

Welcome to the FiDi-Seaport Virtual Open House!

As you're waiting for the meeting to start, please take a moment to share your name and connection to the FiDi and Seaport neighborhoods using the Teams "chat" function.

Financial District & Seaport Climate Resilience Plan

February 2021

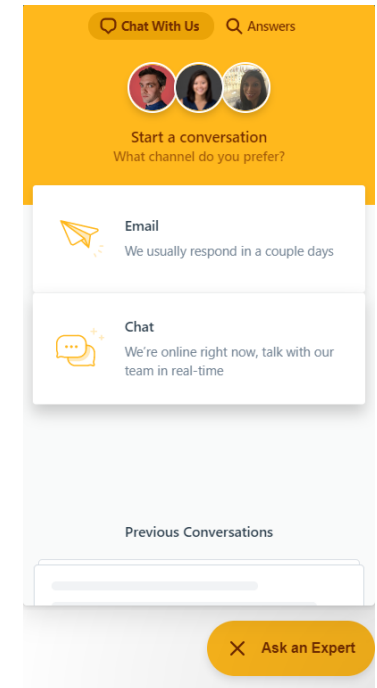
Welcome to Teams!

A few requests for the open house:

- 1. When in a Teams meeting, please mute yourself while others are speaking. You will have time in the workshops to unmute and discuss.*
- 2. Add questions to the chat box during presentations.*
- 3. Turn on your camera if you can!*



What should I expect during today's Virtual Open House?



Click the 'Ask an Expert' button in the bottom right corner of the event page to chat with someone from our team at any time!

Presentation in progress. Presentation will re-start at the beginning of every half-hour.

Why do we need **flood resilience infrastructure**?

Presentation in progress. Presentation will re-start at the beginning of every half-hour.

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 more flooding in low-lying areas.

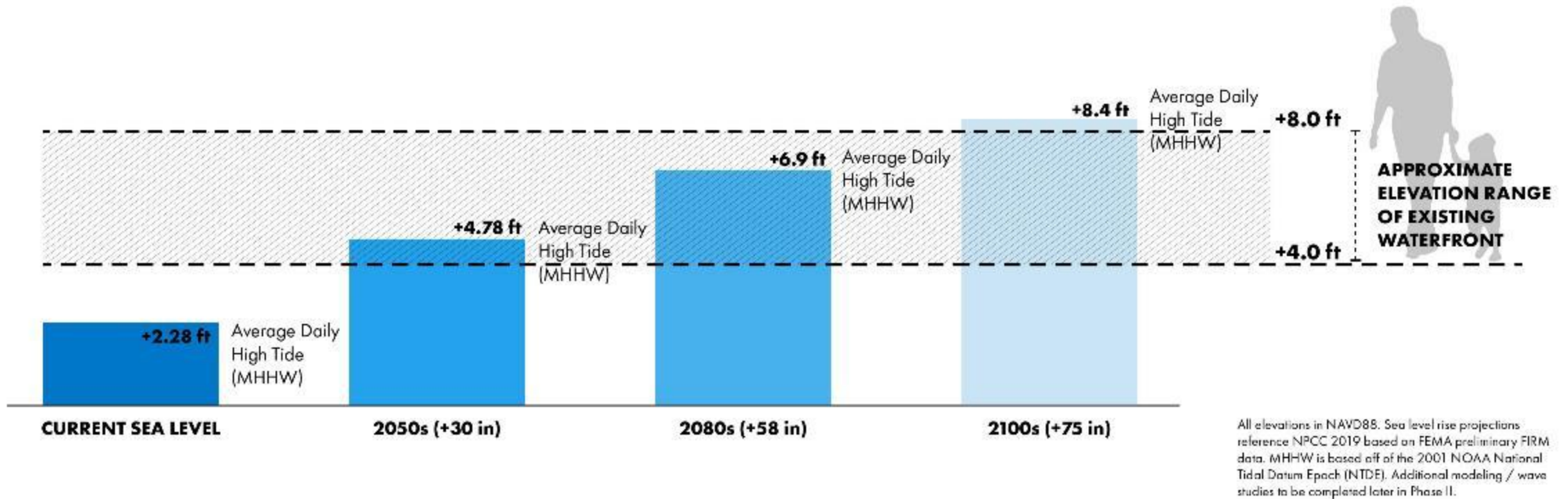


Coastal storms are **increasing** in frequency and intensity, bringing the impact of surge to our front doors.



