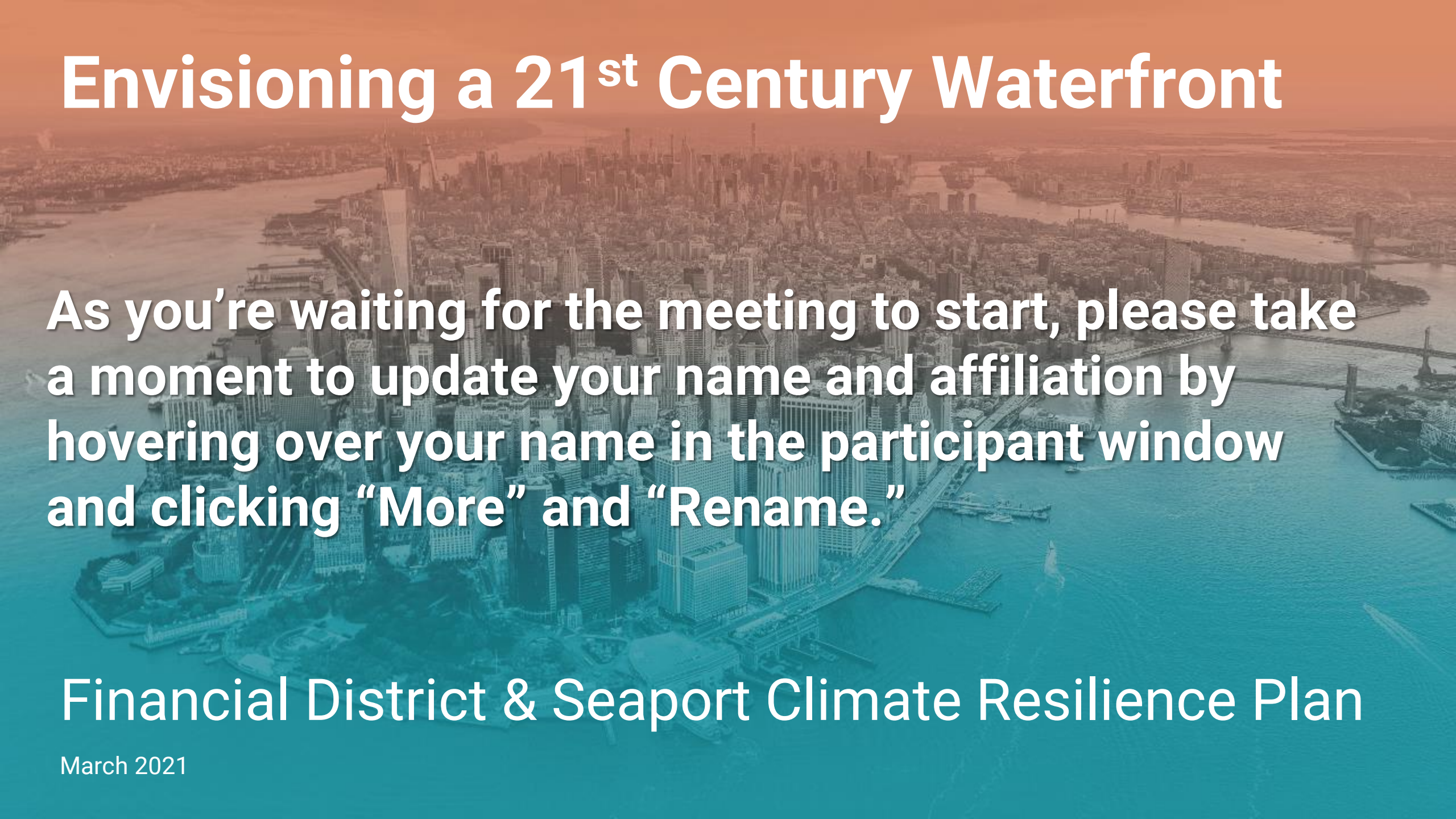
Envisioning a 21st Century Waterfront



As you're waiting for the meeting to start, please take a moment to update your name and affiliation by hovering over your name in the participant window and clicking "More" and "Rename."

Financial District & Seaport Climate Resilience Plan

March 2021

Welcome to Zoom!

A few requests:

1. *Please mute yourself while others are speaking. You will have time in the second half to unmute and discuss.*
2. *Add questions to the chat box during presentations. Please message "everyone" as others may have the same question!*
3. *Turn on your camera if you can!*

Go to www.menti.com and use the code 2037 3539.

Go to www.menti.com and use the code 6983 6292

What do you love about Lower Manhattan's waterfront?

Mentimeter

Introductions

Please share in the chat:

- *Name*
- *Organization*
- *What is your goal for today's meeting?*

Join the conversation!

Please use the chat function to ask questions as we go!

Agenda: Envisioning a 21st Century Waterfront

1. **Project Overview**

   Who is leading this initiative? What could we accomplish? What is our timeline?

2. **Need for Climate Resilience**

   Why should we protect Lower Manhattan, and what are the climate risks facing this area?

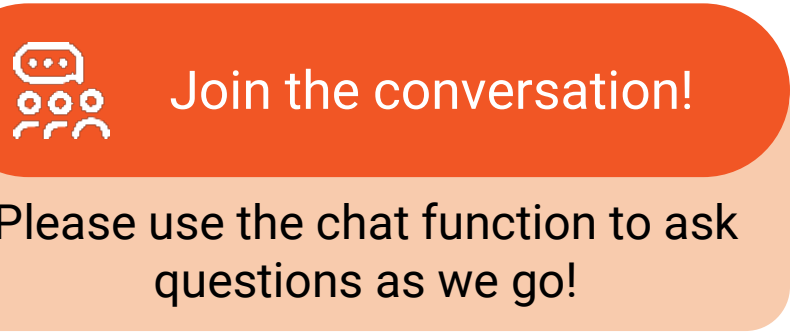
3. **Transformational Opportunities**

   How could we enhance the FiDi-Seaport waterfront in addition to coastal defense?

4. **Visioning Exercise**

   What is your vision of a 21st Century FiDi-Seaport waterfront?

5. **Next Steps**



Your participation today will support co-creation of a vision for the future of the FiDi Seaport waterfront and support the development of project options for the FiDi Seaport Master Plan.

Meeting objectives:

1. **Share information** with a broader group of stakeholders about the FiDi Seaport Climate Resilience Plan and how we're thinking about the future of the public waterfront
2. **Get input** on priorities and concerns related to waterfront access, open space, transportation, circulation, and the FDR; **engage** stakeholders on how we are approaching specific opportunities and **gather feedback**
3. **Incorporate this feedback** into the Climate Resilience Plan as we move into the next phase of project work.
4. **Build relationships** with stakeholders for continued engagement throughout the planning process, building new relationships and incorporating new perspectives.

Project Overview

In Lower Manhattan, the City is advancing $500M in climate adaptation projects to protect various areas within the district

FIDI SEAPORT CLIMATE RESILIENCE PLAN

Envisioning a 21st Century Waterfront: March 2021

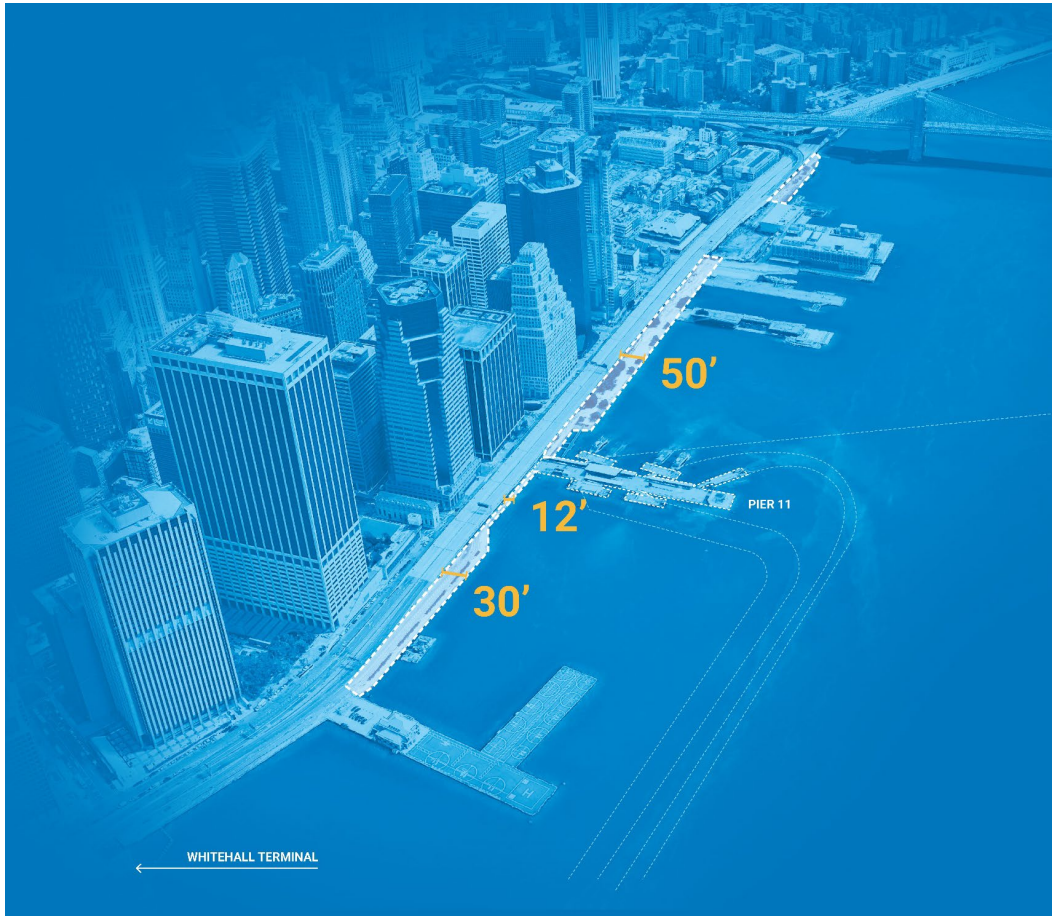
The FiDi-Seaport Climate Resilience Plan will include a comprehensive resilience plan to protect the Financial District and South Street Seaport

What can we achieve by 2021?

- Develop a plan to protect FiDi-Seaport from sea level rise, coastal storms, and extreme precipitation
- Develop a conceptual design of coastal defense infrastructure and identify first phase project options
- Create a roadmap with details on implementation, financing, construction, and governance framework

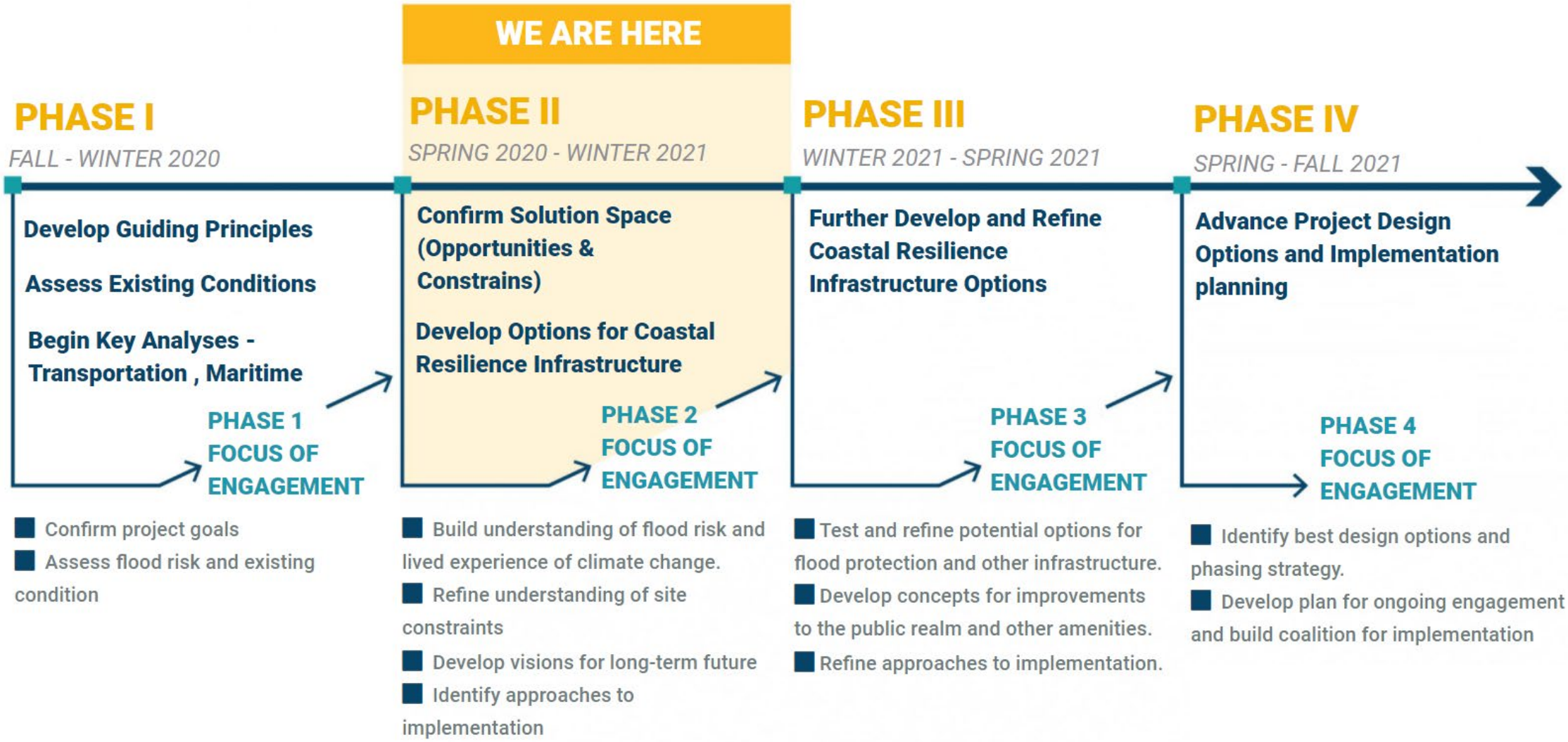
Who is our project team?

- **New York City Economic Development Corporation** and **Mayor's Office of Resiliency** are leading this process, with support from additional City agencies
- An interdisciplinary team of experts will support this work, led by the Dutch engineering firm **Arcadis**.



