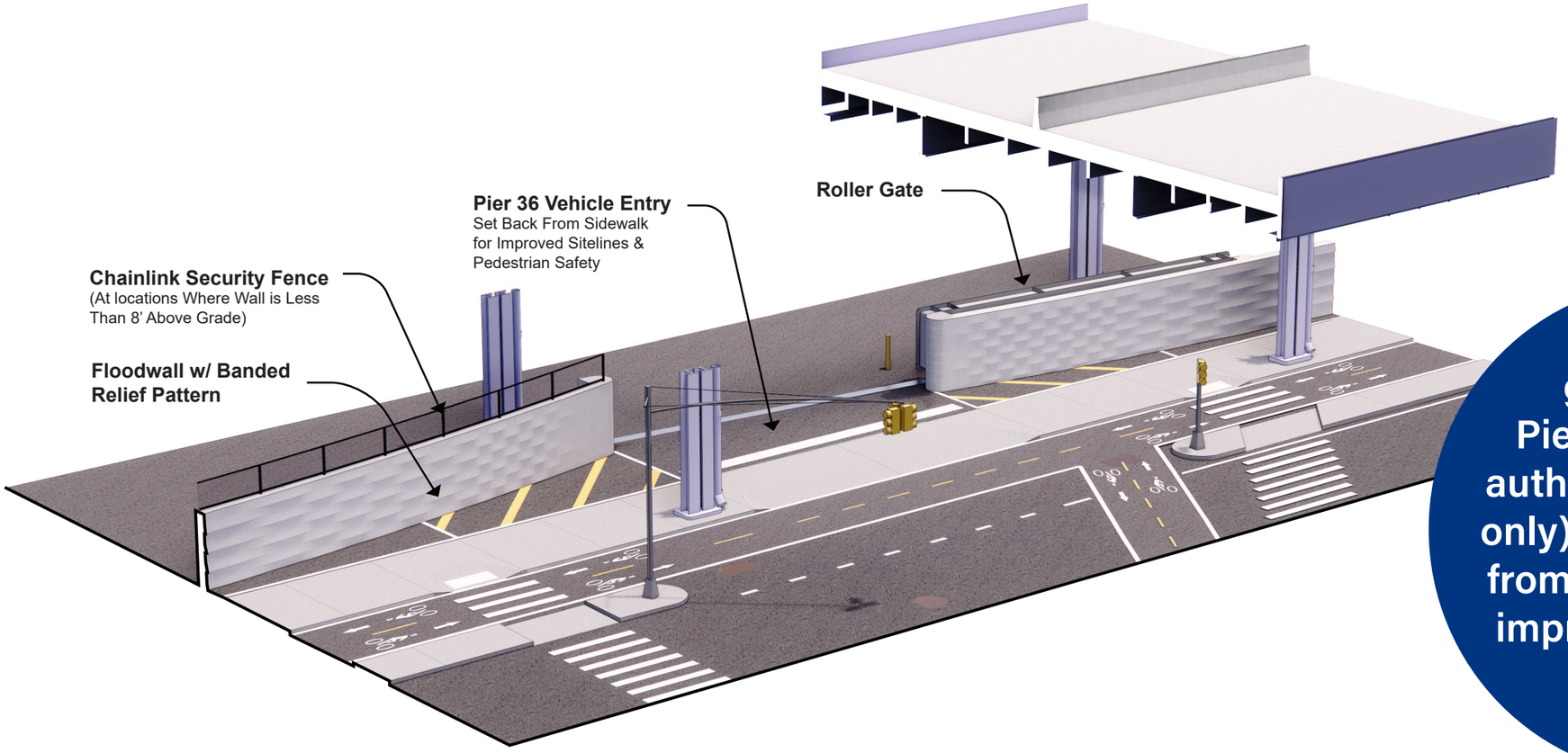
Pier 35 Utility Crossing

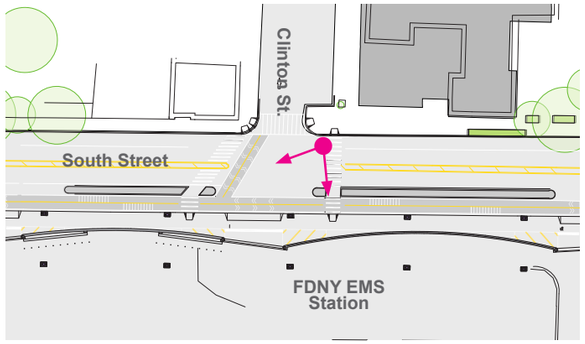




FLOOD PROTECTION WALKTHROUGH

Pier 36 Driveway at Catherine Street

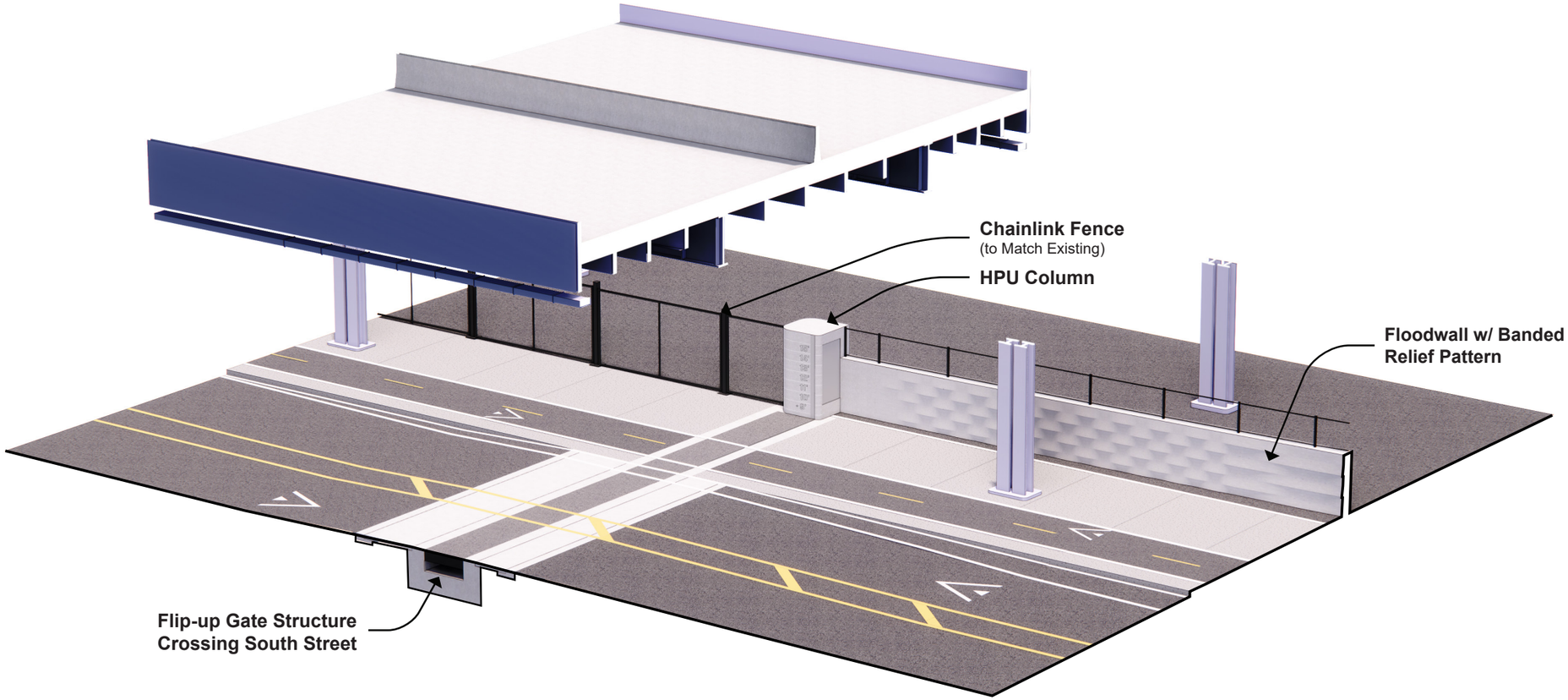


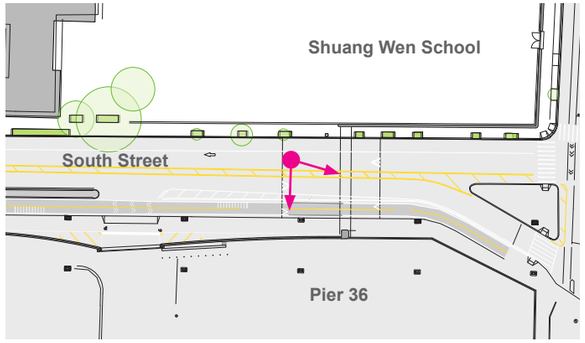


Roller gates at the Pier 36 Entry (for authorized vehicles-only) will be set back from the sidewalk to improve pedestrian safety and sitelines.