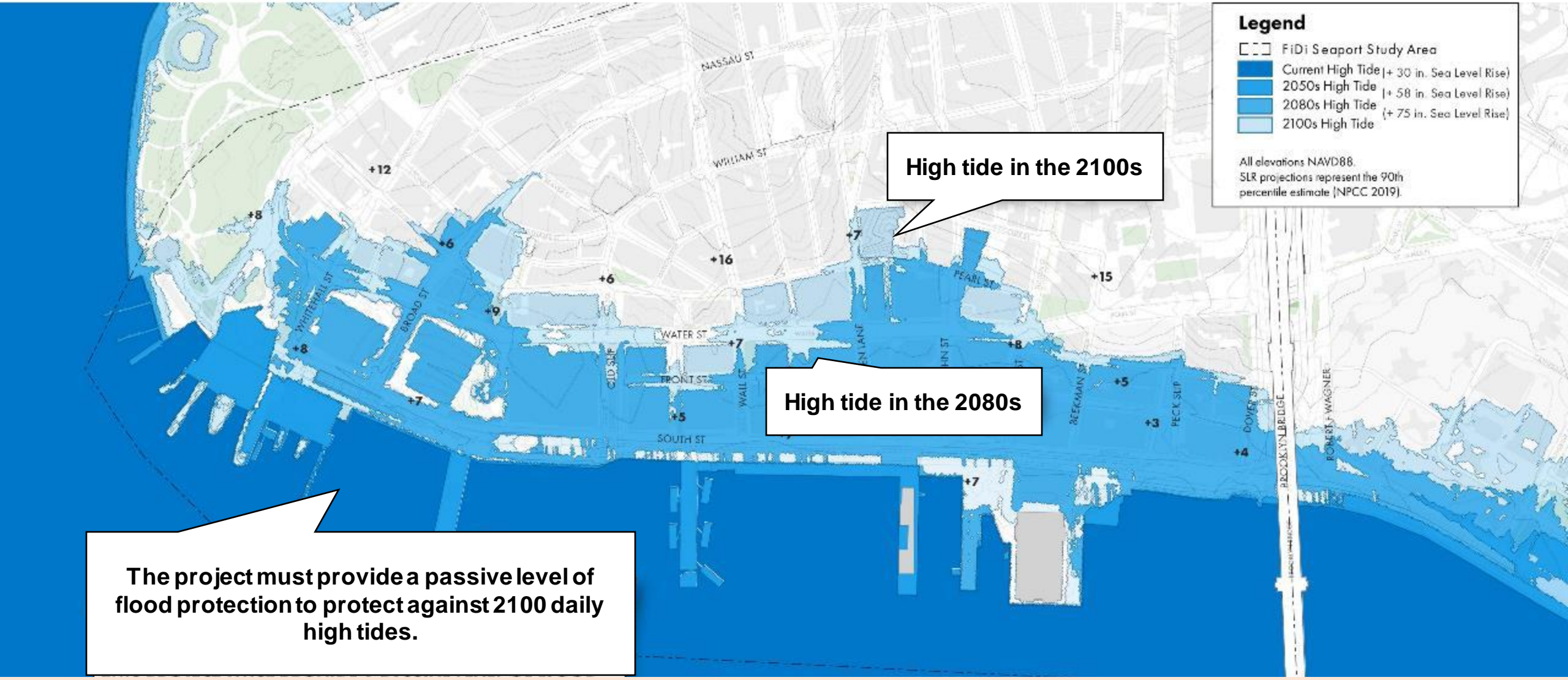
Extreme precipitation is occurring **more frequently**, stressing our sewer system and flooding our streets.

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



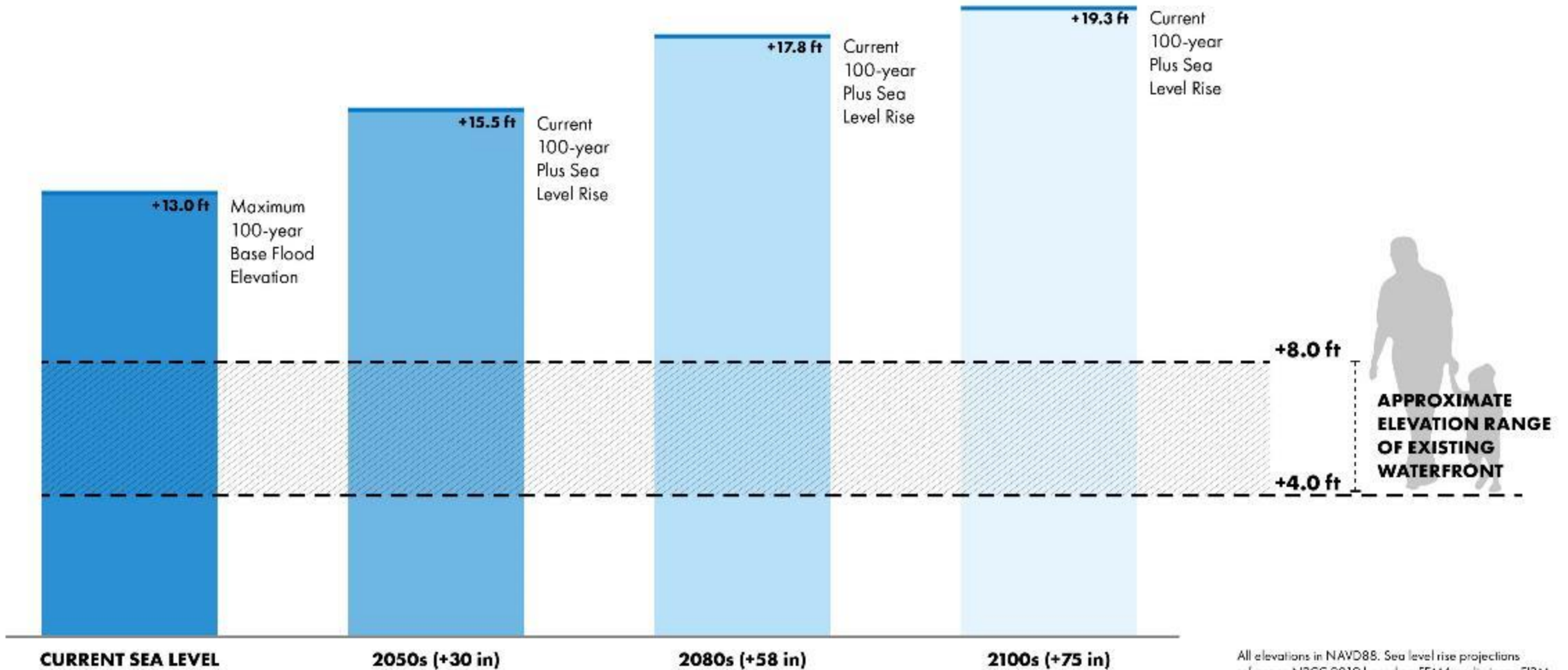
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By 2100, much of the FiDi and South Street Seaport neighborhoods could be under water every day.



The project must provide a passive level of flood protection to protect against 2100 daily high tides.

