

#ONENYC

NYC

Mayor's Office of
Recovery and Resiliency

**NYC
DDC**

Department of
Design and
Construction



NYC Parks



NYC

Environmental
Protection

EAST SIDE COASTAL RESILIENCY PROJECT

CB3 Parks, Recreation, Cultural Affairs, and Waterfront Committee

October 13th, 2016

CB3 Parks, Recreation, Cultural Affairs, and Waterfront Committee

October 13th, 2016

- 1. Project Overview**
- 2. Inputs and Considerations**
- 3. Updated Design Concept Preview**
- 4. Next Steps**

Questions/Discussion

- 1. Project Overview**
2. Inputs and Considerations
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4. Next Steps

EAST SIDE COASTAL RESILIENCY

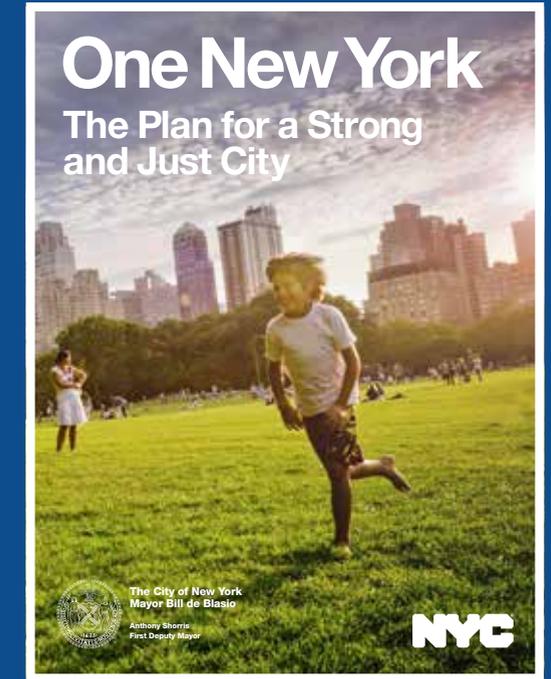
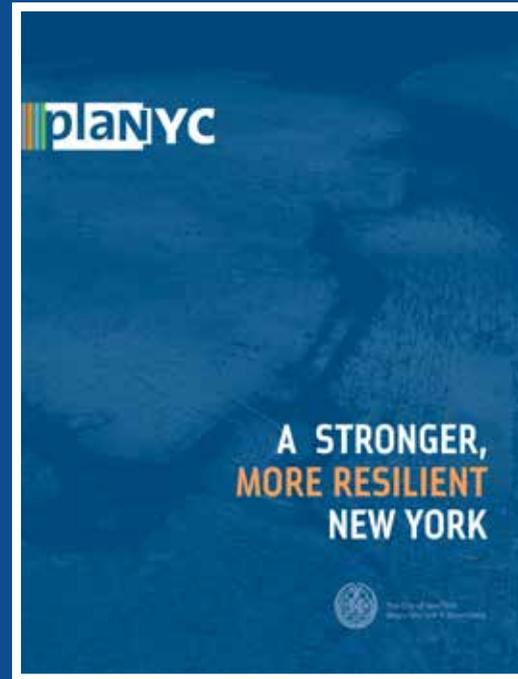
Project Goals

- Provide a reliable, integrated flood protection system; minimize use of closure structures and deployables
- Improve waterfront open spaces and access
- Respond quickly to the urgent need for increased flood protection and resiliency
- Achieve implementation milestones and project funding allocations as established by HUD



EAST SIDE COASTAL RESILIENCY

Project Schedule - 2012-2015



HURRICANE SANDY

*A STRONGER
MORE RESILIENT
NEW YORK*

HUD FUNDING AWARD

*ONE
NYC*

REPORT PREPARATION

REBUILD BY DESIGN COMPETITION

ESCR PROJECT SCOPING

OCTOBER
2012

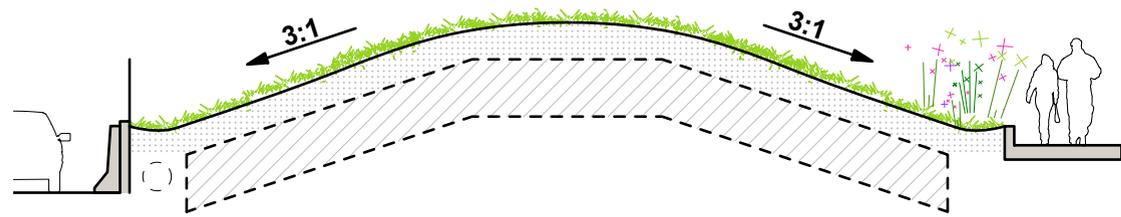
WINTER
2012/2013

WINTER
2013/2014

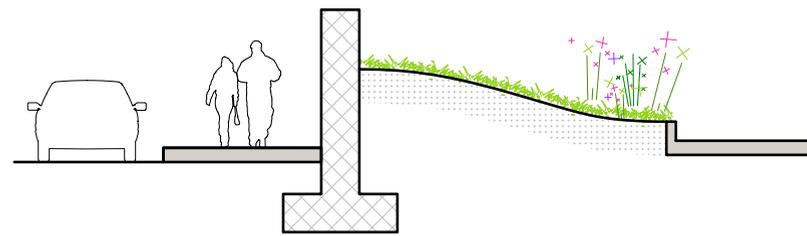
WINTER
2014/2015

ESCR PROJECT AREA

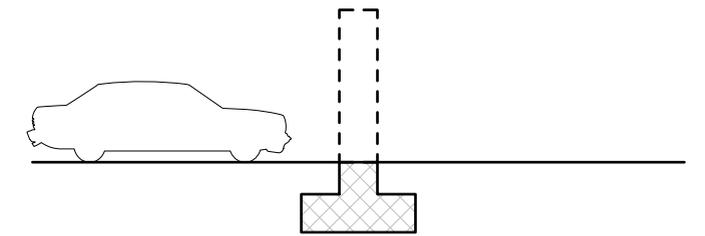
BASELINE FLOOD PROTECTION COMPONENTS



BERM / LEVEE



FLOODWALL



DEPLOYABLE

EAST SIDE COASTAL RESILIENCY

Social Infrastructure



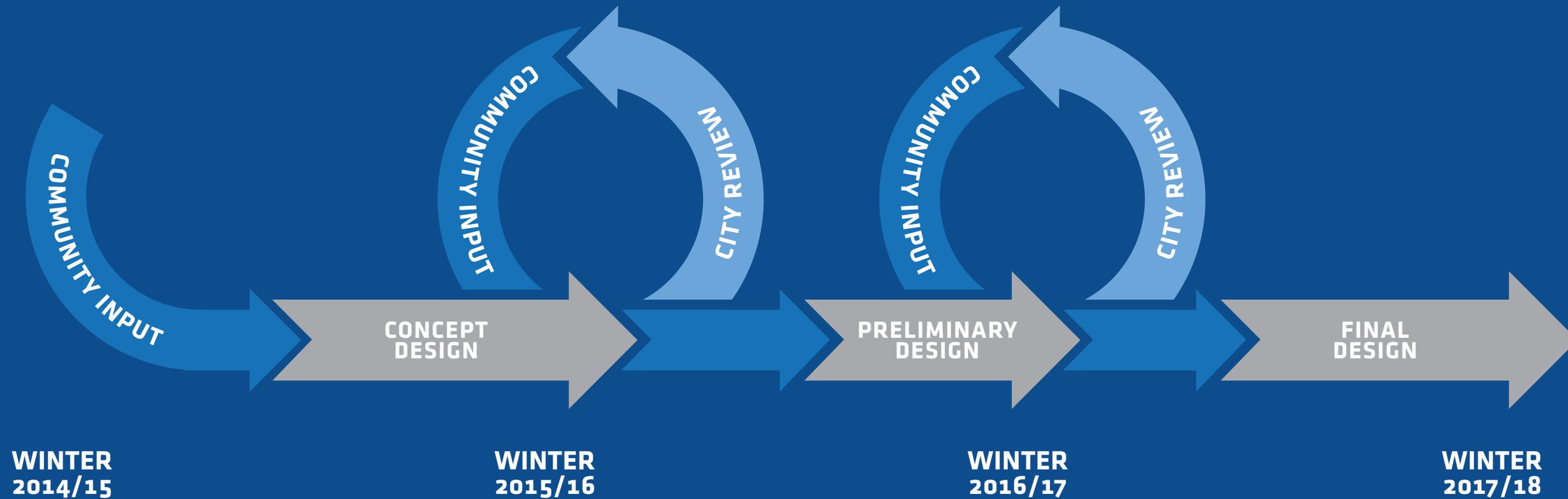
 PEOPLE



 RESILIENCY
INFRASTRUCTURE

EAST SIDE COASTAL RESILIENCY

Iterative Design Process

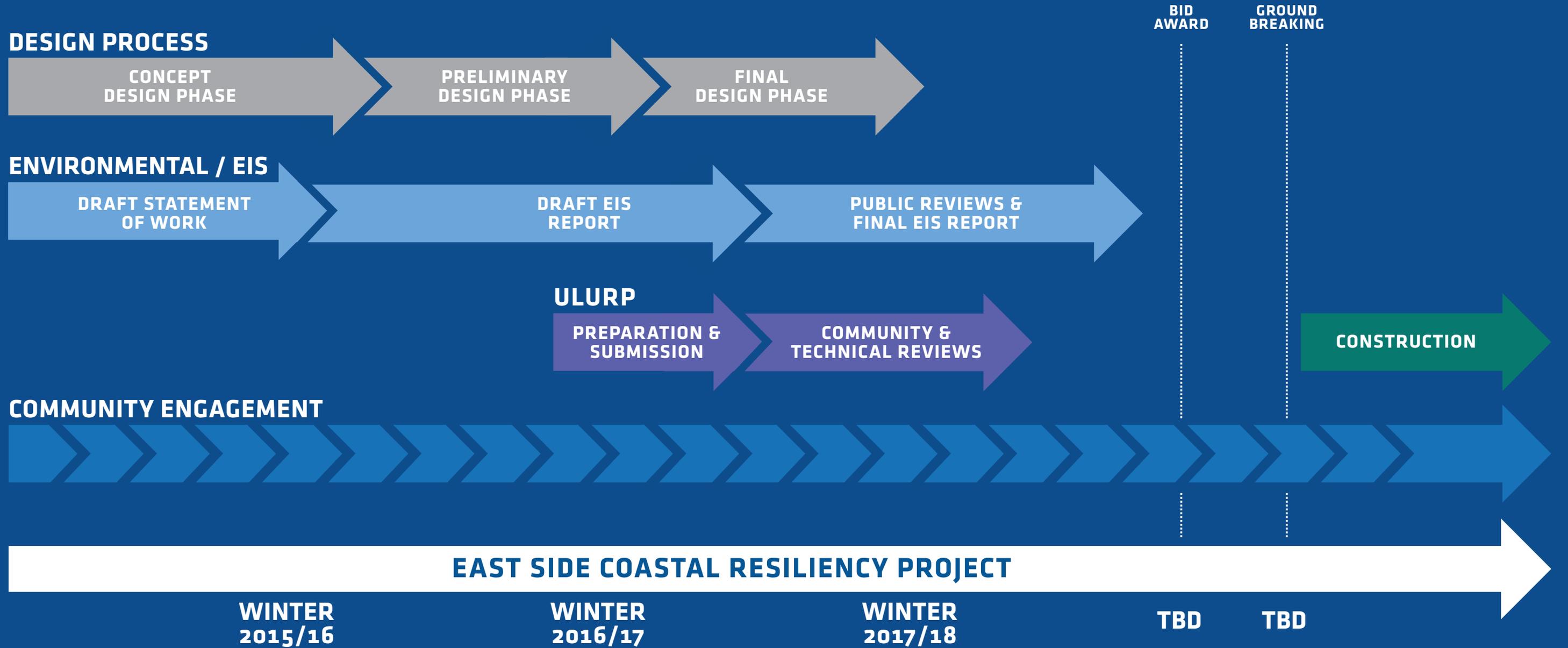


EAST SIDE COASTAL RESILIENCY

What have we been up to?

Since Fall/Winter 2015:

- Procuring final design team
- Addressing comments on Draft Scope of Work
- Evaluating Alternatives
- Developing draft Environmental Impact Statement (EIS) and permit applications
- Refining concept design based on:
 - Community input
 - Agency requirements
 - Regulatory concerns
 - Technical constraints
 - New inputs and considerations



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CURRENT AND FUTURE RISKS

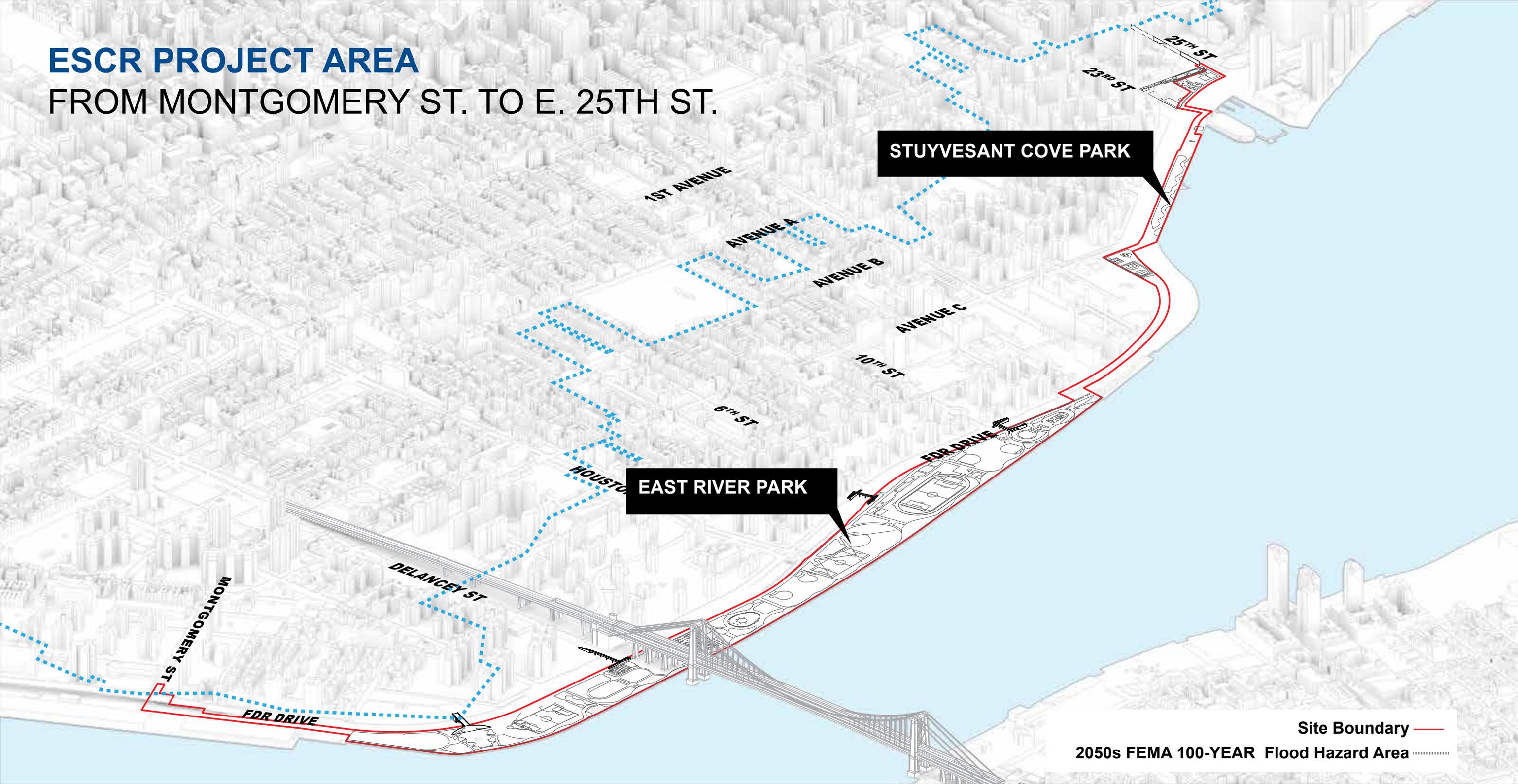
2015 and 2050's FEMA 100-YEAR FLOOD HAZARD AREAS



WATERFRONT OPEN SPACES AND UPLAND NEIGHBORHOODS WERE SEVERELY IMPACTED BY HURRICANE SANDY, AND ARE AT FURTHER RISK DUE TO FUTURE SEA LEVEL RISE AND INCREASING STORM FREQUENCIES



ESCR PROJECT AREA FROM MONTGOMERY ST. TO E. 25TH ST.