FLOOD PROTECTION WALKTHROUGH

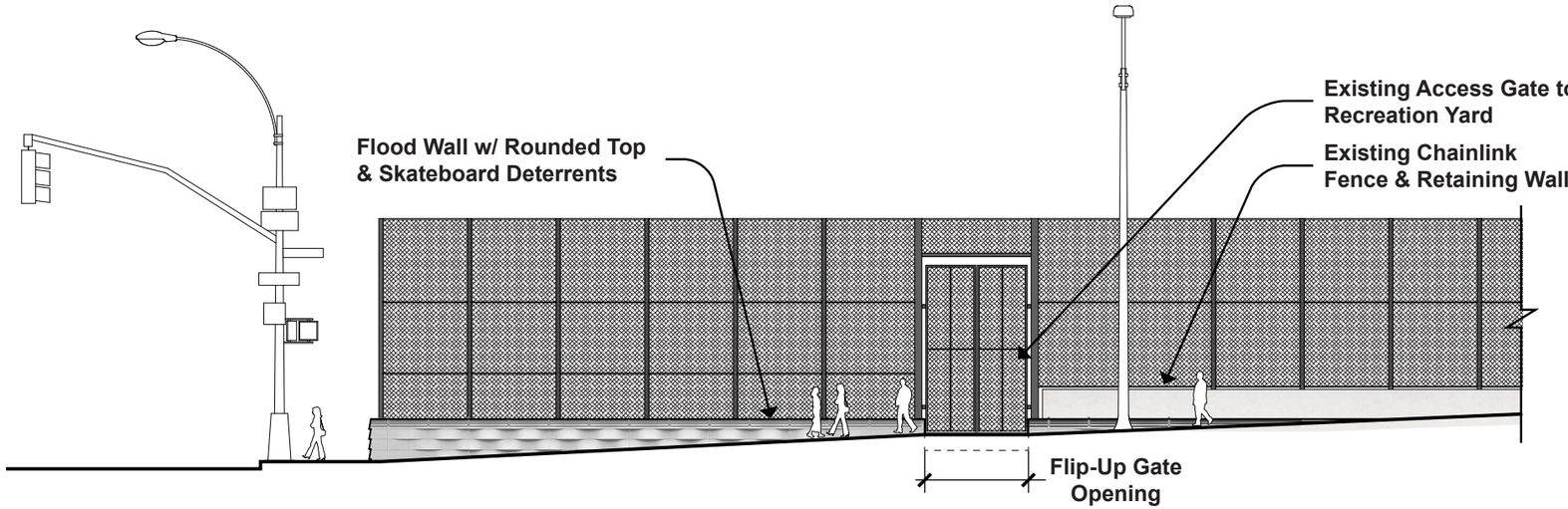
South Street Crossing - Pier 36 Side



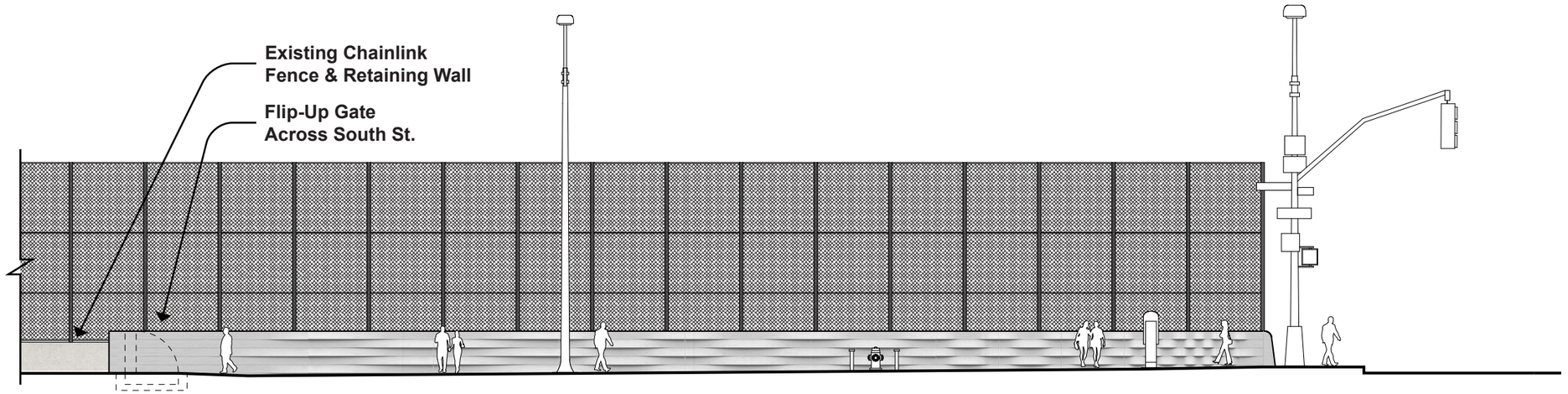


FLOOD PROTECTION WALKTHROUGH

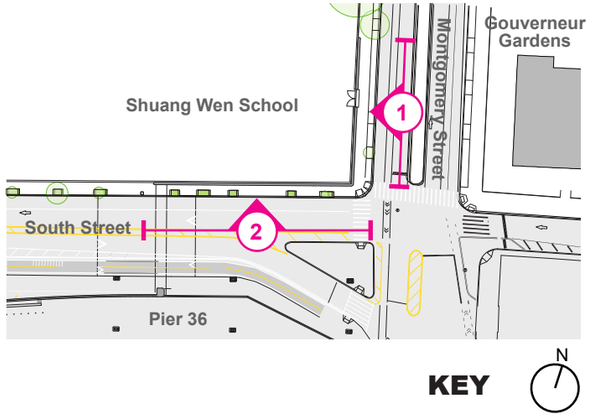
Montgomery Street Tie-In



1. TIE-IN ELEVATION - FLOOD SIDE ALONG MONTGOMERY STREET



2. TIE-IN ELEVATION - FLOOD SIDE ALONG SOUTH STREET

