

Lower Manhattan Coastal Resiliency

March 18th, 2024

NYC Mayor's Office of Climate &
Environmental Justice



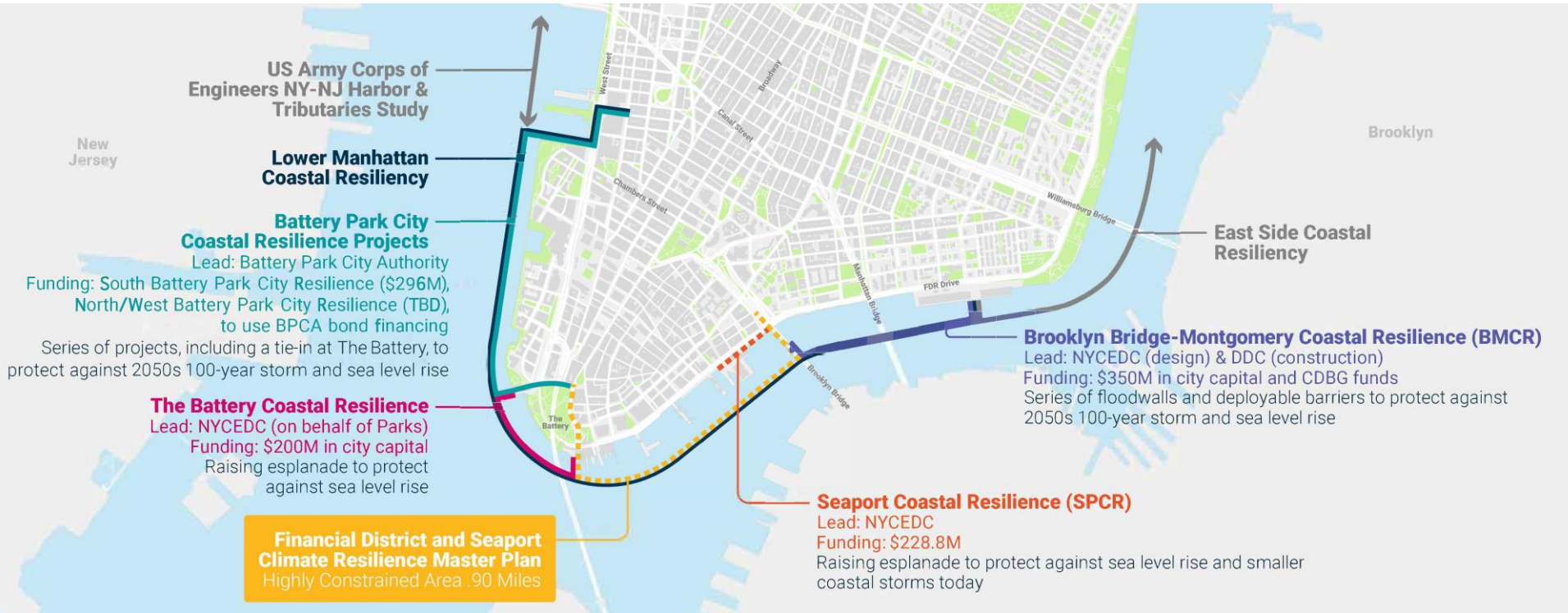
NYC / **EDC**

NYC Department of
DDC Design and
Construction

Agenda

- Overall LMCR Update
- Project Updates
 - BPCA Projects
 - Battery Coastal Resilience
 - Fidi/Seaport Master Plan
 - Seaport Coastal Resilience
 - BMCR

In Lower Manhattan, the City, State, and Federal governments have committed over \$1.7B in capital investments for climate adaptation projects. **The Financial District and Seaport Climate Resilience Master Plan will fill a missing link in Lower Manhattan's comprehensive flood defense infrastructure.**



Project Timelines

(Est. Dates as of March 2024)

Project	100% Design	Procurement	Construction Start	Construction Complete						
					'23	'24	'25	'26	'27	'28
Brooklyn Bridge–Montgomery Coastal Resilience	Complete	Complete	Underway	Fall 2026						
South Battery Park City Resiliency	Complete	Complete	Underway	Early/Mid 2025						
The Battery Coastal Resilience	Complete	Underway	Underway	Summer 2026						
North/West Battery Park City Resiliency	April 2024	Complete	Early 2025	Early/Mid 2028						
Seaport Coastal Resilience	Early 2026	Late 2025	Early 2026	Early 2028						
FiDi-Seaport Master Plan	Underway	TBD	TBD	TBD						



North/West Battery Park City Resiliency Project

CB1
Reaches 2, 3 & 4

March 18, 2024



1. Reach 2 Updates
2. Reach 3 Updates
3. Reach 4 Updates

Reach 2 Updates

REACH 2
a joint venture

1

Reach 2 | Design Goals

URBAN DESIGN / ENVIRONMENTAL CONTEXT

GOALS:

MAINTAIN UNIVERSAL ACCESSIBILITY

MAXIMIZE NUMBER OF TREES

PROTECT AS MANY TREES AS POSSIBLE AT TRIBECA POINT PLANTER

MAINTAIN ADEQUATE SOIL DEPTHS

MAINTAIN 20' FREE AND CLEAR PATHWAY

ESTABLISH MATERIAL DIFFERENCE FOR SECONDARY PATHWAY AND OCCUPABLE AREAS

SUMMER SEASON -- PROVIDE SHADE COOL SPACES FOR OCCUPATION AND CIRCULATION

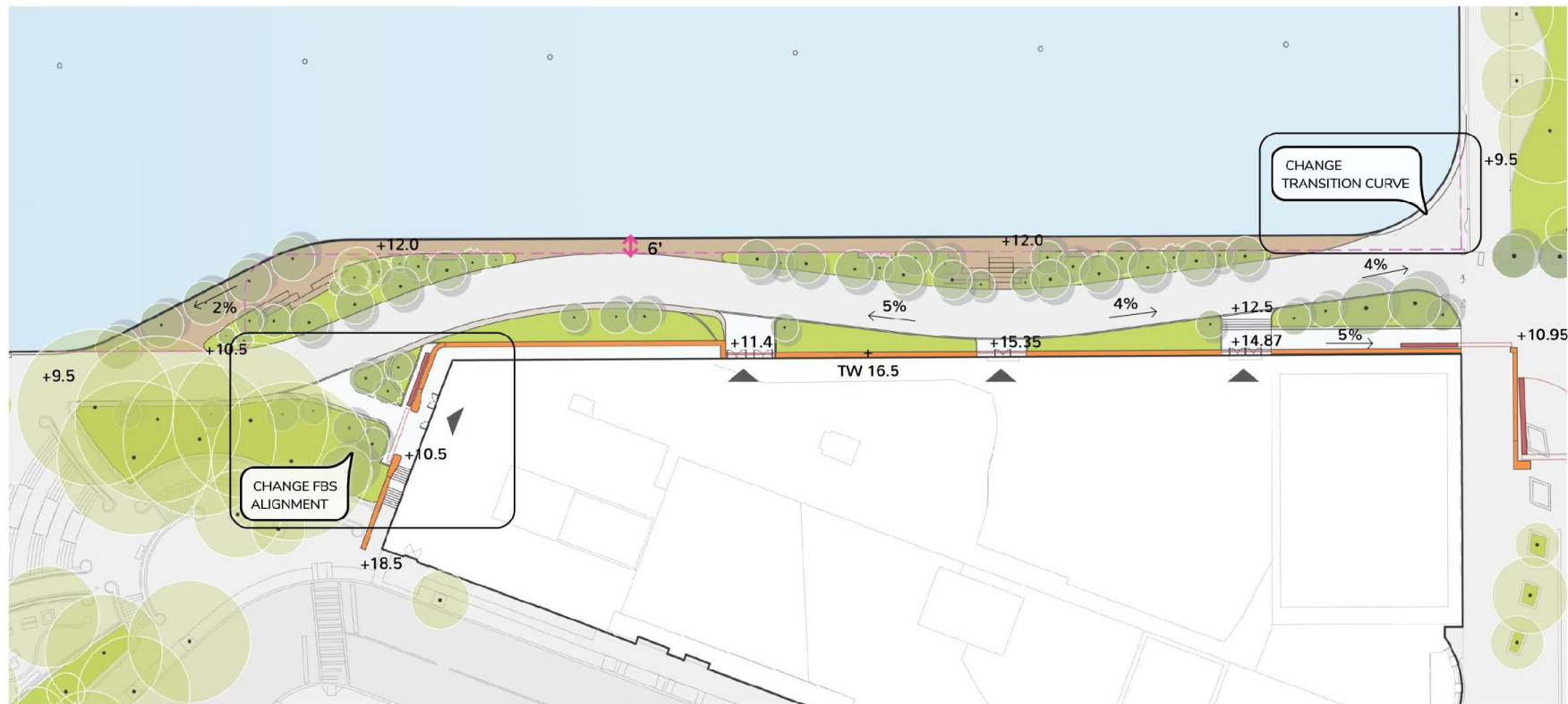
WINTER SEASON -- EXPAND WIND BREAKS AND

CITY POINT / STUYVESANT HIGH SCHOOL

CONSIDERATIONS:

LIMIT THE NUMBER OF SEATING OPPORTUNITIES IMMEDIATELY ADJACENT TO BUILDING

Reach 2 | 40% Plan



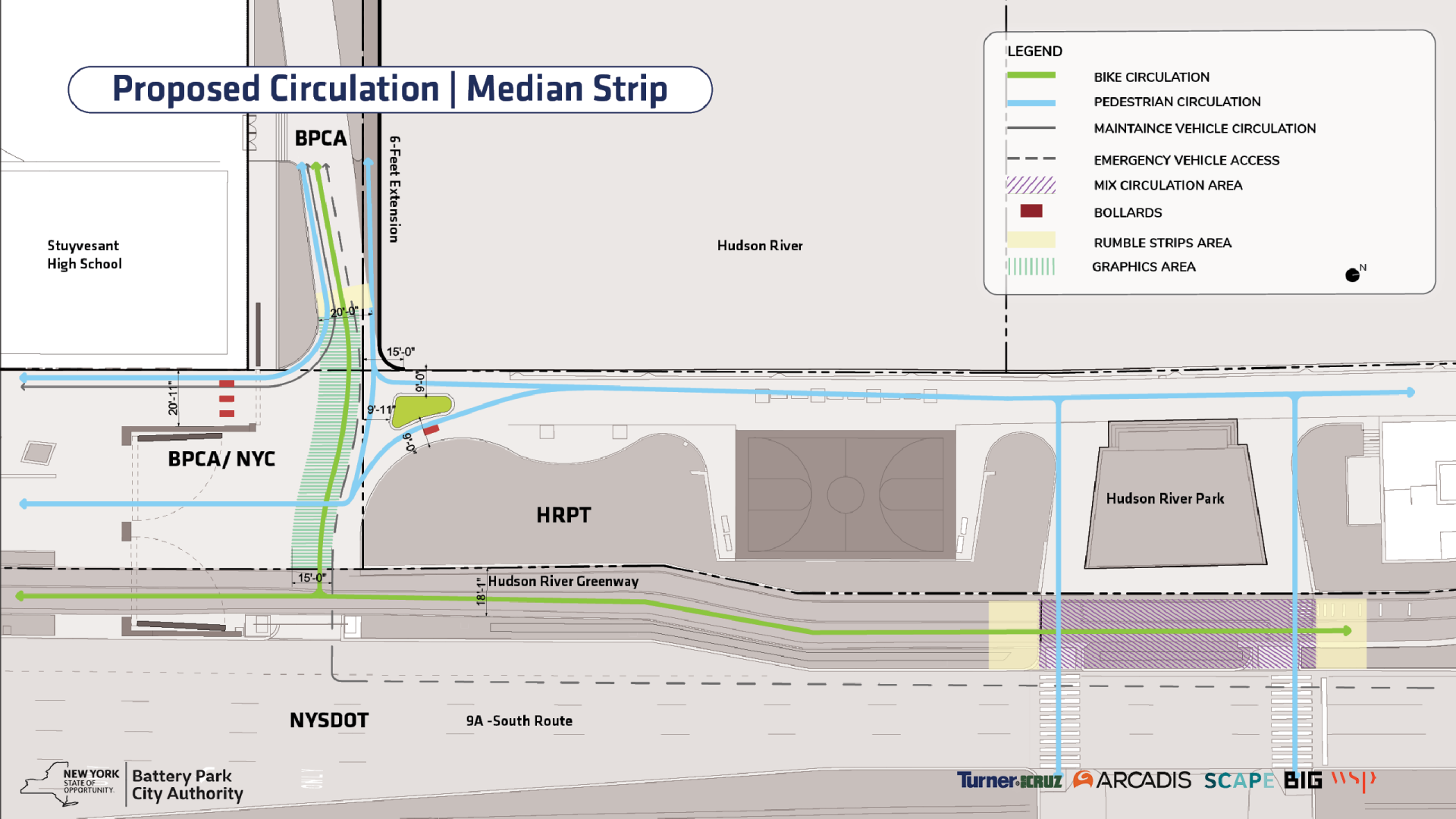
Reach 2 | 40% Plan



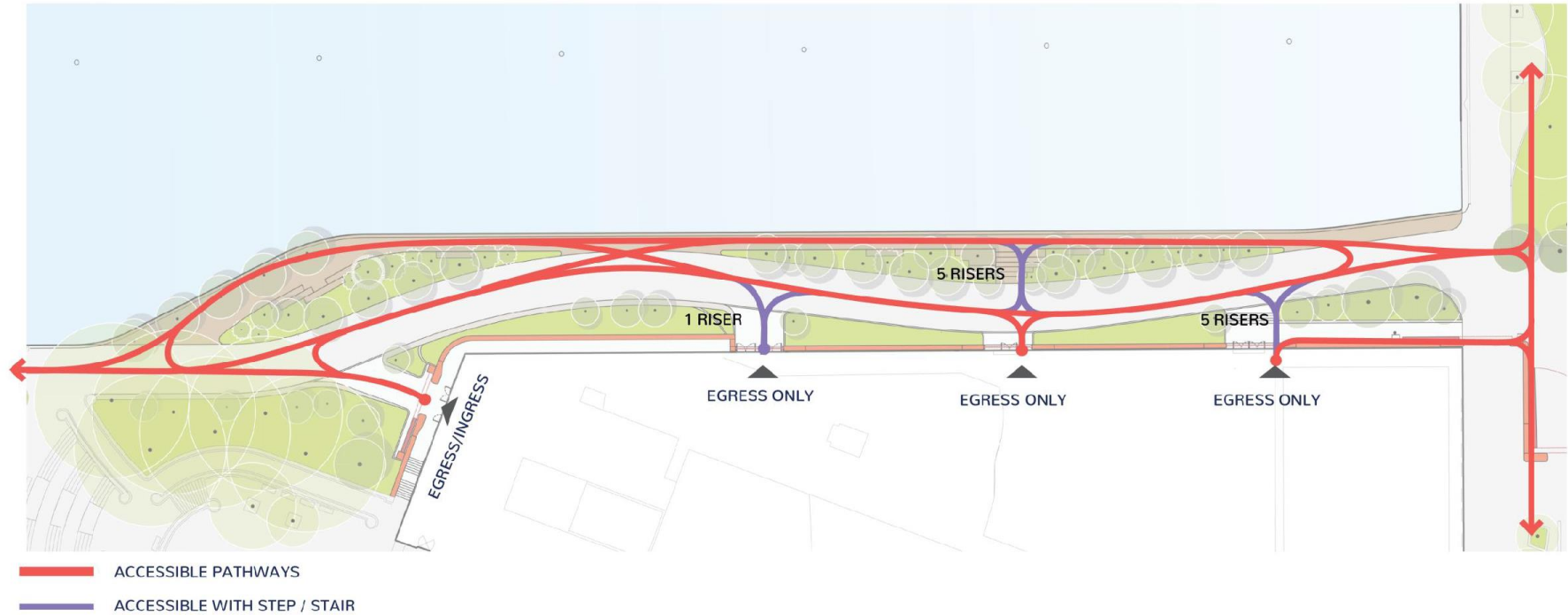
Reach 2 | Updated Plan



Proposed Circulation | Median Strip

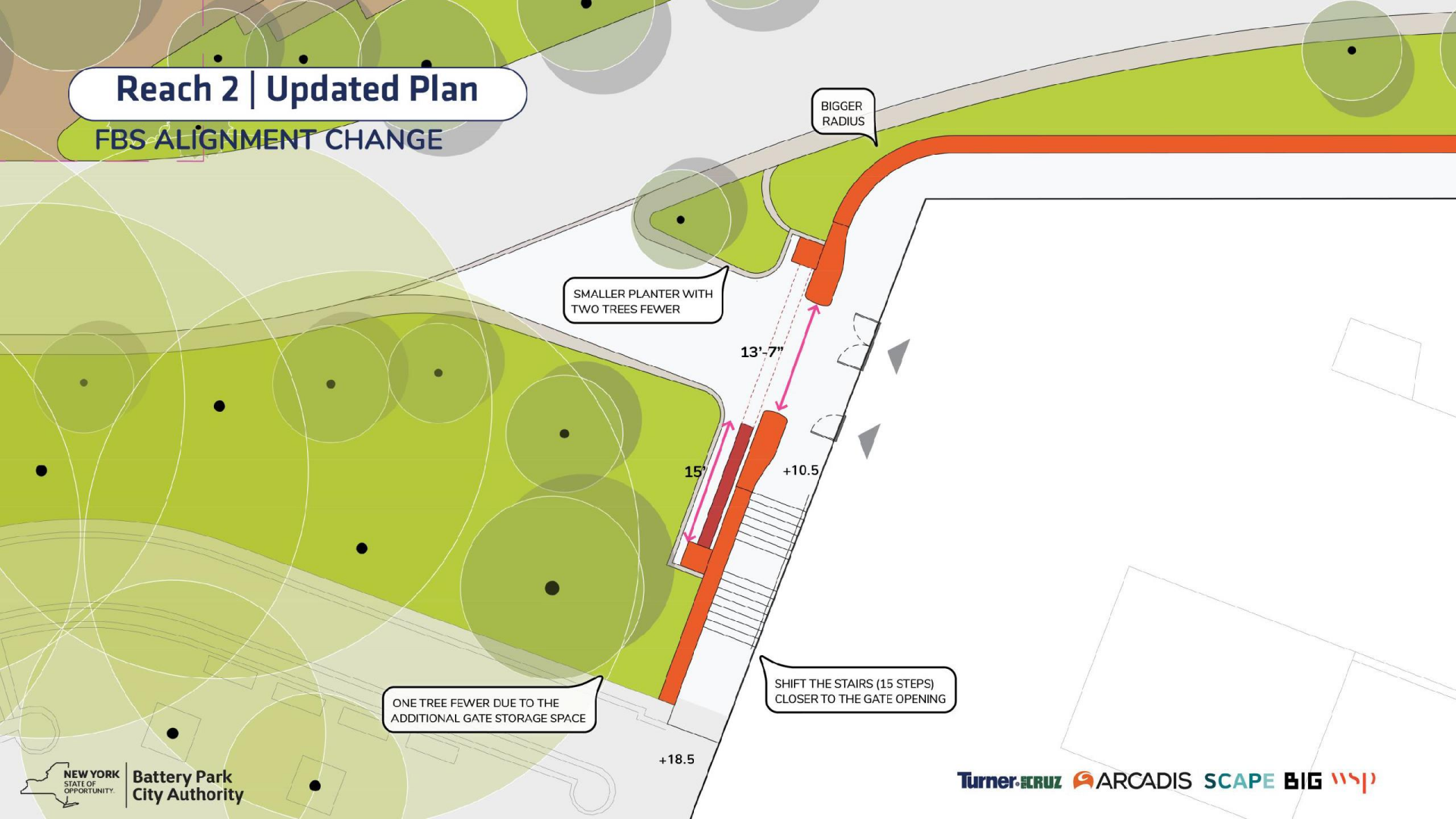


Reach 2 | CIRCULATION

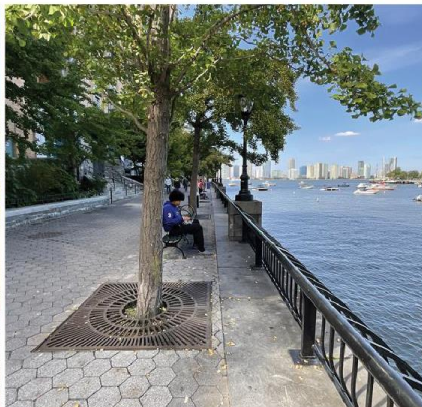


Reach 2 | Updated Plan

FBS ALIGNMENT CHANGE



Existing Palette - North Esplanade



Hex Paver



Brick Facade



BPC Railing



Type B Light Pole



Granite Bollards



Planting Concrete
Bollards

New Palette - North Esplanade



 Proposed New Material



Hex Paver



Brick Facade



BPC Railing



Type B Light Pole



Granite Bollards



Planting Concrete Bollards



Precast Concrete Seating



Pink Granite



Lumber with Routed Face



Metal Edge



Precast Concrete Steps

Reach 2 - Hardscape Layout

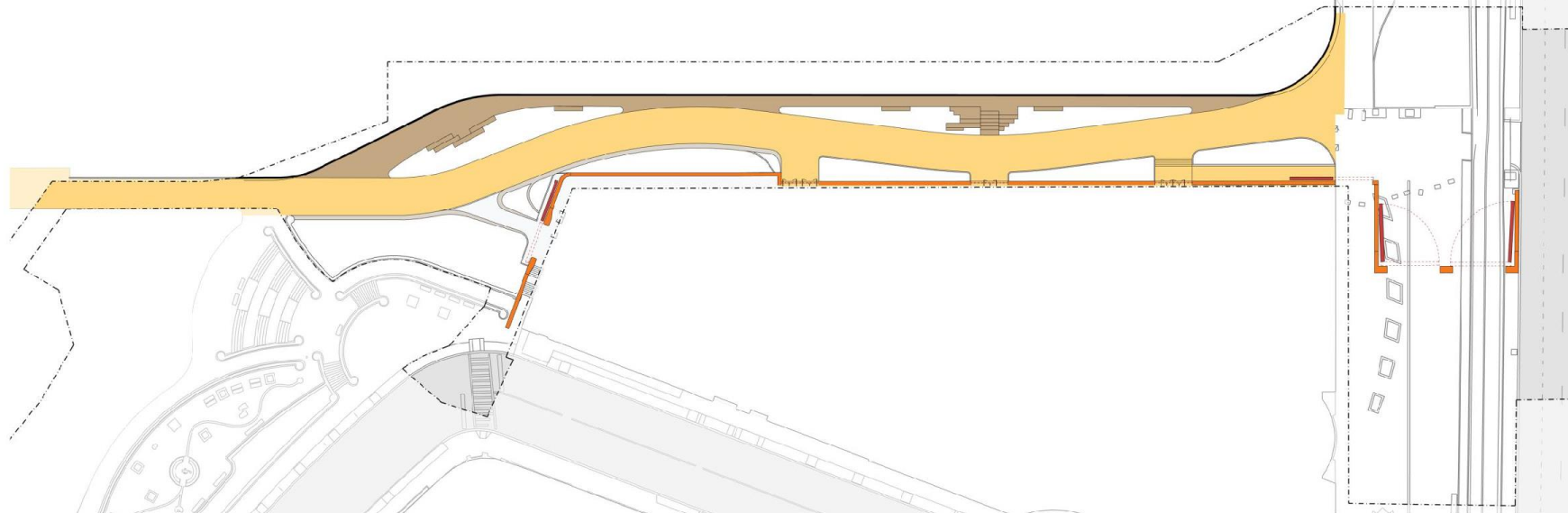
Proposed New Material



Hex Paver



Lumber with Routed Face



Furniture - Precast



Precast Concrete

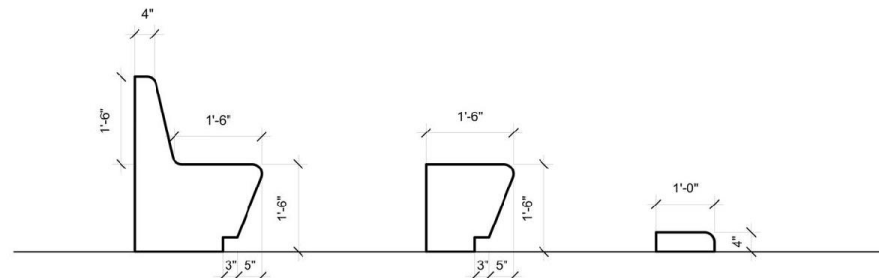
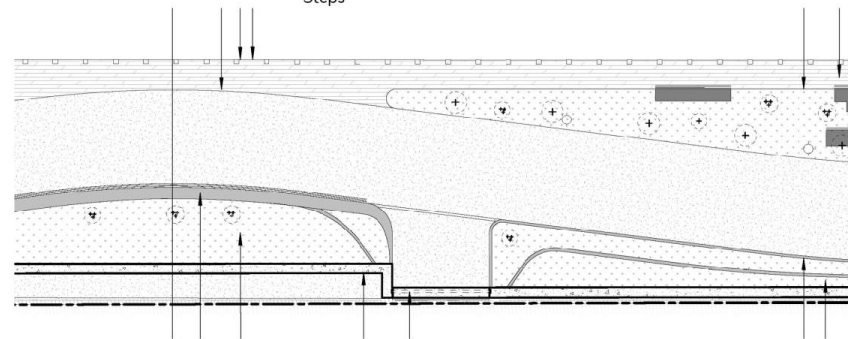


Precast Concrete Steps



Lumber with Routed Face

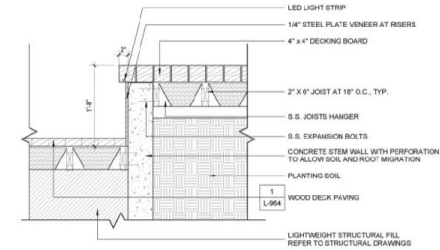
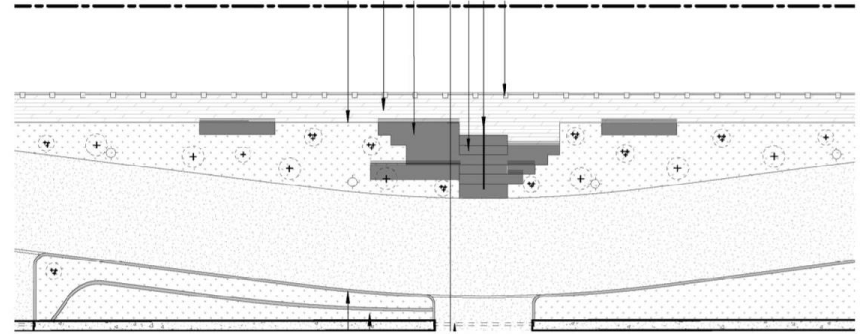
 Proposed New Material