Future storms are becoming more frequent and intense



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.

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Future storms could bring **deeper and broader flooding** than Hurricane Sandy, causing extensive damage in Lower Manhattan.

A 100-year storm, or a storm that has a 1% chance of occurring in any given year, could flood past William Street

Legend

- FiDi Seaport Study Area
- FEMA pFIRM 100-year Flood (+13.0)
- 2050s 100-year Flood (+15.5)
- 2080s 100-year Flood (+17.8)
- 2100s 100-year Flood (+19.3)

All elevations NAVD88.
SLR projections represent the 90th percentile estimate [NPCC 2019].

Flood elevations could average 12 feet above existing grade by the 2100s.

What is the FiDi-Seaport Climate Resilience Plan?

Presentation in progress. Presentation will re-start at the beginning of every half-hour.

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

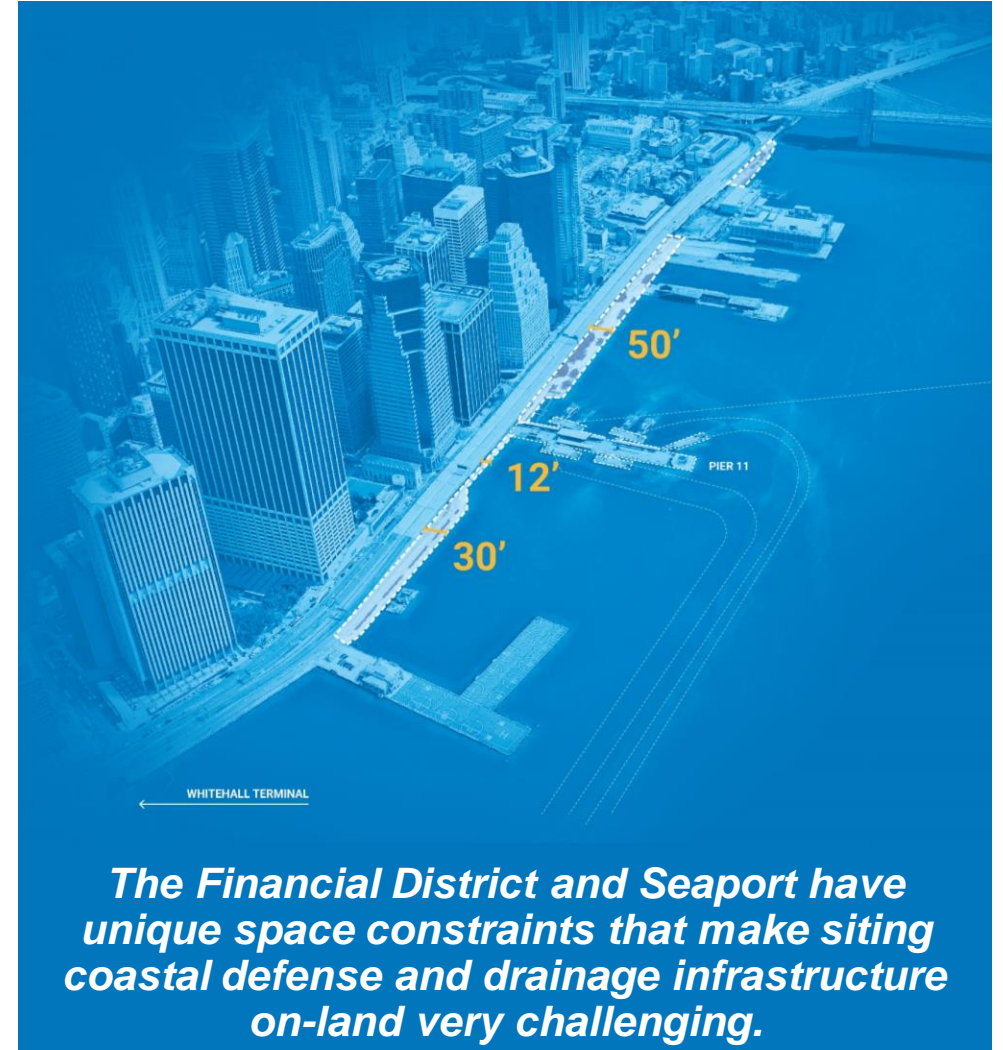


Presentation in progress. Presentation will re-start at the beginning of every half-hour.

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

What can we achieve by 2021?

- 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.
- Work with regulatory agencies to identify a pathway for permitting and approvals.
- Create a drainage strategy to manage stormwater and wastewater.
- Build the foundation for an intergenerational coalition to carry this project forward.



The Financial District and Seaport have unique space constraints that make siting coastal defense and drainage infrastructure on-land very challenging.