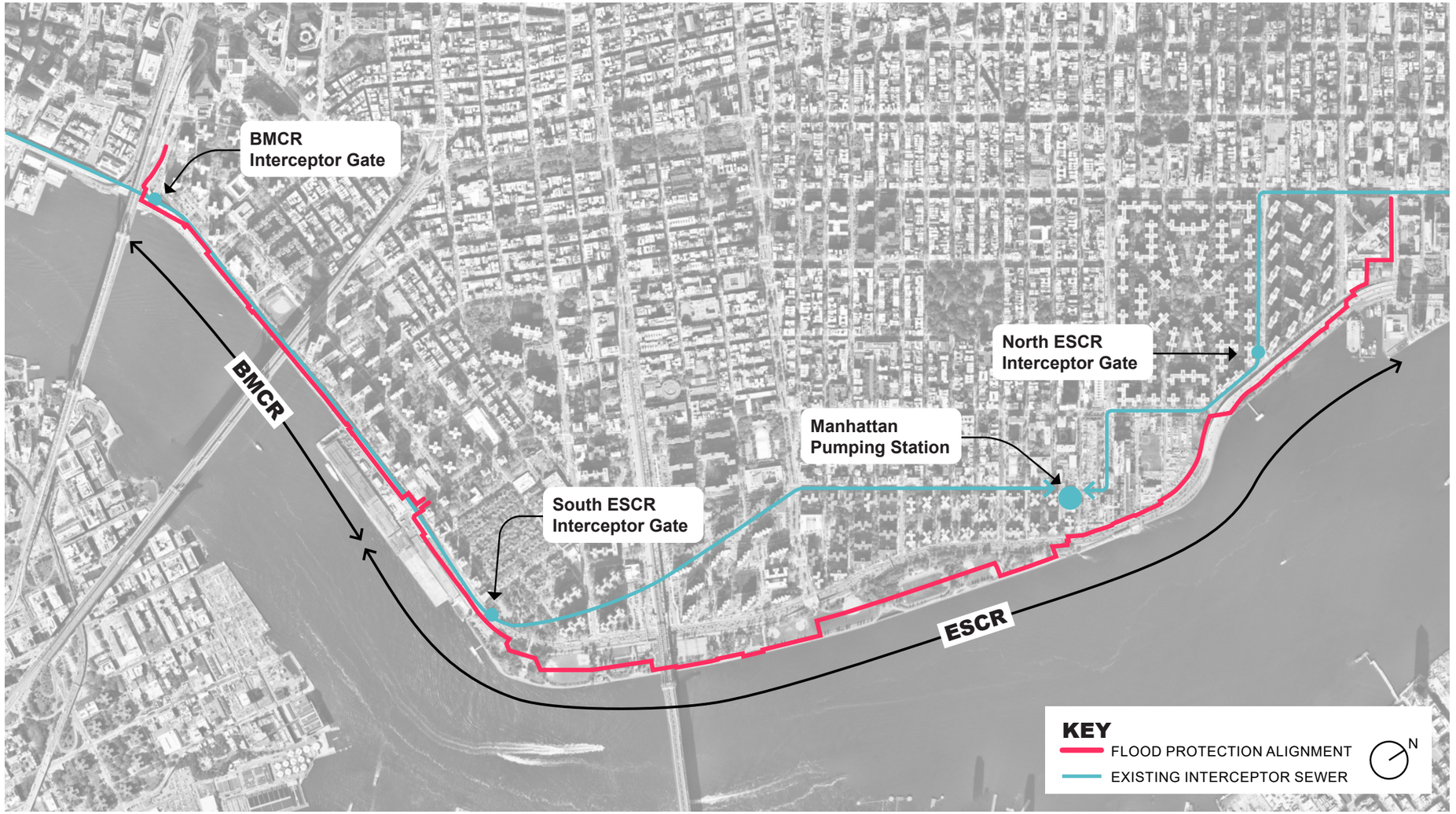


AGENDA

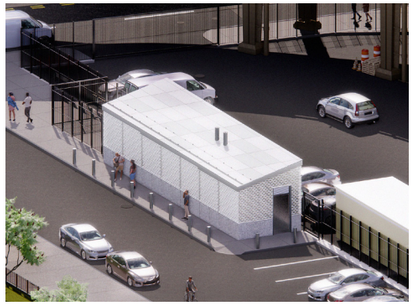
1. LOWER MANHATTAN COASTAL RESILIENCY
2. PROJECT INTRODUCTION
3. COMMUNITY FLOOD PROTECTION
4. RAISING THE PLATFORM
5. PROJECT DESIGN
6. **INTERCEPTOR GATE BUILDING**

INTERCEPTOR GATE BUILDING

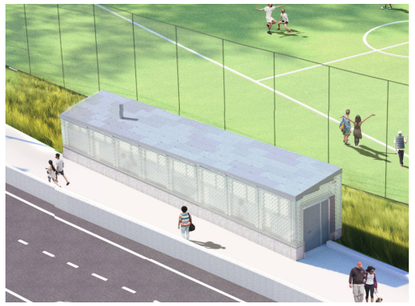
Combined BMCR / ESCR Approach



BMCR / ESCR COMBINED INTERCEPTOR STRATEGY