Furniture - Wood Elements



Lumber with Rounded Face



Reach 2 | Perspective



Reach 2 | Perspective



Reach 2 | Perspective

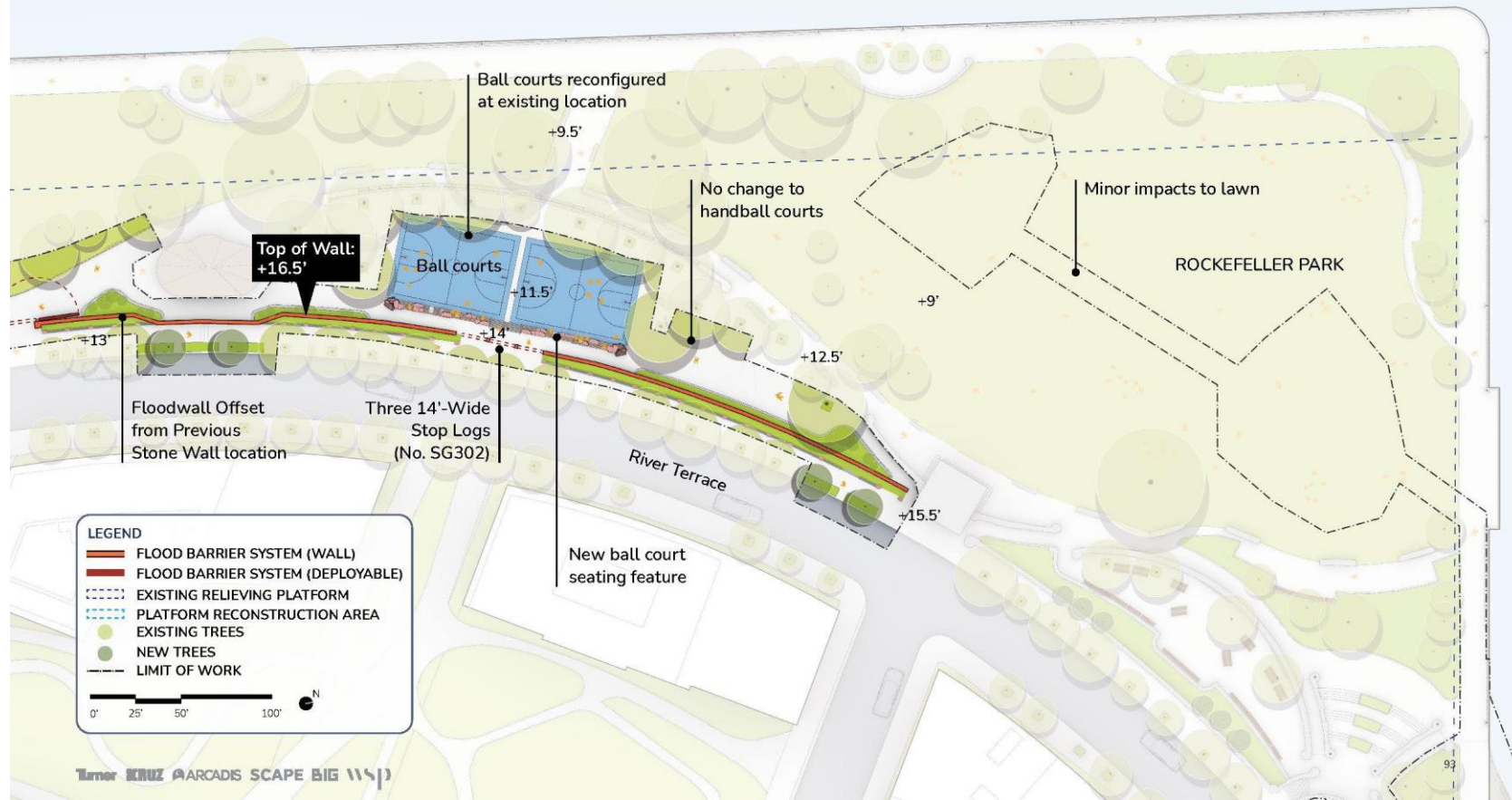


Reach 3 Updates

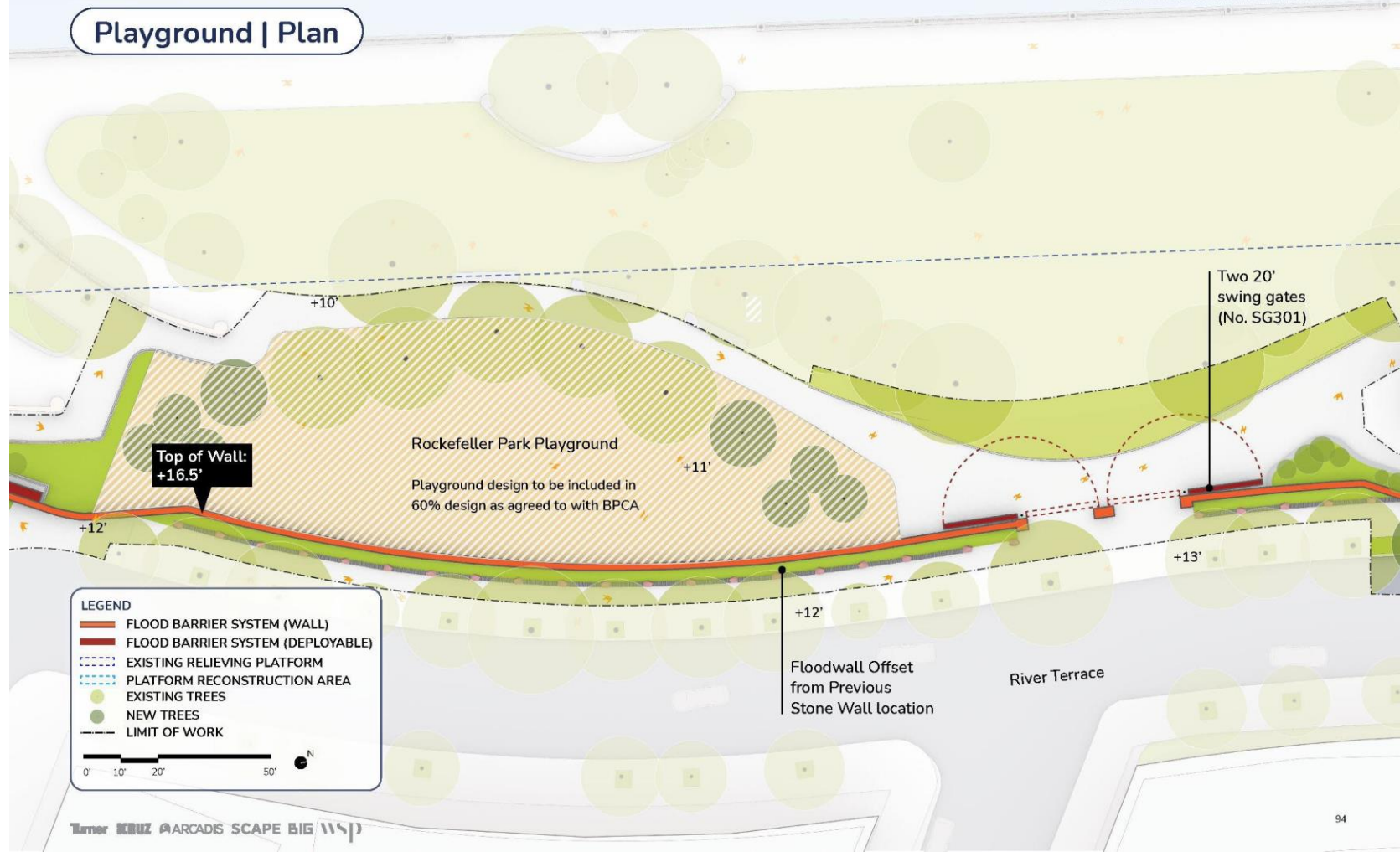
2



Rockefeller Park | Plan

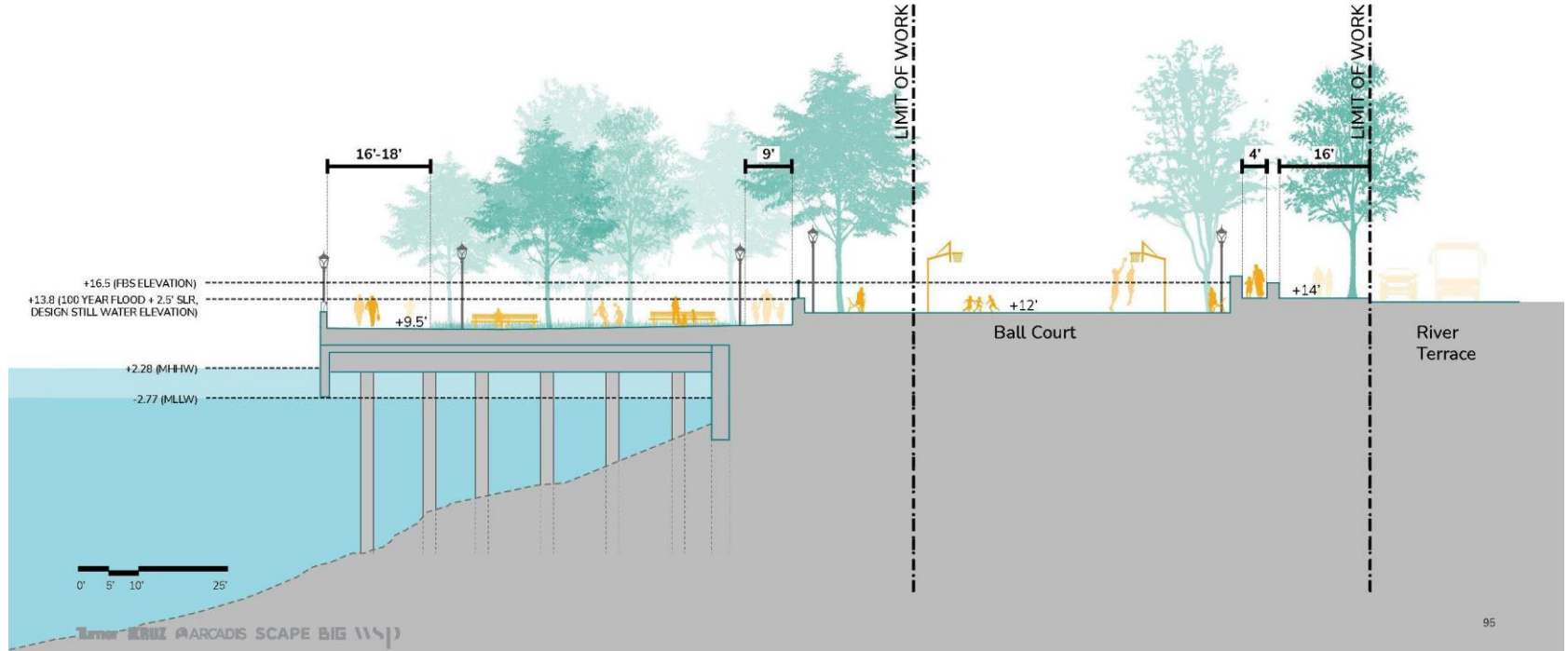
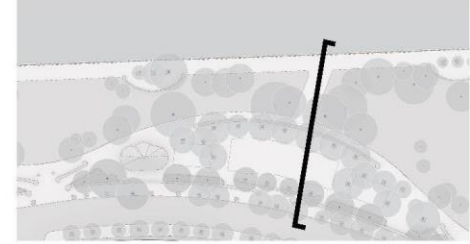


Playground | Plan



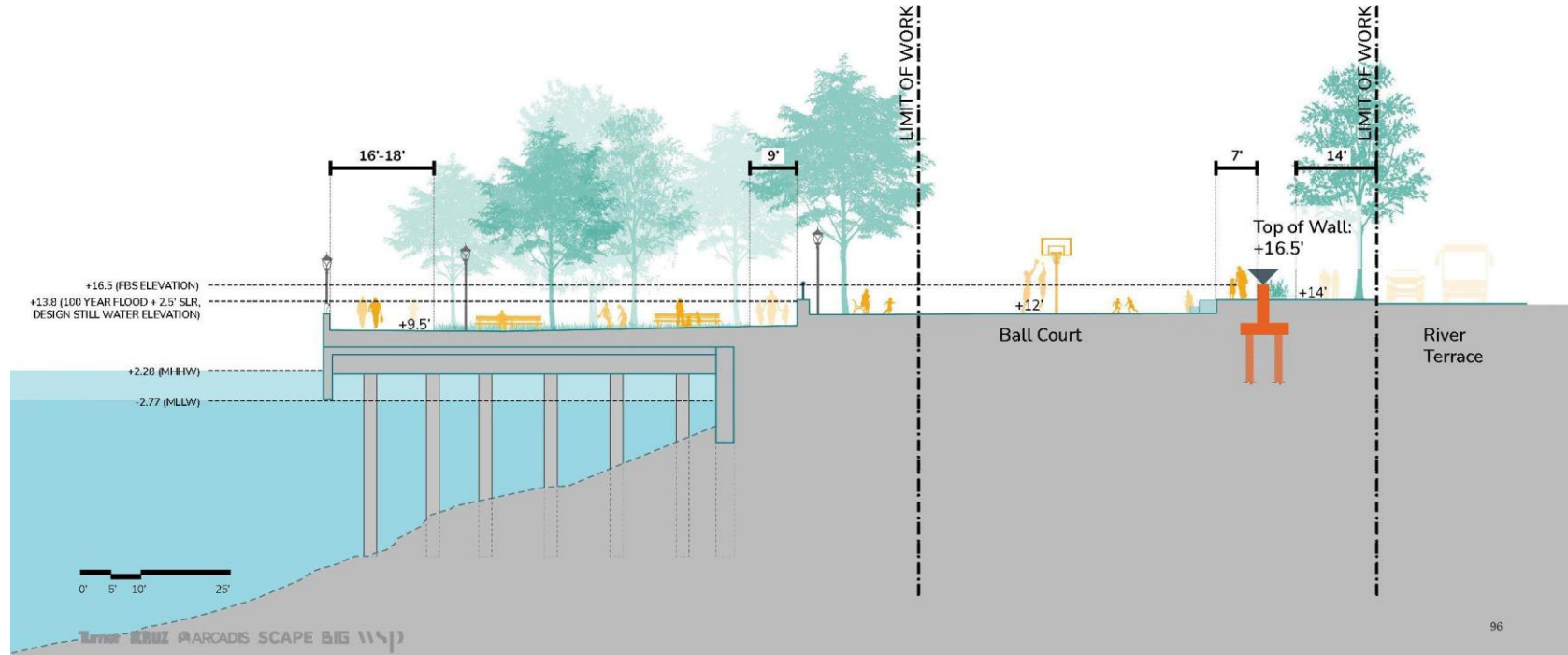
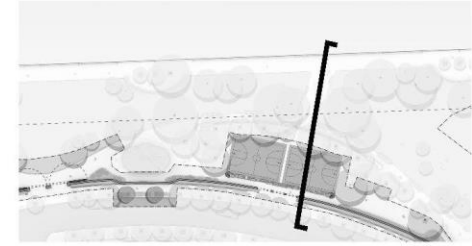
Ball Court | Section

Existing



Ball Court | Section

Proposed



Existing Palette - Rockefeller Park



Hex Paver



Cobblestone



Stone Band



Demetri Pavilion Paver



Pink Granite



Railing



Typical Light Pole



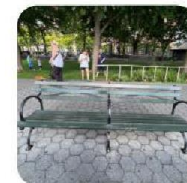
Plant Rail



Stone Wall



Concrete Benches



1939 World's Fair Bench



Plant Rail



Stone Curbs



Metal Fence



Stone Balustrade

 Proposed New Material

Proposed Palette - Rockefeller Park



Hex Paver



Cobblestone



Stone Band



Demetri Pavilion Paver



Pink Granite



Railing



Typical Light Pole



Plant Rail



Stone Wall



Concrete Benches



1939 World's
Fair Bench



Plant Rail



Stone Curbs



Metal Fence



Precast Seating



Stone Edge

Proposed Paving



Non-permeable
Hex Asphalt
Paver



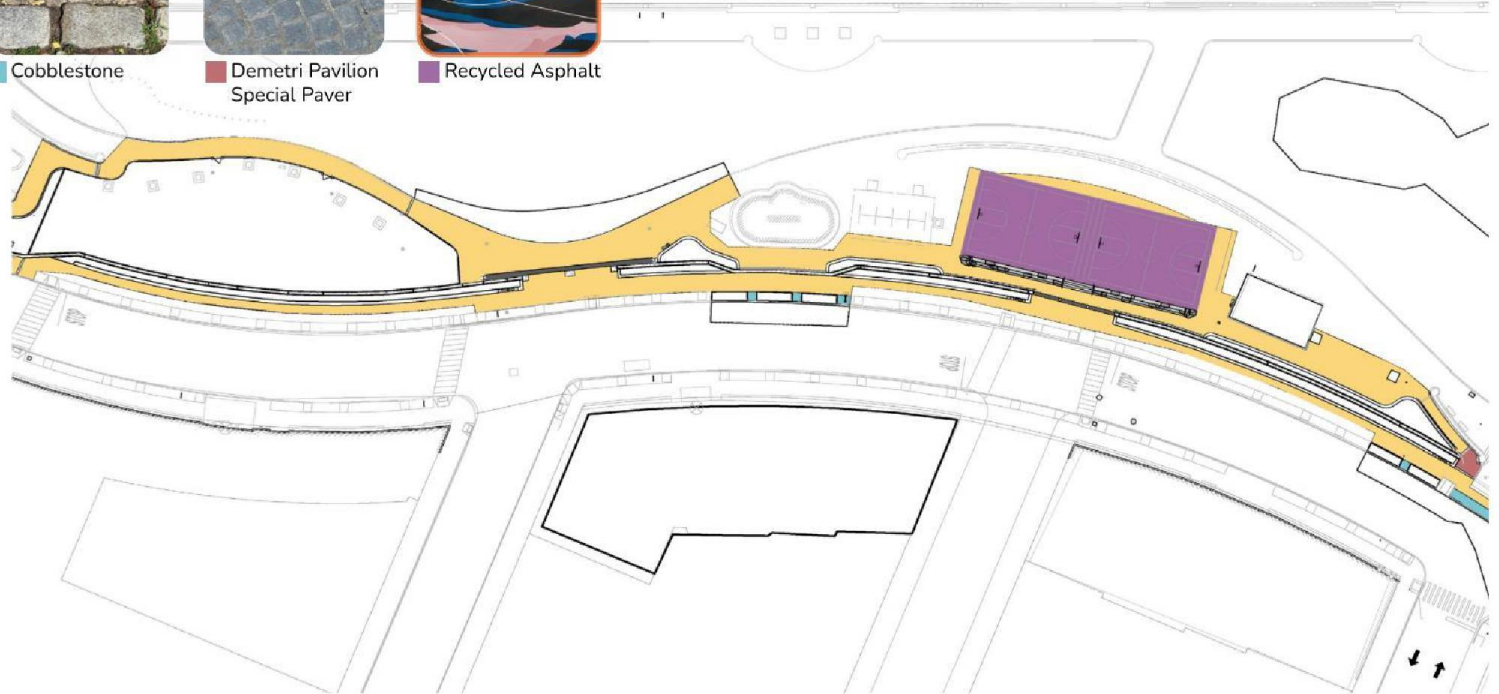
Cobblestone



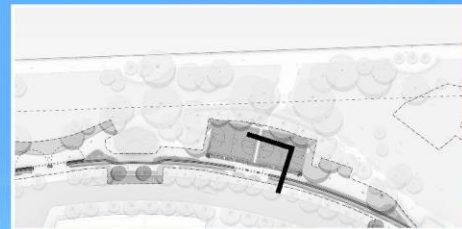
Demetri Pavilion
Special Paver



Recycled Asphalt



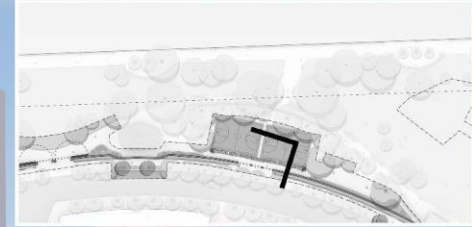
Existing



+ 11.90'

Ball Courts | Connection to River Terrace

Proposed



FBS Wall

(Materiality subject to BPCA 60% decision)