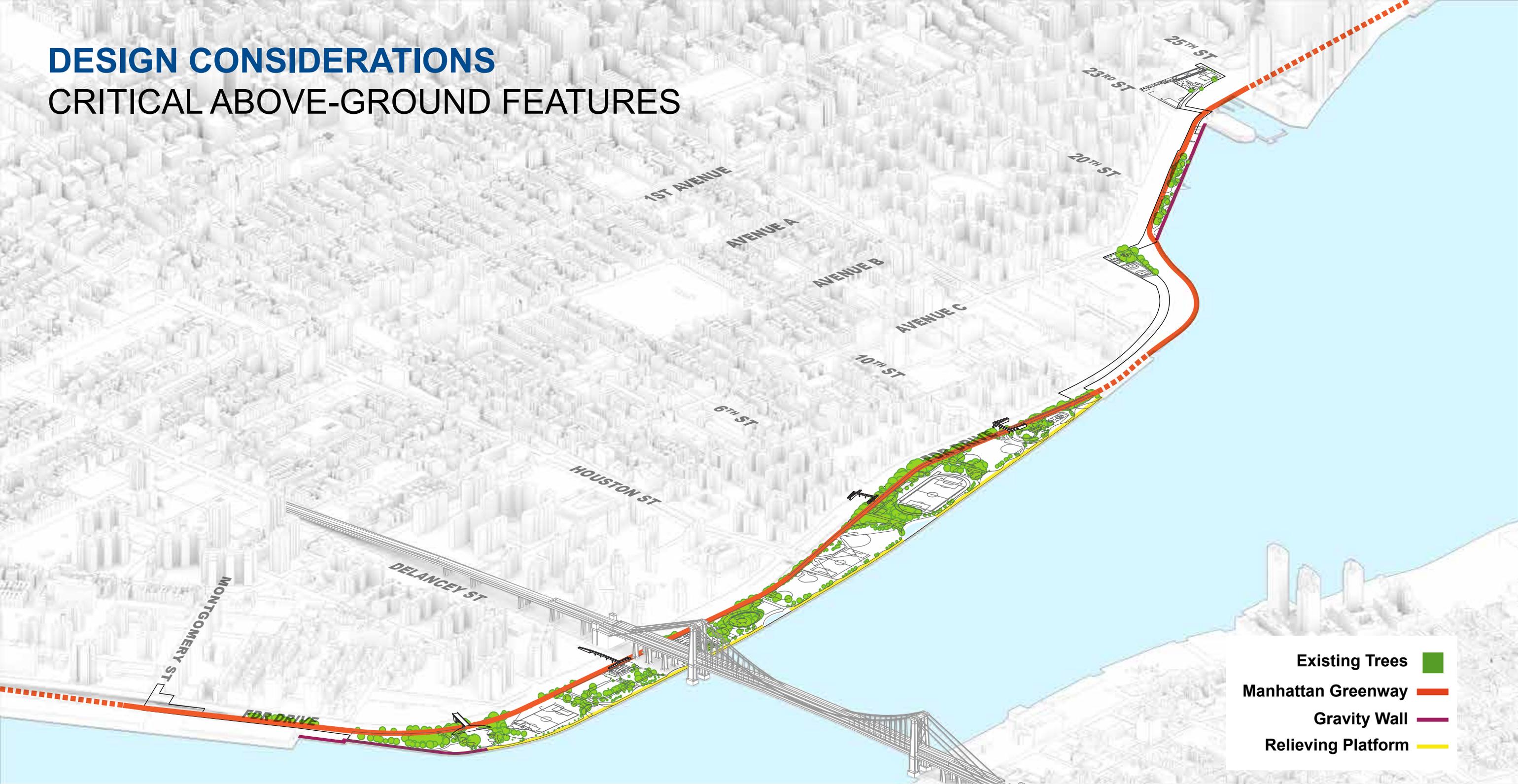
EXISTING PROGRAM

USES ALONG THE WATERFRONT



DESIGN CONSIDERATIONS

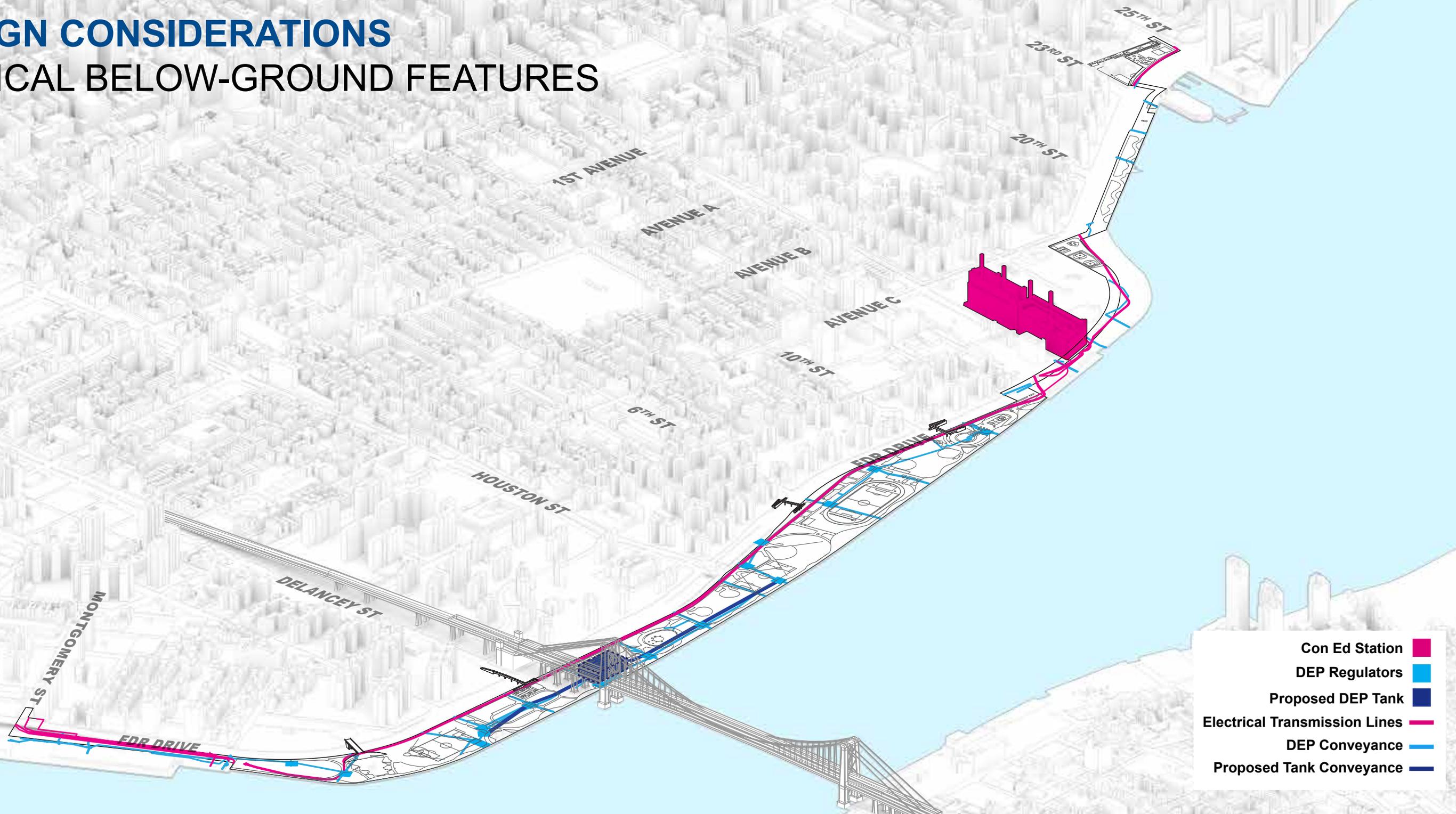
CRITICAL ABOVE-GROUND FEATURES



- Existing Trees ■
- Manhattan Greenway ■
- Gravity Wall ■
- Relieving Platform ■

DESIGN CONSIDERATIONS

CRITICAL BELOW-GROUND FEATURES



EAST SIDE COASTAL RESILIENCY 2015 Community Engagement Recap

ROUND 1

x2 Meetings



MARCH 2015

How do you use the waterfront?

ROUND 2

x3 Meetings



MAY 2015

Access and Flood Protection:
What are the options?

ROUND 3

x4 Meetings



JULY AND SEPTEMBER 2015

How do we combine options?

ROUND 4

x2 Meetings



OCTOBER 2015

Initial Design Direction:
Feedback and Discussion



QUARTERLY JOINT CB3/CB6 WATERFRONT TASK FORCE MEETINGS

COMMUNITY ENGAGEMENT FEEDBACK

EXTENSIVE COMMUNITY ENGAGEMENT WAS UNDERTAKEN TO DETERMINE HOW FLOOD PROTECTION COULD MEET NEEDS AND DESIRES OF THE COMMUNITY

"MAINTAIN AT GRADE CROSSINGS AT MAJOR JUNCTIONS!"

"INTEGRATE FUTURE DEVELOPMENTS SUCH AS SOLAR 2!"

"WE LIKE THE SEPARATED BIKE LANE! IT'S SAFER FOR BIKES AND PEDESTRIANS."

"MAXIMIZE PASSIVE PROTECTION!"

"GET US IN THE MOOD FOR A PARK! YOU CAN'T SEE THE BRIDGE FROM BACK HERE"

"THE RAMPS ARE TOO STEEP ON BOTH SIDES OF THE BRIDGE"

"WE NEED MORE PASSIVE SPACE!"

"THIS IS A VERY DANGEROUS CROSSING FOR KIDS!"

"THIS AREA IS THE BEST FOR FAMILIES"

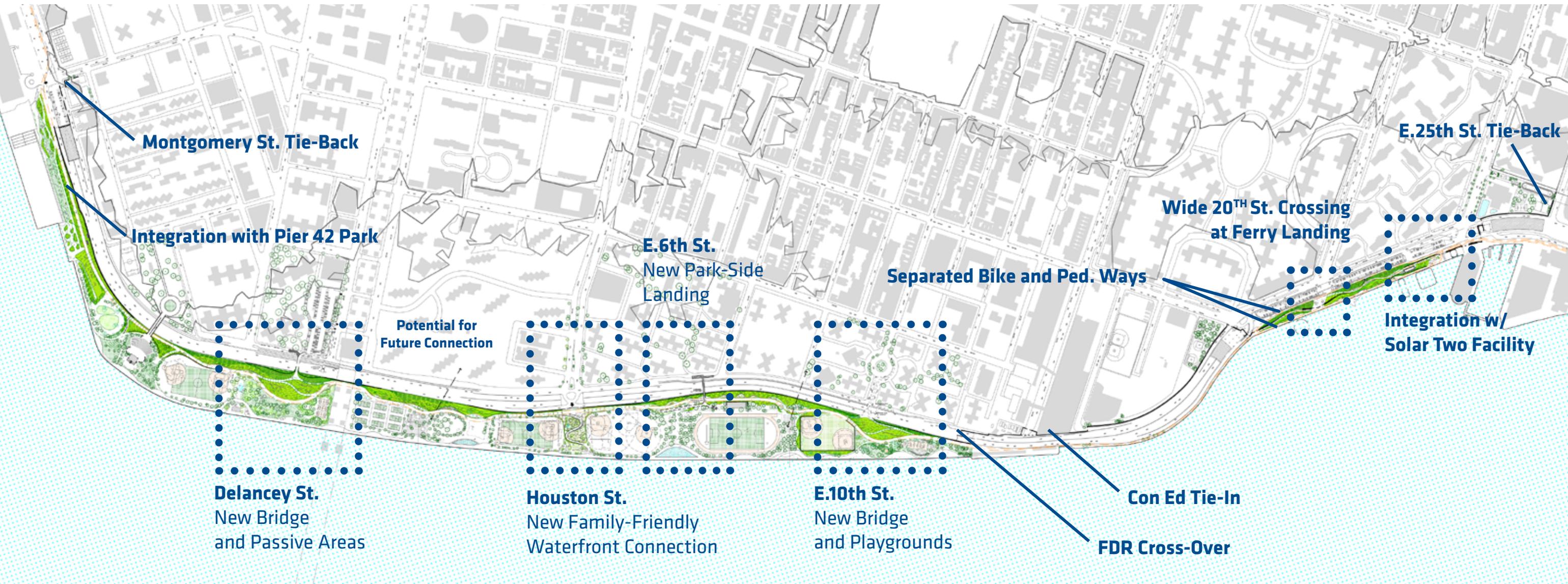
"DELANCEY IS AN IMPORTANT CROSSING INTO THE PARK"

"THIS AREA HAS THE BEST TREES!"