The Financial District and Seaport have unique constraints that require us to explore a range of flood protection options, including extending the shoreline into the East River.

Where are we in the Planning Process?



We drafted our guiding principles with input from the Climate Coalition of Lower Manhattan, City Agencies, and the broader public

Ensure a **secure future for those who live in, work in, or depend upon Lower Manhattan** by addressing near and long-term climate risks, including impacts of flooding from daily tides, rain, and coastal storms.

Strengthen Lower Manhattan as a **central hub of the region's workforce, transportation network and economy**.

Plan a project that is **feasible, financeable, and implementable**, with a broad coalition of support and clear regulatory and permitting pathways.

Create an **equitable and inclusive public engagement process** that advances widespread understanding of climate risks and fosters the development of a shared vision for Lower Manhattan.

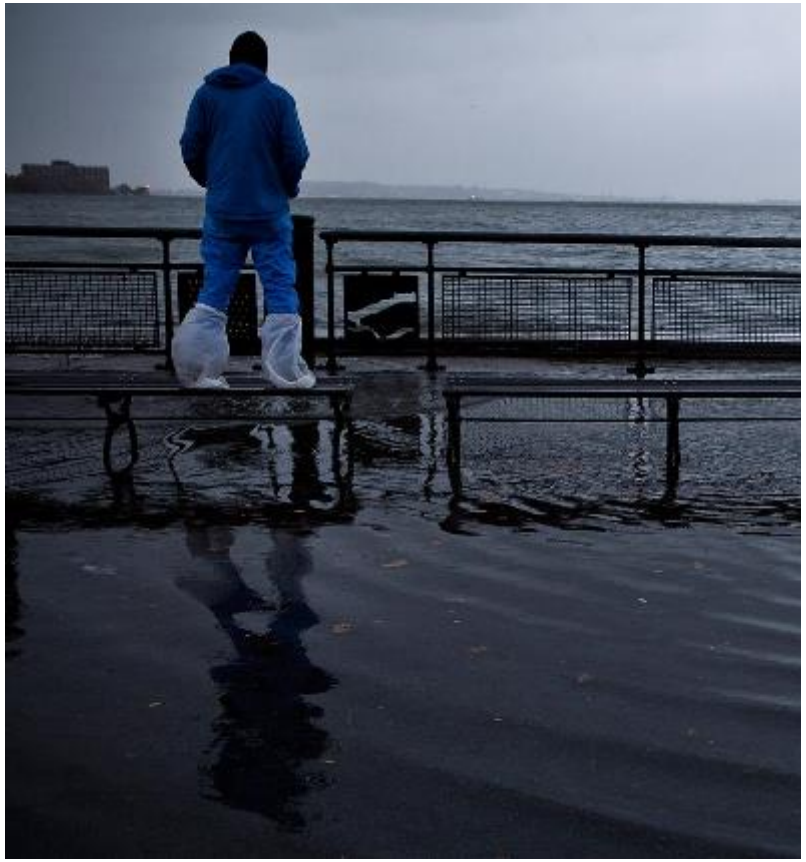
Plan for resiliency infrastructure that protects **key historic assets**, **maximizes ecologically-sensitive design** and **sustainability**, and is **adaptable over time**, adopting best practices from around the world.

Maintain and look to improve infrastructure that creates **an accessible public realm for all** – including **strong connections to an active waterfront**, as well as a range of **water-dependent transportation and recreational uses**.

Need for **Climate Resilience**

The primary goal for the project is to provide flood risk reduction for the FiDi-Seaport district from storms and tidal flooding through 2100. Accordingly, the project team needs to either design the project to meet the 2100 DFE from the outset or, at a minimum, ensure that the design allows for future adaptability to protect to the 2100 DFE.

Climate change isn't coming; it's here.



Daily tidal flooding combined with sea level rise is bringing **higher** water levels along the coast, causing recurrent flooding in low-lying areas.

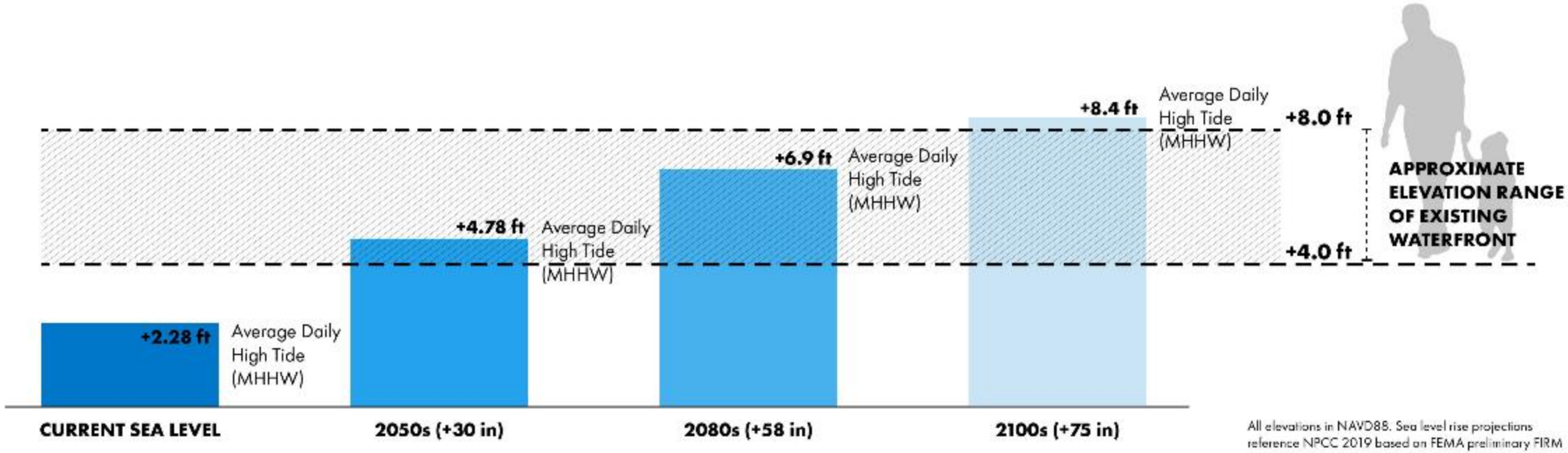
Coastal storms are **increasing** in frequency and intensity, bringing the impact of surge to our front doors.

Extreme precipitation is occurring **more frequently**, stressing our sewer system and flooding our streets.

FIDI SEAPORT CLIMATE RESILIENCE PLAN

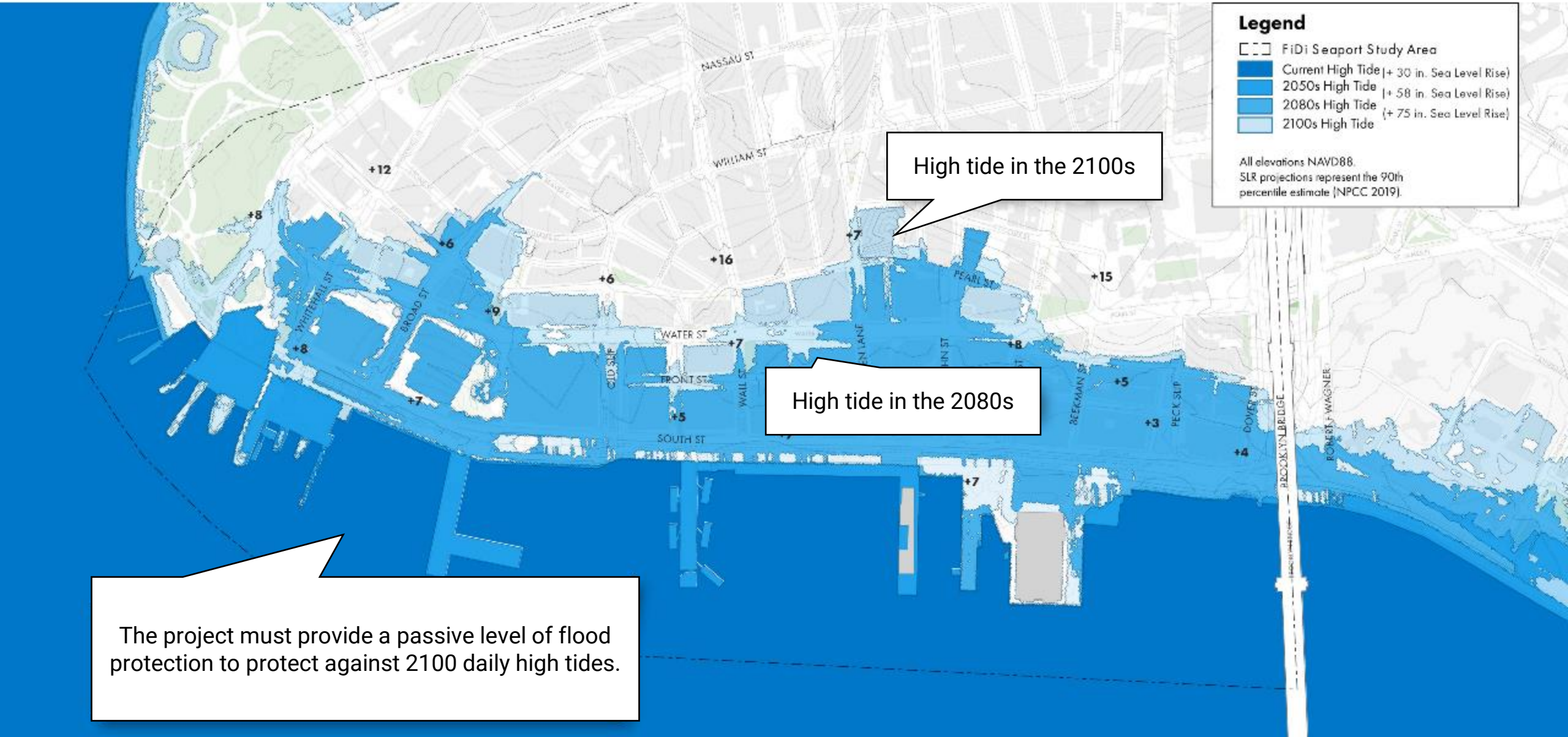
Envisioning a 21st Century Waterfront: March 2021

The waterfront could be inundated by high tide almost daily by the 2080s

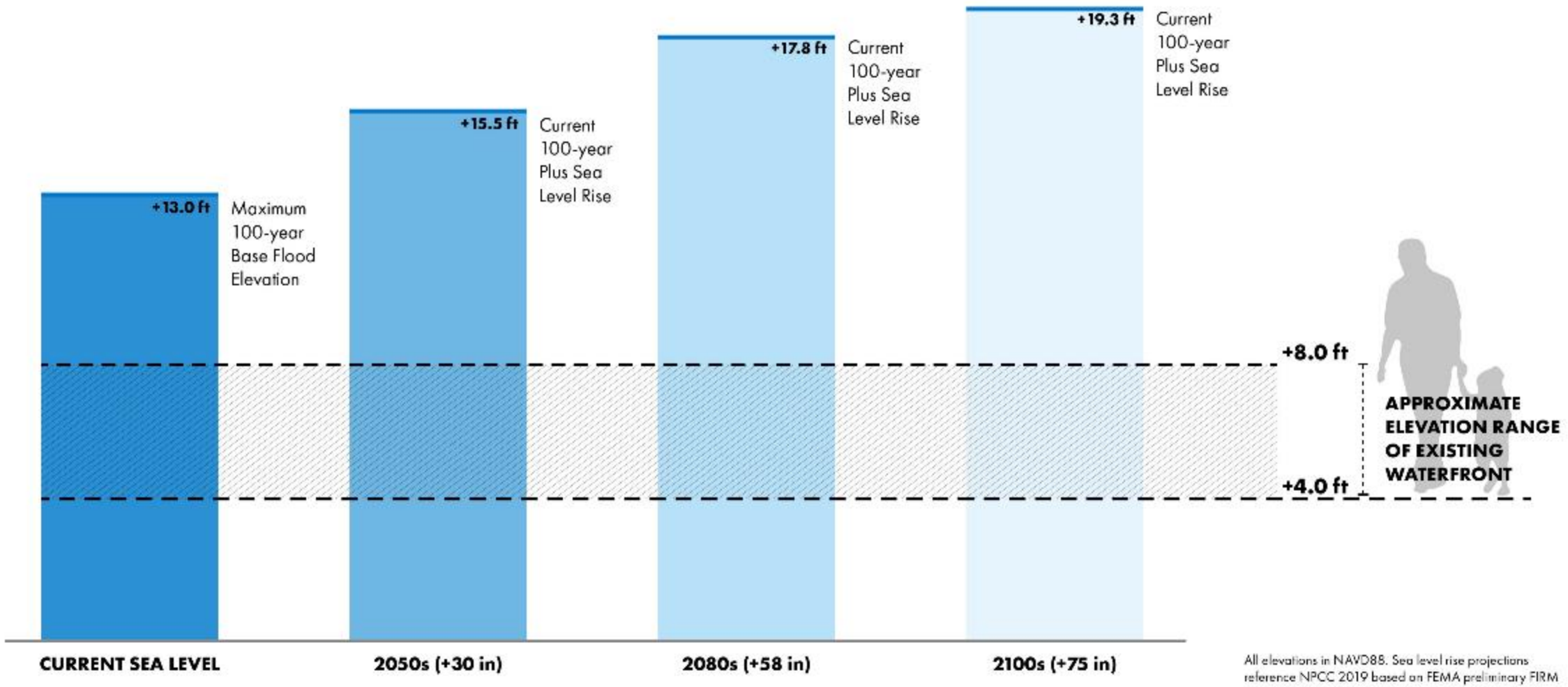


All elevations in NAVD88. Sea level rise projections reference NPCC 2019 based on FEMA preliminary FIRM data. MHHW is based off of the 2001 NOAA National Tidal Datum Epoch (NTDE). Additional modeling / wave studies to be completed later in Phase II.