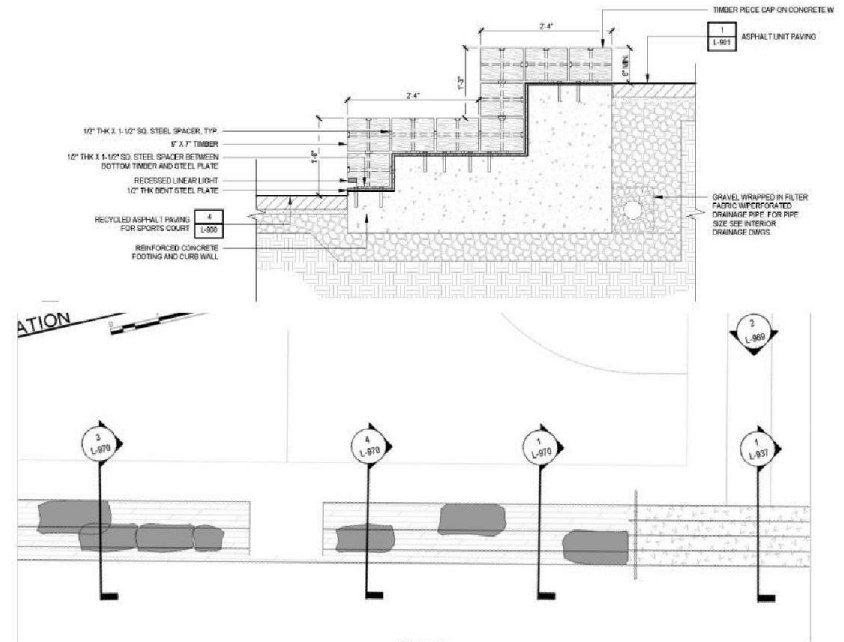
Top of Wall:
+16.5'

Direct Access to Ball Courts

+14.00'

+11.90'

Ball Court Seating - 40% Design



Ball Court Seating - Design Development

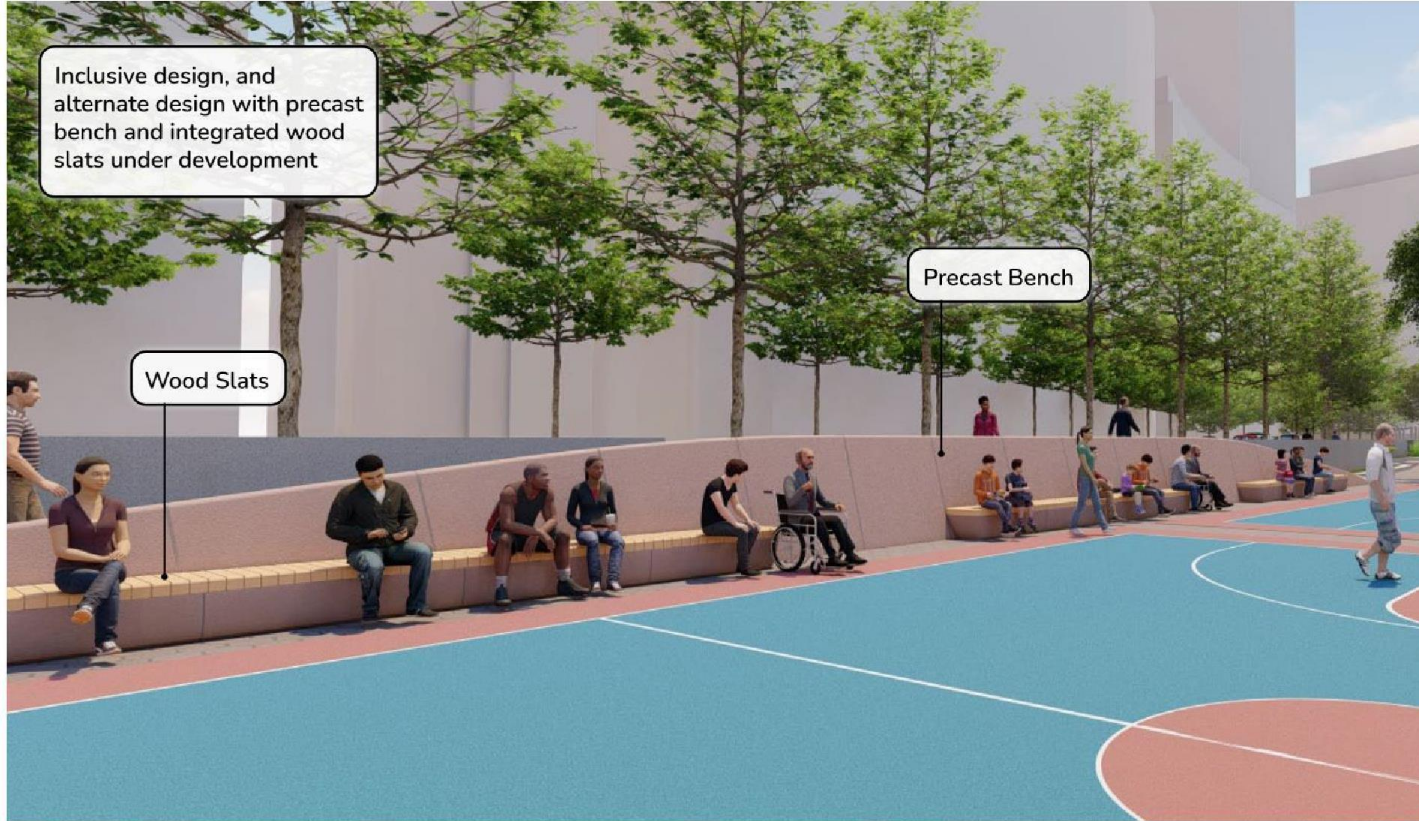
Inclusive design, and alternate design with precast bench and integrated wood slats under development

Wood Slats

Precast Bench



Precast Bench

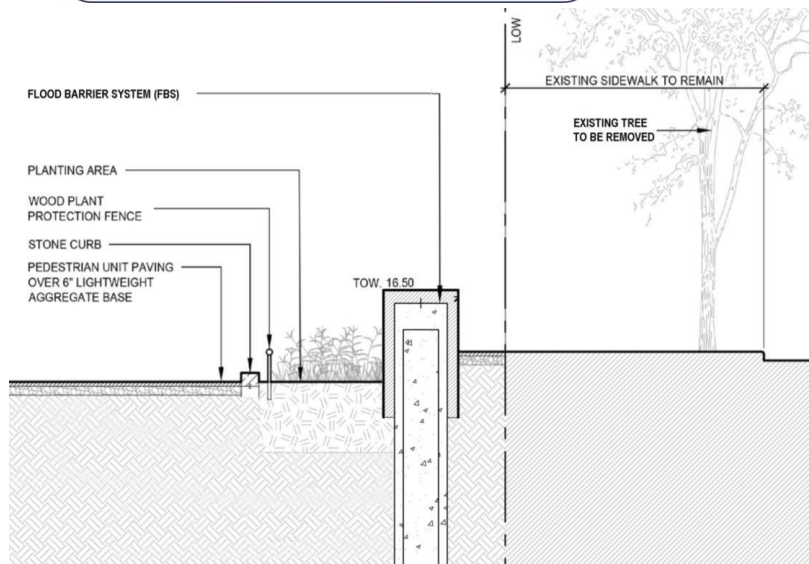


RIVER TERRACE: OFFSET WALL APPROACH

Existing Conditions: Aerial view



FBS Alignment Approaches



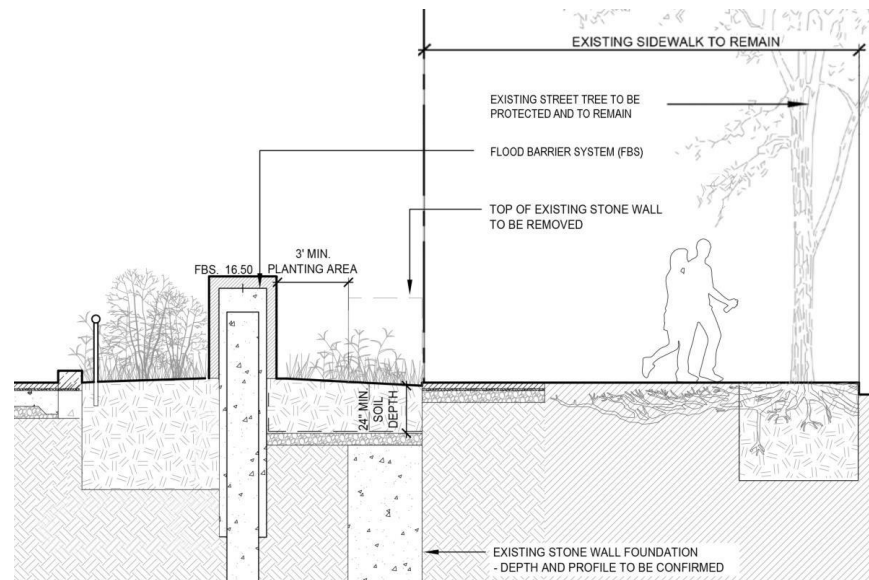
FBS wall follows existing wall footprint

Pros:

- No encroachment into park area

Cons:

- Street trees will be removed
- Proximity to FBS will not allow for new trees to be planted
- Utilities in sidewalk will need to be relocated
- Removal of existing wall footing adds construction complexity



FBS wall shifted into the park

Pros:

- Minimizes tree impact to street trees (approx. 20 trees protected)
- If trees are impacted during construction, distance from FBS allows for new trees to be planted
- Avoids utility conflict
- Avoids removal of existing wall footing (reduced construction complexity)

Cons:

- Limited encroachment into Rockefeller Park

Flood Barrier System Follows Existing Wall Footprint: Tree Impact

Previously Proposed

LEGEND

--- LIMIT OF WORK

— PROPOSED FLOOD BARRIER SYSTEM

● IMPACTED TREE

○ TREES RECENTLY REMOVED

● PROTECTED TREE



Note: Some trees to remain within the construction envelope will require special protection measures. While tree protection does not guarantee tree health in the long run, active and passive protection measures will be utilized to the extent possible to preserve and protect individual trees and the overall forest health.

Flood Barrier System Shifted into the Park: Tree Impact

Updated Proposed Approach

LEGEND

--- LIMIT OF WORK

— PROPOSED FLOOD BARRIER SYSTEM

● IMPACTED TREE

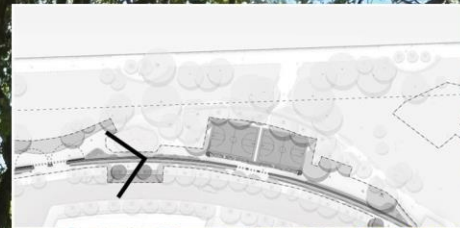
○ NEW PROPOSED TREES

● PROTECTED TREE



Note: Some trees to remain within the construction envelope will require special protection measures. While tree protection does not guarantee tree health in the long run, active and passive protection measures will be utilized to the extent possible to preserve and protect individual trees and the overall forest health.

Existing Conditions: View along Sidewalk

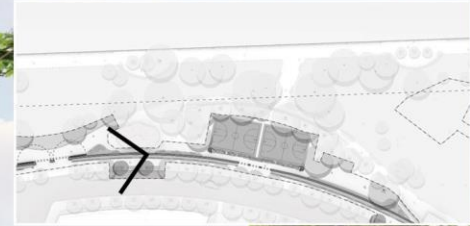


Top of Wall: +15.75'

2.75'

+13.00'

Proposed Design: View along Sidewalk



Stormwater Bioswale

Floodwall Offset from
Previous Stone Wall
Location, New Planting
along Sidewalk

Top of Wall: +16.5'

FBS Wall
Materiality under Development

+13.00'

Salvaged Stone Edge

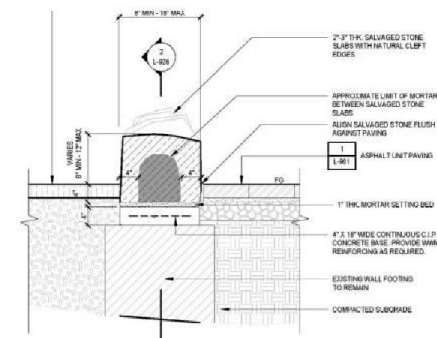
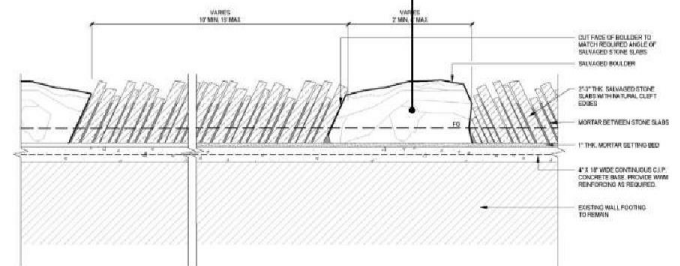


Proposed New Material

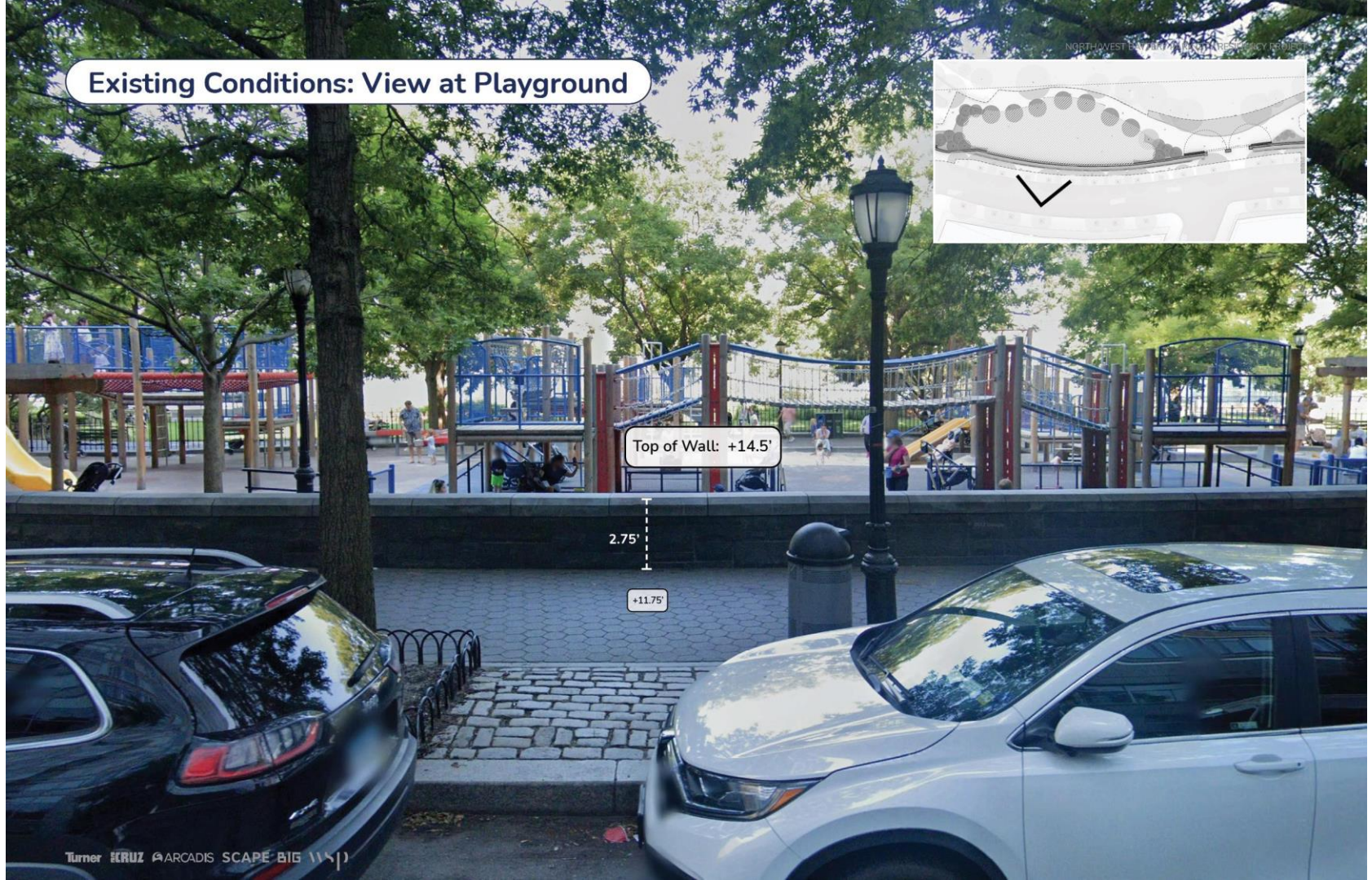
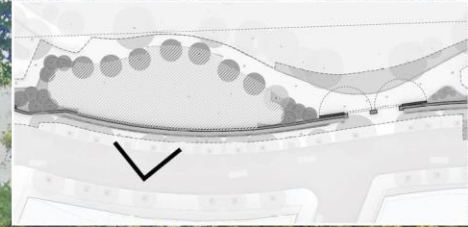