BMCR IGB



SOUTH ESCR IGB

NORTH ESCR IGB

INTERCEPTOR GATE BUILDING

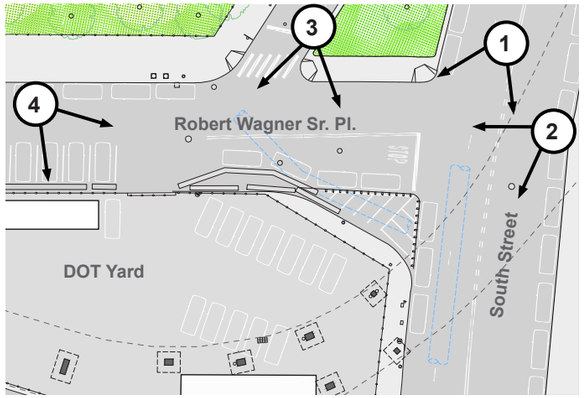
Existing Conditions

1. AERIAL VIEW FROM SOUTHEAST

2. VIEW LOOKING NORTH FROM SOUTH STREET

3. VIEW LOOKING WEST FROM SLIP STREET

4. VIEW LOOKING SOUTH FROM WAGNER PL.



KEY

N

BK Bridge - Montgomery
Coastal Resilience

WHAT IS AN INTERCEPTOR GATE?