By 2100, daily high tides could inundate most of the area east of Water Street, impacting Lower Manhattan & the region



Future storms are becoming more frequent and intense



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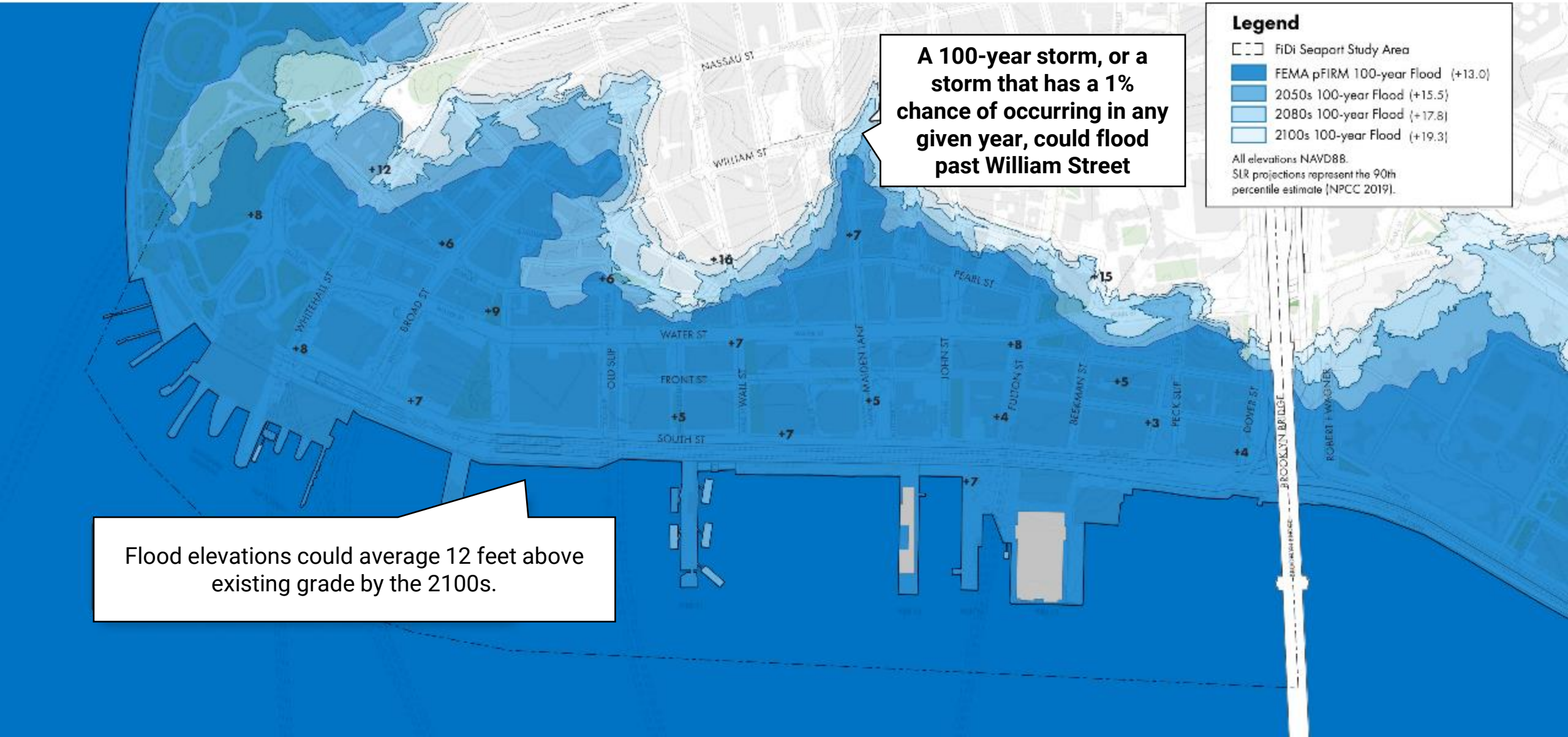
Future storms will have larger and deeper floodplains than those of today



Why Protect Lower Manhattan?

Driver of the City's Workforce & Economy

of NYC jobs are located in Lower Manhattan.

in estimated annual tax contributions in 2019.

in annual GDP (8% of the city's total).

Transportation Hub for the City & Region

of commuters through Lower Manhattan live outside of the area.

of Lower Manhattan workers live outside of Manhattan.

of Lower Manhattan workers live outside of NYC.

Center of Culture, Community, & Civic Life

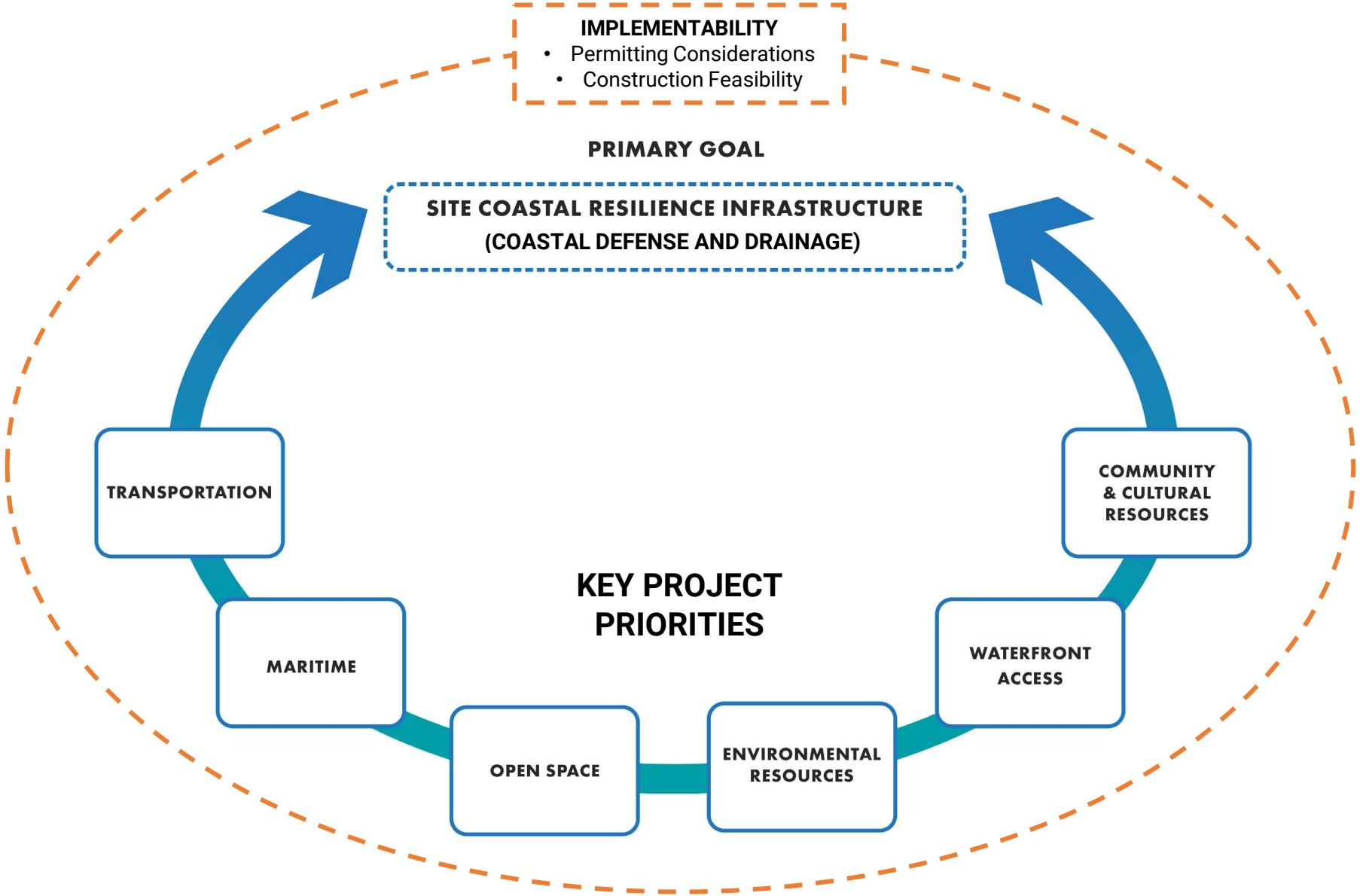
increase in Lower Manhattan residents between 2000 and 2020.

students at 21 higher learning institutions in Lower Manhattan.

FIDI SEAPORT CLIMATE RESILIENCE PLAN

Envisioning a 21st Century Waterfront: March 2021

The project seeks to comprehensively protect Lower Manhattan from flood risks, while achieving other key priorities:



How does the regulatory framework inform how we design?

As we develop options for the project, it is imperative that we comply with rules and regulations based on the existing Federal and State regulatory framework as these entities will be the ultimate decision makers on whether the project advances forward. This includes:

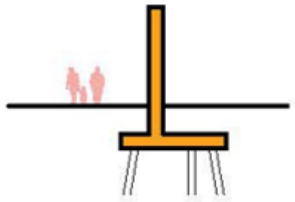
1. **Avoiding:** Fully assessing if an on-land option is possible to implement based on technical feasibility, impacts, and cost.

2. **Minimizing:** If we must go into the water to site our coastal resilience infrastructure, we must justify every inch and demonstrate that we are minimizing our impact.

3. **Mitigating:** If we must go into the water, we must understand all potential impacts – including ecological, navigation, and scour – and demonstrate to the State and Federal government that we can mitigate any negative impacts.

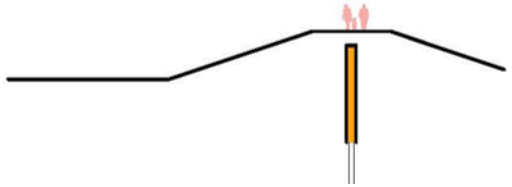
Providing for Comprehensive Flood Protection in Lower Manhattan

Coastal Defense



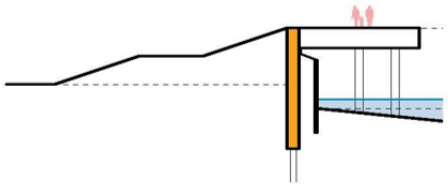
Floodwall

Foundation Width: 10-15 ft
Construction Clearance: 18-20 ft
Access Requirements: 15 ft (each side)



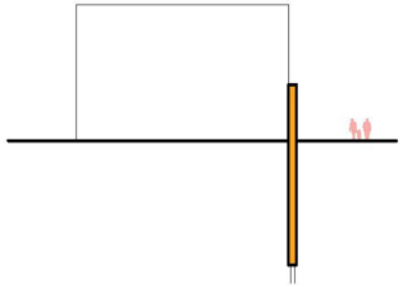
Buried Floodwall

Foundation Width: 50 ft
Access Requirements: 15 ft (each side)



Bulkhead (or Caisson)

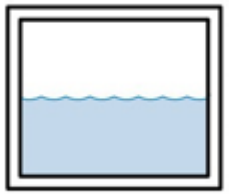
Foundation Width: 35 ft
Access Requirements: Across the whole system



Integrated with Buildings (assumes floodwall)

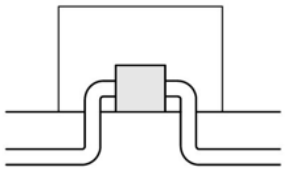
Foundation Width: 10-15 ft
Construction Clearance: 18-20 ft
Access Requirements: 15 ft (at least 1 side)

Drainage



Storage

Footprint: Large; based on amount of water stored
Operations: Pump station would be required to take water back to interceptor when capacity is available



Pump Station

Footprint: 3,000 – 4,000 SF each (1 or 2 likely needed)
Operations: Requires a wet well, or large tank below ground, to receive water and force main, or pressurized pipe, to take stormwater to an outfall for discharge

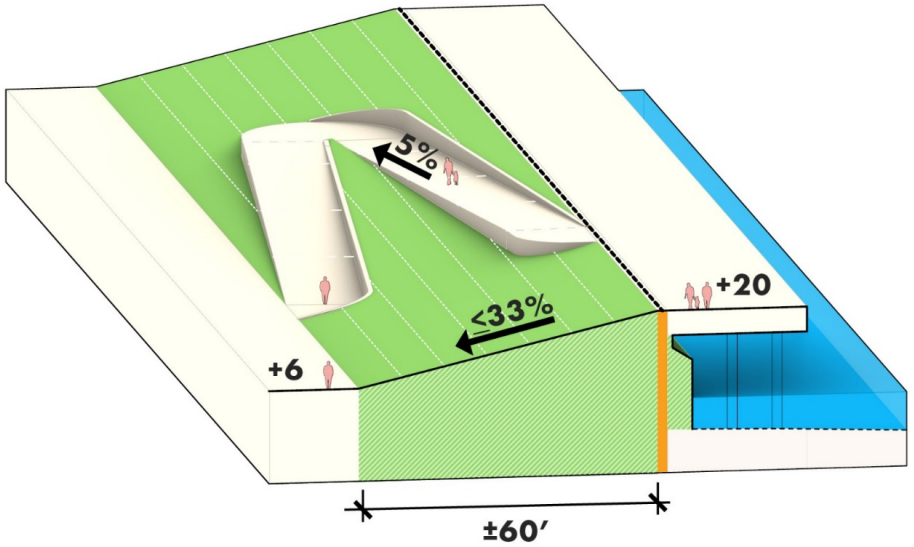
Green Infrastructure

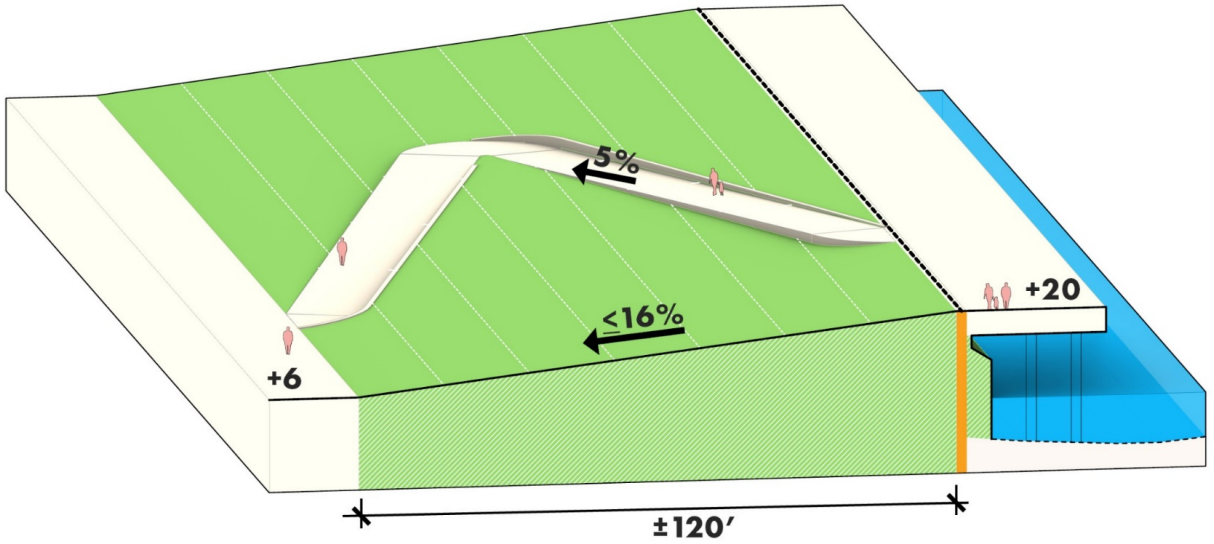
Footprint: Varies; often local solution (bioswale)
Operations: Complementary part of drainage strategy; unable to manage heavy precipitation or surge

WATERFRONT ACCESS AND CONNECTIONS

Passive vs Active Flood Protection Study

Navigating grade changes are critical to siting passive flood protection infrastructure while maintaining waterfront public access and connections to maritime uses.