"MAINTAIN VIEWS AND ACCESS TO THE NEW PIER 42 PARK"

"THIS STAIRCASE IS DANGEROUSLY STEEP"

WHERE WE LEFT OFF - FALL 2015 INITIAL DESIGN DIRECTION



-FLOOD PROTECTION TYPICALLY +8'-9' ABOVE EXISTING GRADE
-18 GATE/DEPLOYABLE LOCATIONS

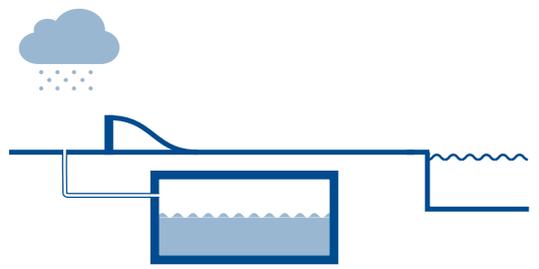
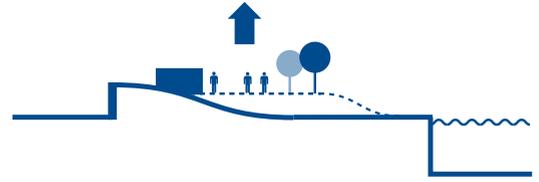


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ADDITIONAL DESIGN PARAMETERS

EXPAND AVAILABLE PROGRAMMING BY CREATING MORE FLEXIBLE, CASUAL, MULTI-USE AREAS OF PARK

INCORPORATE A NEW STORAGE TANK IN EAST RIVER PARK TO MANAGE COMBINED SEWER OVERFLOW



PARK RESILIENCY

DIVERSIFY PROGRAM

INTEGRATE CON-ED

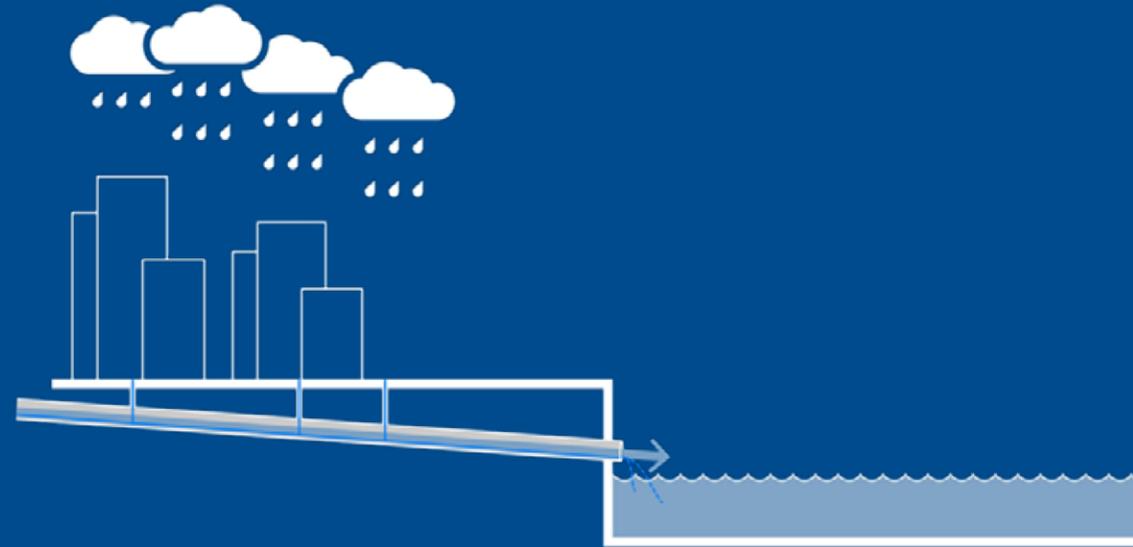
STORAGE TANK

INCORPORATE MORE HOLISTIC RESILIENCE OF WATERFRONT PARKS AND OPEN SPACES

INCORPORATE CRITICAL CON-ED TRANSMISSION LINES, WHICH CARRY 16% OF NYC'S ELECTRICITY

DESIGN CONSIDERATIONS

DEP Storage Tank

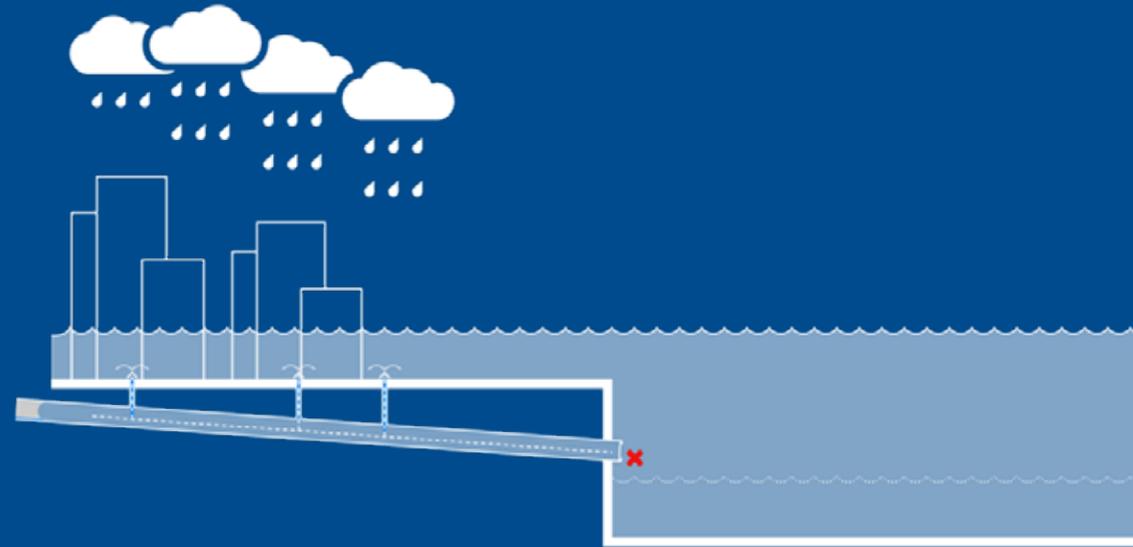


CURRENT CONDITIONS:

DURING A HEAVY PRECIPITATION EVENT

DESIGN CONSIDERATIONS

DEP Storage Tank

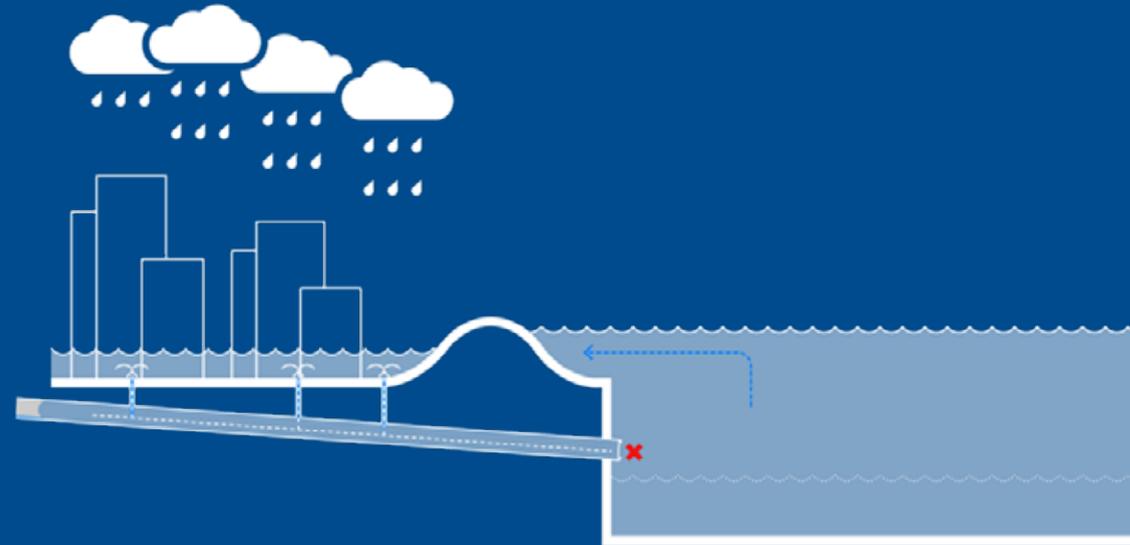


STORM EVENT WITHOUT COASTAL PROTECTION:

**POTENTIAL FOR FLOODING FROM BOTH
STORM SURGE AND PRECIPITATION**

DESIGN CONSIDERATIONS

DEP Storage Tank



STORM EVENT WITH COASTAL PROTECTION:

**INLAND FLOODING THAT NEEDS TO BE MANAGED:
EVALUATING BOTH PUMPING AND STORAGE ALTERNATIVES**

10

DESIGN CONSIDERATIONS

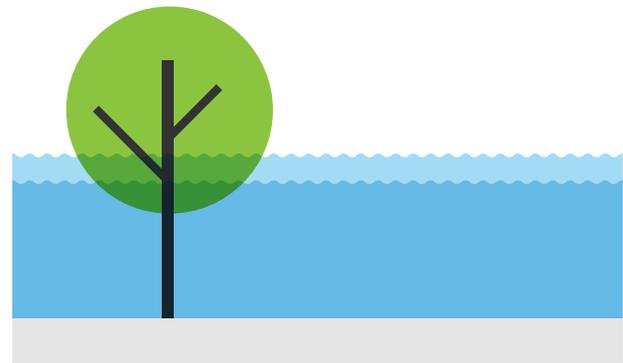
STORM CONSIDERATIONS FOR WATERFRONT PARKLAND



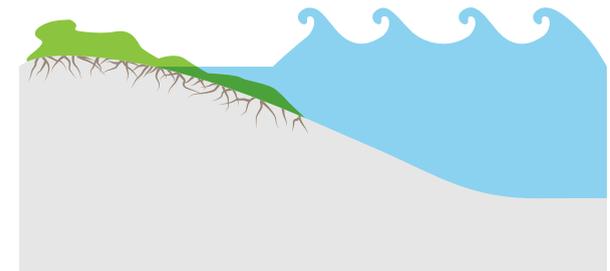
WIND

WIND FROM STORMS DAMAGES TREES AND REDUCES CANOPY HEALTH OVER TIME

INUNDATION AFFECTS ROOTS AND TREE HEALTH



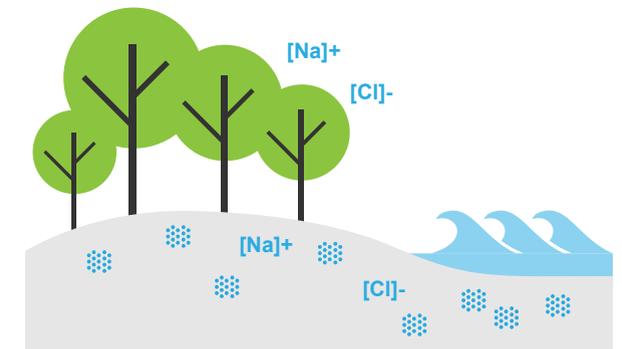
INUNDATION



WAVE ACTION + EROSION

WAVES ERODE LANDSCAPE SOILS AND CAUSE PHYSICAL DAMAGE TO TREES, SHRUBS, LAWNS, GARDENS

SALT DEPOSITS BUILD UP IN SOILS AND AFFECT PLANT HEALTH



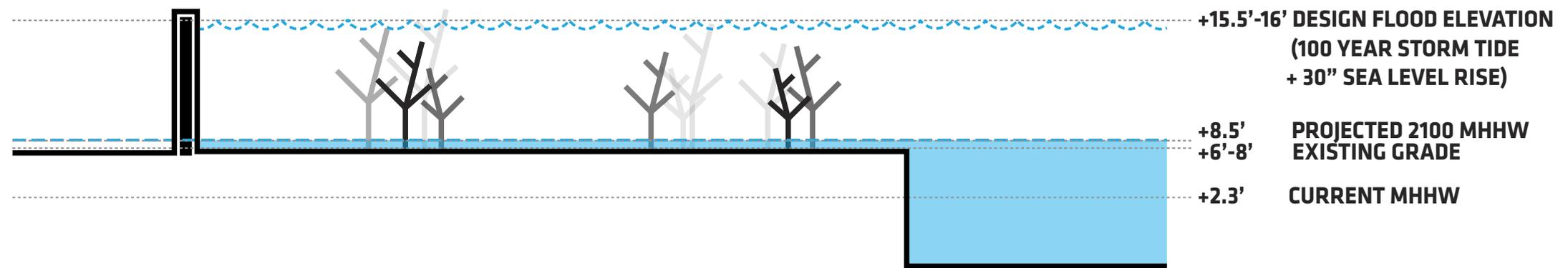
SALINITY

EAST RIVER PARK

BASELINE FLOOD PROTECTION

NOTE: ILLUSTRATIVE DIAGRAM, NOT-TO-SCALE

A FLOODWALL ALONG THE BACK EDGE OF THE PARK PROTECTS THE CITY, BUT LEAVES THE PARK OPEN TO DAMAGE FROM FUTURE SEA LEVEL RISE AND HIGHER FREQUENCY STORM EVENTS

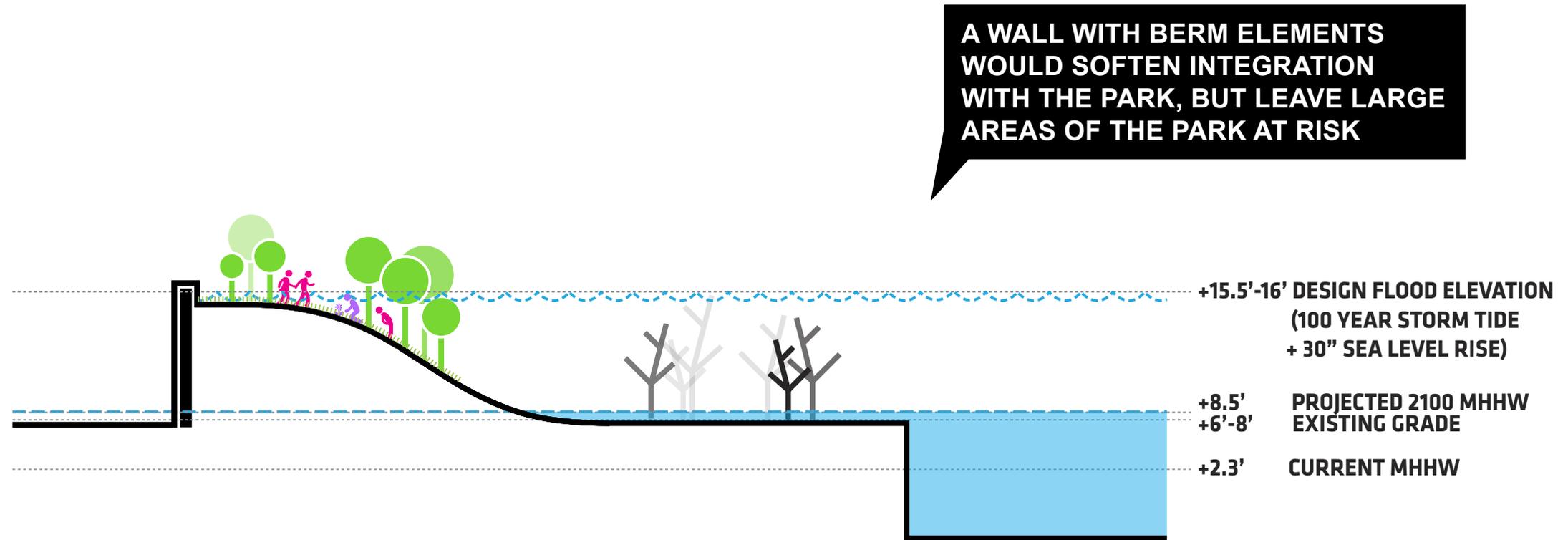


*MHHW: Mean Higher High Water

National Oceanic Atmospheric Administration: The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch

INTEGRATED FLOOD PROTECTION FALL 2015 CONCEPT

NOTE: ILLUSTRATIVE DIAGRAM, NOT-TO-SCALE



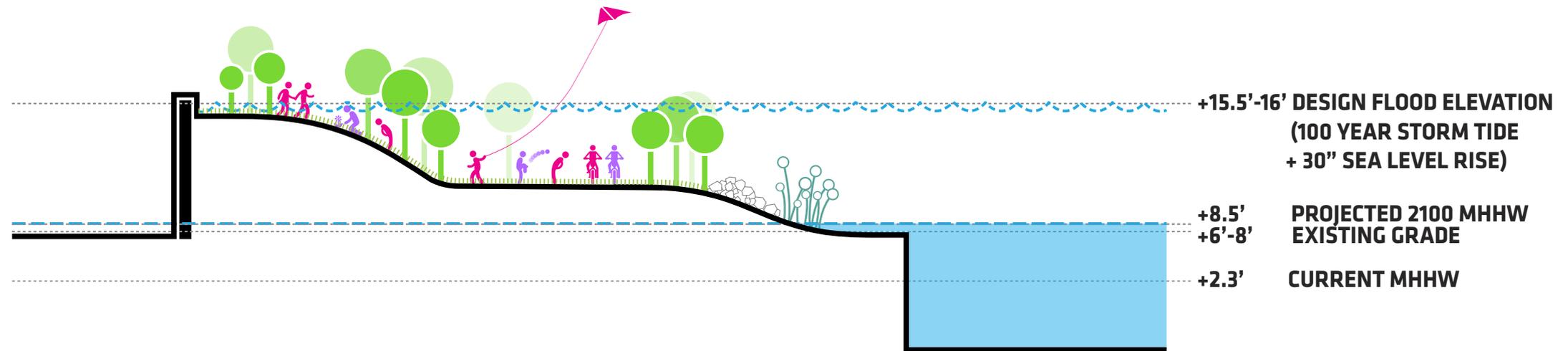
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National Oceanic Atmospheric Administration: The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch

PARK INTEGRATION

NOTE: ILLUSTRATIVE DIAGRAM, NOT-TO-SCALE

INTEGRATING AND RAISING MORE AREAS OF THE PARK WOULD INCREASE OPEN SPACE RESILIENCY INTO THE FUTURE



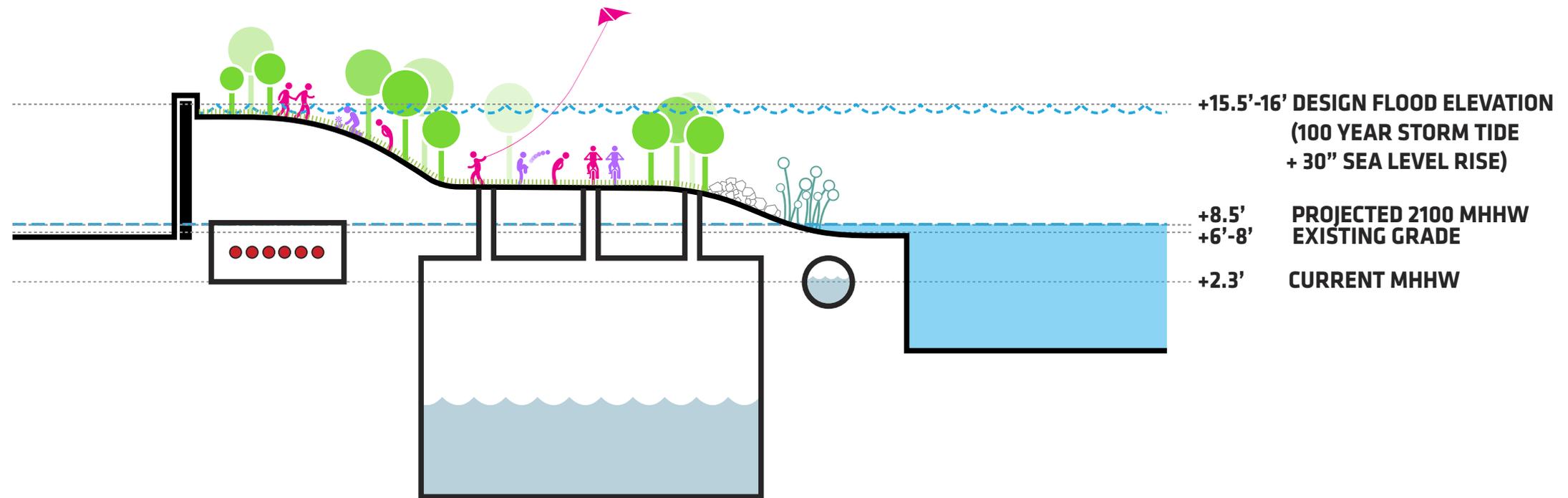
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SUB-SURFACE INFRASTRUCTURE

NOTE: ILLUSTRATIVE DIAGRAM, NOT-TO-SCALE

**NEW SUB-SURFACE
INFRASTRUCTURE ACCOMODATED
BY INCREASED LIMIT OF WORK**

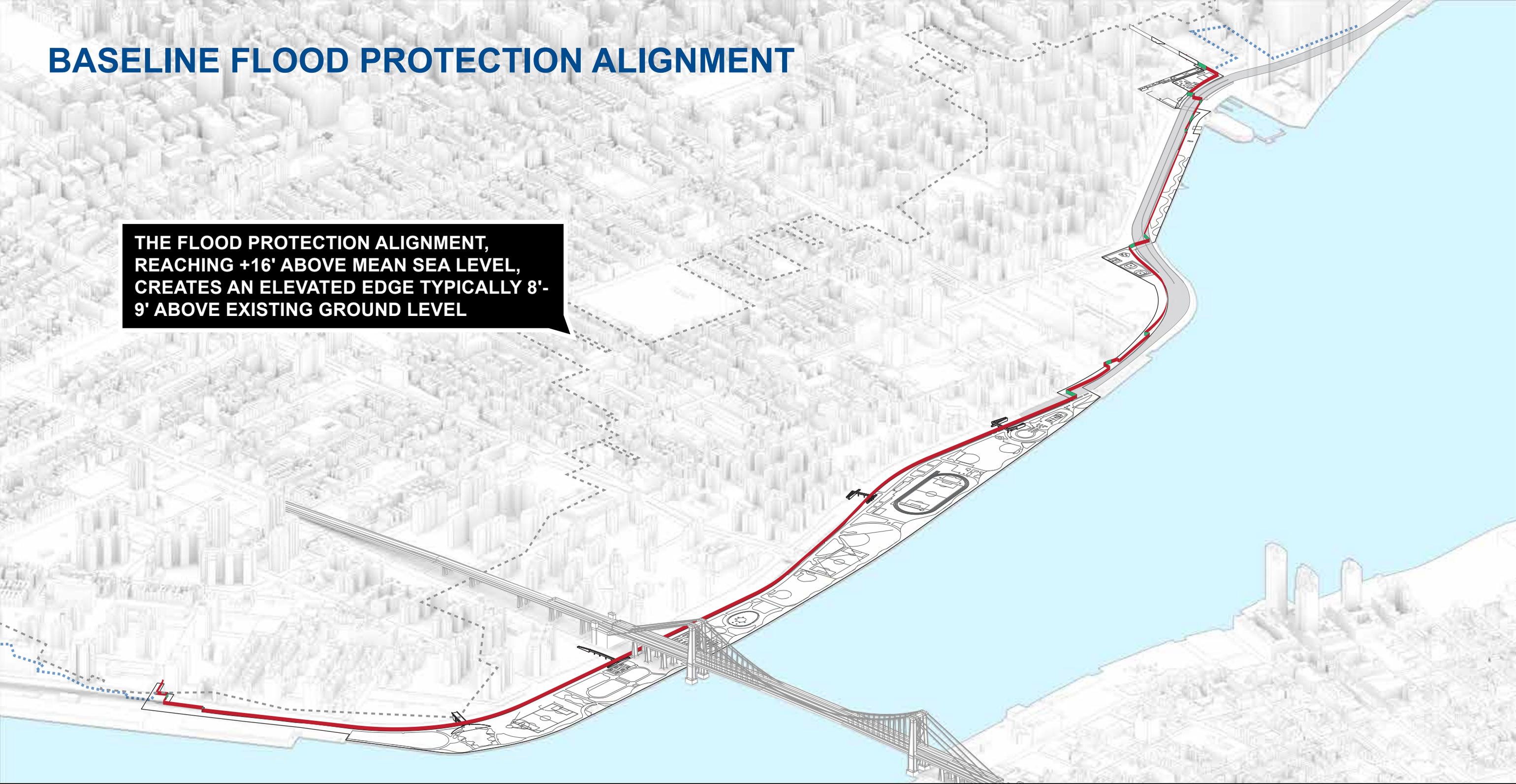


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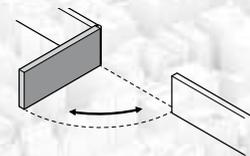
National Oceanic Atmospheric Administration: The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch

BASELINE FLOOD PROTECTION ALIGNMENT

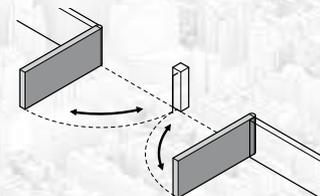
THE FLOOD PROTECTION ALIGNMENT, REACHING +16' ABOVE MEAN SEA LEVEL, CREATES AN ELEVATED EDGE TYPICALLY 8'-9' ABOVE EXISTING GROUND LEVEL



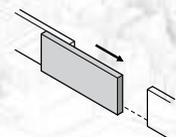
CLOSURE STRUCTURES



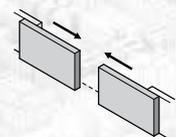
Single Swing Gate (x7)



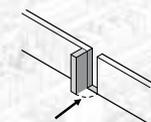
Double Swing Gates (x2)



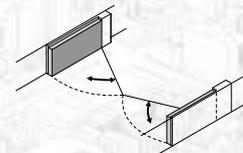
Single Roller Gates (x4)



Double Roller Gates (x1)



Pedestrian Gates (x3)



Miter Gates (x1)

*18 Total Closure Structures

25TH STREET TIEBACK

MONTGOMERY STREET TIEBACK

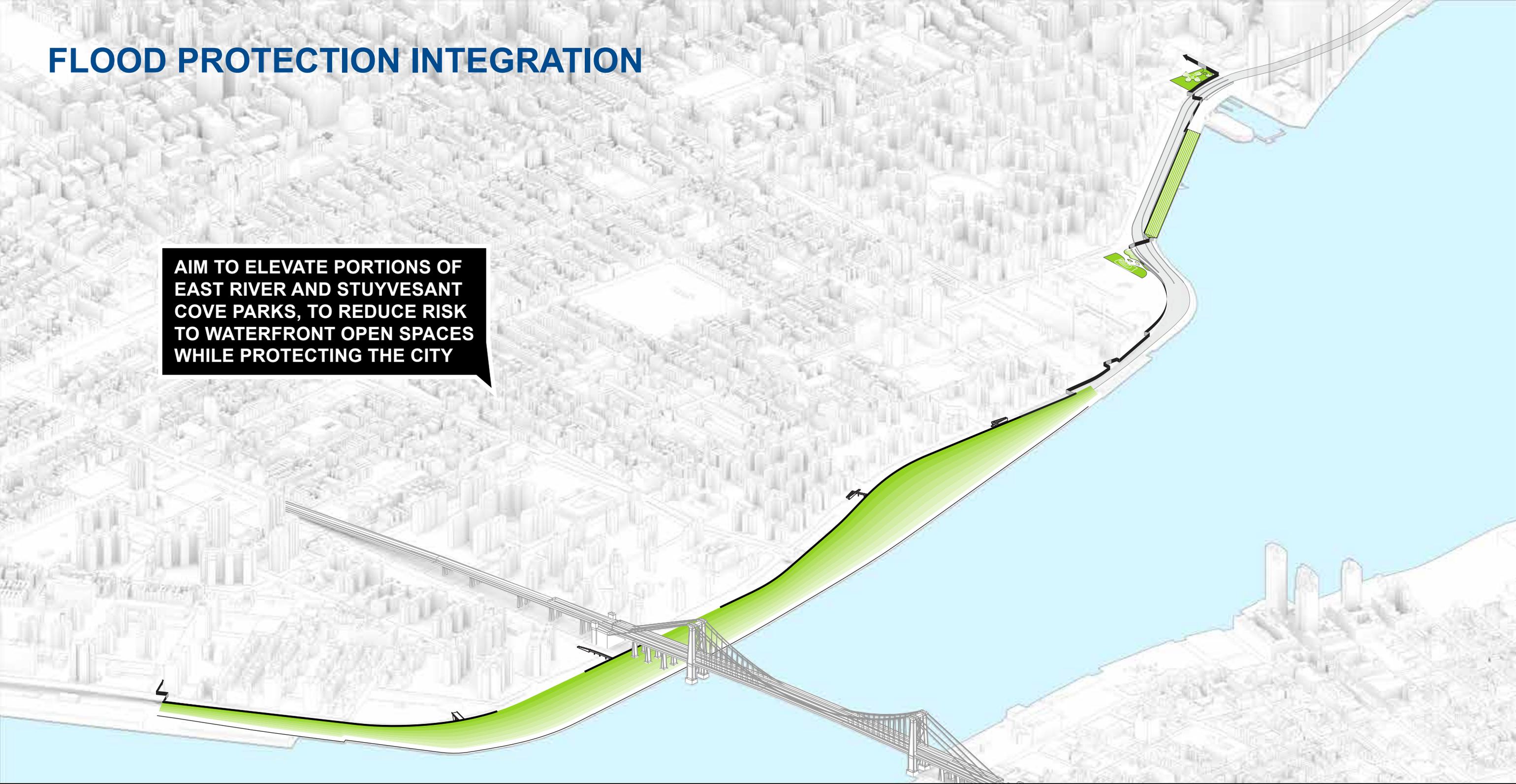
THE FLOOD PROTECTION ALIGNMENT, REACHING +16' ABOVE MEAN SEA LEVEL, CREATES AN ELEVATED EDGE TYPICALLY 8'-9' ABOVE EXISTING GROUND LEVEL, WITH FLOOD GATES ACROSS PEDESTRIAN, CYCLIST AND VEHICULAR ACCESSWAYS