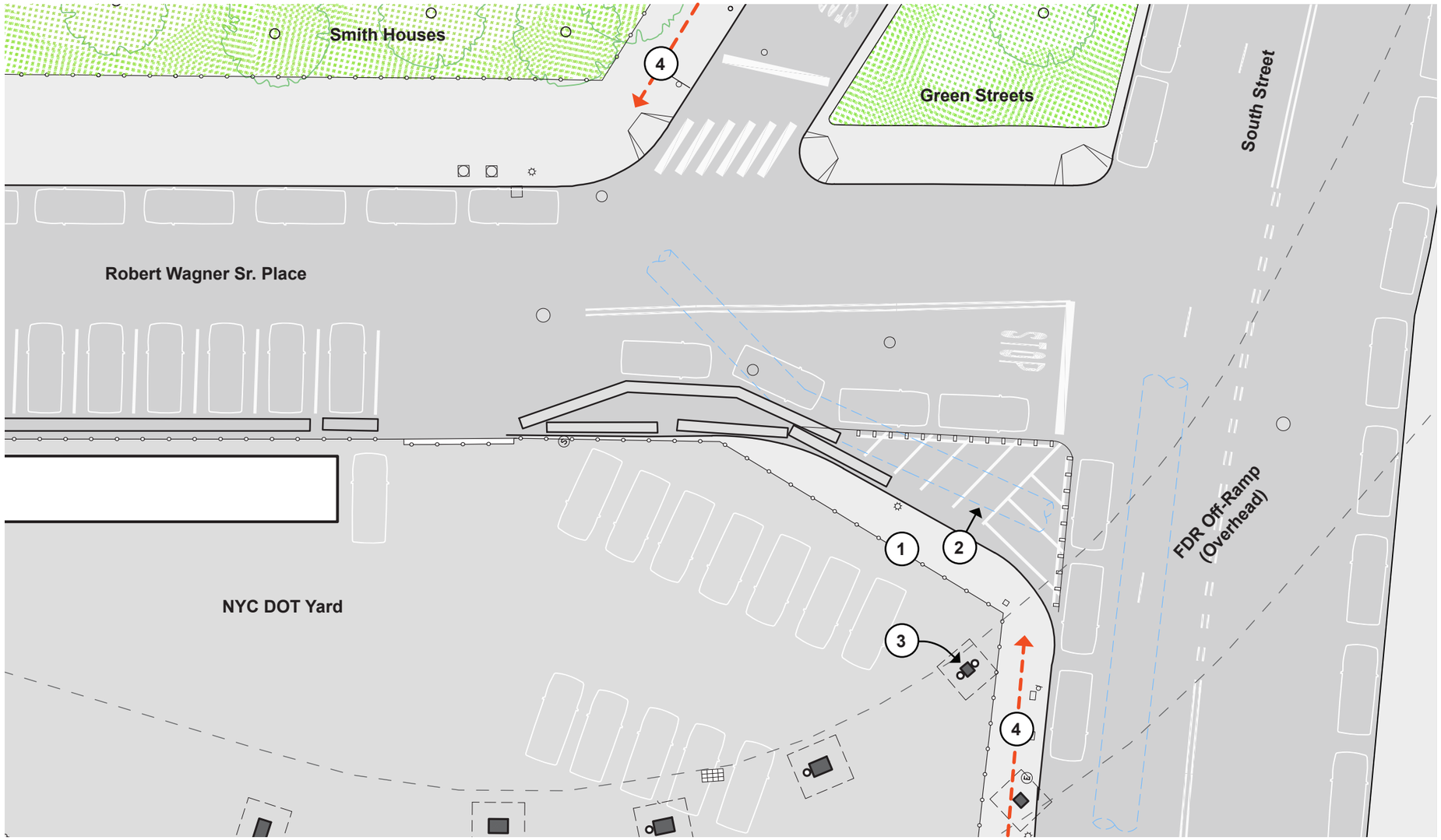
The interceptor gate building is essential to **operating the underground sewer interceptor gate.** The building layout and site design features **added pedestrian improvements.**

INTERCEPTOR GATE BUILDING

View from South Street

INTERCEPTOR GATE BUILDING

Existing Conditions



SITE CONSTRAINTS & OPPORTUNITIES

1. MINIMIZE IMPACT ON EXISTING DOT YARD
2. PROVIDE REQ'D OFFSET FROM EXISTING BELOW GRADE COMBINED SEWER
3. PROVIDE ADEQUATE CLEARANCE FROM EXISTING FDR COLUMNS AND FOOTINGS
4. IMPROVE PEDESTRIAN CONNECTION ALONG SOUTH STREET'S NORTH SIDEWALK; EXISTING STREET PATTERN CREATES RIFT WITH NO CLEAR PEDESTRIAN CONNECTION, ENCOURAGING JAYWALKING