Chicago Riverwalk

Governors Island - The Hills

Prospect Park

We need to extend the shoreline because:

Due to limited space along the water's edge, we need to consider going into the water to site **coastal defense infrastructure**

Our goal is to construct a flood protection system to keep water out during a storm or high tides while maintaining **access to the waterfront** and preserving **open space & historic assets**

But how much we extend the shoreline is limited for the following reasons:

At the same time, we recognize that the East River serves many vital functions, including home to many **fish, invertebrates, and microorganisms**. The potential impacts of any in-water option must be minimized and mitigated.

The East River also serves as an important **waterway** for the Coast Guard, emergency services, commuters, and in-water options cannot negatively impact navigation.

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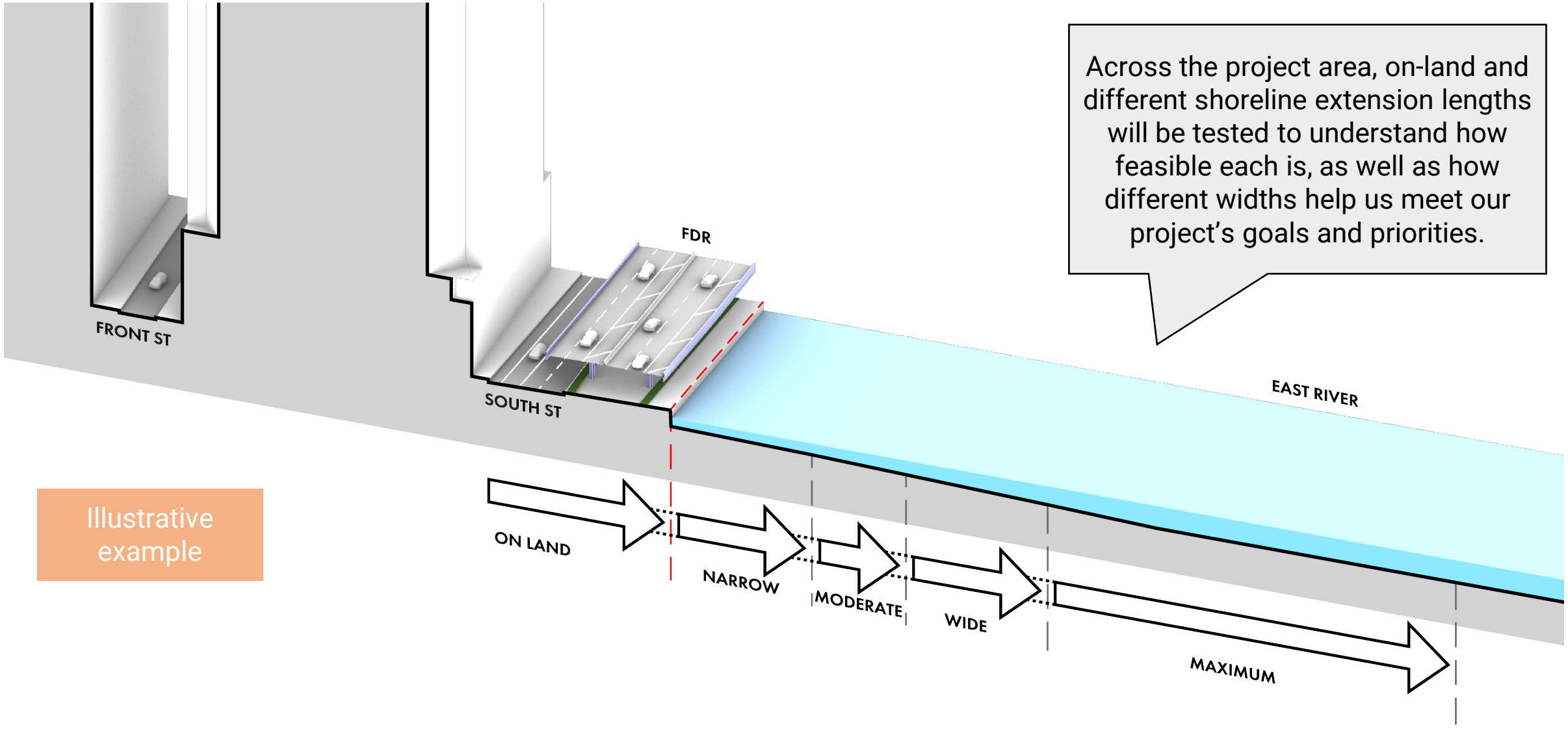
What do our early project options look like?



Across the project area, on-land and different shoreline extension lengths will be tested to understand how feasible each is, as well as how different widths help us meet our project's goals and priorities.

Illustrative example

Consultant Team

Urban Design & Open Space

Pippa Brashear – SCAPE

Urban Design & Waterfront Access

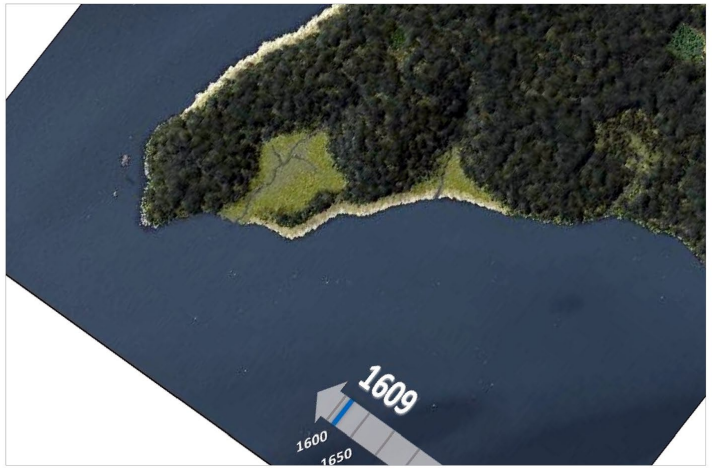
Travis Bunt– ONE Architecture

Transportation & Mobility

Mike Flynn -- SSE

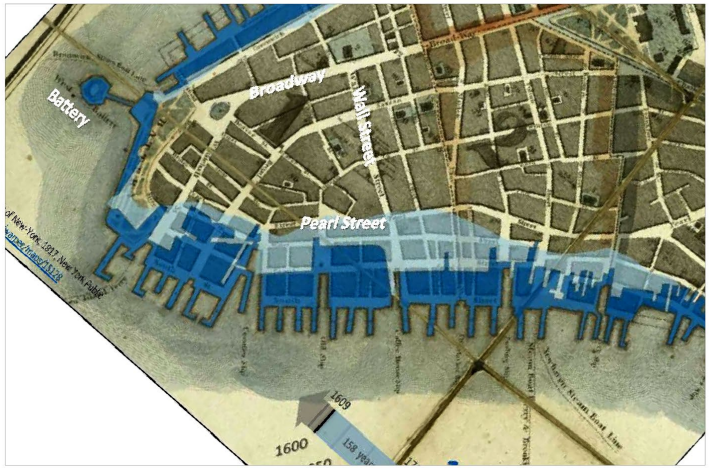
Transformational Opportunities

The Seaport, NYC's original harbor, has changed dramatically over time, and will continue to in the future.

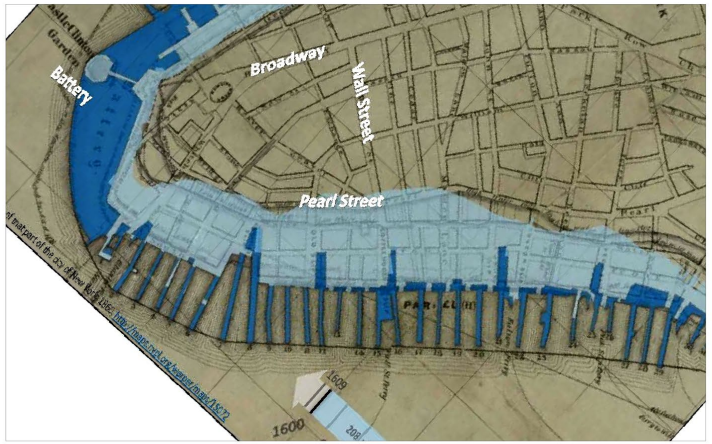


1609

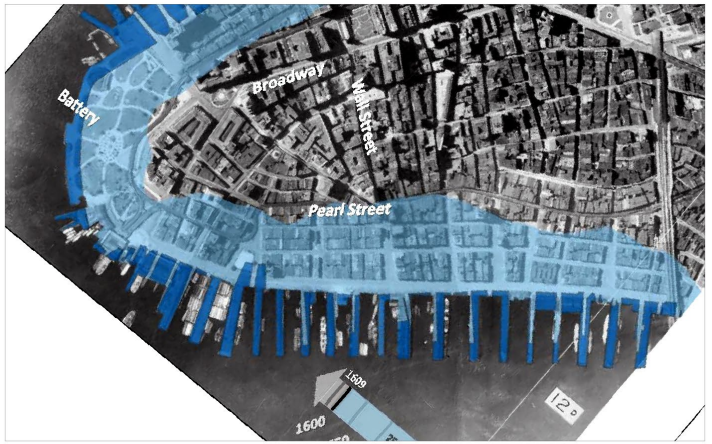
1767



1817



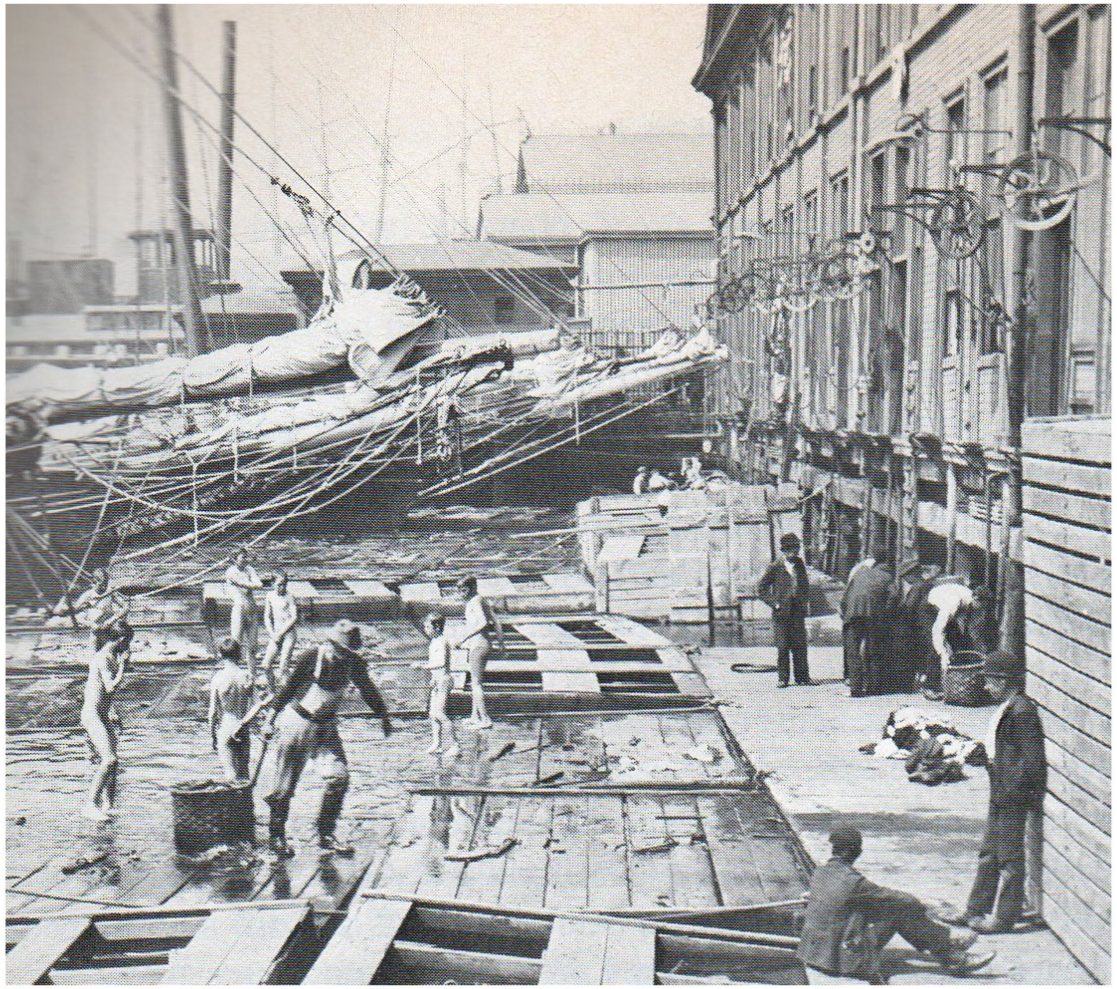
1860



1924

2021

But people have always found ways to connect to the water.