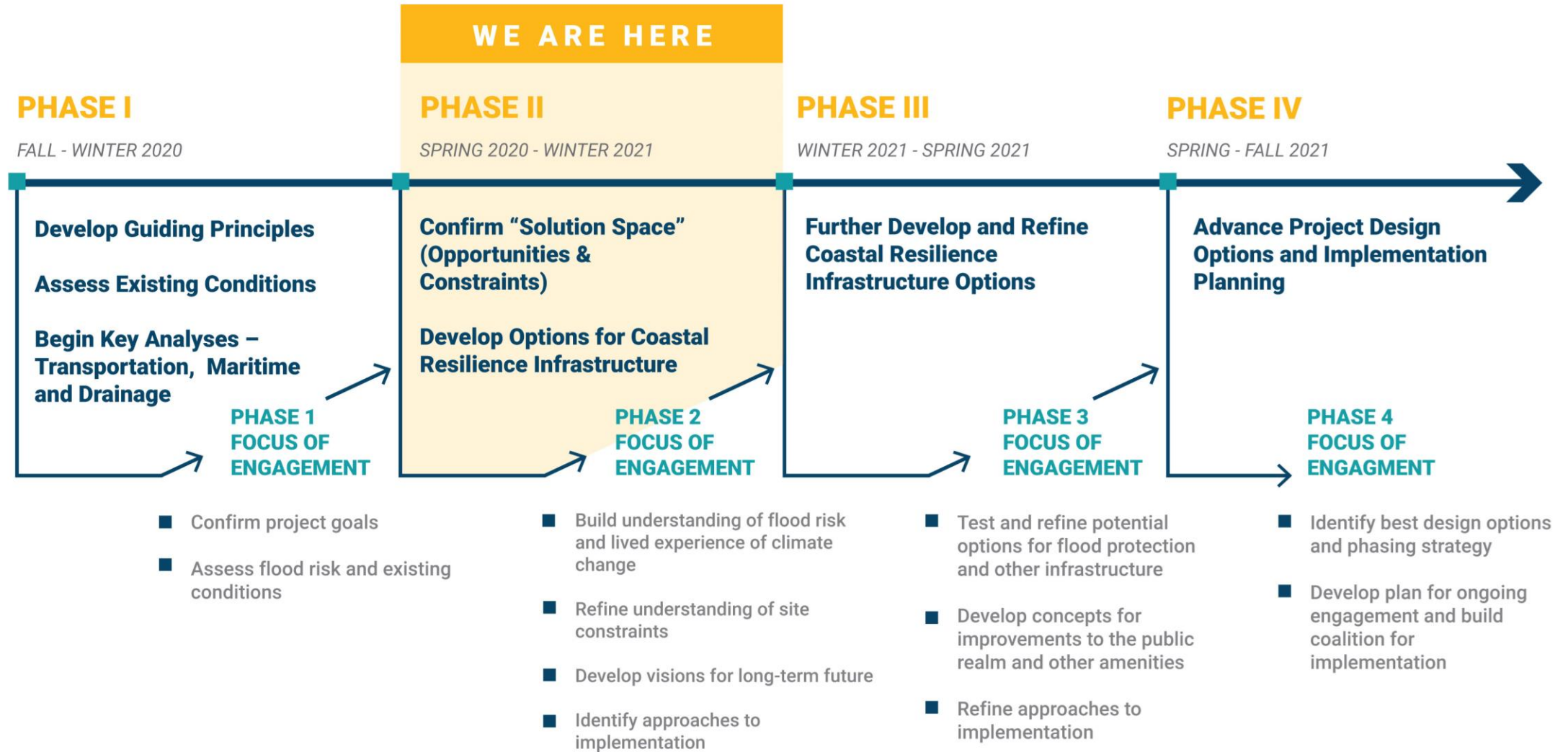
Our project team



The **New York City Economic Development Corporation (NYCEDC)** and the **Mayor's Office of Resiliency (MOR)** are leading the Climate Resilience Plan along with the NYC Departments of Transportation, City Planning, Environmental Protection, Parks & Recreation, and more.

An interdisciplinary team of experts are supporting this work, led by the Dutch engineering firm **Arcadis**. **One Architecture & Urbanism** and **SCAPE Landscape Architecture** are helping lead the design development.

What we've been up to



Presentation in progress. Presentation will re-start at the beginning of every half-hour.

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



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.



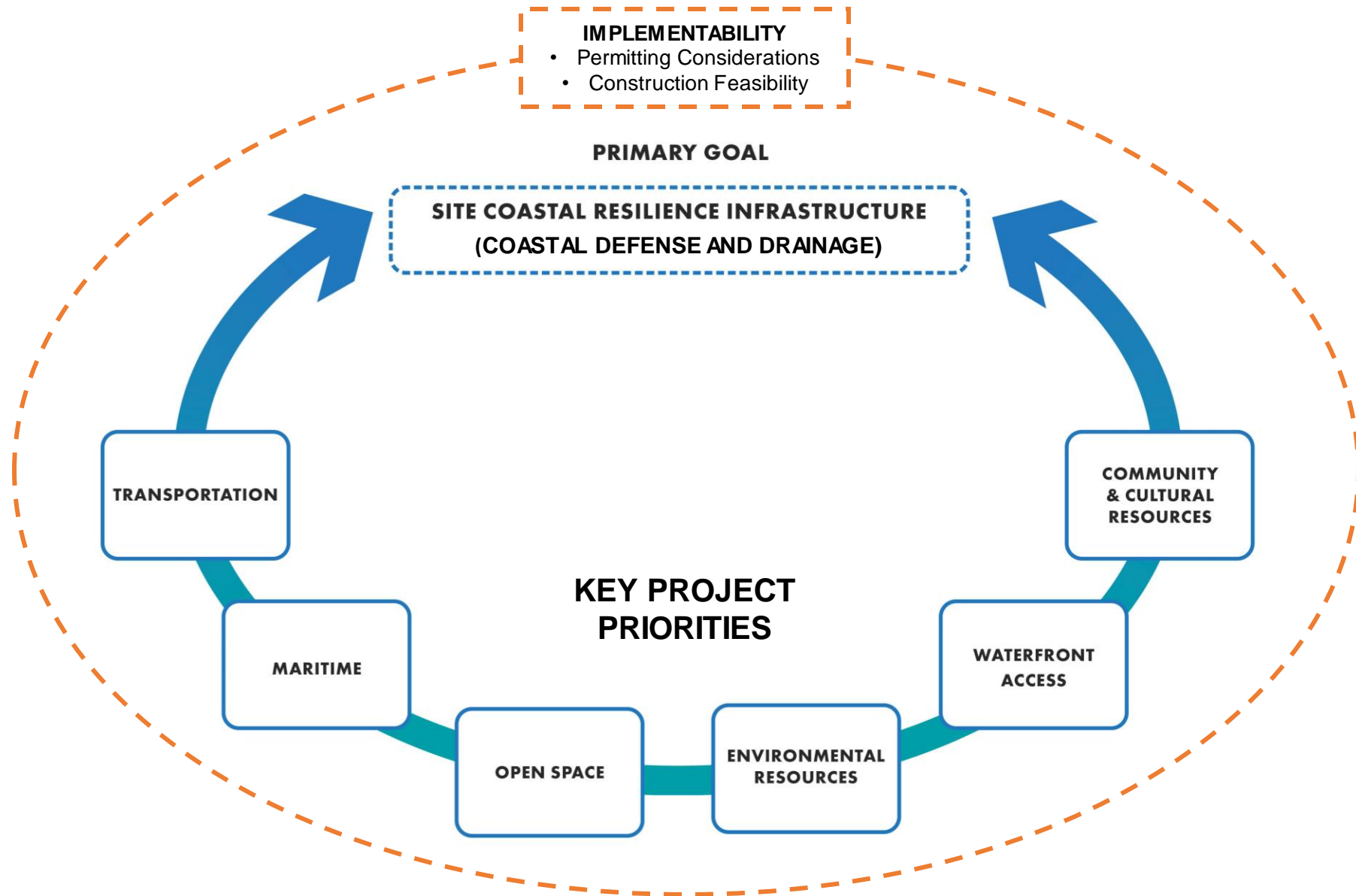
Plan for resiliency infrastructure that protects **key historic assets, maximizes ecologically-sensitive design and sustainability**, and is **adaptable over time**.