Salvaged Stone

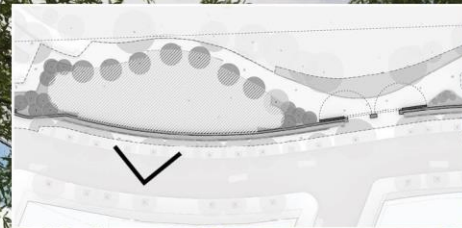
Quarried boulder or other stabilizing measures under development



Existing Conditions: View at Playground



Proposed Design: View at Playground



FBS Wall
Materiality under Development

Top of Wall: +16.5'

Floodwall Offset from
Previous Stone Wall
Location, New Planting
along Sidewalk

4.75'

+11.75'

Playground | Aerial View



Rockefeller Park Playground

Existing Street Trees
to be Protected

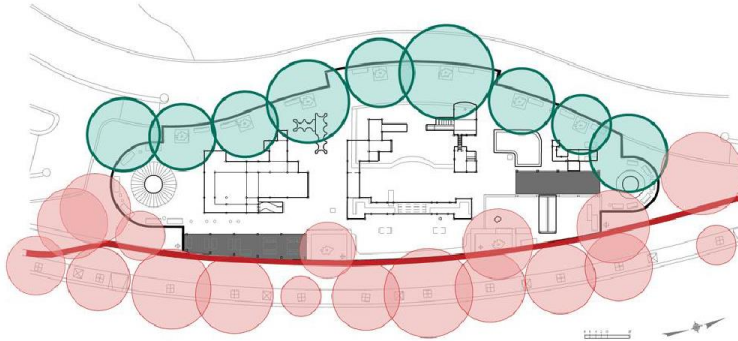
Floodwall Offset from
Previous Stone Wall
Location, New Planting
along Sidewalk

FBS Wall

Materiality subject to BPCL 60% decision

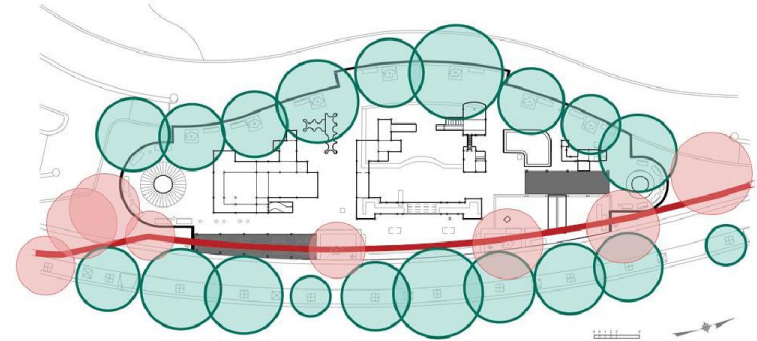
Comparison: Tree Impact

Non-Offset Wall



- 27 existing trees within playground vicinity
- 18 trees in total impacted by FBS:
 - 11 street trees
 - 7 playground trees

Offset Wall

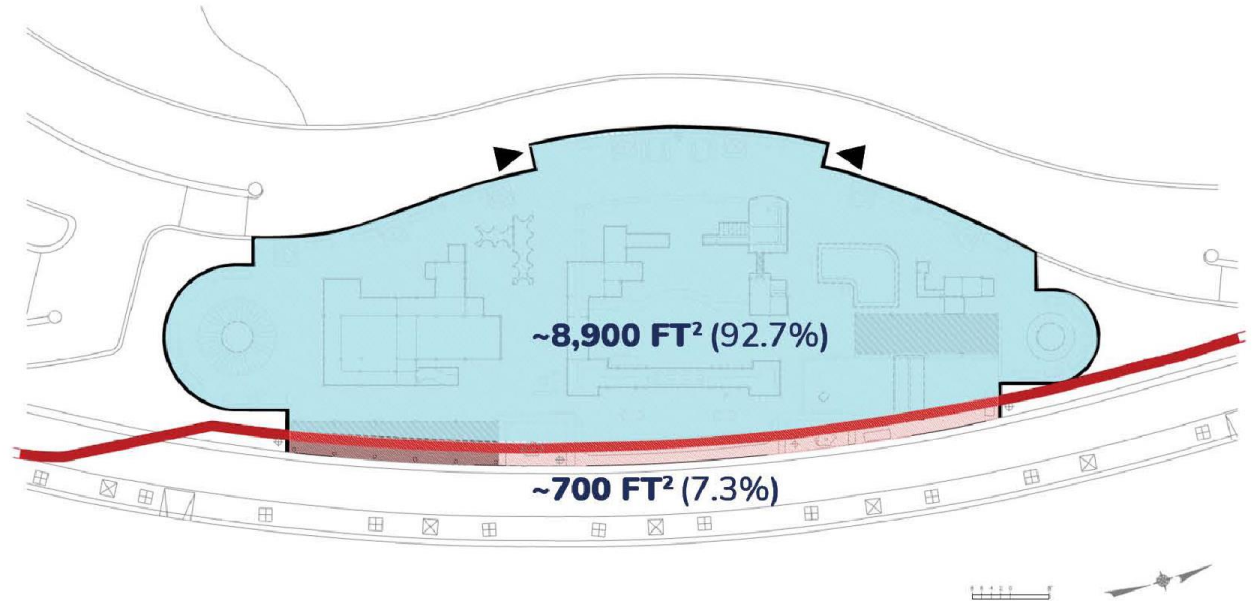


- 27 existing trees within playground vicinity
- 8 trees in total impacted by FBS:
 - 1 street tree
 - 7 playground trees

Impact of Offset Alignment on Playground Footprint

LEGEND

- PROPOSED FBS AT OFFSET LOCATION
- USABLE AREA
- AREA LOST TO FBS



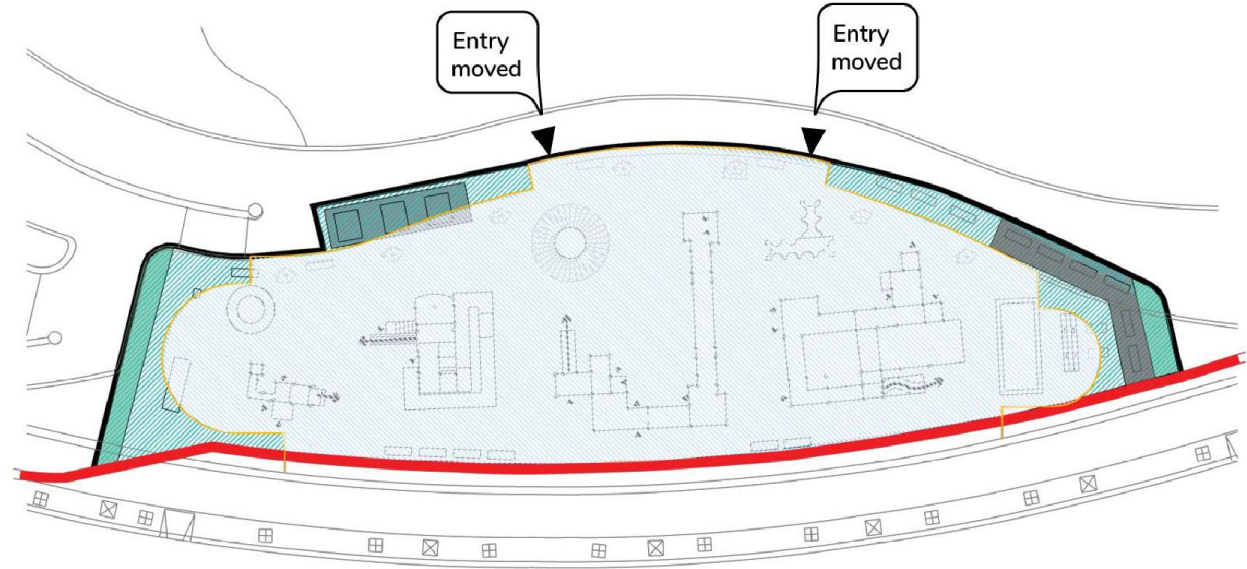
Offset Alignment with Expanded Footprint

LEGEND

- PROPOSED FBS OFFSET LOCATION
- CURRENT PLAYGROUND FOOTPRINT
- EXPANDED PLAYGROUND FOOTPRINT

Note: additional area is conducive to seating, stroller space and play features with reduction of planted buffers at playground perimeter

AREAS	SQ. FT
Existing Total	~9,600 ft ²
Removed for FBS	~700 ft ²
Added	~1,700 ft ²
New Total	~10,600 ft ²



Reach 4 Updates

3



Lily Pond | Plan



LEGEND

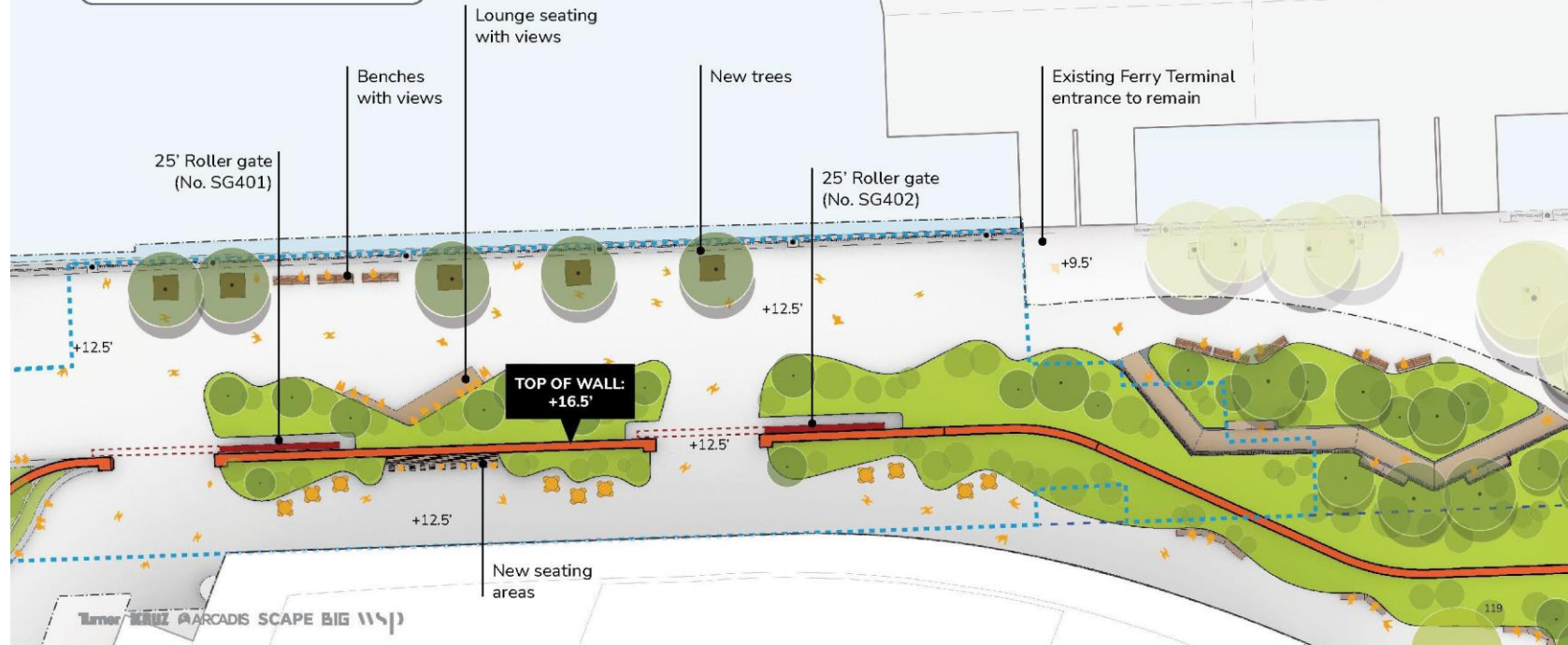
- FLOOD BARRIER SYSTEM (WALL)
- - - FLOOD BARRIER SYSTEM (DEPLOYABLE)
- - - EXISTING RELIEVING PLATFORM
- - - PLATFORM RECONSTRUCTION AREA
- EXISTING TREES
- NEW TREES
- - - LIMIT OF WORK



Esplanade and Ferry Terminal | Plan

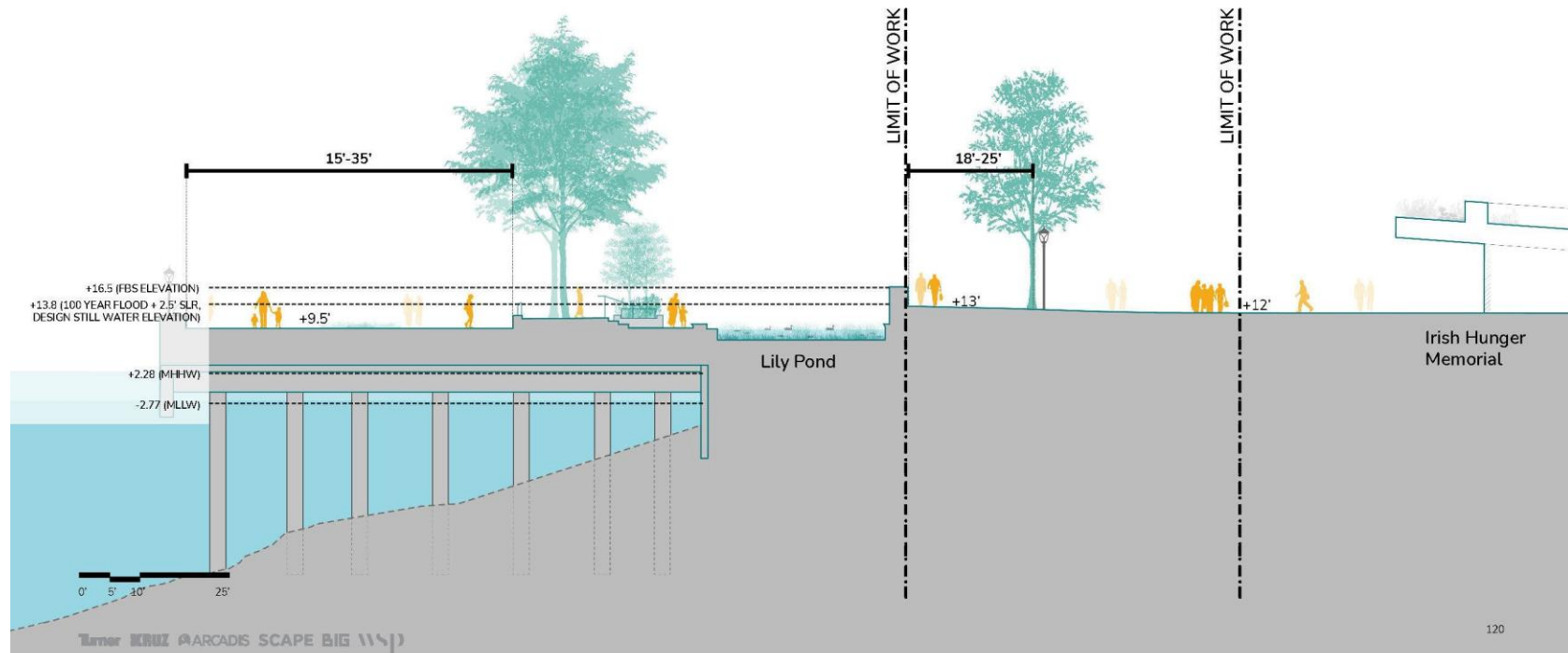
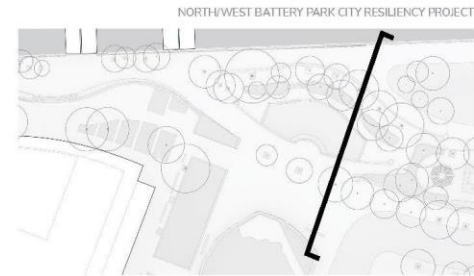
LEGEND