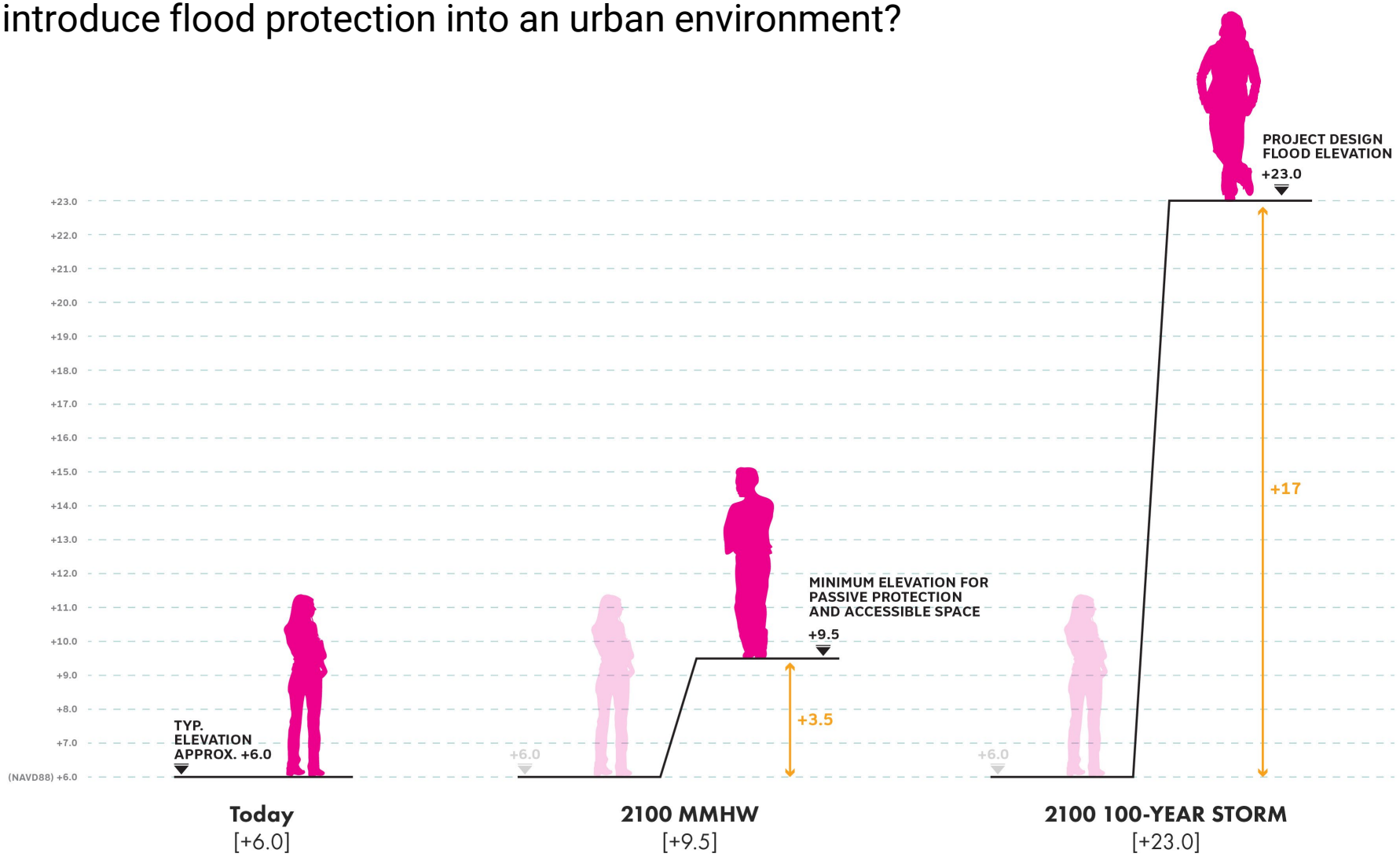


Fulton Fish Market [1892]

City of Water Day [2018]

The Challenge

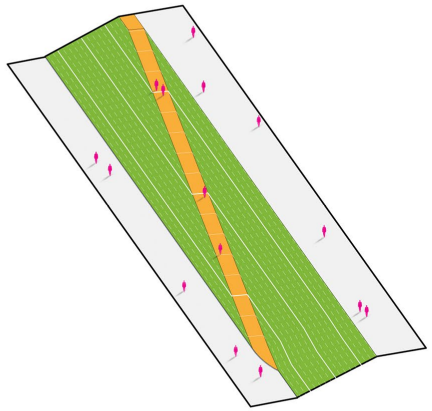
How can we introduce flood protection into an urban environment?



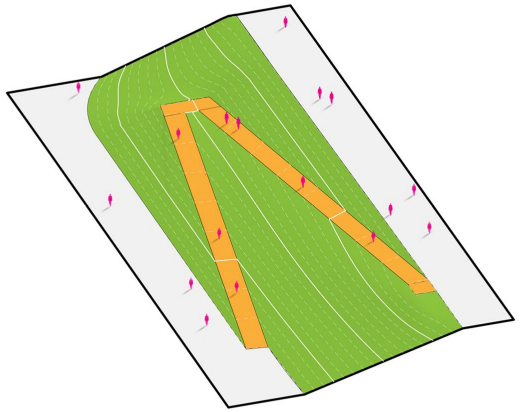
The Challenge

How can we introduce flood protection into an urban environment?
While minimizing reliance on deployable flood protection?

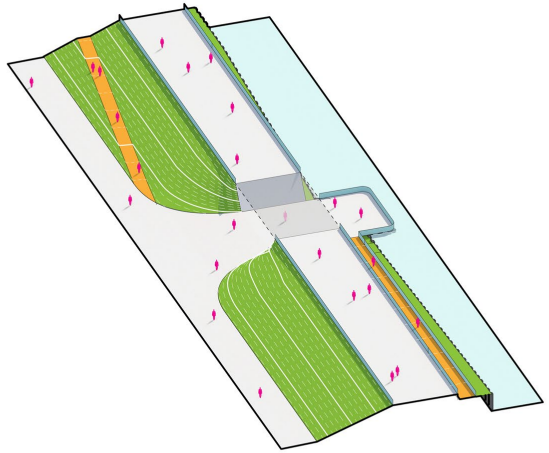
Potential Tools:



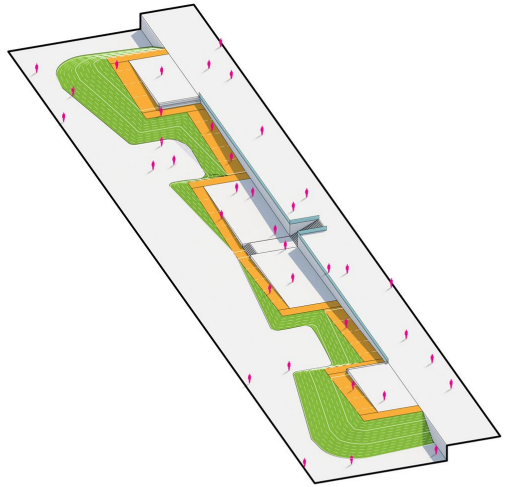
Parallel Access



Switchback Access



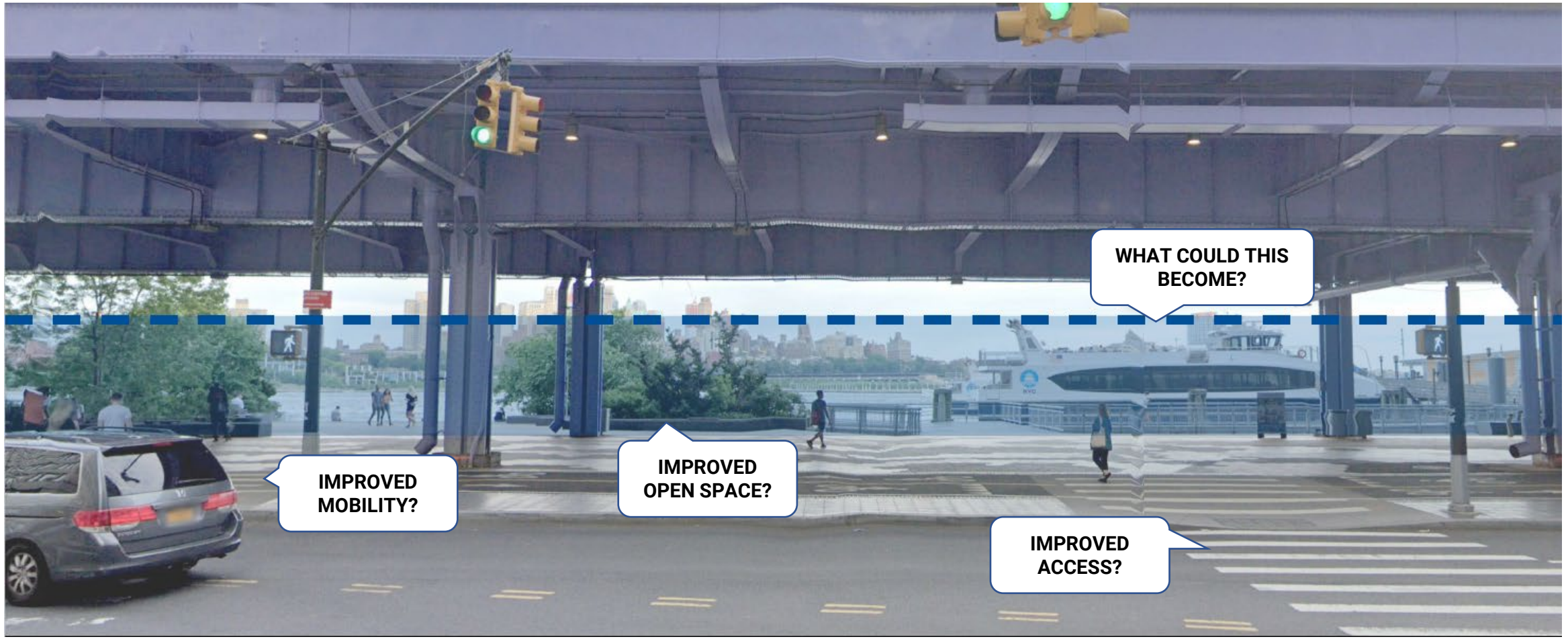
Staggered Elevation Access



Terraced Access

The Opportunity

How can new resilience infrastructure also improve public space? What tools do we have to do make these improvements?



What We've Heard So Far

Improving Open Space Resources

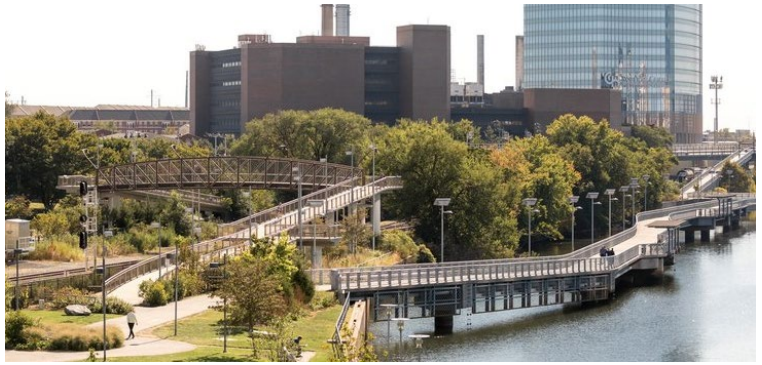
What inspires us?

Brooklyn Bridge Park
Park with Active + Passive Recreation

Hunter's Point South Park
Coastal Resilience + Interactive Landscape

Pier 26
Pier Structure + Ecologically Sensitive Approach

Chicago Riverwalk
Raised Edge + Waterfront Park



Schuylkill River Park (Philadelphia)
Grade Change + Waterfront Experience

CityDeck (Green Bay, Wisconsin)
Maritime Edge + Waterfront Access

Improving Open Space Resources

Who uses this space today?

RESIDENT

COMMUTER

WORKER

RECREATIONAL USER

NYC VISITOR

TOURIST

POTUS?

Who are they?
Why do they go?
Where do they go?
When do they go?
What do they do?
How long do they stay?
+
Are there **inhibitors**?

Improving Open Space Resources

Who uses this space today?

RESIDENT

User Profiles

Who are they?

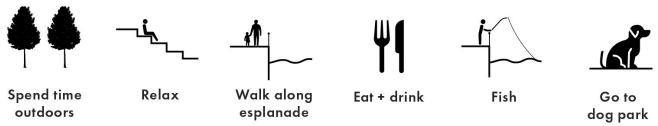
New Yorkers who live in the Financial District or Seaport neighborhoods, or more broadly, live in nearby in Lower Manhattan. These are likely the individuals most familiar with the site.

Why do they visit?

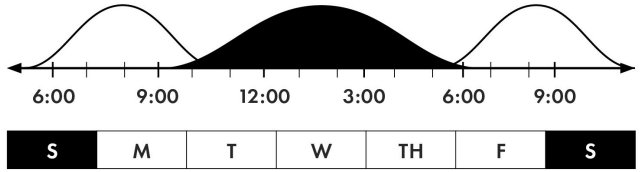
As one of the most flexible user groups, residents go to the waterfront for a variety of reasons including the experience of being outdoors, day-to-day needs, movement, dining, and more.

What do they do?

Residents activities can vary from "local" amenities, such as the dog park or outdoor seating, to dwelling, exercise, and leisure, to occasional commercial activity and dining.



What is the primary time of use?



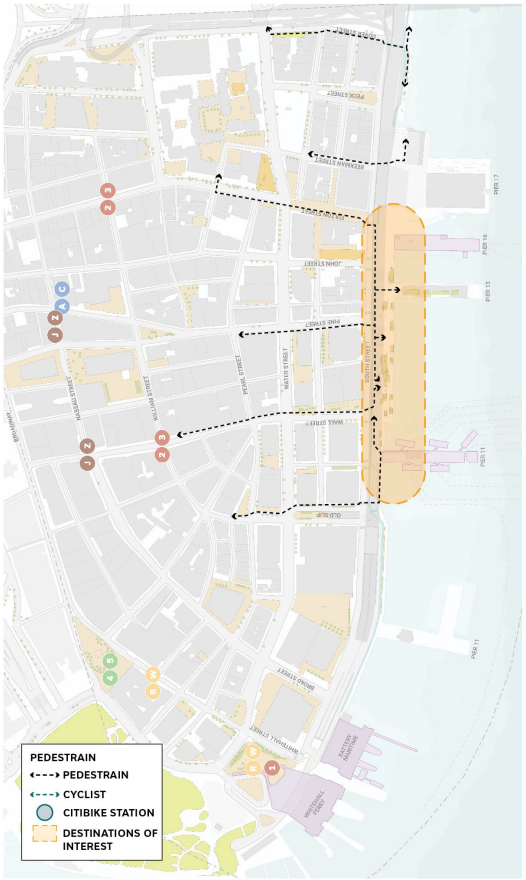
How long do they stay?