Maintain and look to improve infrastructure that creates **an accessible public realm for all**.

What are our **project goals**?

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



The primary goal for the project is to provide **coastal defense** for the FiDi-Seaport district from storms and tidal flooding through 2100

Potential coastal defense solutions:



Floodwalls



Levees / Berms



Street Raising



Caissons



Bulkheads

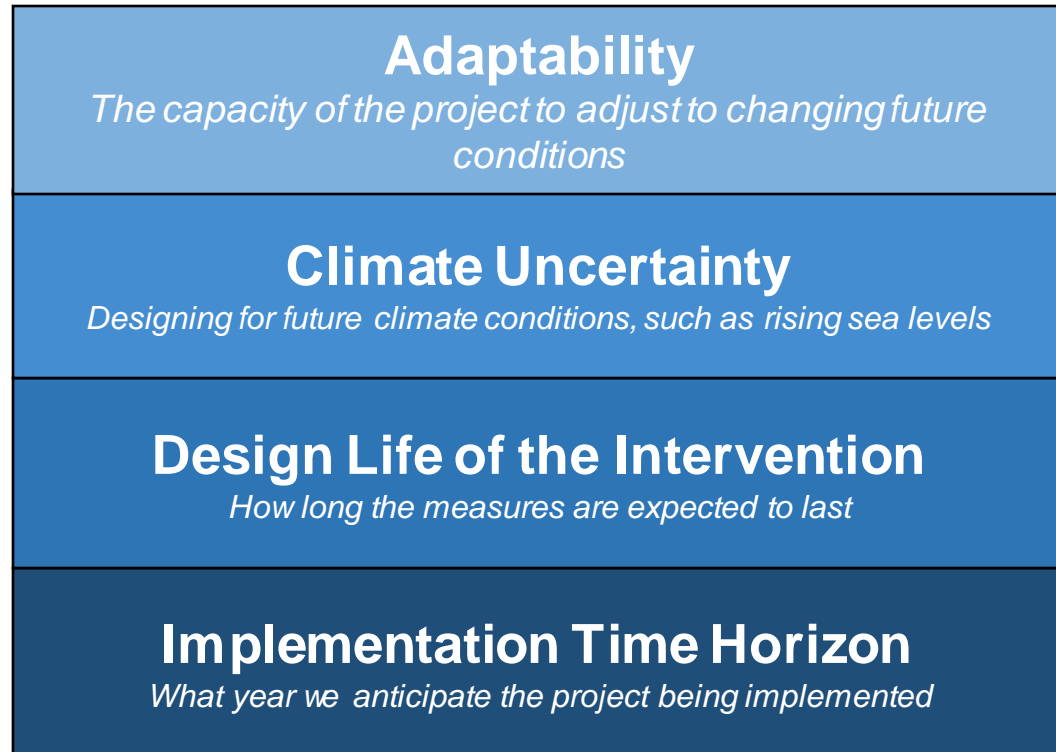


Fill & Revetment

Photo sources (clockwise): Arcadis; Brooklynbridgepark.org; NYCDDC Broad Channel; iStock; Hosoya Schaefer Architects; Crandall / Alamy Stock Photo