Floodwall/Levee ■

Closure Areas

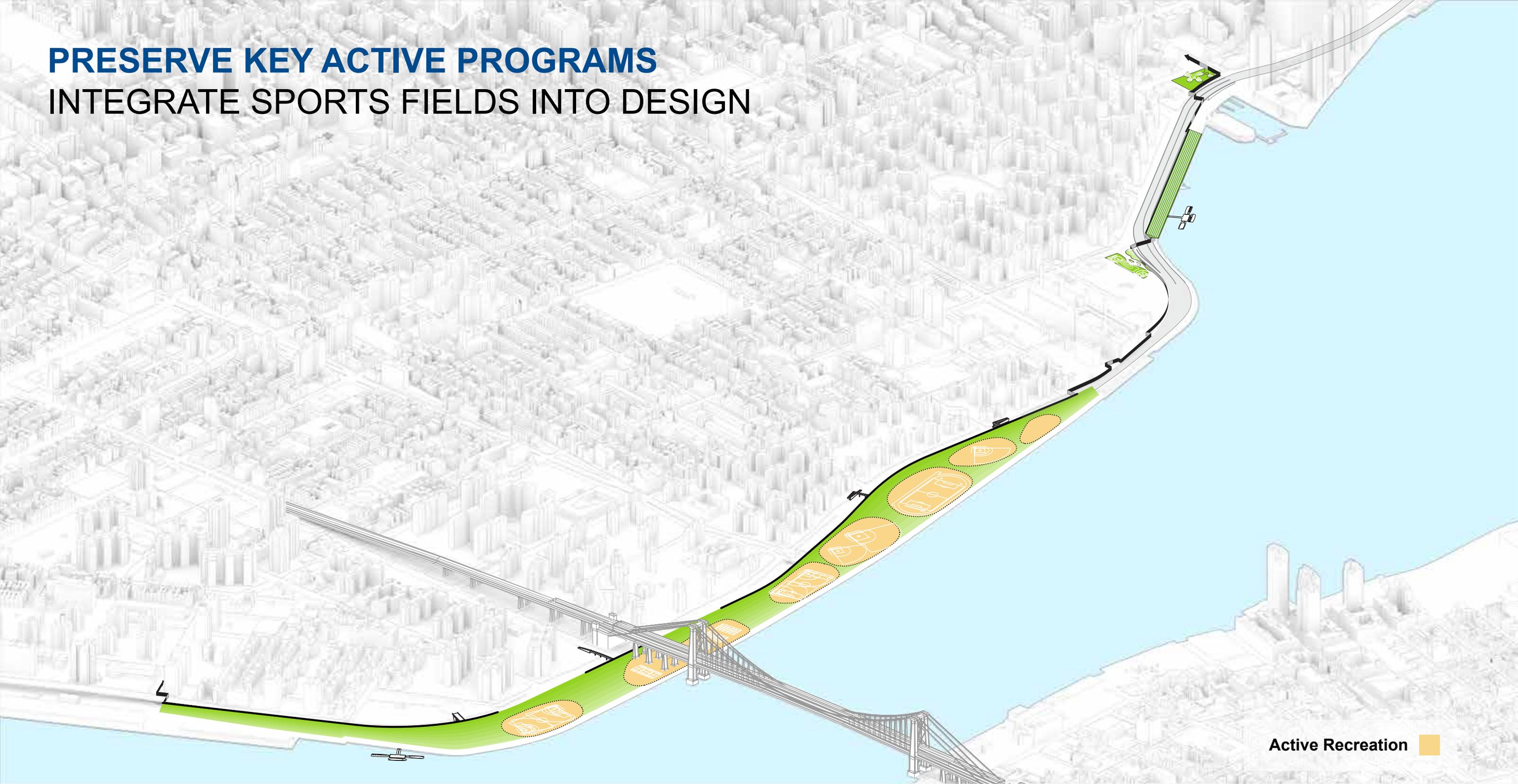
FLOOD PROTECTION INTEGRATION

AIM TO ELEVATE PORTIONS OF EAST RIVER AND STUYVESANT COVE PARKS, TO REDUCE RISK TO WATERFRONT OPEN SPACES WHILE PROTECTING THE CITY



PRESERVE KEY ACTIVE PROGRAMS

INTEGRATE SPORTS FIELDS INTO DESIGN

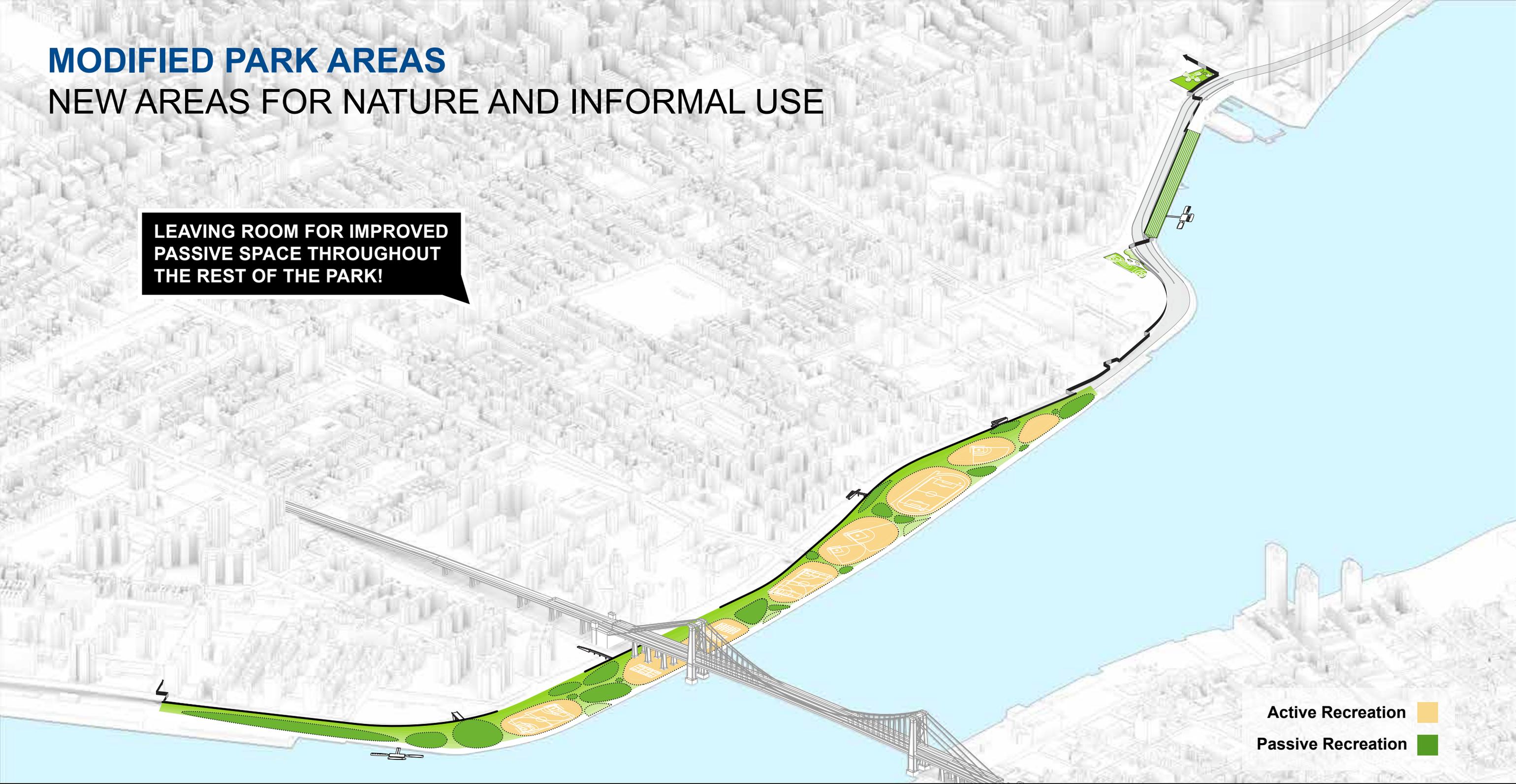


Active Recreation 

MODIFIED PARK AREAS

NEW AREAS FOR NATURE AND INFORMAL USE

LEAVING ROOM FOR IMPROVED PASSIVE SPACE THROUGHOUT THE REST OF THE PARK!

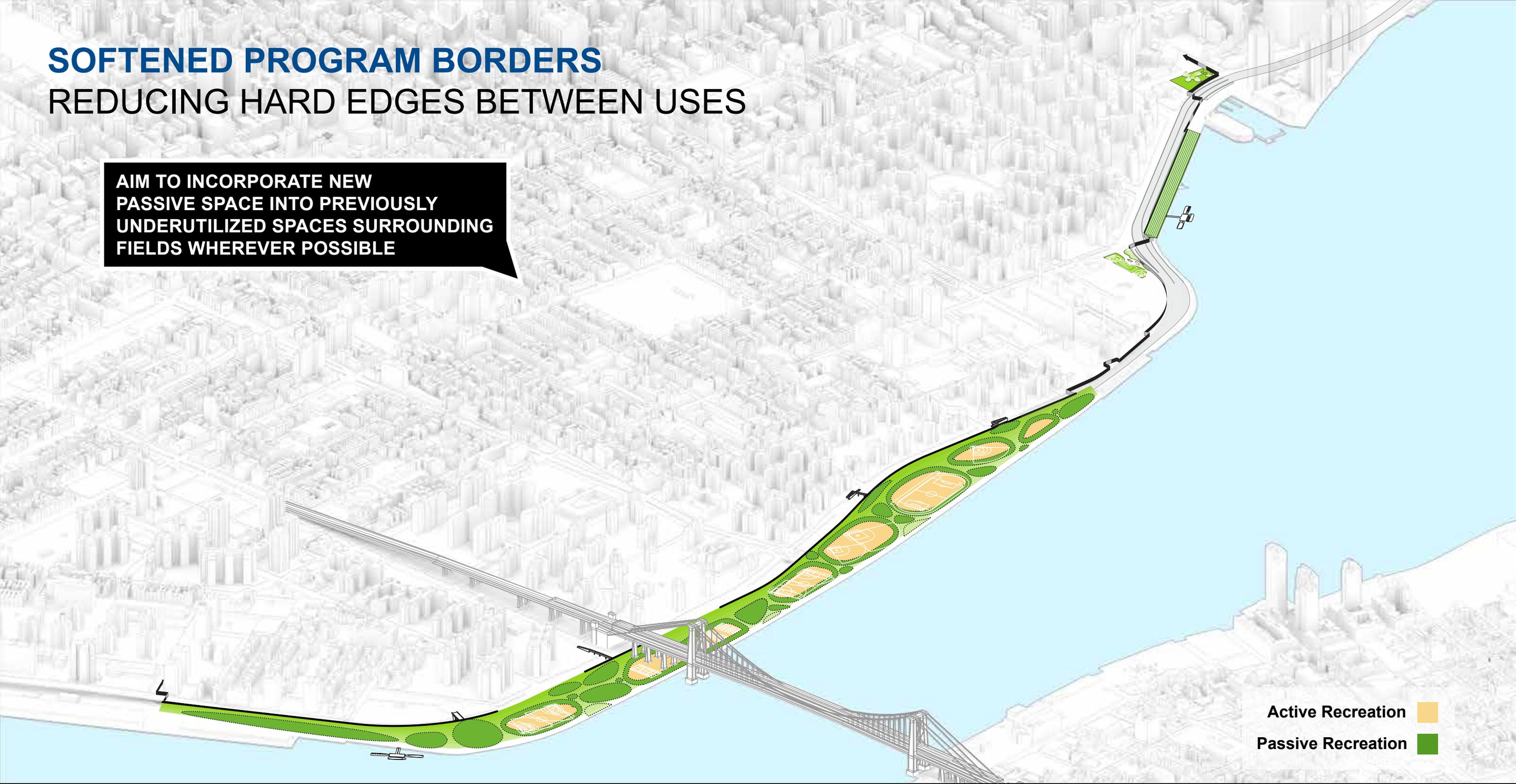


Active Recreation 
Passive Recreation 

SOFTENED PROGRAM BORDERS

REDUCING HARD EDGES BETWEEN USES

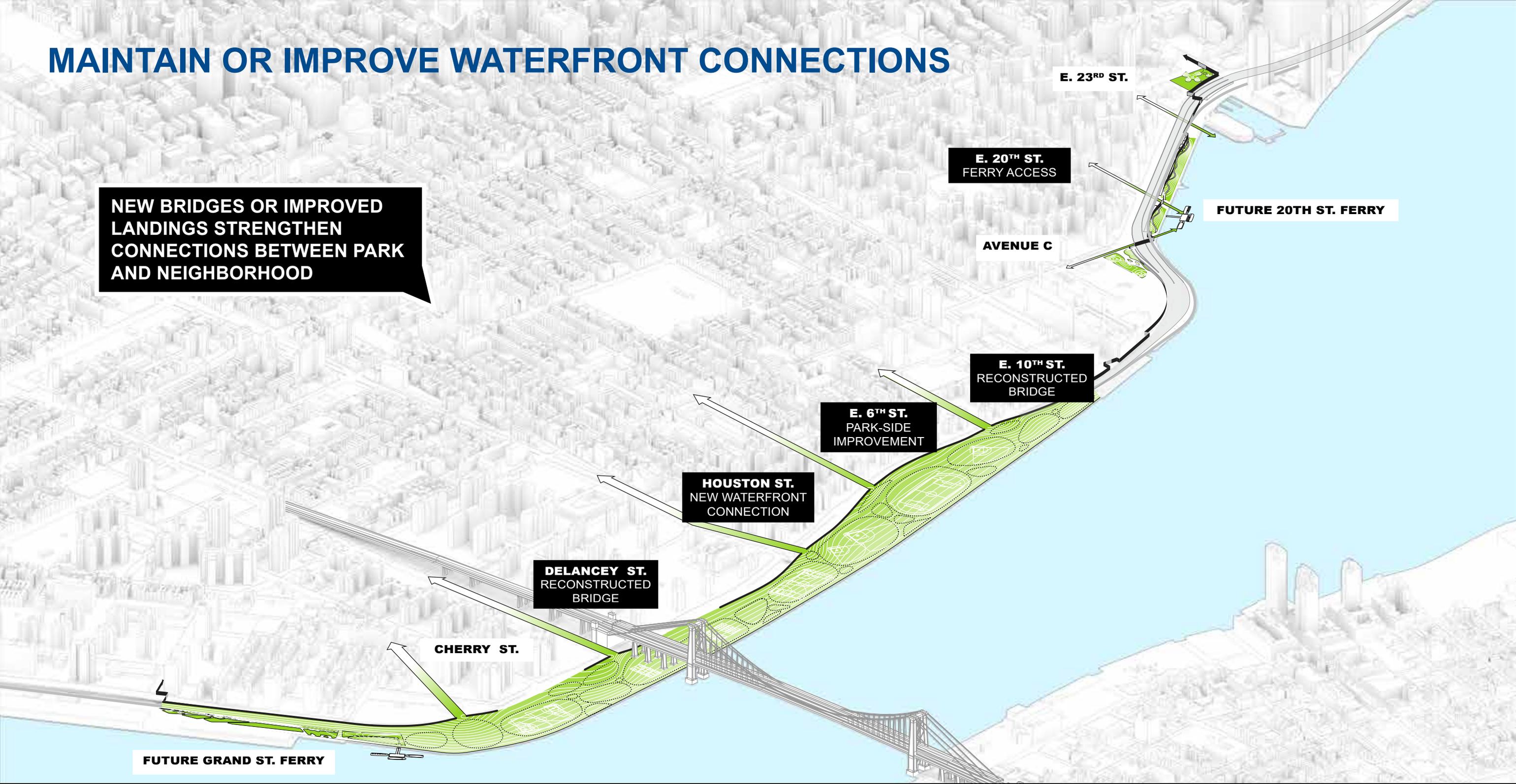
AIM TO INCORPORATE NEW
PASSIVE SPACE INTO PREVIOUSLY
UNDERUTILIZED SPACES SURROUNDING
FIELDS WHEREVER POSSIBLE