Varies
Brief (dog park) vs. extended (dwelling, dining, etc.)

Are there inhibitors that discourage them from using the waterfront open space?

- Lacks lush park-like spaces and active recreation program.
- Weather is not favorable.
- Programs and amenities are not uniformly distributed north to south

Where do they go?



Improving Open Space Resources

Who uses this space today?

CONNECTIVITY

- Primarily serves commuter and visitor needs
- Users value transit to/from water-based and on land modes of transit
- Features multi-model transit connections

EFFICIENCY

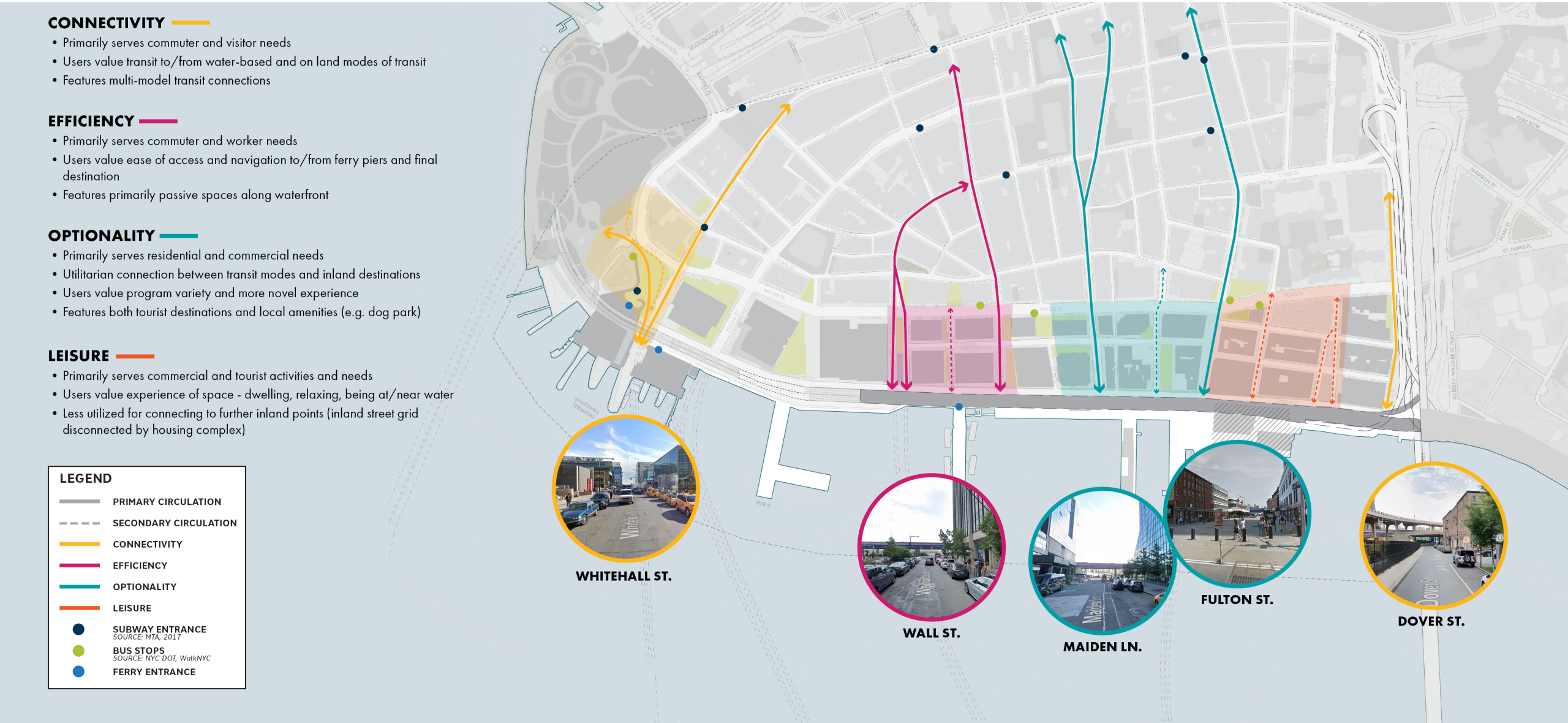
- Primarily serves commuter and worker needs
- Users value ease of access and navigation to/from ferry piers and final destination
- Features primarily passive spaces along waterfront

OPTIONALITY

- Primarily serves residential and commercial needs
- Utilitarian connection between transit modes and inland destinations
- Users value program variety and more novel experience
- Features both tourist destinations and local amenities (e.g. dog park)

LEISURE

- Primarily serves commercial and tourist activities and needs
- Users value experience of space - dwelling, relaxing, being at/near water
- Less utilized for connecting to further inland points (inland street grid disconnected by housing complex)



Improving Open Space and Urban Program

What could this space provide?

Passive Recreation - East River Esplanade

Playground - Imagination Playground

Plaza - Peck Slip

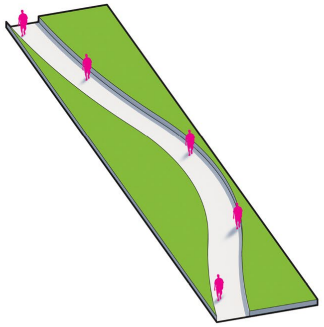
Business Activated Spaces - East River Esplanade

Active Recreational Resources - South Street Fitness Park

Marina - Brooklyn Bridge Park

Improving Open Space Resources

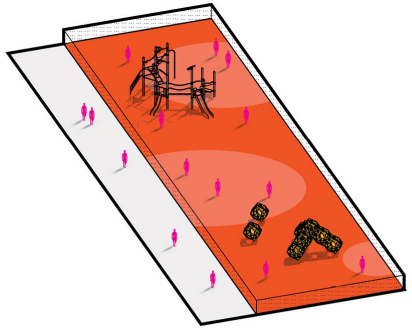
What could this space provide?



1. Gardens

Serves:

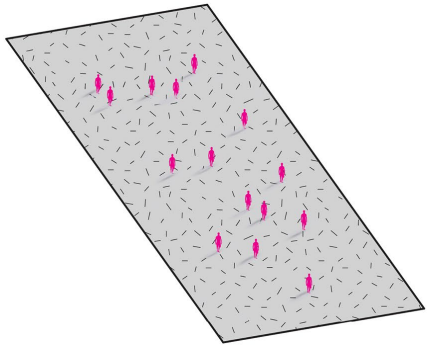
- Residents
- Commuter
- Worker
- Recreational User
- NYC Visitor
- Tourist



2. Play Area

Serves:

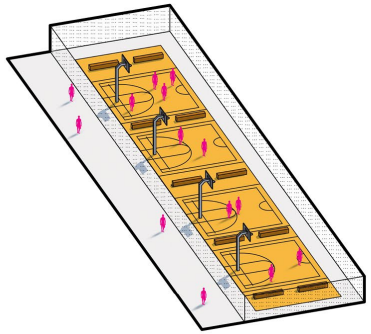
- Residents
- Commuter
- Worker
- Recreational User
- NYC Visitor
- Tourist



3. Plaza

Serves:

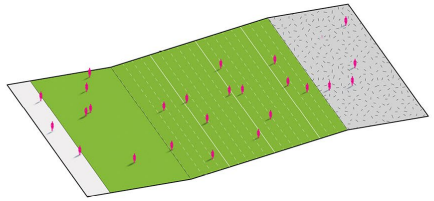
- Residents
- Commuter
- Worker
- Recreational User
- NYC Visitor
- Tourist



4. Small Active

Serves:

- Residents
- Commuter
- Worker
- Recreational User
- NYC Visitor
- Tourist



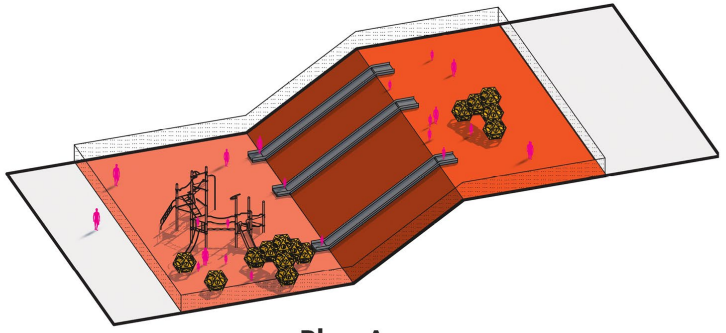
5. Active & Passive

Serves:

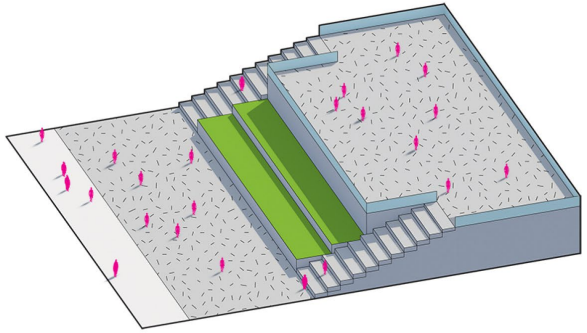
- Residents
- Commuter
- Worker
- Recreational User
- NYC Visitor
- Tourist

Improving Open Space Resources

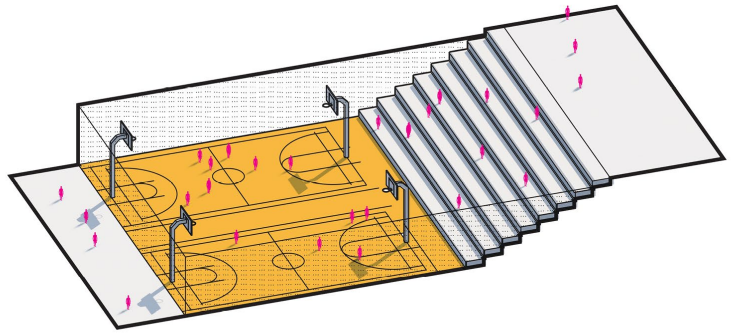
What might this look like in an area with grade change?



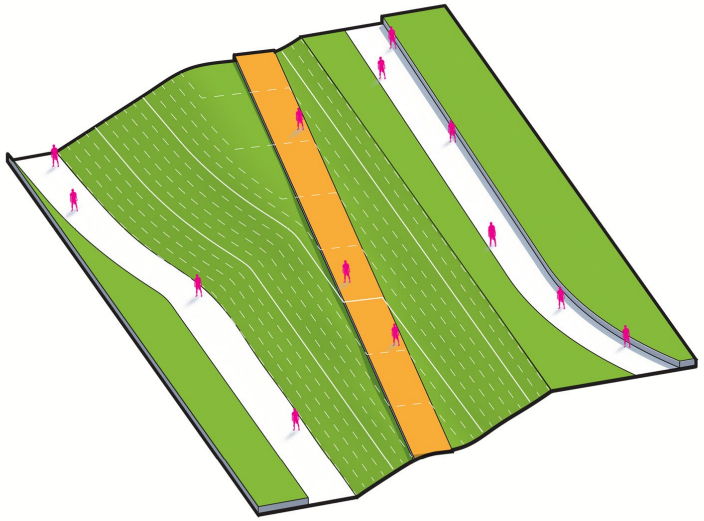
Play Area



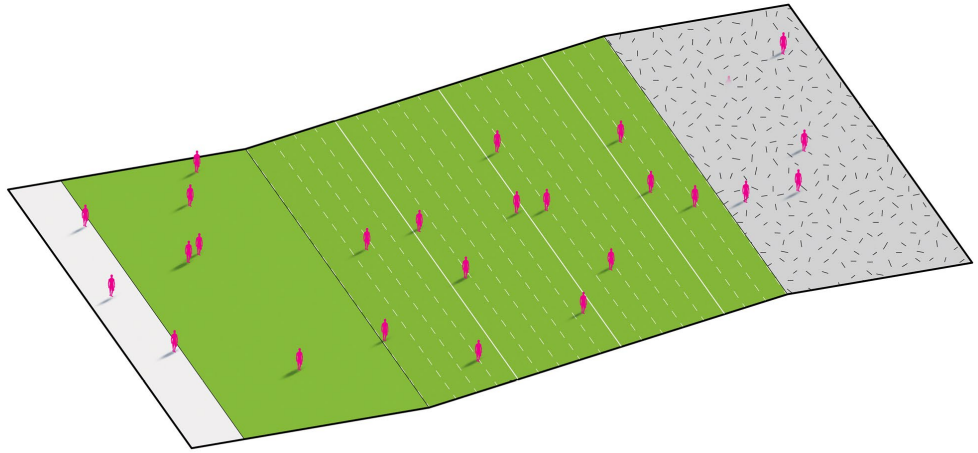
Plaza



Small Active



Gardens



Active & Passive

Improving Waterfront Access

How could we improve pedestrian connections?