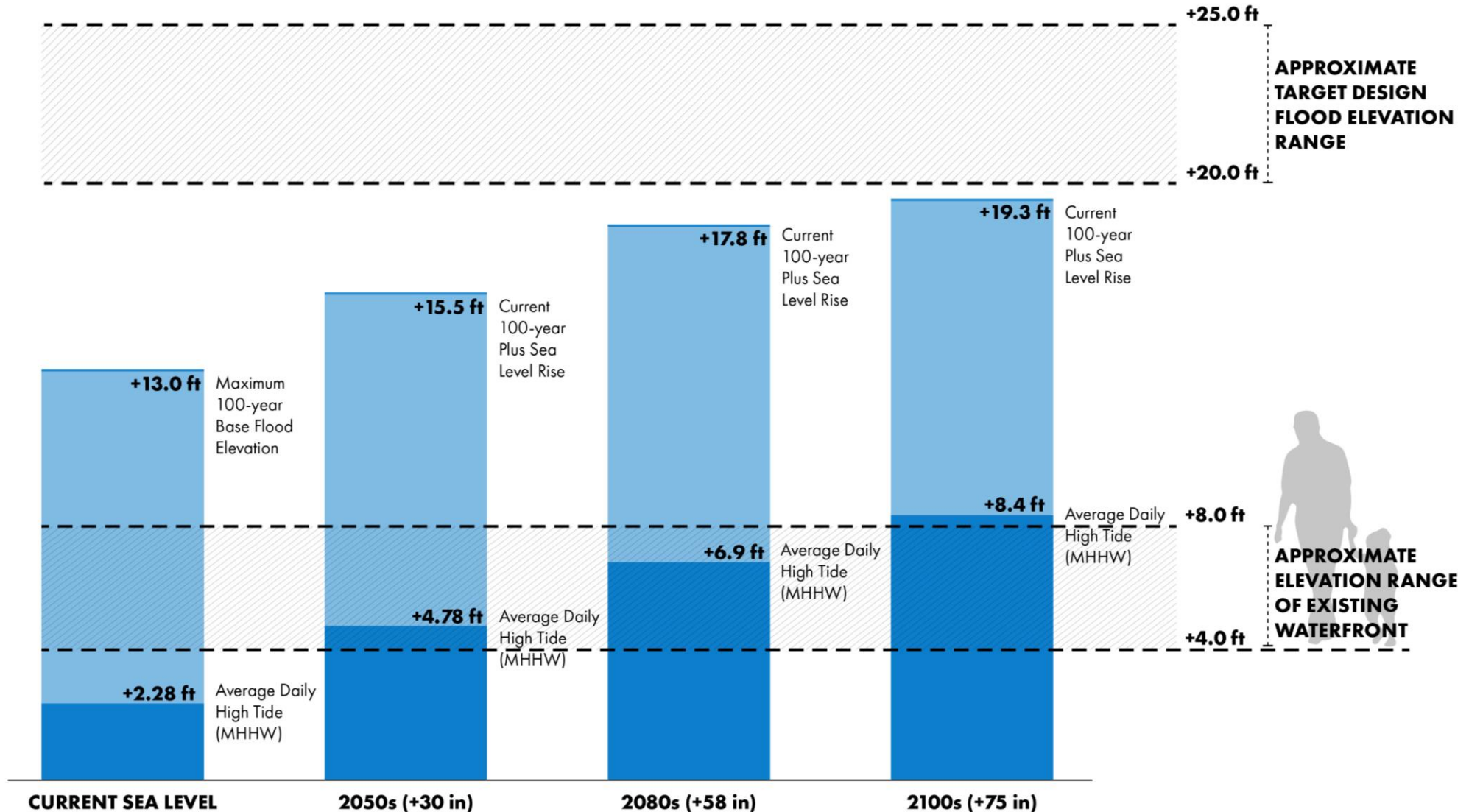
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However, the future is ultimately **uncertain**; we must plan and design accordingly



Design Flood Elevation (DFE)
The level of protection provided by the coastal defense system

The project's **design flood elevation (DFE)** must protect up to 20-25 feet of flooding from the outset, and/or be designed to adapt in the future.



Presentation in progress. Presentation will re-start at the beginning of every half-hour.

New **drainage infrastructure** will also be required to ensure the flood protection system works

- To ensure that stormwater does not “pond” or collect behind the coastal defense, a combination of **pumping, storage, and green infrastructure** solutions to manage stormwater are being considered.
- New drainage infrastructure will also ensure that the existing drainage system provides the same **level of service** under future sea level rise conditions.

Examples of Drainage Solutions in an Urban Environment



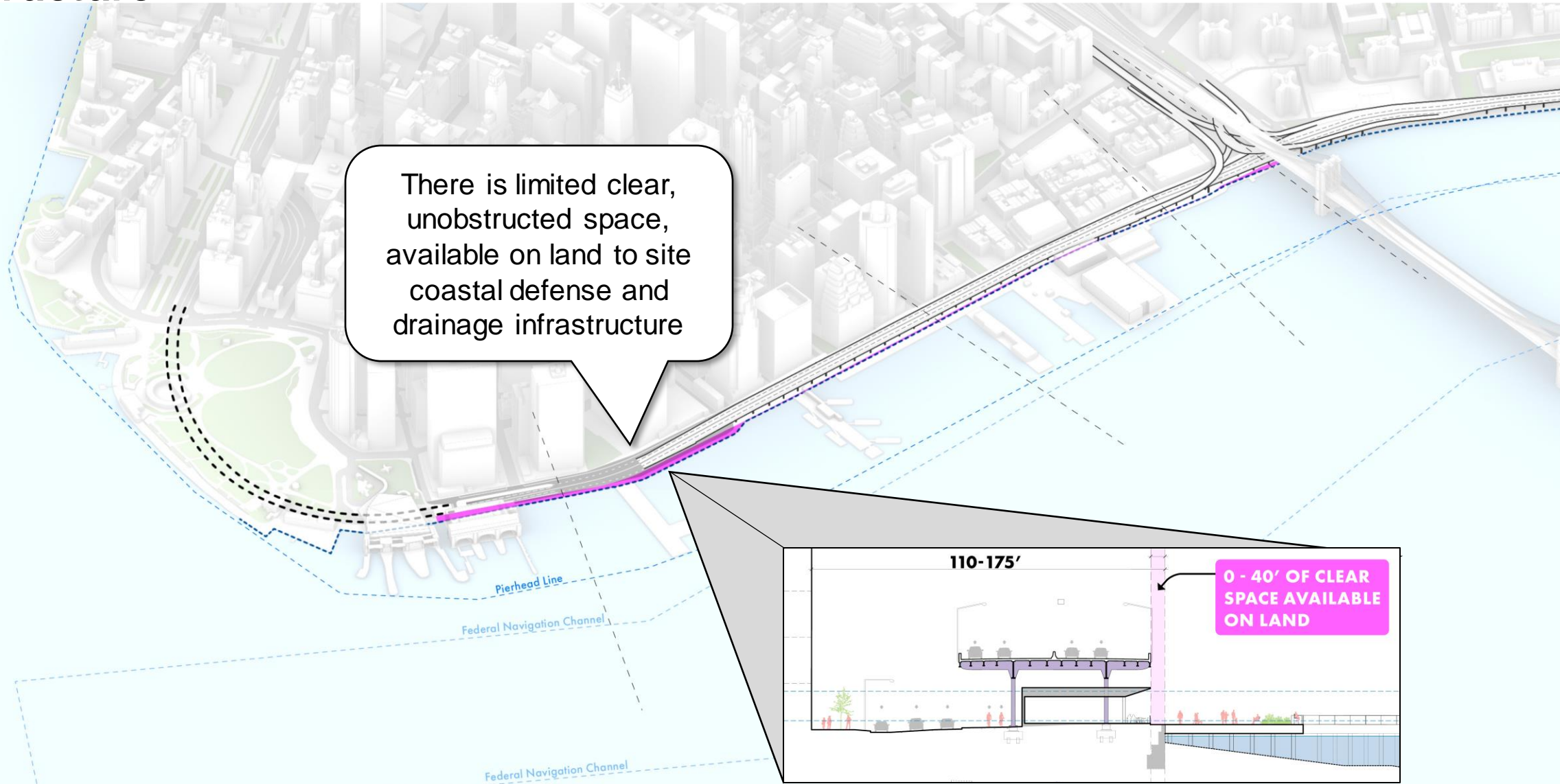
Manhattan Pump Station; Manhattan, NY
Pump Station