- FLOOD BARRIER SYSTEM (WALL)
- - - FLOOD BARRIER SYSTEM (DEPLOYABLE)
- - - EXISTING RELIEVING PLATFORM
- - - PLATFORM RECONSTRUCTION AREA
- EXISTING TREES
- NEW TREES
- LIMIT OF WORK



Lily Pond | Section

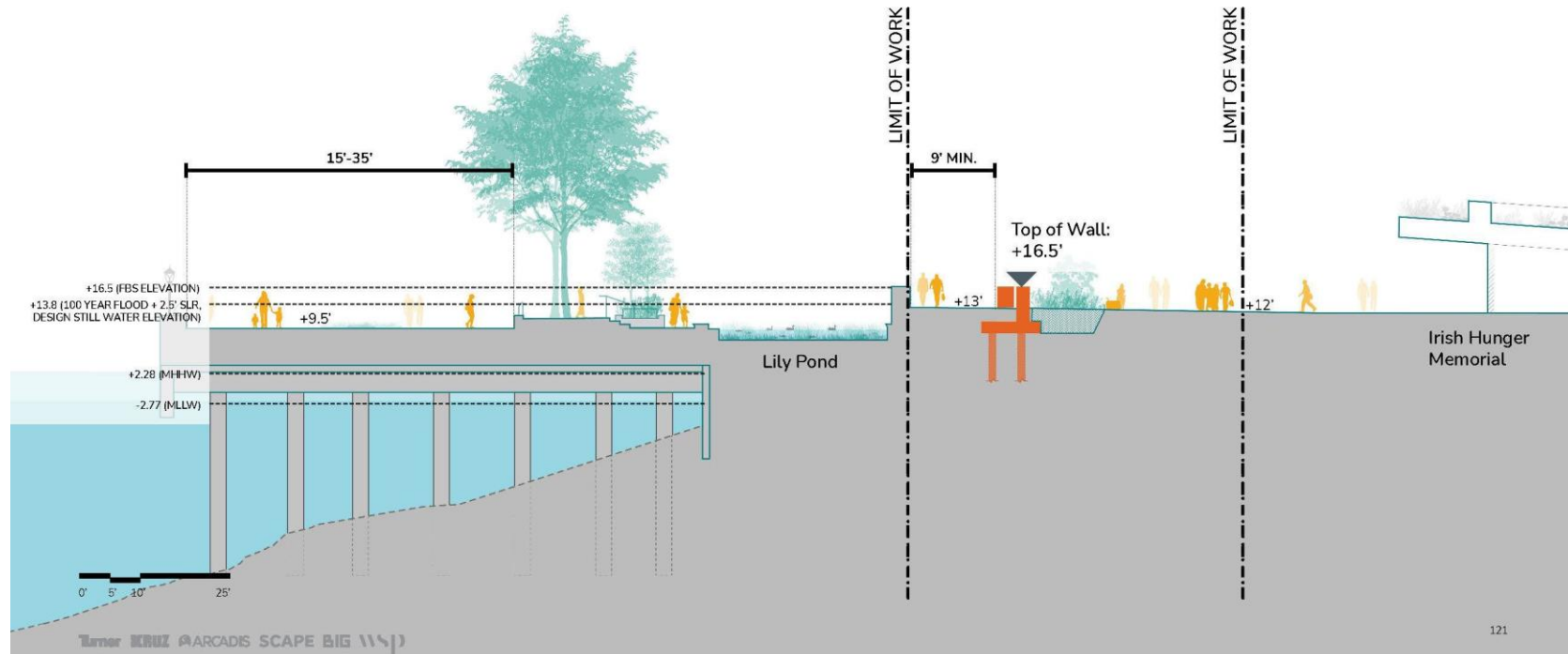
Existing



Lily Pond | Section

Proposed

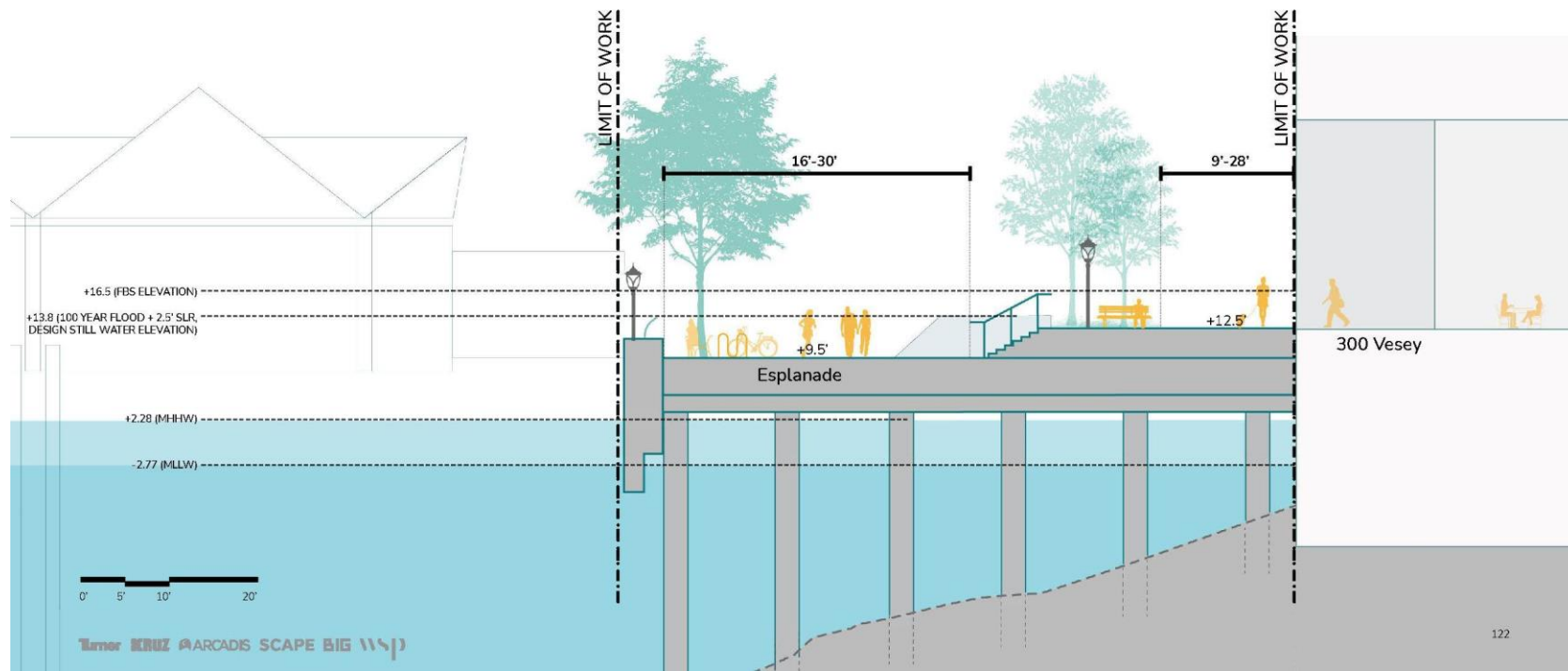
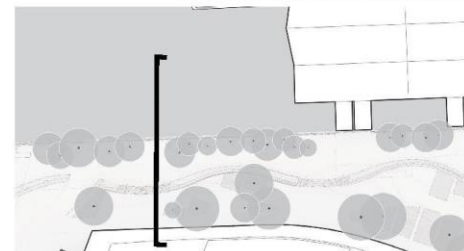
NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT



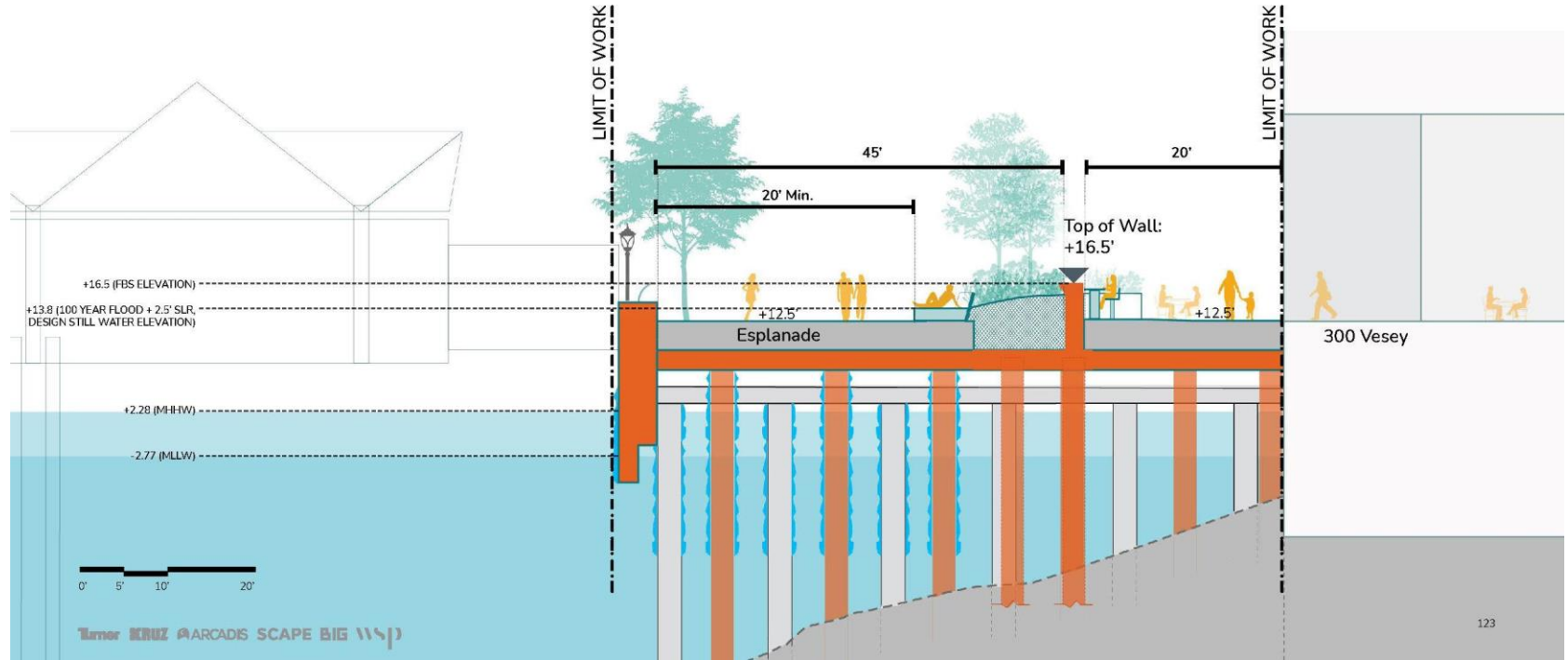
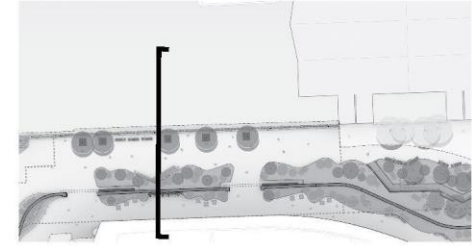
Esplanade | Section

Existing

NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT

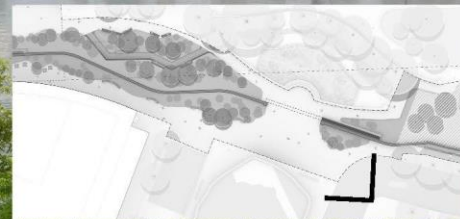


Esplanade | Section Proposed



Lily Pond | Aerial View

Proposed



Existing Lily Pond

+12.40'

+13.00'

Expanded planting and seating area and reduced hardscape

+10.00'

FBS Wall

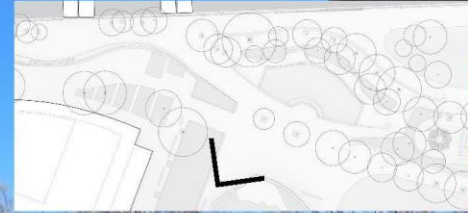
Materiality subject to BPCA 60% decision

Top of Wall:
+16.5'

+12.00'

Lily Pond | View from Irish Hunger Memorial

Existing

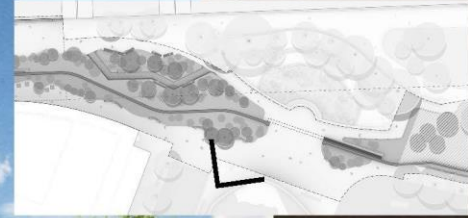


Top of Wall:
+16.5'

+13.00'

Lily Pond | View from Irish Hunger Memorial

Proposed



Lush planting and
seating along floodwall

FBS Wall
Materiality subject to BPICA 60% decision

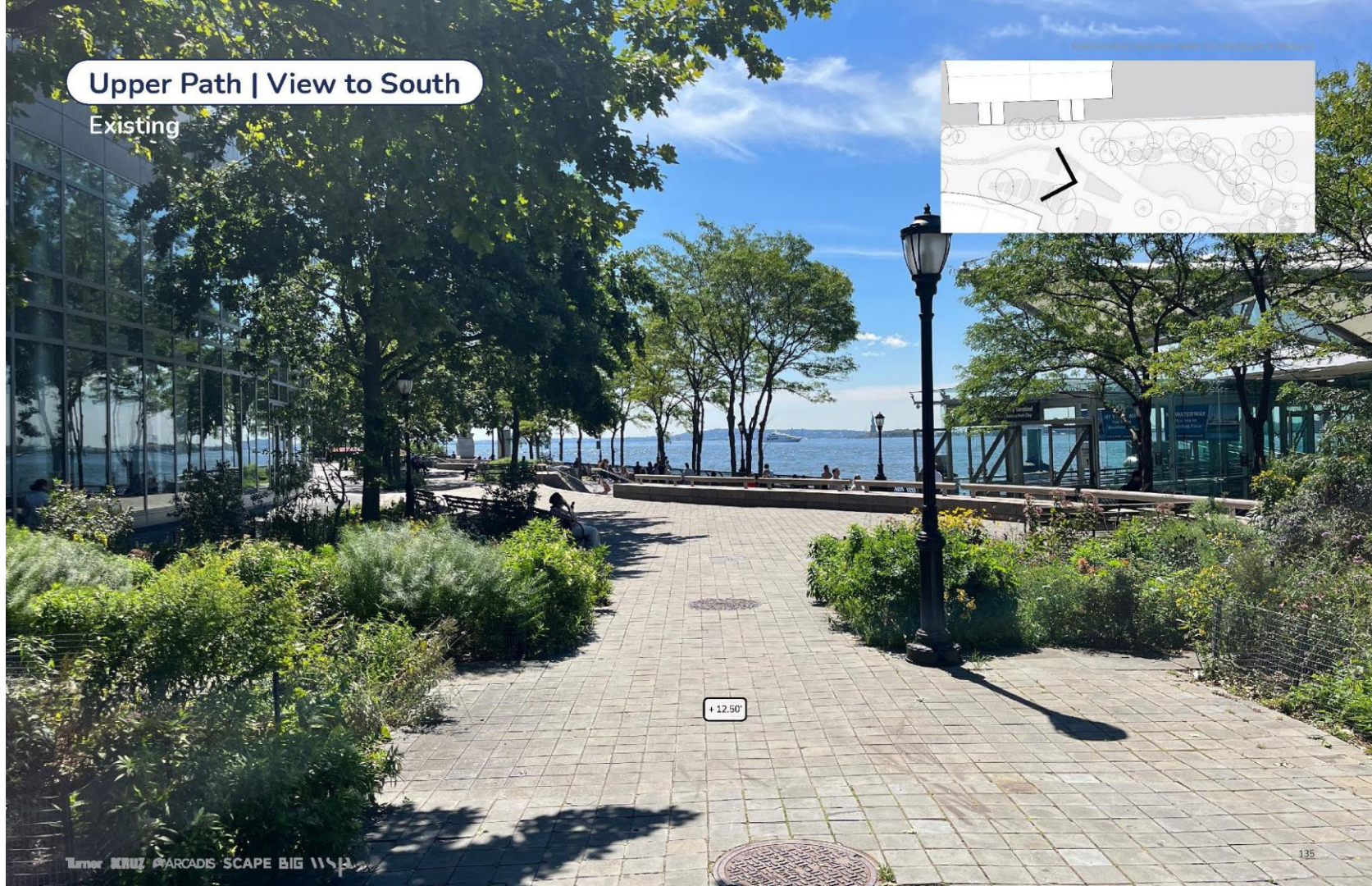
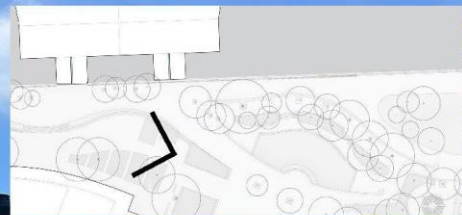
Top of Wall:
+16.5'