Active Recreation 
Passive Recreation 

MAINTAIN OR IMPROVE WATERFRONT CONNECTIONS

NEW BRIDGES OR IMPROVED LANDINGS STRENGTHEN CONNECTIONS BETWEEN PARK AND NEIGHBORHOOD



E. 23RD ST.

**E. 20TH ST.
FERRY ACCESS**

FUTURE 20TH ST. FERRY

AVENUE C

**E. 10TH ST.
RECONSTRUCTED
BRIDGE**

**E. 6TH ST.
PARK-SIDE
IMPROVEMENT**

**HOUSTON ST.
NEW WATERFRONT
CONNECTION**

**DELANCEY ST.
RECONSTRUCTED
BRIDGE**

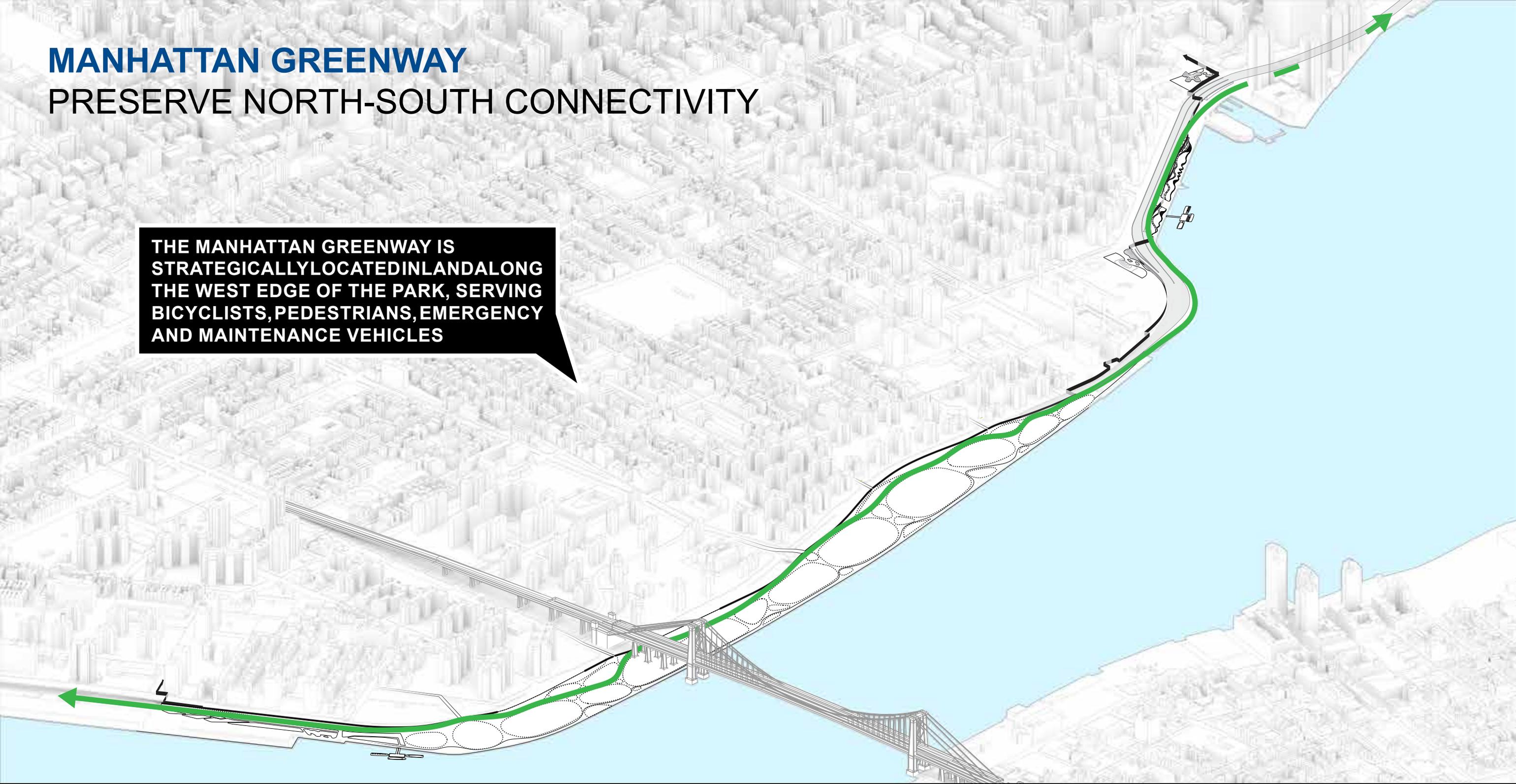
CHERRY ST.

FUTURE GRAND ST. FERRY

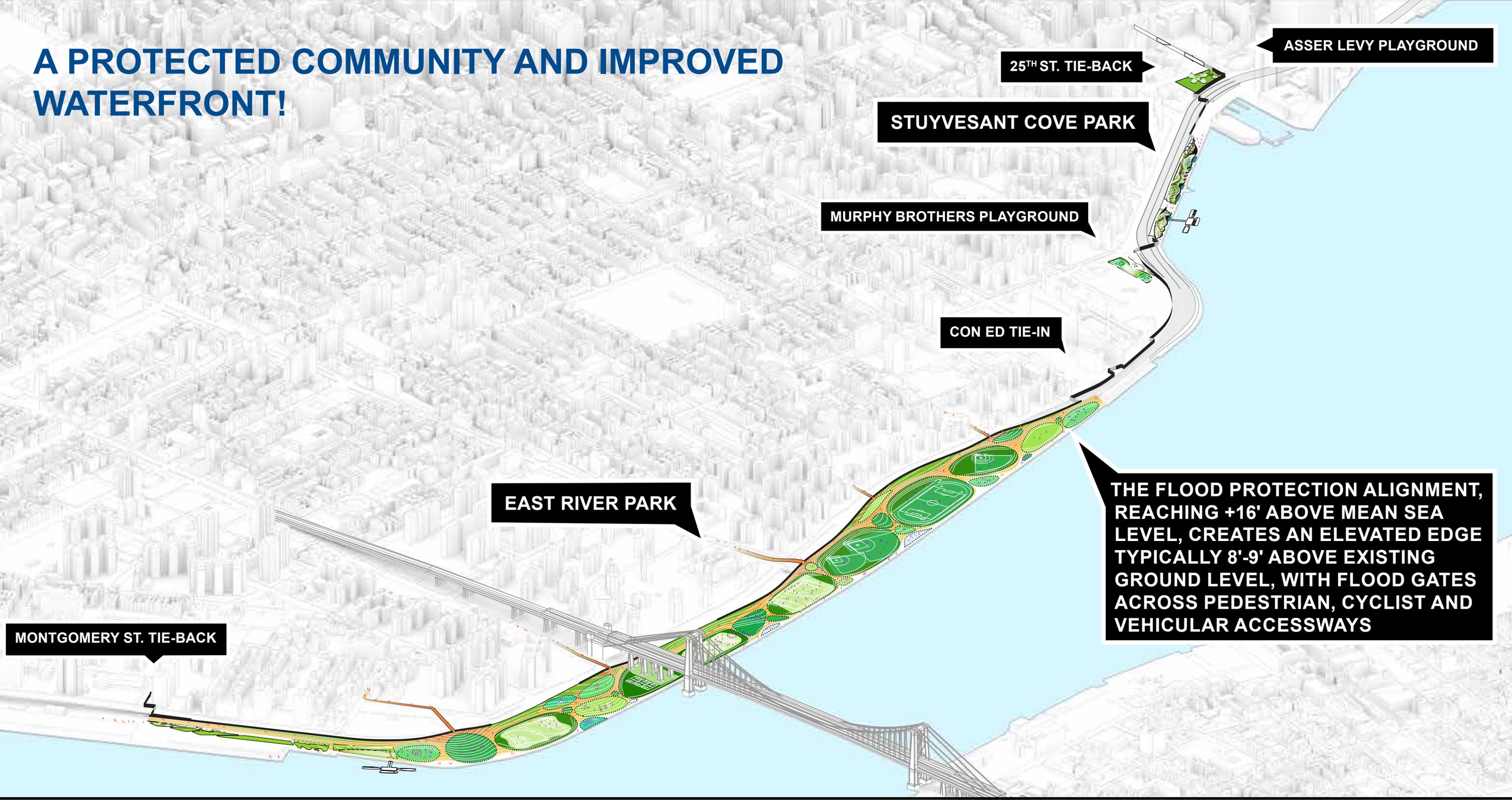
MANHATTAN GREENWAY

PRESERVE NORTH-SOUTH CONNECTIVITY

THE MANHATTAN GREENWAY IS STRATEGICALLY LOCATED INLAND ALONG THE WEST EDGE OF THE PARK, SERVING BICYCLISTS, PEDESTRIANS, EMERGENCY AND MAINTENANCE VEHICLES



A PROTECTED COMMUNITY AND IMPROVED WATERFRONT!



ASSER LEVY PLAYGROUND

25TH ST. TIE-BACK

STUYVESANT COVE PARK

MURPHY BROTHERS PLAYGROUND

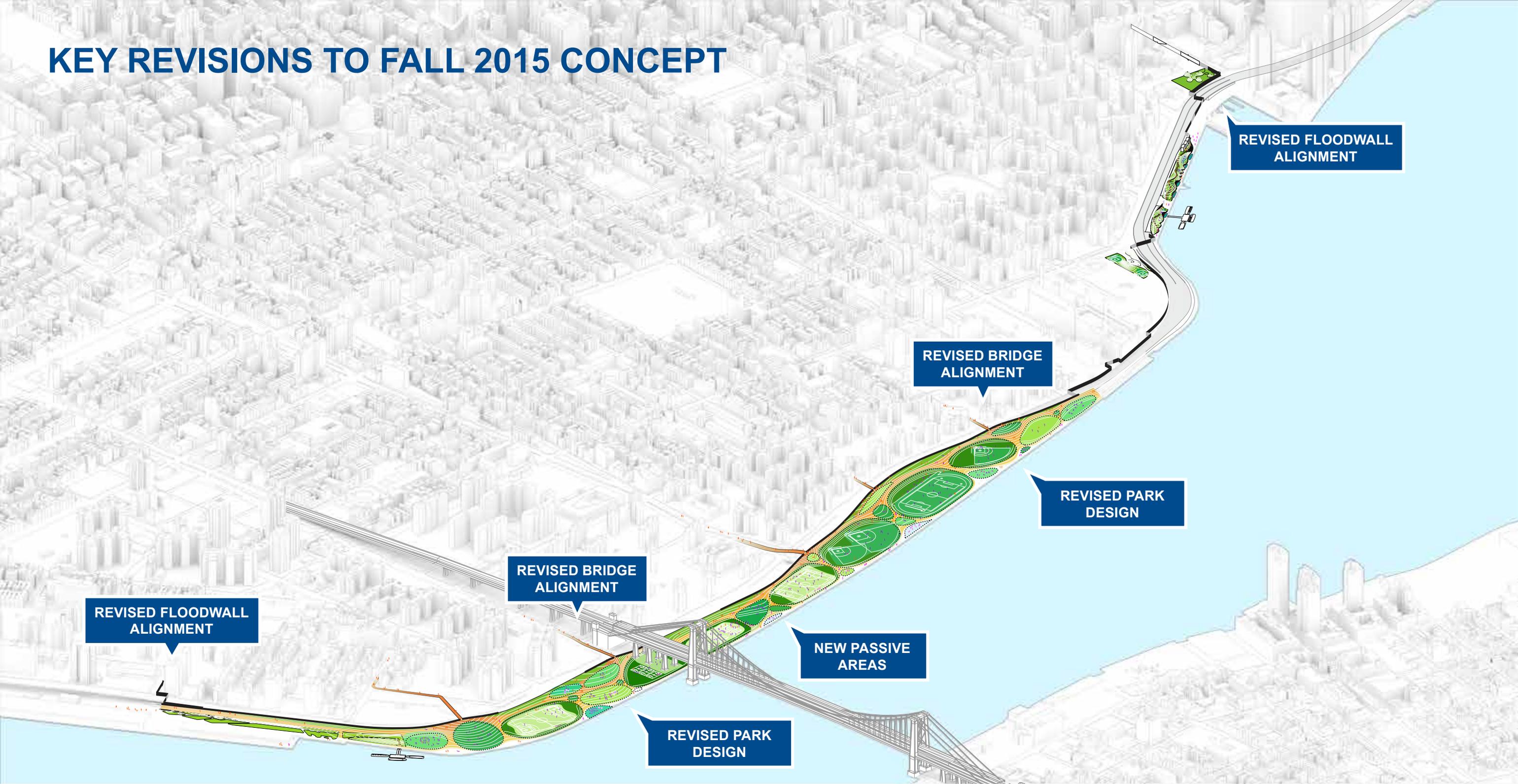
CON ED TIE-IN

EAST RIVER PARK

THE FLOOD PROTECTION ALIGNMENT, REACHING +16' ABOVE MEAN SEA LEVEL, CREATES AN ELEVATED EDGE TYPICALLY 8'-9' ABOVE EXISTING GROUND LEVEL, WITH FLOOD GATES ACROSS PEDESTRIAN, CYCLIST AND VEHICULAR ACCESSWAYS