Climate Tile; Copenhagen, Denmark
Green Infrastructure

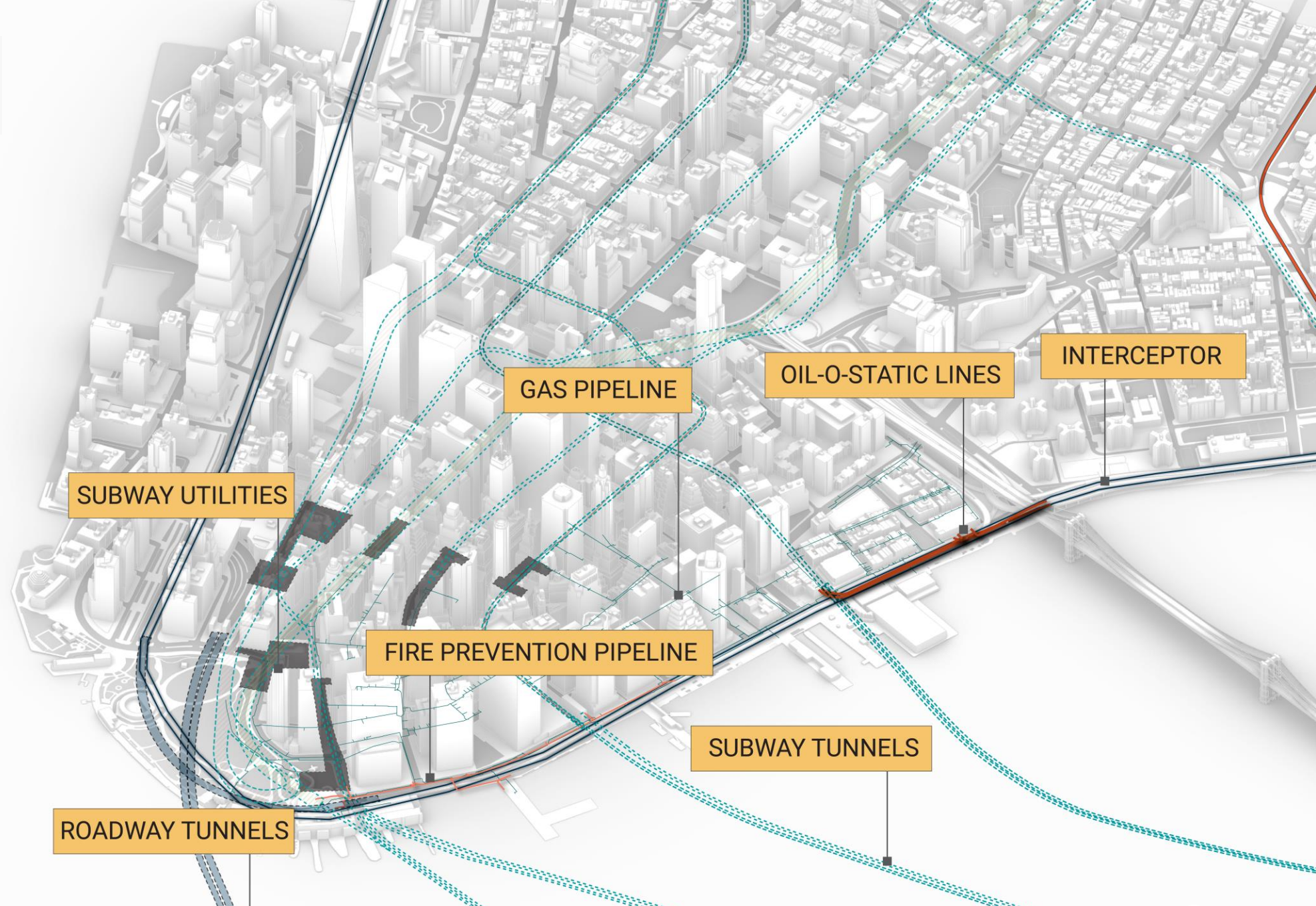
Coastal defense infrastructure, and the drainage infrastructure needed to support it, take **up a lot of space**, both above and below ground.