+13.00'

+12.00'

Upper Path | View to South

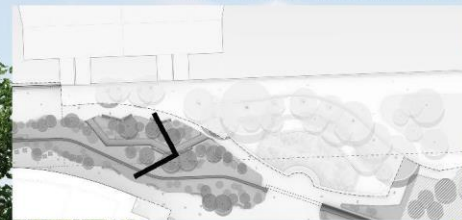
Existing



+ 12.50'

Upper Path | View to South

Proposed



Top of Wall:
+16.5'

Planted Berm

+12.40'

Ferry Terminal | View from South

Existing

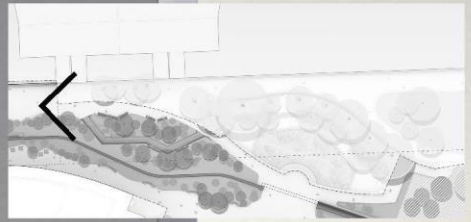


Top of
Wall: +14'

+ 9.50'

Ferry Terminal | View from South

Proposed



New expanded
planting area

Top of Wall:
+16.5'

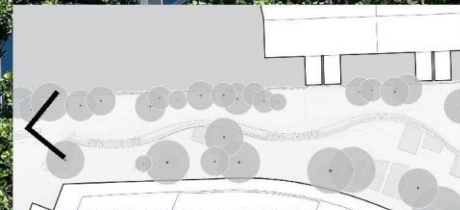
New immersive landscape
area with secondary path

FBS Wall
Materiality subject to BPCA 60% decision

+10.00'

Esplanade and Ferry Terminal | View to North

Existing



Top of
Wall: +14'

Typ. Width Range
16' - 35'

+9.50'

Esplanade and Ferry Terminal | View to North

Proposed



Custom Lounge Seating

Top of Wall:
+16.5'

FBS Wall
Materiality subject to BPCA 60% decision

Typ. Width Range
20' – 26'

+12.50'

+12.50'

Existing Palette - Ferry & Lily Pond



Hex Paver



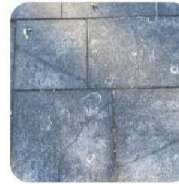
Stone Band



Railing



Plant Rail



Irish Hunger Memorial
Paver



Typical Light Pole



Drain Covers



Bollards



Lily Pond Stone



1939 World's Fair
Bench



Glass Benches



Natural Cleft Pink Granite
w/ Wood Handrail



Cobblestone



Bluestone Paver



Flamed Granite Paver

Proposed Palette - Ferry & Lily Pond



Hex Paver



Stone Band



Railing



Irish Hunger Memorial paver



Typical Light Pole



Drain Covers



Bollards



Lily Pond Stone



1939 World's Fair Bench



Glass Benches



Timber Loungers



Bar and Stools



Precast Plank Pavers



Wood-Clad Planter Wall



Movable Table and Chairs

Proposed Paving



Non-permeable
Hex Asphalt
Paver



Irish Hunger
Memorial special
paver



Permeable Hex
Asphalt Paver
(Romex)



Precast Plank
Paver



 Proposed New Material

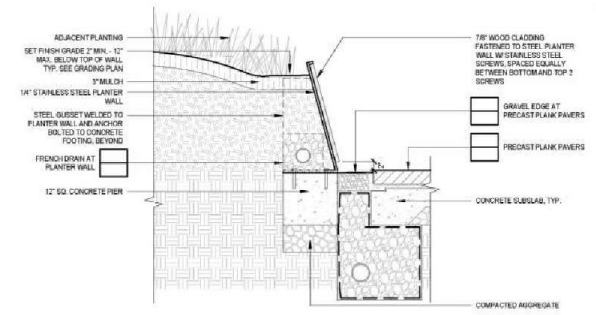
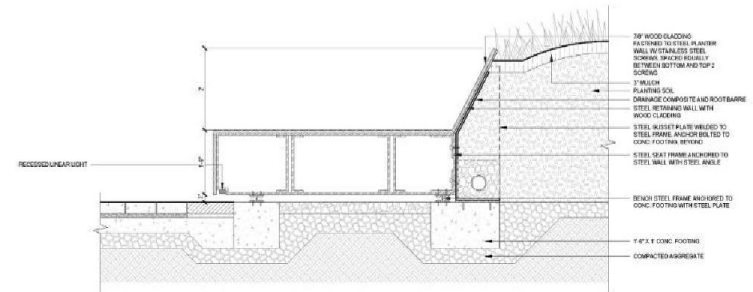
Lounge Seat and Wood-Clad Planter Wall



Lounge Seat



Wood-Clad Planter Wall



Secondary Landscape Path



 Proposed New Material



Precast Plank Pavers



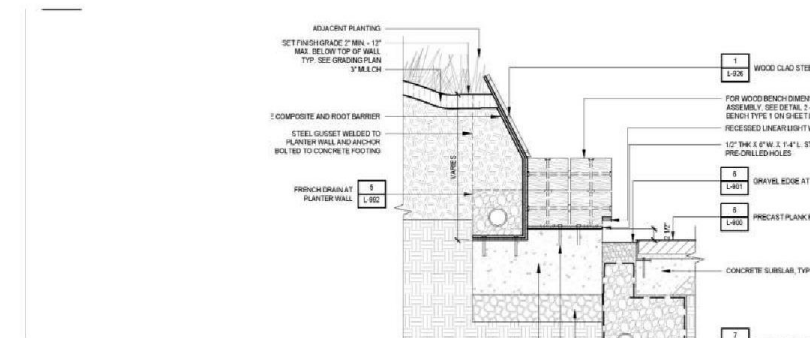
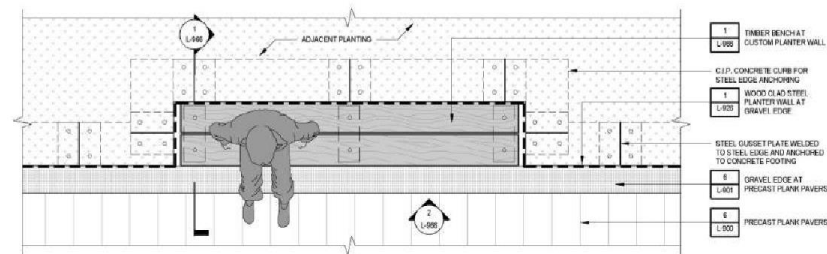
Wood Bench



Wood-Clad
Planter Wall



Gravel Edge



South Battery Park City Resiliency

Battery
Park City
Authority



South Battery Park City Resiliency- Construction Schedule

- **Phase 1: MJH & Wagner Park Site/Pavilion:**
 - Construction Underway
- **Phase 2: Pier A/Battery/Interior Drainage:**
 - Construction Underway
- **Project Construction Completion: Spring 2025**



South Battery Park City Resiliency- Construction Updates

- Architectural Concrete foundation wall has been poured (below left)
- Pavilion Cellar Slab has been poured
- Soil anchor testing ongoing along Flood Barrier System
- Retaining wall at esplanade being installed
- Geofoam installation in progress (below right)
- Micropiles being installed along First Place



South Battery Park City Resiliency- Contact Information

Questions and feedback about SBPCR can be sent to:

Katie MacDougall
Community Construction Liaison
(917) 624-5409
bpcrinfo@bpca.ny.gov

or by mail:

**Battery Park City Authority 200 Liberty
Street, 24th Floor New York, NY 10281
att: South BPC Resiliency Project Team**



Battery Coastal Resilience

LMCR - The Battery

EDC Managing Project on Behalf of Parks

Design

- 100% Design complete – June 2023
- Seeking Envision Certification (program to lower carbon footprint for large infrastructure projects)

Construction Updates

- NPS West Security Tent Demolition Complete – March 2024
- Phase 1 salvage work Complete – March 2024
- Marine Mobilization – March 2024
- Community Liaison – Karp Strategies

Conceptual Rendering



Upcoming Milestones

- Existing wharf demolition - to begin March 2024
- Sheet Pile installation to begin April 2024
- Anticipate start of pile driving for new wharf - Spring 2024.

LMCR - The Battery

Community Construction Liaison – Karp Strategies

- Will be working with the construction team to address community questions / concerns.
- Will provide regular updates to the Community Board.
- Community Board Site Walk held Wednesday March 13, 2024
- Contact: **Lily Zaballos, Karp** (347) 201-1596

For more information visit us at:

<https://www.nyc.gov/site/lmcr/progress/battery-coastal-resilience.page>

Or email us at:

info@batterycoastalresilience.com

Conceptual Rendering



The Battery Flooding from January 13th Storm



Current progress: National Park Service West Tent Demolished



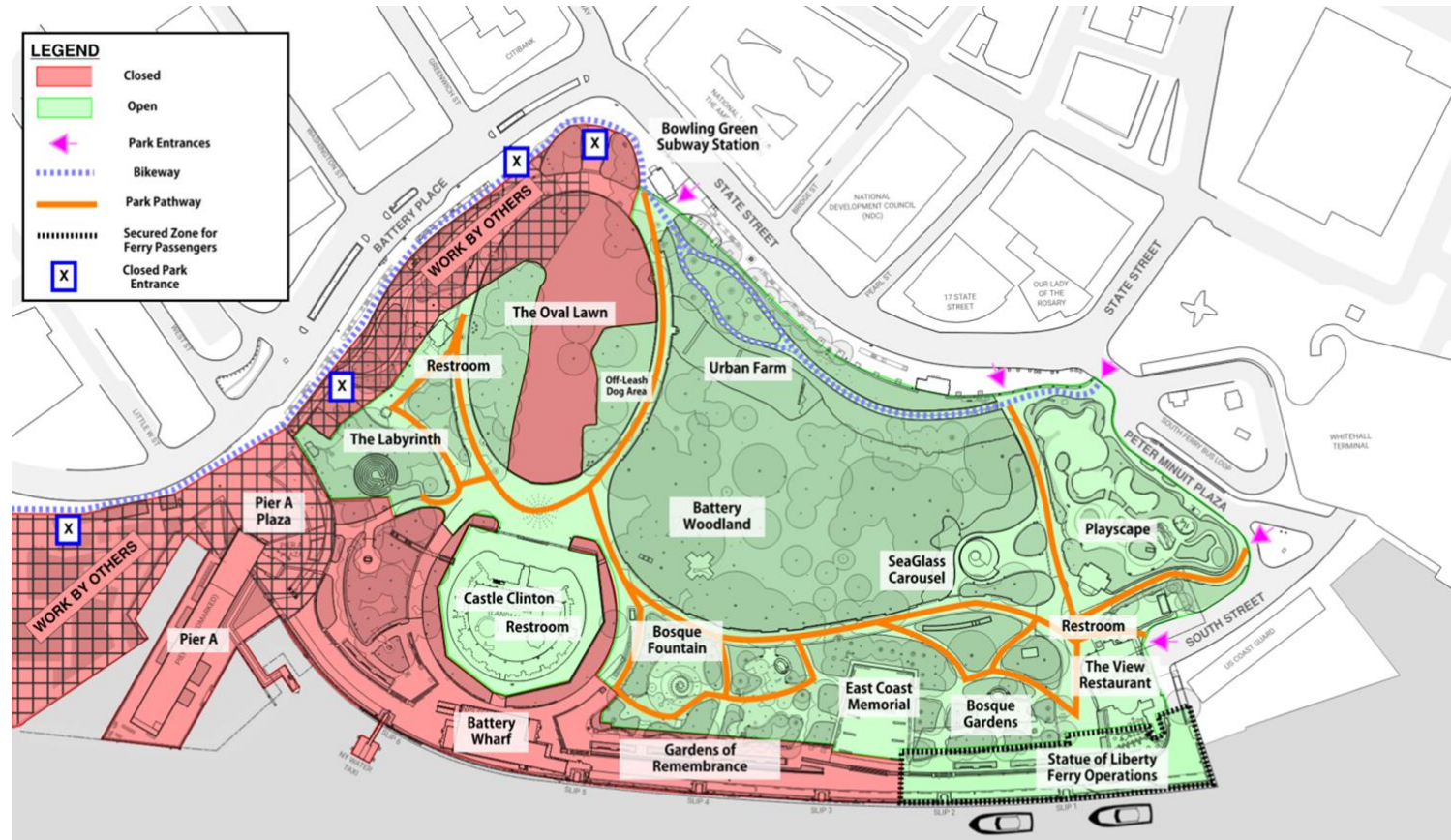
Current Progress: Hardscape Salvage



Current Progress: Marine Mobilization



Current Status of the Battery



Site Visit with CBI | March 13





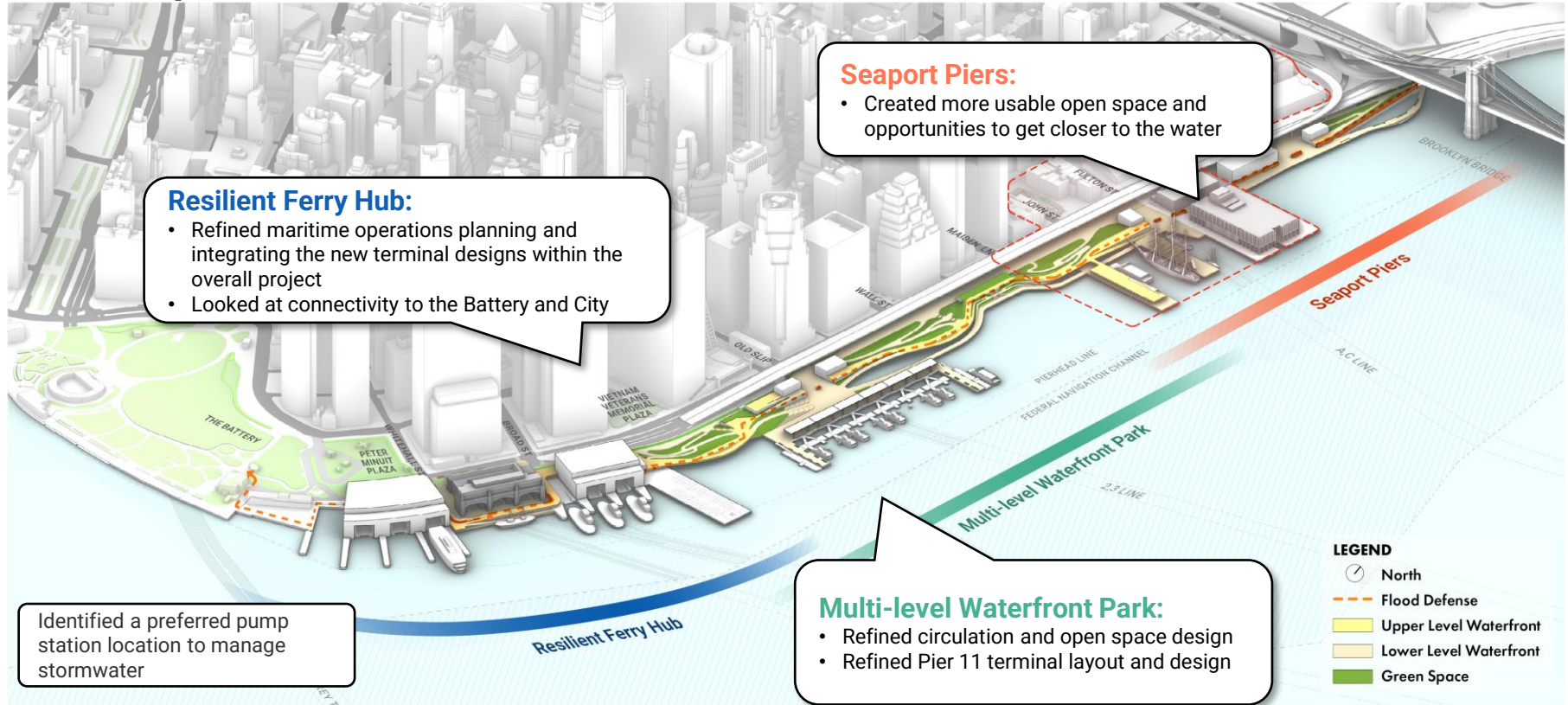
Financial District & Seaport Climate Resilience Plan Updates

March 18, 2024

Agenda

- Phase V Recap
- Upcoming Milestones

In Phase V, we refined the design to integrate Resilience+ infrastructure into **three distinct destinations** along the waterfront, each with shared flood defense solutions & user experiences.