MONTGOMERY ST. TIE-BACK

KEY REVISIONS TO FALL 2015 CONCEPT



REVISED FLOODWALL ALIGNMENT

REVISED BRIDGE ALIGNMENT

REVISED PARK DESIGN

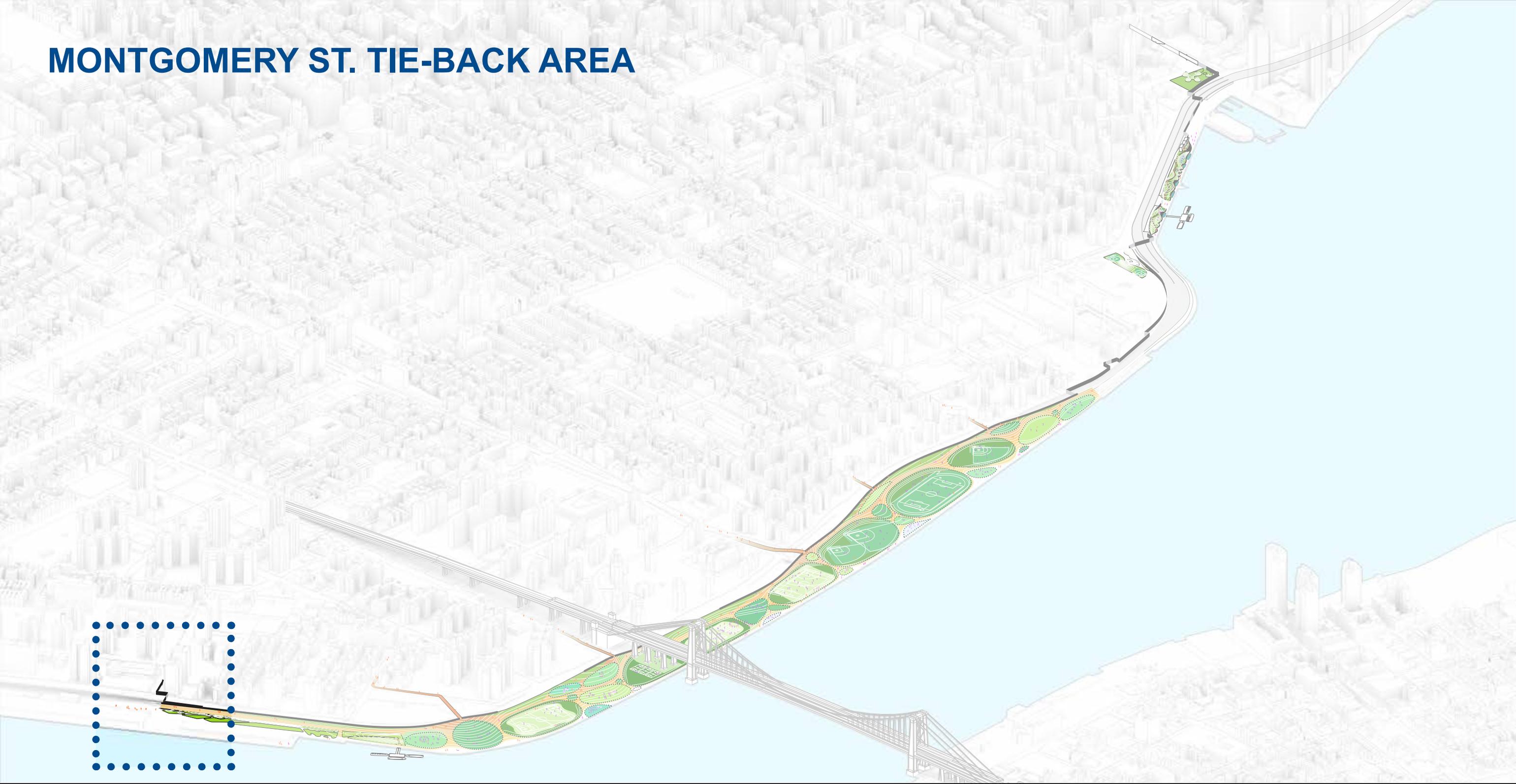
REVISED BRIDGE ALIGNMENT

NEW PASSIVE AREAS

REVISED FLOODWALL ALIGNMENT

REVISED PARK DESIGN

MONTGOMERY ST. TIE-BACK AREA



EXISTING - MONTGOMERY ST. TIE-BACK



PROPOSED - MONTGOMERY ST. TIE-BACK

DRAFT



PROPOSED - MONTGOMERY ST. TIE-BACK

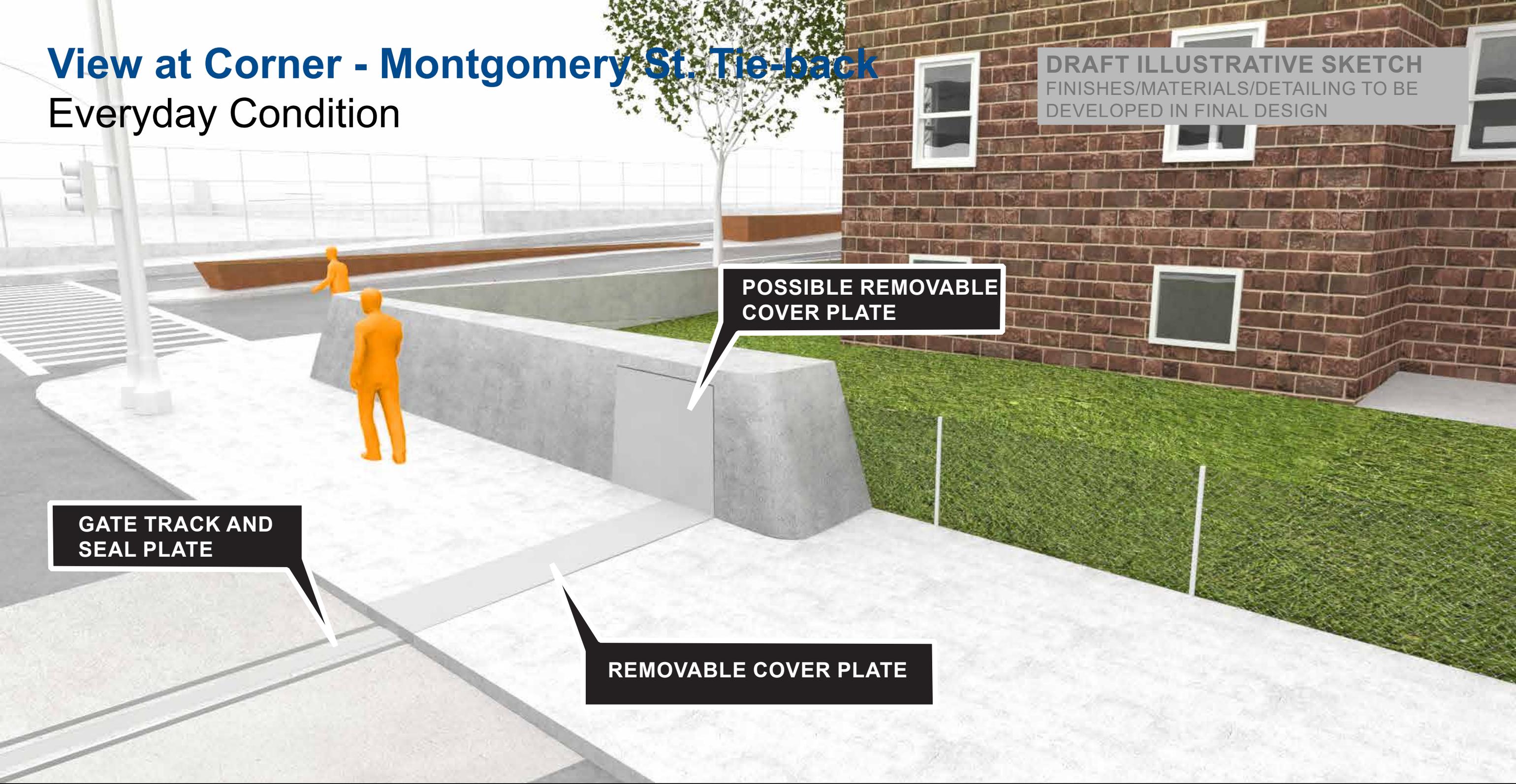
DRAFT



View at Corner - Montgomery St. Tie-back

Everyday Condition

DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING TO BE
DEVELOPED IN FINAL DESIGN



GATE TRACK AND
SEAL PLATE

POSSIBLE REMOVABLE
COVER PLATE

REMOVABLE COVER PLATE

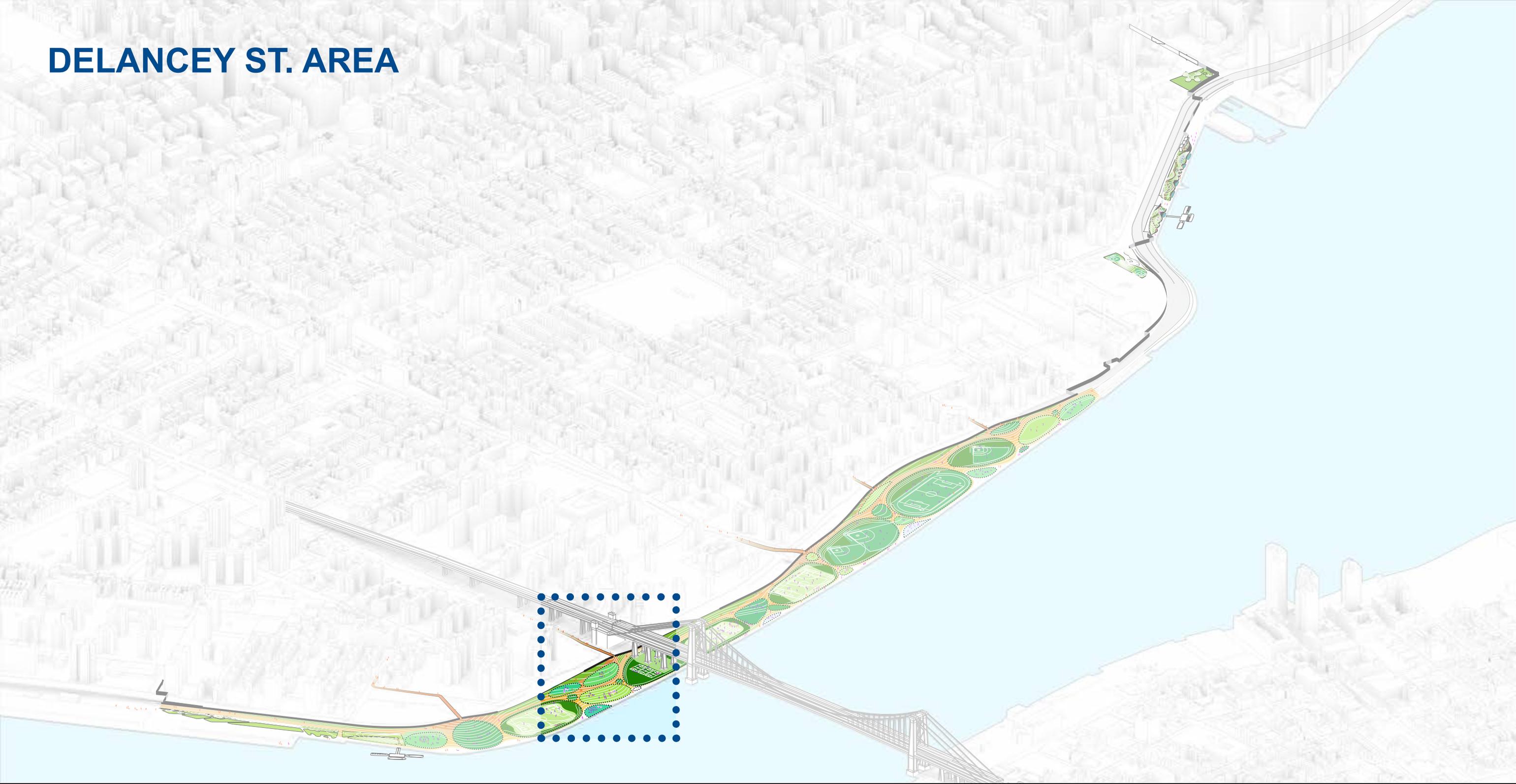
View at Corner - Montgomery St. Tie-back

During Flood Event

DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING TO BE
DEVELOPED IN FINAL DESIGN



DELANCEY ST. AREA



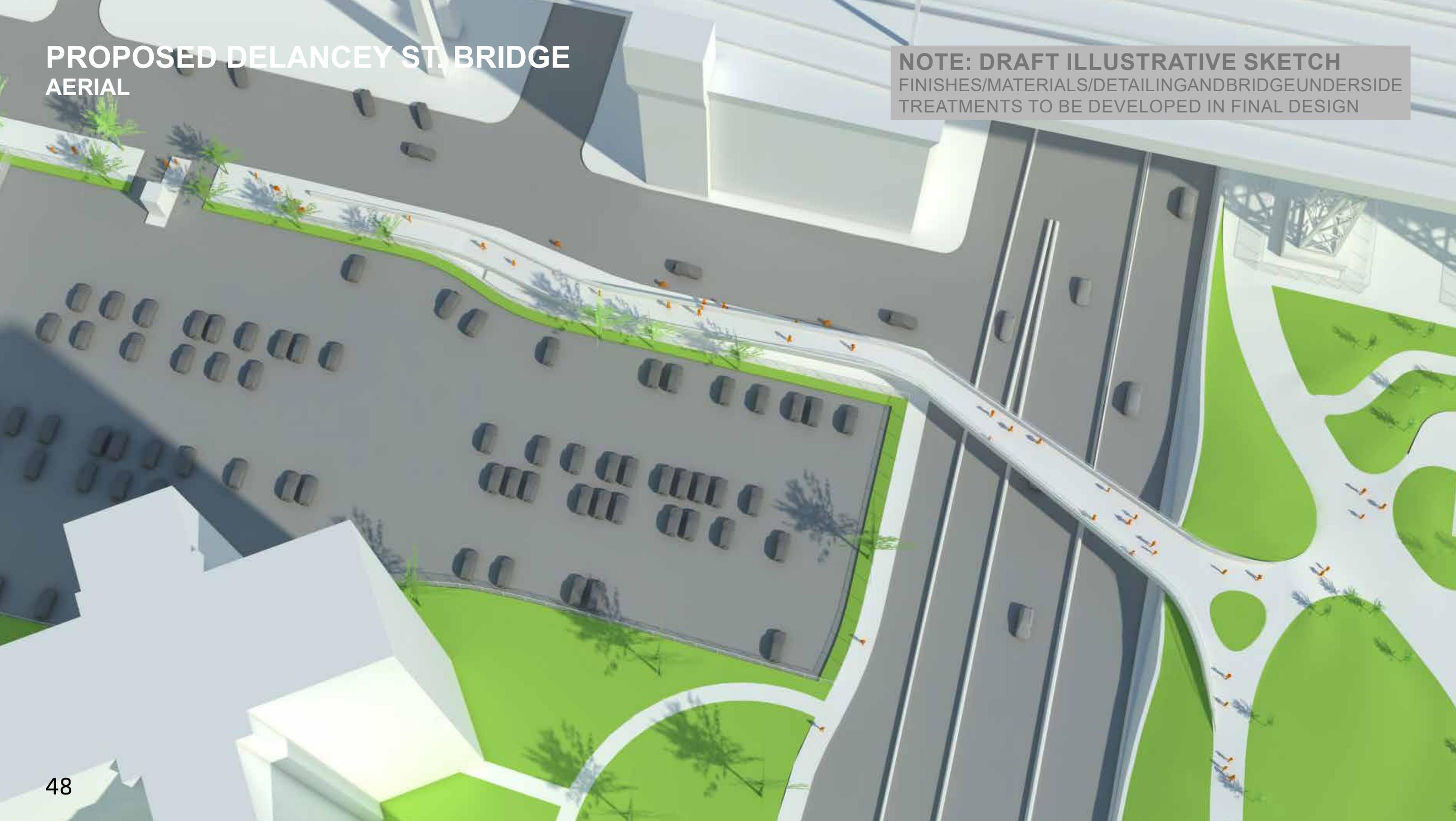
EXISTING DELANCEY ST. BRIDGE
AERIAL



PROPOSED DELANCEY ST. BRIDGE

AERIAL

NOTE: DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING AND BRIDGE UNDERSIDE
TREATMENTS TO BE DEVELOPED IN FINAL DESIGN