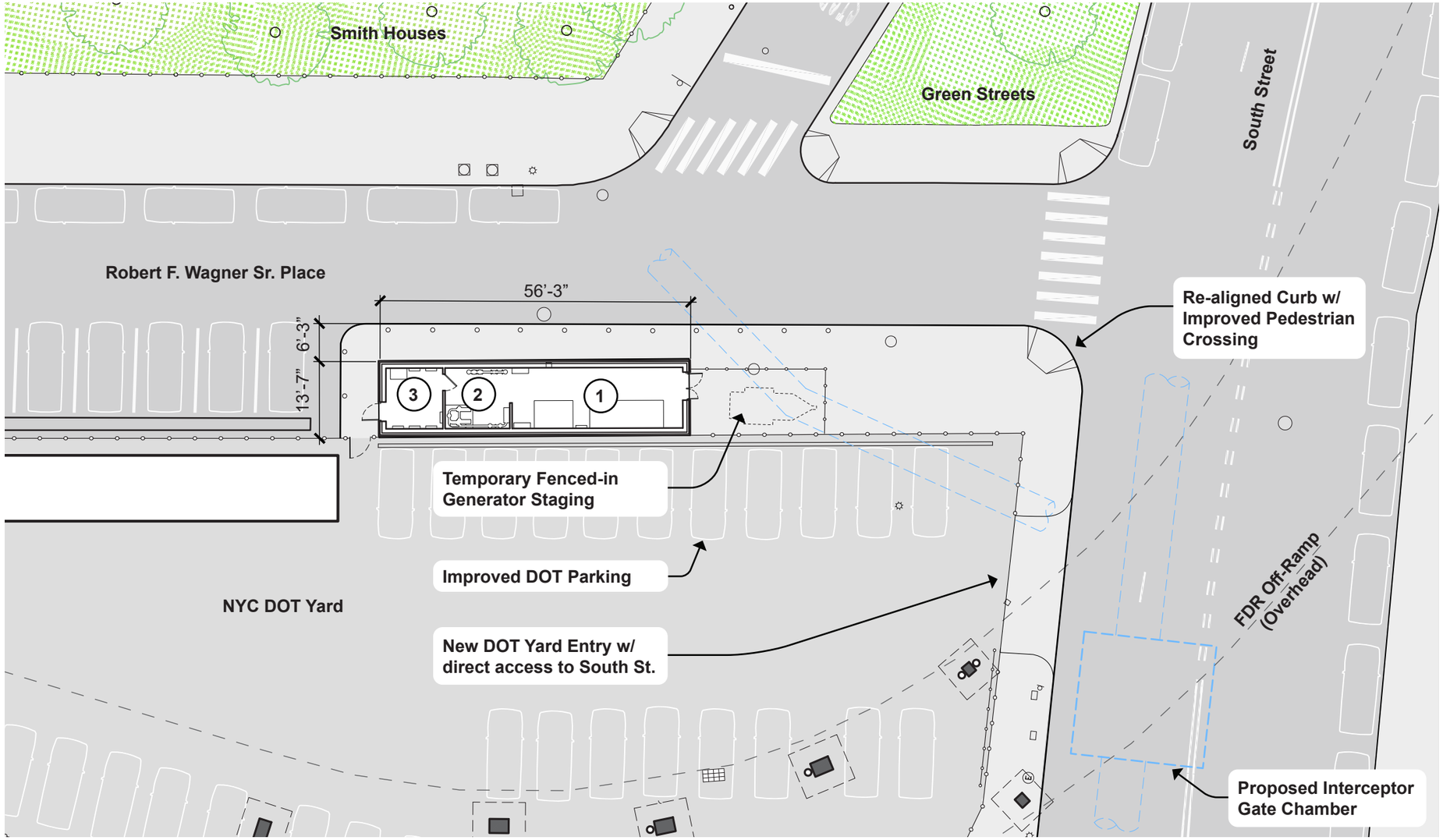
0' 5' 20' 40'

SCALE: 3/64" = 1'

N

INTERCEPTOR GATE BUILDING

Proposed Site Plan



KEY:

1. Hydraulic Area
2. Pump Area
3. Electrical Room

Note: Final confirmation of site plan pending full traffic analysis of conversion of southern portion of Robert F. Wagner Sr. Pl from two-way to one-way traffic.

0' 5' 20' 40'

SCALE: 3/64" = 1'

N

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