The FiDi & Seaport Climate Resilience Plan is committed to advancing city and statewide sustainability targets, including **reducing carbon emissions 80% by 2050**.

Goals of the Plan:

1. The plan should strive to be **as carbon neutral as possible** through both the construction and operations phases.
2. The plan **should incubate new and emerging sustainability and energy practices and technologies** for wider deployment elsewhere in the city.
3. The plan should **showcase its sustainability features**.

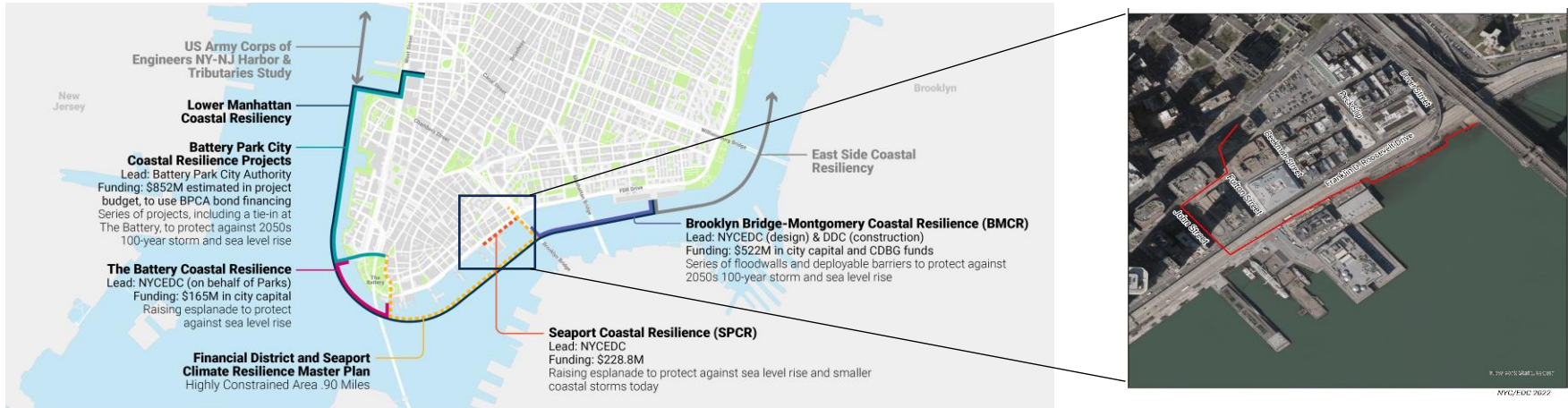


Upcoming Milestones

- **March 28:** Energy & Sustainability Workshop
- **Summer 2024:** Schematic design (15-20%) for base infrastructure
- **End of 2025:** Preliminary design (30%) for base infrastructure
- Advancing implementation strategy, including phasing and financing plan
- Continuing in-person tabling and engagement with community stakeholders to spread awareness of project

SEAPORT COASTAL RESILIENCY (SPCR)

Seaport Coastal Resiliency vs. FiDi-Seaport Master Plan



- FiDi-Seaport Master Plan – long-term coastal resiliency project between BPCA and BMCR addressing **BOTH** coastal storms and sea level rise through 2100
- The Seaport identified as a low-lying vulnerable area during the FiDi-Seaport Master Planning process
- Seaport Coastal Resiliency is a near-term project to provide critical Sea-Level Rise Protection for The Seaport
- FiDi-Seaport Master Plan will coordinate with the near-term Seaport Coastal Resiliency project

What is the Seaport Coastal Resiliency Project?

Creating a more resilient Seaport by addressing sea level rise, drainage risks, and continued waterfront access

- This project proposes raising the shoreline 3-5 feet in the area from the Brooklyn Bridge to Imagination Playground
- Scope includes potential esplanade improvements, ecological enhancements, and green infrastructure to address stormwater management
- AECOM has been procured as a design consultant, has just recently been mobilized.
- Details and a refined plan will be provided as we progress through the design process.



The Team – AECOM and FHI



PROJECT MANAGER
Elizabeth Thompson
PE, ENV SP

- Experience delivering complex projects with tight schedules
- Ability to navigate reviews/approval processes with city agencies
- Work in downtown area after Sandy provides understanding of complex below grade utilities
- Thrives on improving New Yorkers' lives & revitalizing communities

COMMUNITY ENGAGEMENT TEAM



Ryan Walsh
AICP, PP



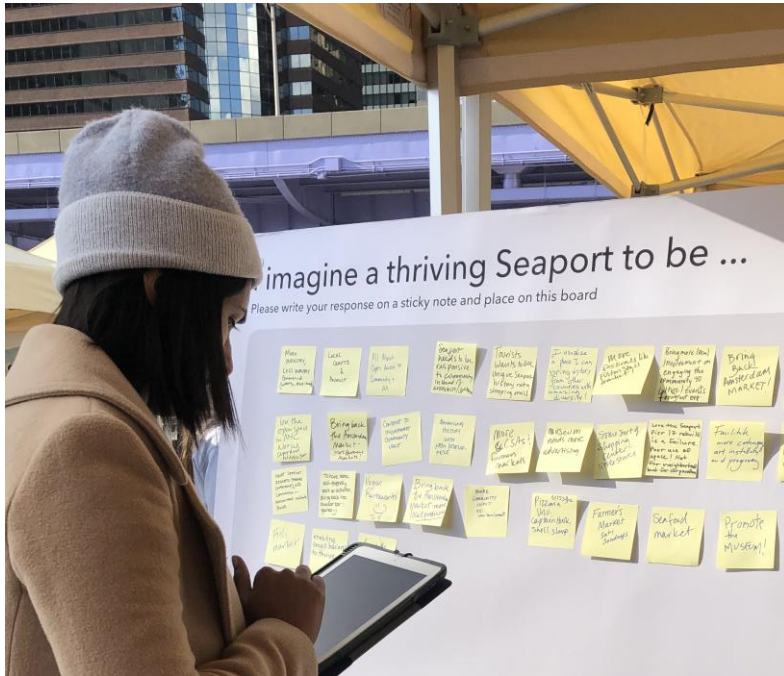
Maura Fitzpatrick

In the first 100 days, the team will begin:

- Technical surveys and data gathering
- Environmental review process
- Community engagement outreach plan
- Initiating conceptual designs
- Initiating public art process



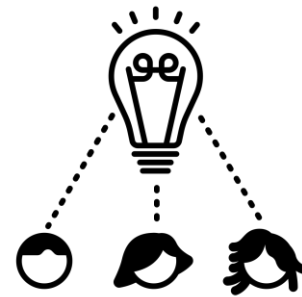
How will we approach engagement?



The engagement team believes in:

- A flexible, open-ended approach
- Starting early and connecting often
- Tailoring engagement to the Seaport community

Please share ideas for the best way to engage the Seaport community!



Brooklyn Bridge-Montgomery Coastal Resilience Construction Update

CB1 Environmental Committee Meeting
1 Centre Street
March 18, 2024



Highlights

- Project Status
- Construction Photos
- Greenway Detour
- Community Resources

BMCR | Project Status

ALL WORK IS SUBJECT TO CHANGE

Current Activities

- Water main upgrades
- Utility relocation & upgrades
- Floodwall construction
- Micropile installation
- Interceptor Gate Building Construction

Upcoming Activities

- Greenway closure and bike detour between John Street and Market Slip

Coordination

- ESCR—PC and PA1 Construction, Utility Work Coordination
- Ongoing coordination with DOT to maintain safe, greenway access
- NYC EDC Brooklyn Bridge Esplanade Project, Dover St. to Catherine Slip



BMCR | Project Need

ALL WORK IS SUBJECT TO CHANGE



January 2024 via Catherine Hughes



January 2024 via Catherine Hughes

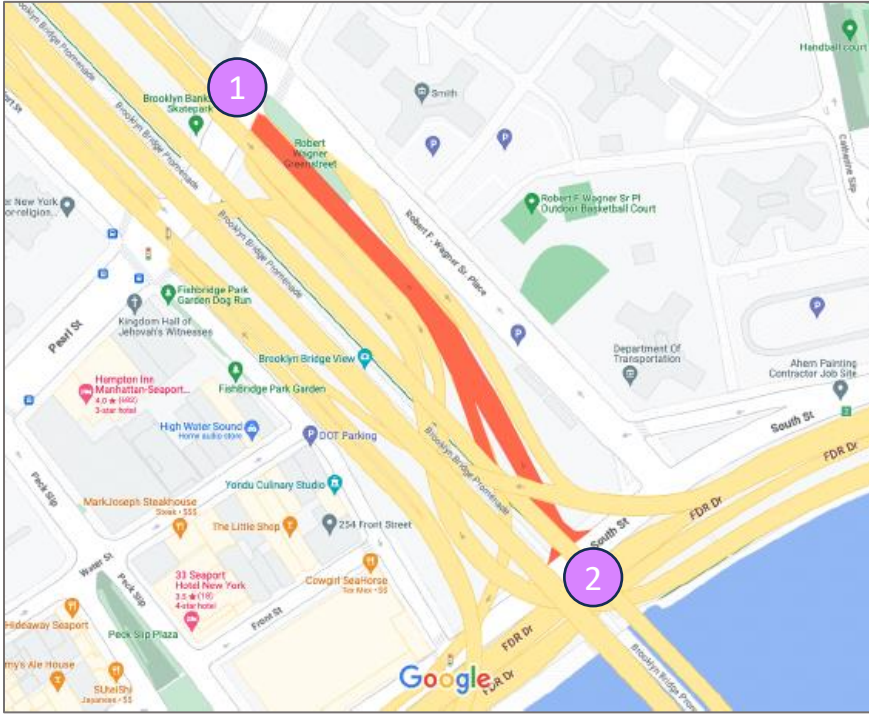
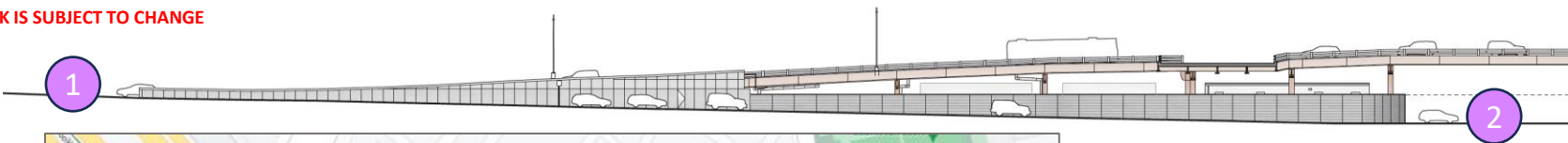
BMCR | Construction Photos - Floodwall Mockup

ALL WORK IS SUBJECT TO CHANGE



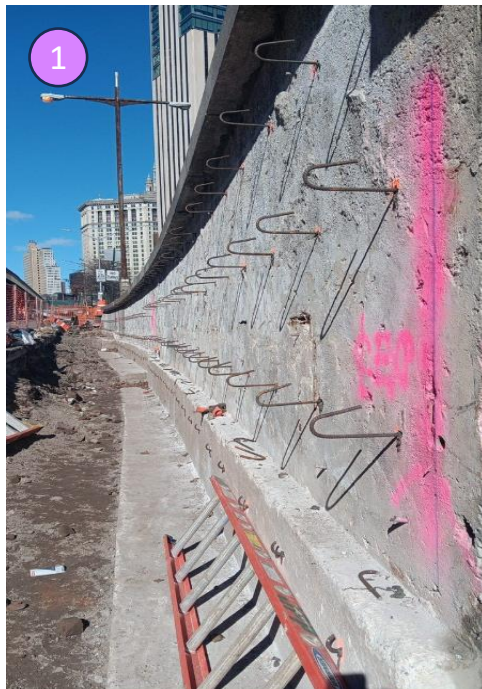
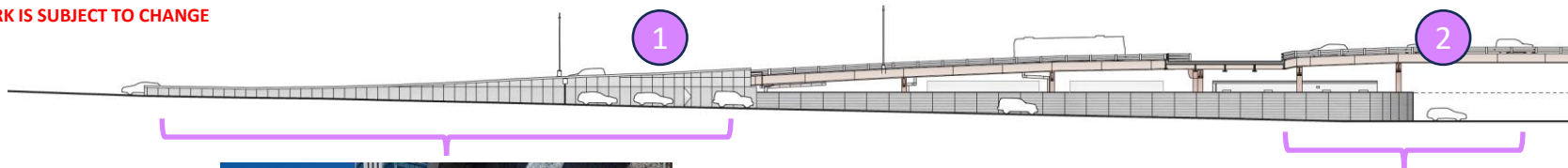
BMCR | Floodwall Tie-in

ALL WORK IS SUBJECT TO CHANGE



BMCR | Floodwall Tie-in

ALL WORK IS SUBJECT TO CHANGE



Rebar j-hooks for floodwall tie in on FDR off-ramp – March 2024



Rendering of floodwall tie-in and flip-up gate at South Street under Brooklyn Bridge
From [2021 PDC Presentation](#):

BMCR | Greenway Closure and Bike Detour

ALL WORK IS SUBJECT TO CHANGE



BMCR | Resources

- Visit Us: <https://www.nyc.gov/bmcr>
- Community Construction Liaison:
 - Marsha Guido
347-538-4266
Email: bmcr.ccl@gmail.com
- Tabling in the Community
- CB 3 Parks Meetings
- On-site signage
- Inquiry tool and email updates:

<https://www.nyc.gov/site/lmcr/progress/contact.page>



Tabling event - 2023



Advisories posted on-site

NYC Lower Manhattan Coastal Resiliency 311 | Search all NYC.gov websites

NYC Lower Manhattan Coastal Resiliency Русский | Select Language | Text-Size

Background Progress Resources Get Involved Search

Brooklyn Bridge-Montgomery Coastal Resiliency

[Brooklyn Bridge-Montgomery Coastal Resiliency](#)

The Battery Coastal Resiliency

Interim Flood Protection Measure (IFPM)

Battery Park City Resilience Projects

The Financial District and Seaport Climate Resilience Master Plan

Seaport Coastal Resiliency

[The same waterfront that the community enjoys when weather is good...](#)

[...transforms into critical flood protection during major flooding events.](#)

Learn More about BMCR

- About
- Construction Notices
- Presentations
- Newsletters
- Gallery
- Community Engagement
- Contact
- FAQs