EXISTING - PERSPECTIVE FROM DELANCEY BRIDGE ARRIVAL

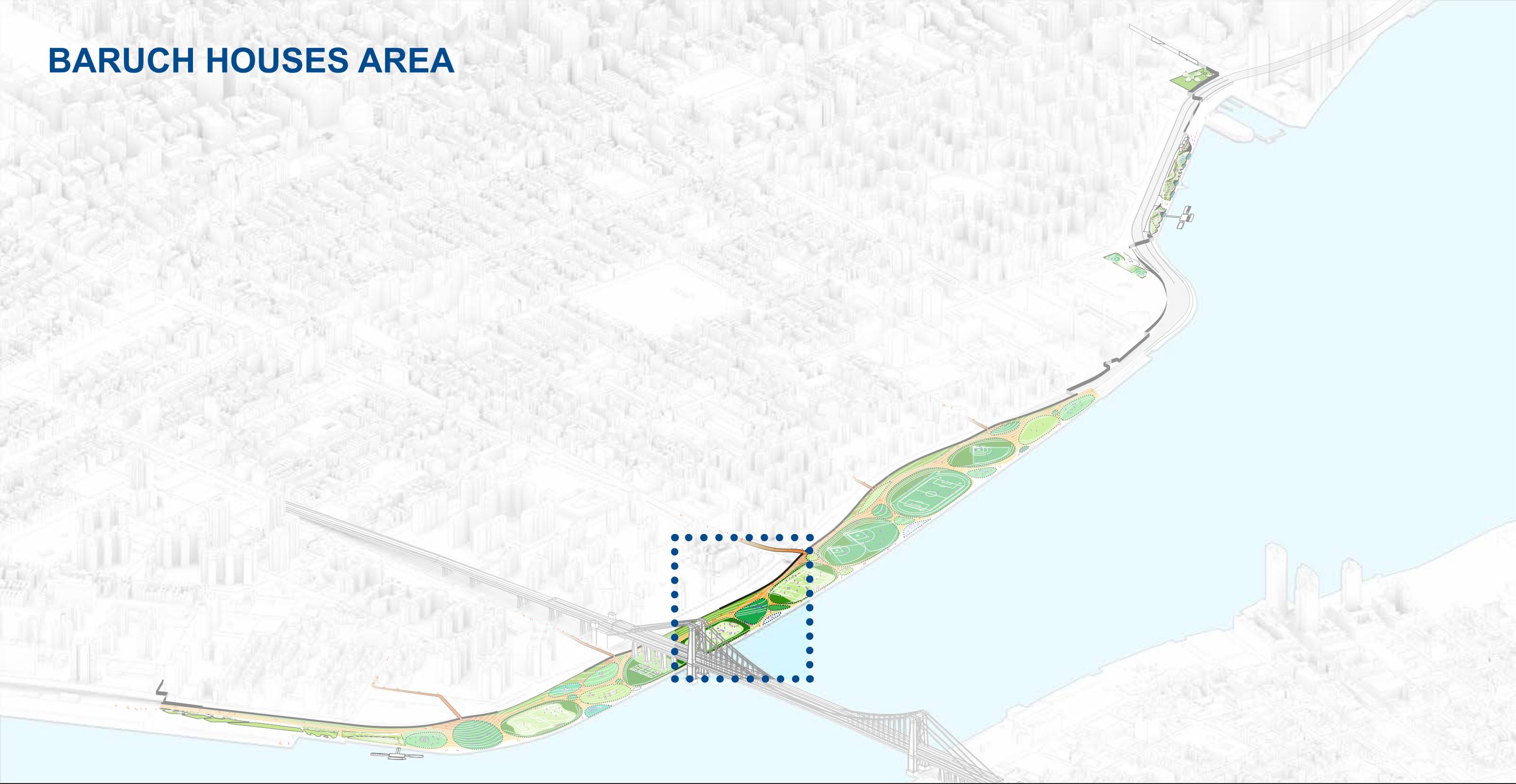


PROPOSED - PERSPECTIVE FROM DELANCEY BRIDGE ARRIVAL

DRAFT



BARUCH HOUSES AREA



EXISTING - 1ST FLOOR NYCHA HOUSING - BARUCH HOUSING

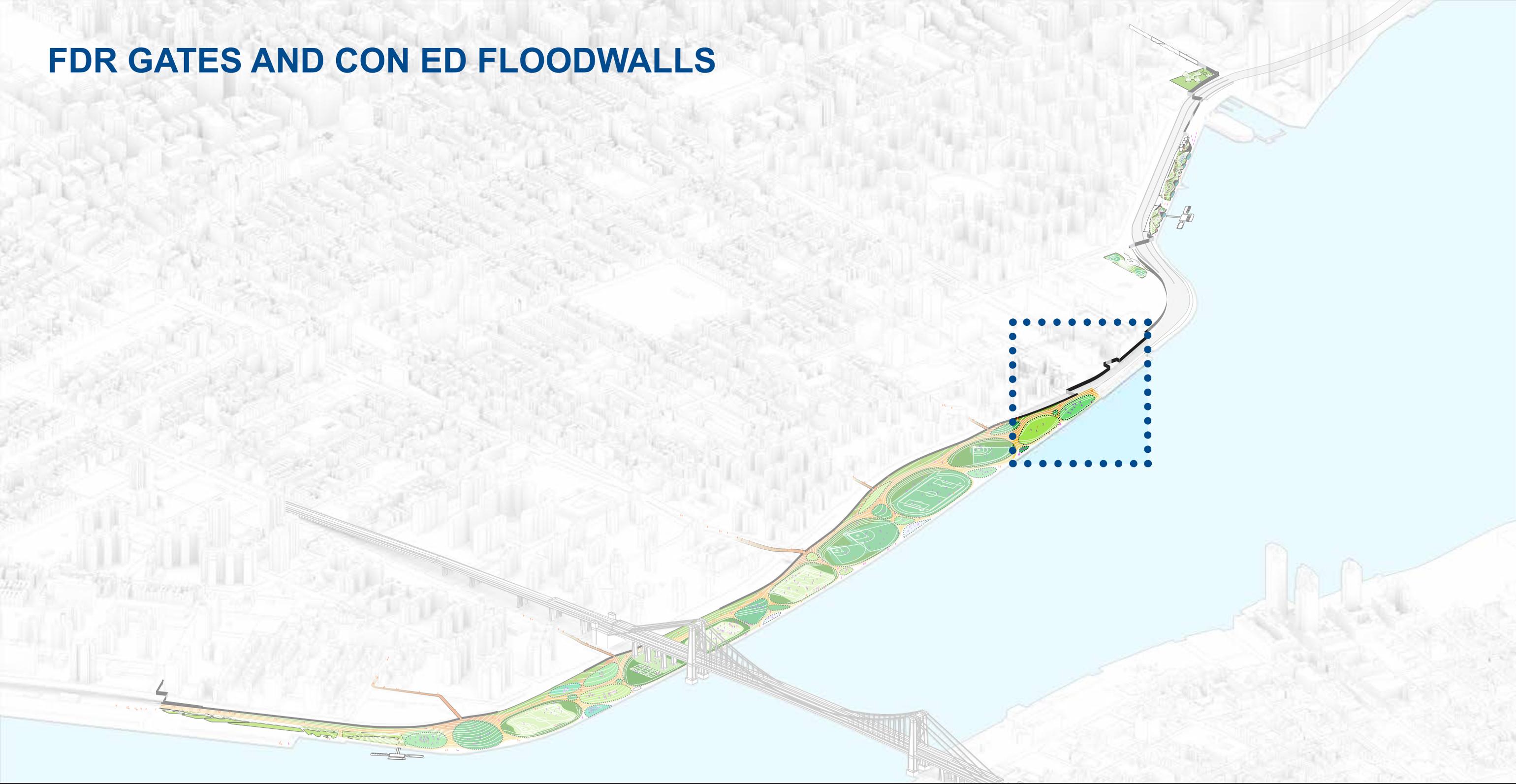


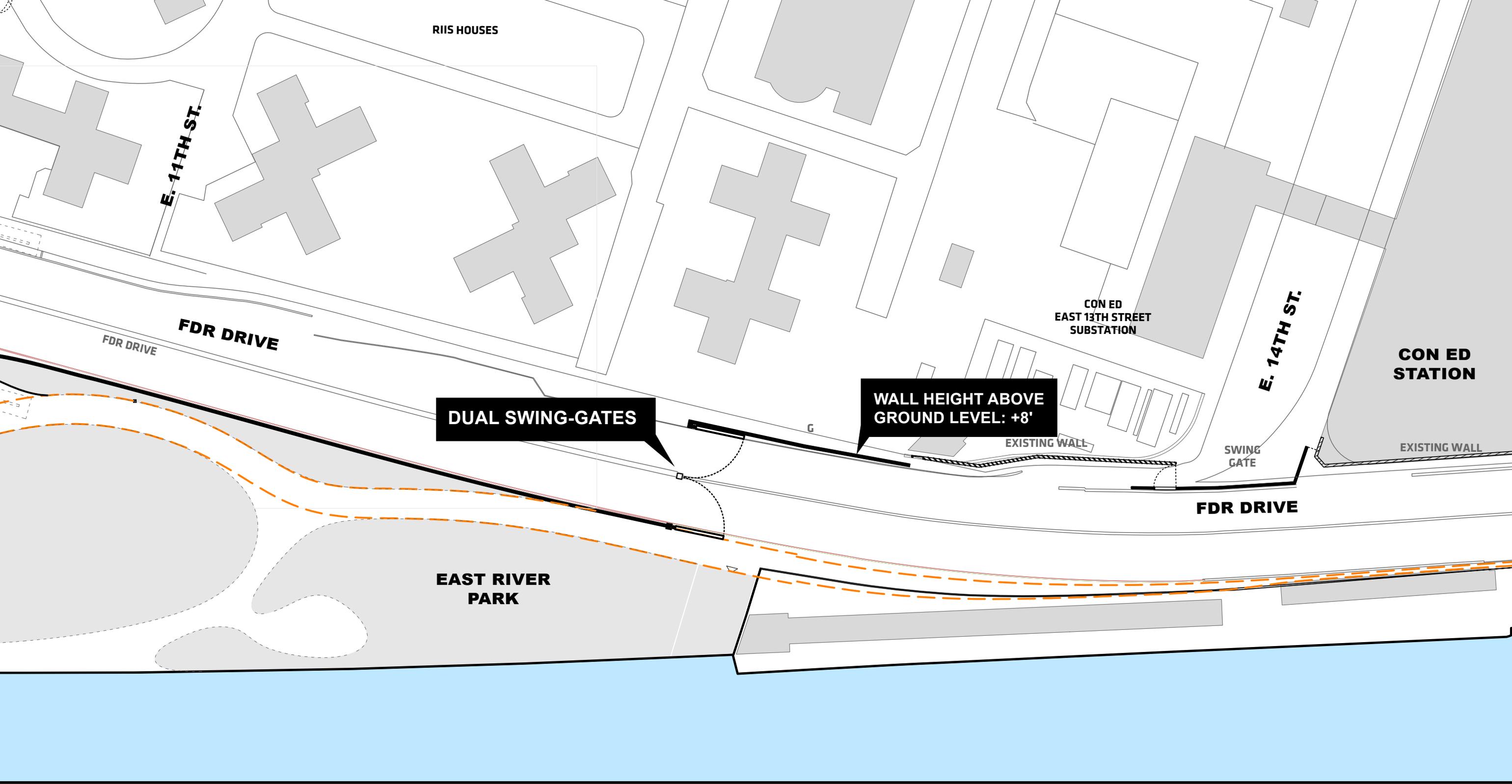
PROPOSED - 1ST FLOOR NYCHA HOUSING - BARUCH HOUSING

DRAFT



FDR GATES AND CON ED FLOODWALLS





RIIS HOUSES

E. 11TH ST.

FDR DRIVE

FDR DRIVE

DUAL SWING-GATES

WALL HEIGHT ABOVE
GROUND LEVEL: +8'

EXISTING WALL

CON ED
EAST 13TH STREET
SUBSTATION

E. 14TH ST.

CON ED
STATION

EXISTING WALL

SWING
GATE

FDR DRIVE

EAST RIVER
PARK



**NOTE: DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING TO BE DEVELOPED
IN FINAL DESIGN**



**NOTE: DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING TO BE DEVELOPED
IN FINAL DESIGN**



NOTE: DRAFT ILLUSTRATIVE SKETCH
FINISHES/MATERIALS/DETAILING TO BE DEVELOPED
IN FINAL DESIGN



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NEXT STEPS

Community Engagement and Revised Concept Roll-Out

OCT - DEC 2016

Project Area One North Overview
Project Area One South Overview

-Community Update Sessions, TBD
-Community Update Sessions, TBD

Asser Levy and Murphy Brothers Playgrounds
Stuyvesant Cove Park/E. 23rd Street Intersection
Project Area Two Overview

-Community Input Session, TBD
-Community Input Session, TBD
-Community Update Session, Nov

Overall Concept Plan

-PDC Presentation, Nov
-CB3/6 Joint Task Force Meeting, Dec

NEXT STEPS

Preliminary Design



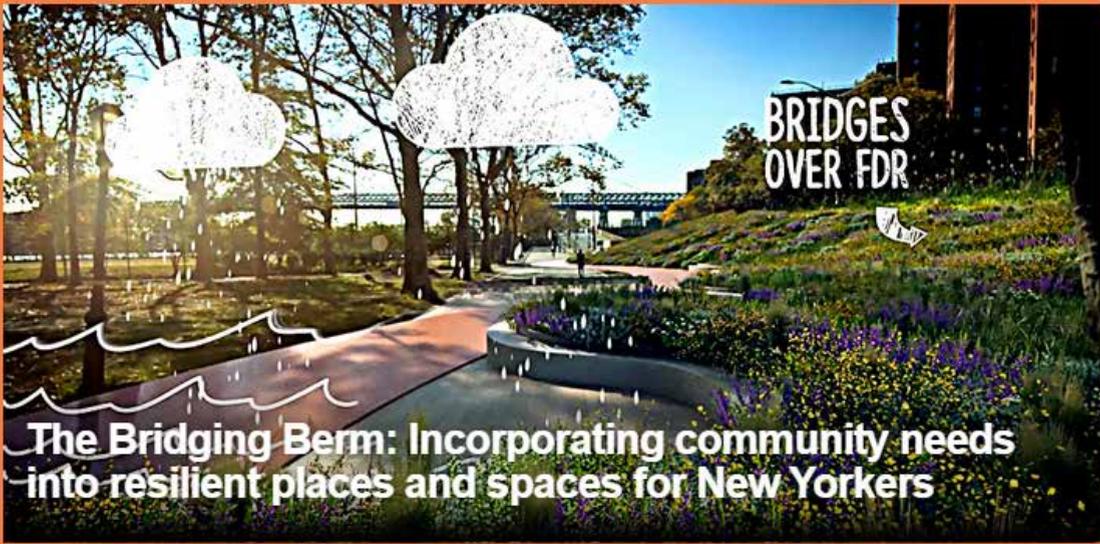
- Plan Refinement
- Detailed Planting Strategy
- Materiality, Paving, and Furnishing
- Design of Park Amenities
- Detailed Park Design
- Detailed Wall and Tie-Back Design
- Detailed Bridge Design
- Detailed M+O Strategy
- Construction Sequencing

NYC East Side Coastal Resiliency 311 Search all NYC.gov websites

NYC
The East Side Coastal Resiliency Project

Translate | Text-Size

Home Vision Background Progress Get Involved Resources Search



BRIDGES OVER FDR

The Bridging Berm: Incorporating community needs into resilient places and spaces for New Yorkers

The East Side Coastal Resiliency Project

The East Side Coastal Resiliency (ESCR) Project is a federally funded coastal protection initiative aimed at reducing flood risk due to coastal storms and sea level rise on Manhattan's East Side from East 23rd Street to Montgomery Street.

The ESCR Project is a priority of the City of New York as outlined in the 2015 *One New York: The Plan for a Strong and Just City* and by the innovative Rebuild by Design competition sponsored by the U.S. Department of Housing and Urban Development.

Partners



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