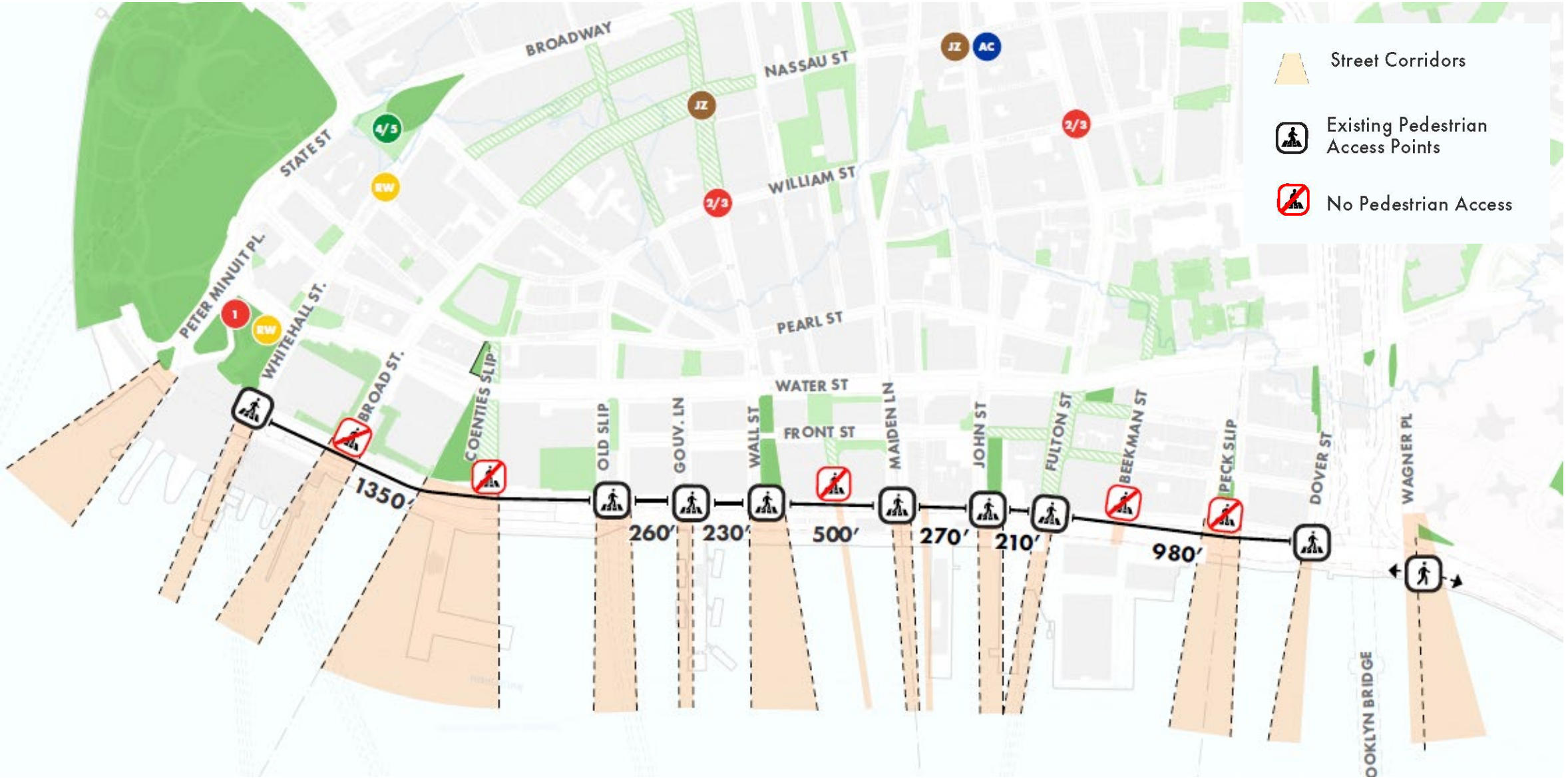
South St. crosswalks

Under the FDR Drive

Active urban waterfront

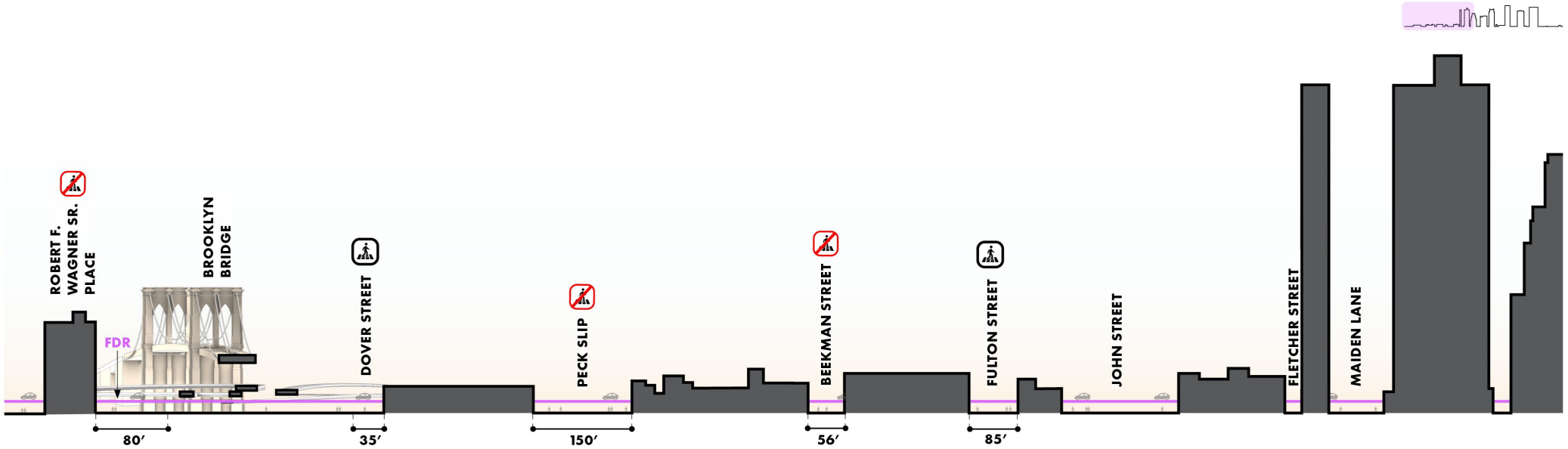
Improving Waterfront Access

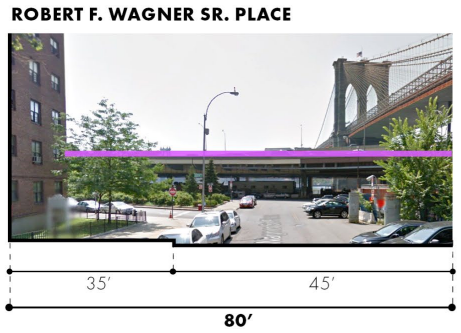
Where is there access today?

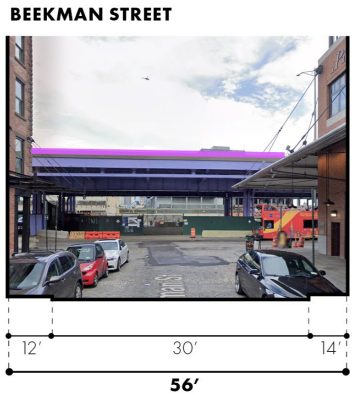


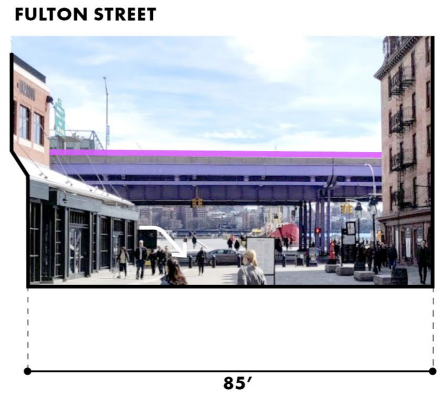
Improving Waterfront Access

Could we improve pedestrian access to the waterfront?





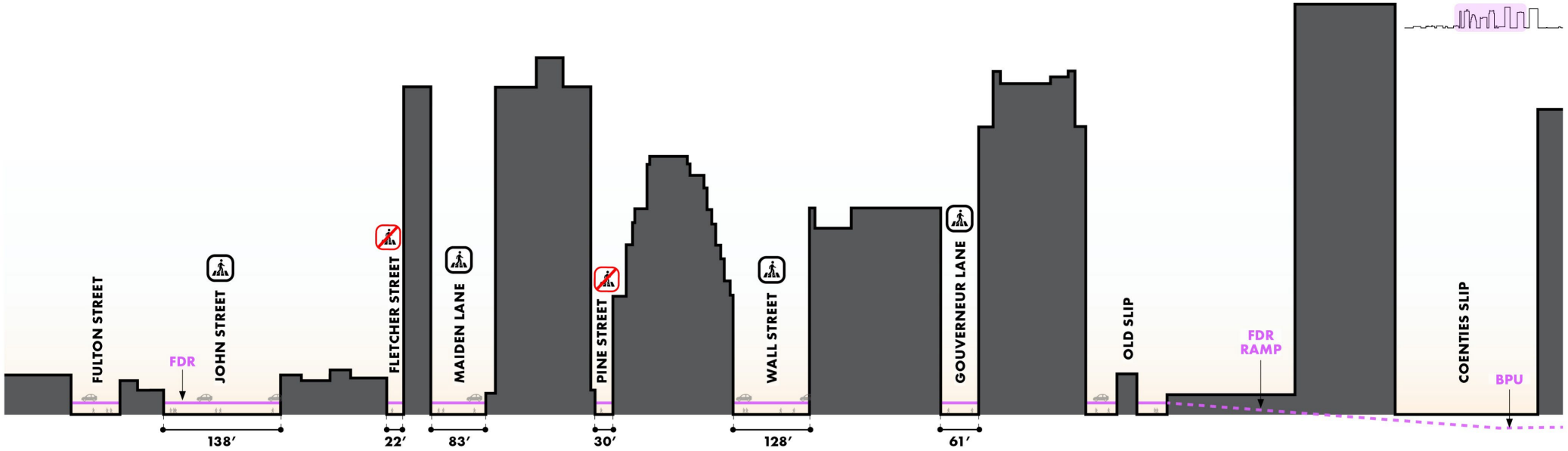


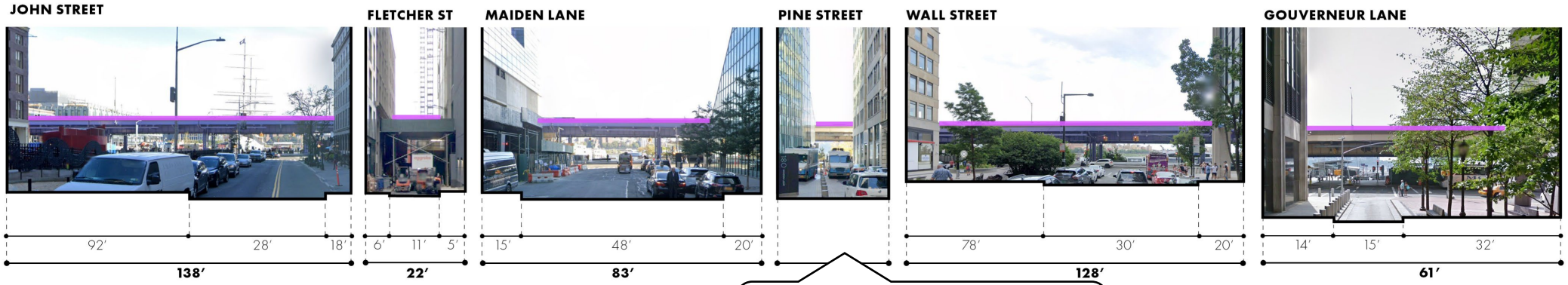


Access is limited by visual obstruction of FDR Drive

Improving Waterfront Access

Could we improve pedestrian access to the waterfront?

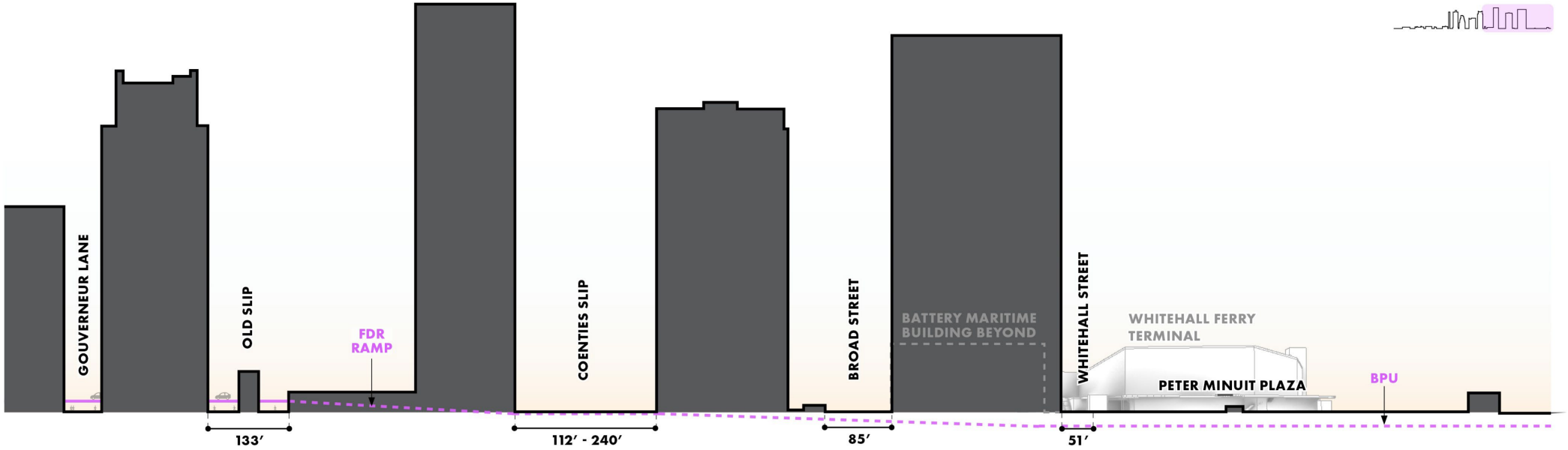




Opportunity to enhance viewsheds with signature access points

Improving Waterfront Access

Could we improve pedestrian access to the waterfront?



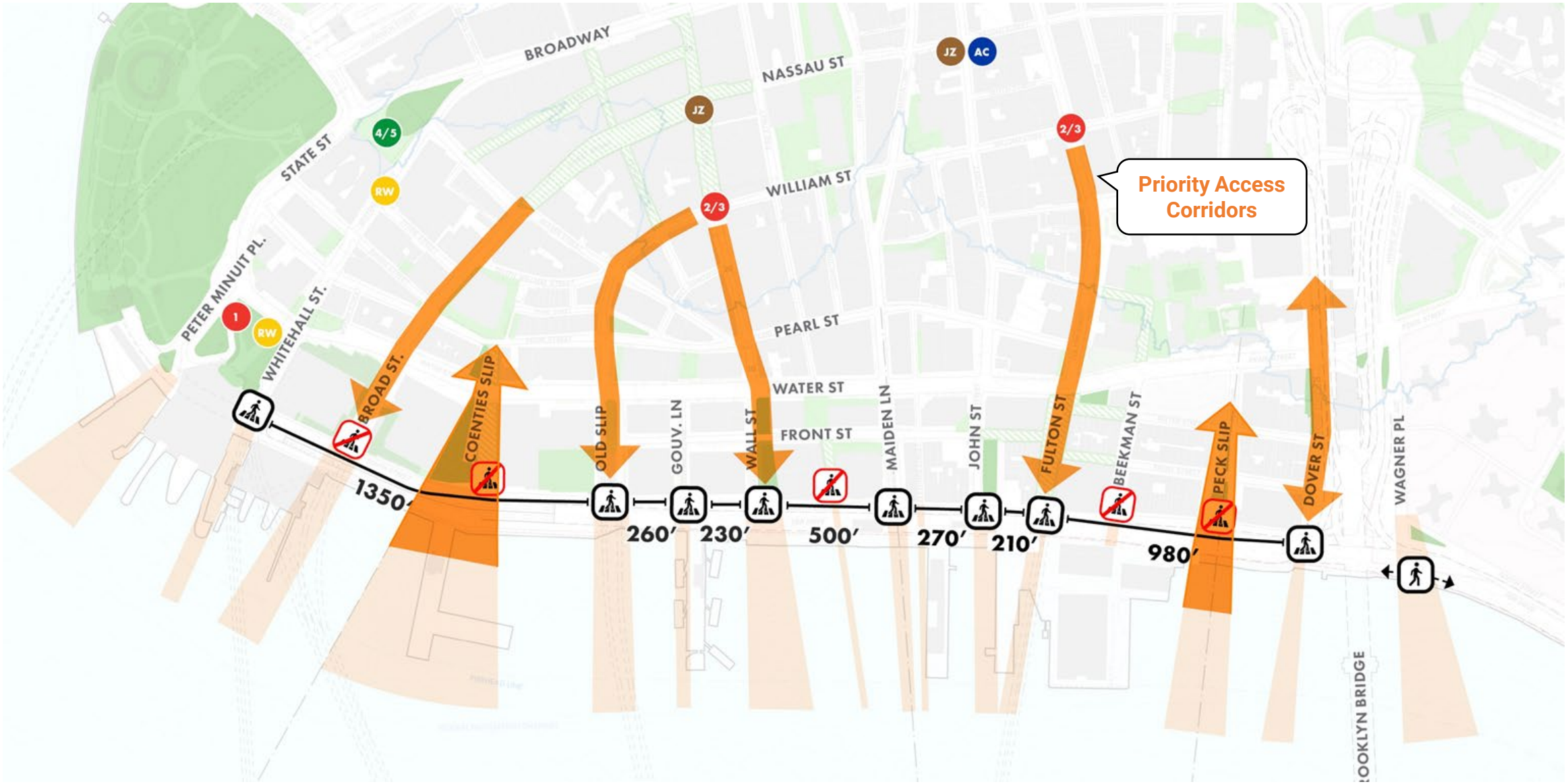
Limited existing access between Coenties Slip and Whitehall

FIDI SEAPORT CLIMATE RESILIENCE PLAN

Envisioning a 21st Century Waterfront: March 2021

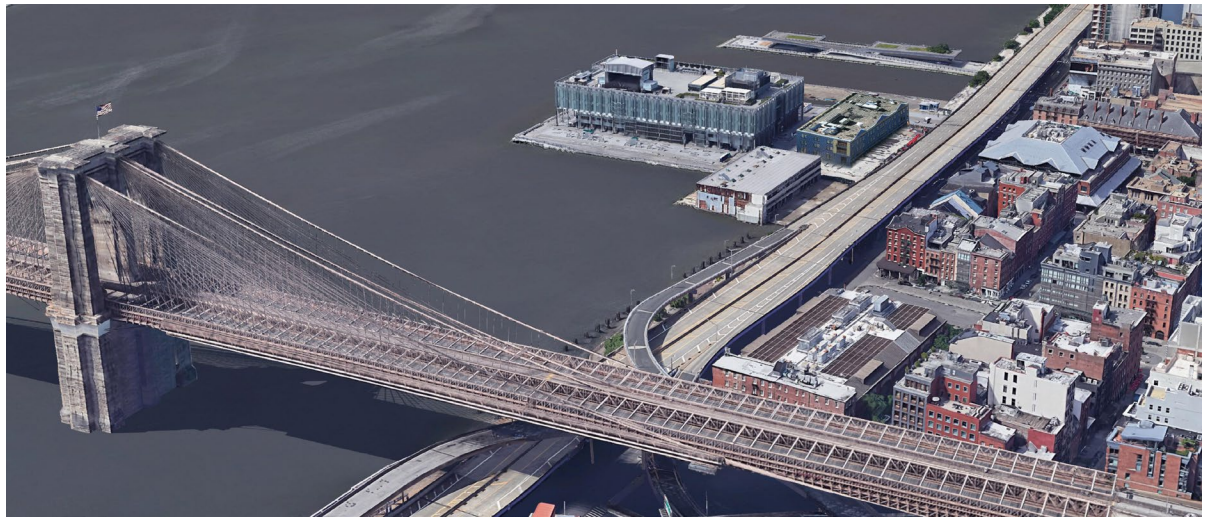
Improving Waterfront Access

How could we improve pedestrian access to the waterfront?



Improving Waterfront Access

Studying the FDR Corridor



Modifications to the FDR Drive could create more space for flood protection and improve connectivity to the waterfront

Improving Mobility

What are recent trends and future plans to consider?

Traffic Trends

- Vehicle traffic into Manhattan is trending downward
- City and State policies may further reduce demand

Capital Investments

- MTA Fast Forward
- Safety, Greenway & Public Space improvements
- Federal Infrastructure Stimulus

Policies & Plans

- Carbon Neutrality (mode shift)
- Vision Zero (traffic safety)
- Governor's Island connections

Innovations

- Micromobility (Shared e-Bikes & e-Scooters)
- Freight & Waste Logistics

Improving Mobility

How could we improve bicycling and micromobility?

FIDI SEAPORT CLIMATE RESILIENCE PLAN

Envisioning a 21st Century Waterfront: March 2021

Improving Mobility

How could we improve bicycling and micromobility?

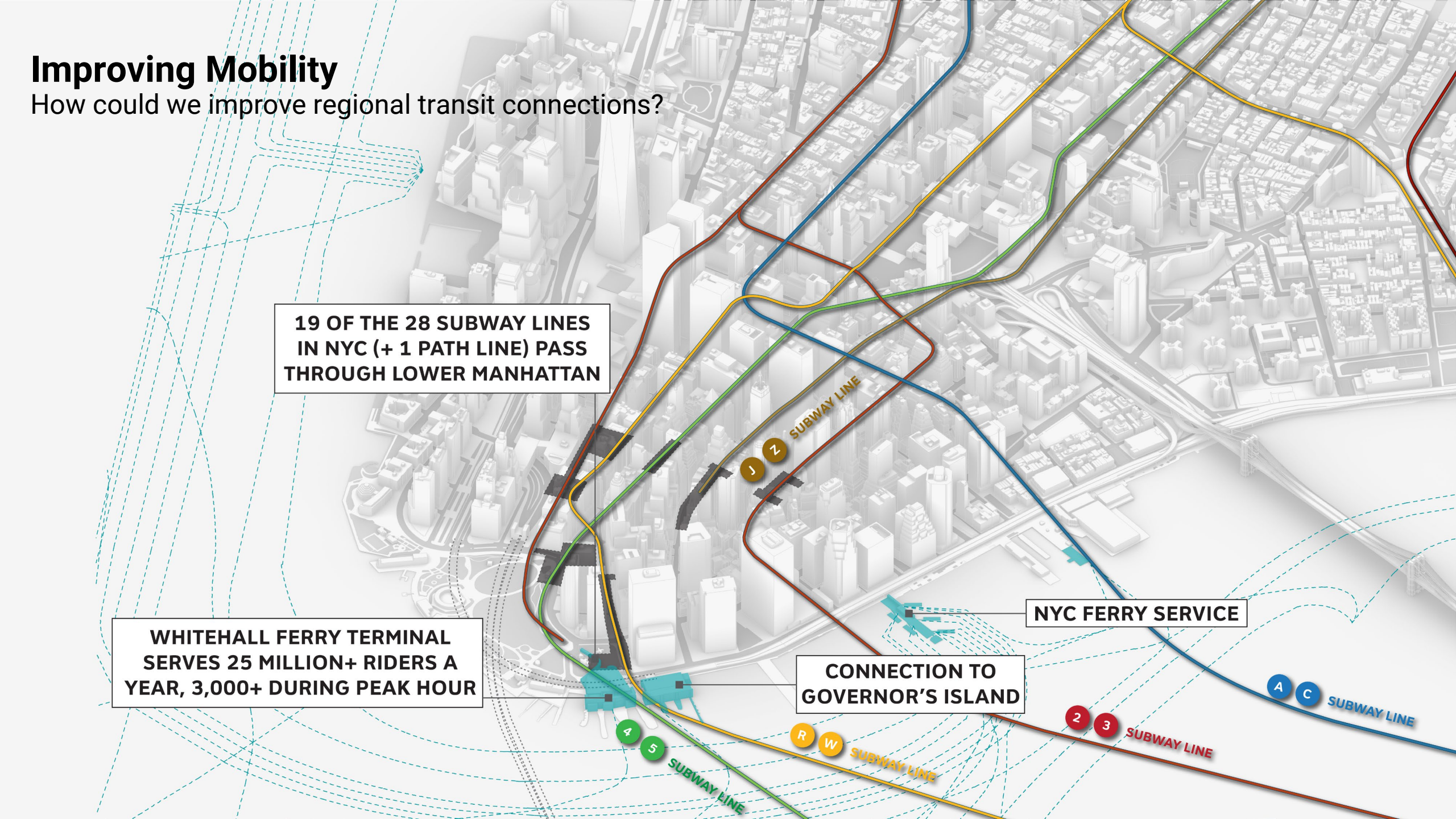
Congestion point at the Battery Maritime Building

Mixing zone below FDR Drive at Fulton St.

Dover St. at South St.

Improving Mobility

How could we improve regional transit connections?



Improving Mobility

How could we ensure flexibility for maritime uses?

Historic Vessels

Ferry Services

Emergency Access

Freight

Discussion + Q&A

Discussion Questions

1. What transformational opportunities resonate with you?
2. What are the critical ingredients of a 21st century waterfront?
3. What other opportunities should we consider?
4. What is your vision for the future of the Lower Manhattan Waterfront?

Go to **www.menti.com** and use the code **9071 4498**

What transformational opportunities resonate with you?

Go to www.menti.com and use the code 77 65 57 3.

Go to **www.menti.com** and use the code **5674 5225**

What are the critical ingredients of a 21st century waterfront?

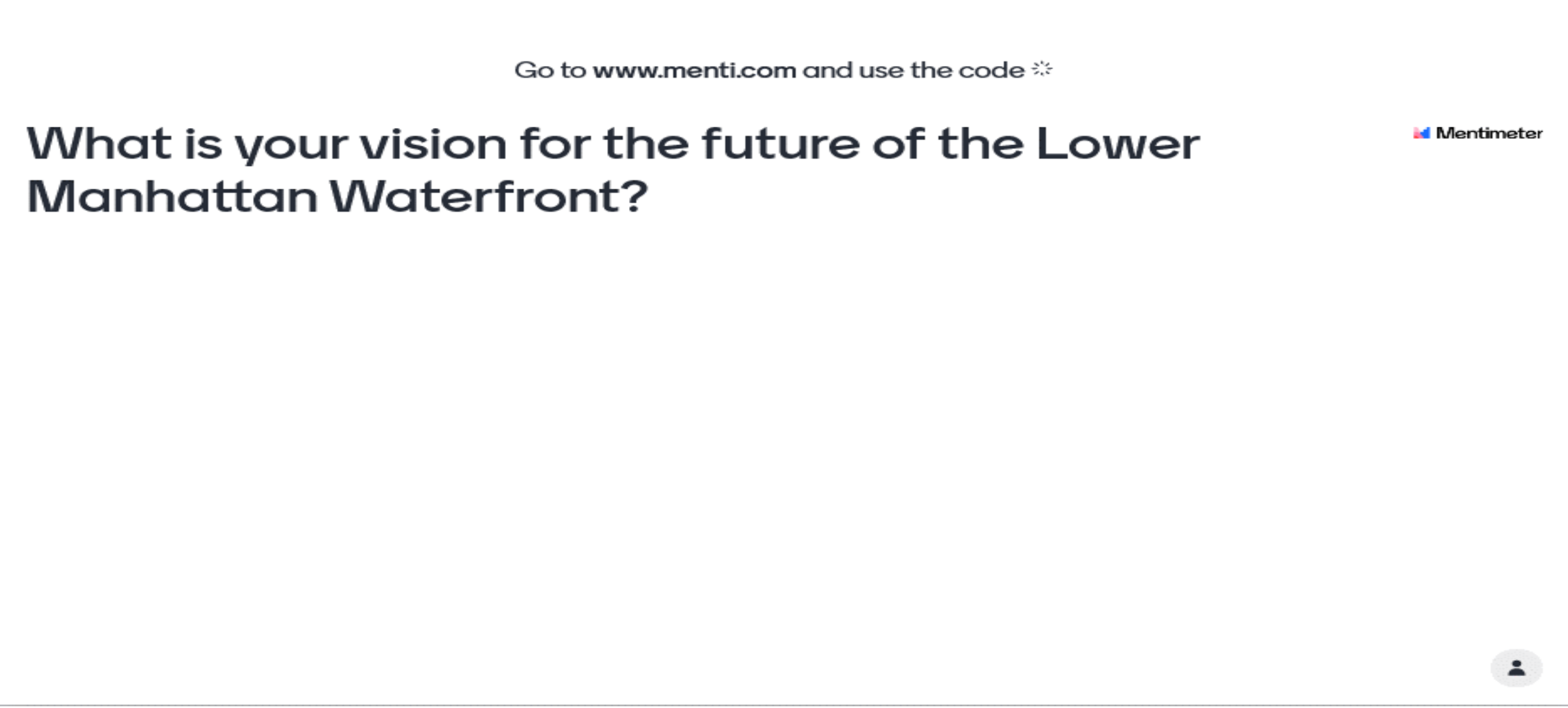
Mentimeter

Go to www.menti.com and use the code 5311 7532.

Go to www.menti.com and use the code 2796 6876

What other opportunities should we consider?

Go to www.menti.com and use the code 7356 1015.



Go to www.menti.com and use the code 7132 5019.

Wrap-up and Next Steps

What's Coming Next?

1. **Financing Resiliency Projects in Lower Manhattan** (April 13th): More information coming soon!
2. **Late Spring Public Open House (date TBD – stay tuned!)**
3. **Meeting minutes and notes**: Stay tuned for summary notes and presentation materials, which will be shared in the coming weeks
4. **Continue the conversation online:** Explore our engagement portal to learn more about other aspects of this project and share your feedback through interactive features (https://fidiseaportclimate.nyc/)