The FiDi-Seaport shoreline has **limited on-land space** available to site this infrastructure



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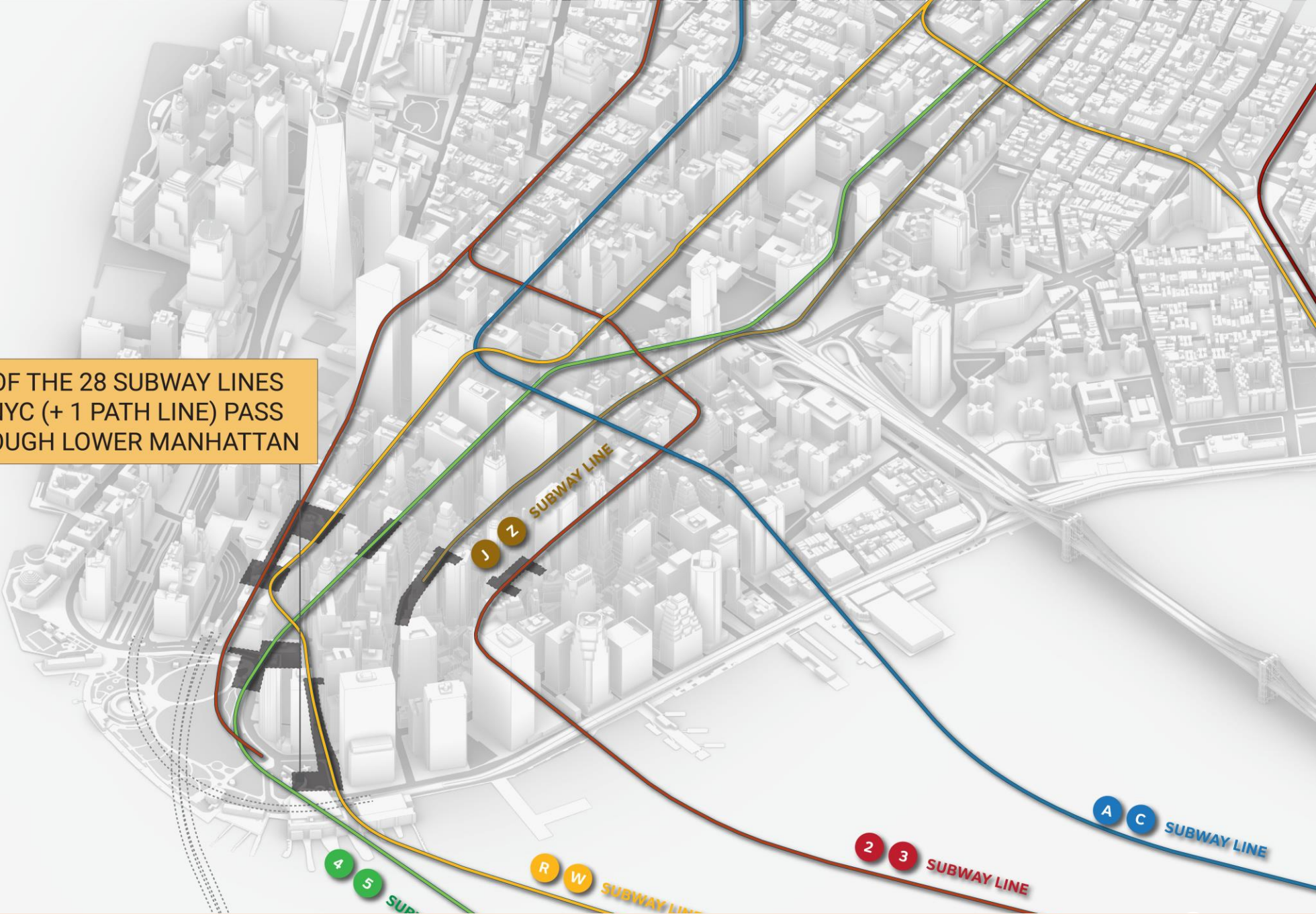
The area has a complex web of **underground infrastructure** which also makes it challenging to site below grade infrastructure



Presentation in progress. Presentation will re-start at the beginning of every half-hour.

In addition to underground subway tunnels which our system must protect and cross, if built on-land

19 OF THE 28 SUBWAY LINES IN NYC (+ 1 PATH LINE) PASS THROUGH LOWER MANHATTAN



Extending the shoreline would be beneficial:



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.

As we develop project options, it is imperative that we also comply with State and Federal **rules and regulations**, as these entities will be the decision-makers on whether the project moves forward. This includes:



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



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.



Mitigating: If we must go into the water, we must understand all potential impacts – including ecological, navigation, and scour (eroding of soils, piers, or other surfaces) – and demonstrate to the State and Federal government that we can mitigate, or reduce the severity of, any negative impacts.

We are currently conducting sampling to better understand the **East River aquatic ecosystem**

- Conducting one-year (Fall 2020-Summer 2021) aquatic sampling within the project area
 - **Phytoplankton and zooplankton:** Summer
 - **Benthic macroinvertebrates:** Fall, Spring, Summer
 - **Fish:** Fall, Winter, Spring, Summer
 - **Sediment characteristics**
 - **Water quality** (temperature, salinity, total nitrogen, etc.), **water depth**, and **current velocity**
- Preliminary results from October 2020 samples being analyzed



Grab sampling (East River channel)

Considering these **other key priorities** is critical to how we develop early project options.

The project must...



Maintain functionality and reliability of the regional **transportation** network, supporting future capacity needs while allowing for adaptation to future trends.



Protect and ensure continuous ferry service at the many **maritime** hubs in the area.



Maintain the area's public **open space** as a valuable amenity for residents and visitors.



Ensure continuous public access to and along the **waterfront** and water-based transportation.



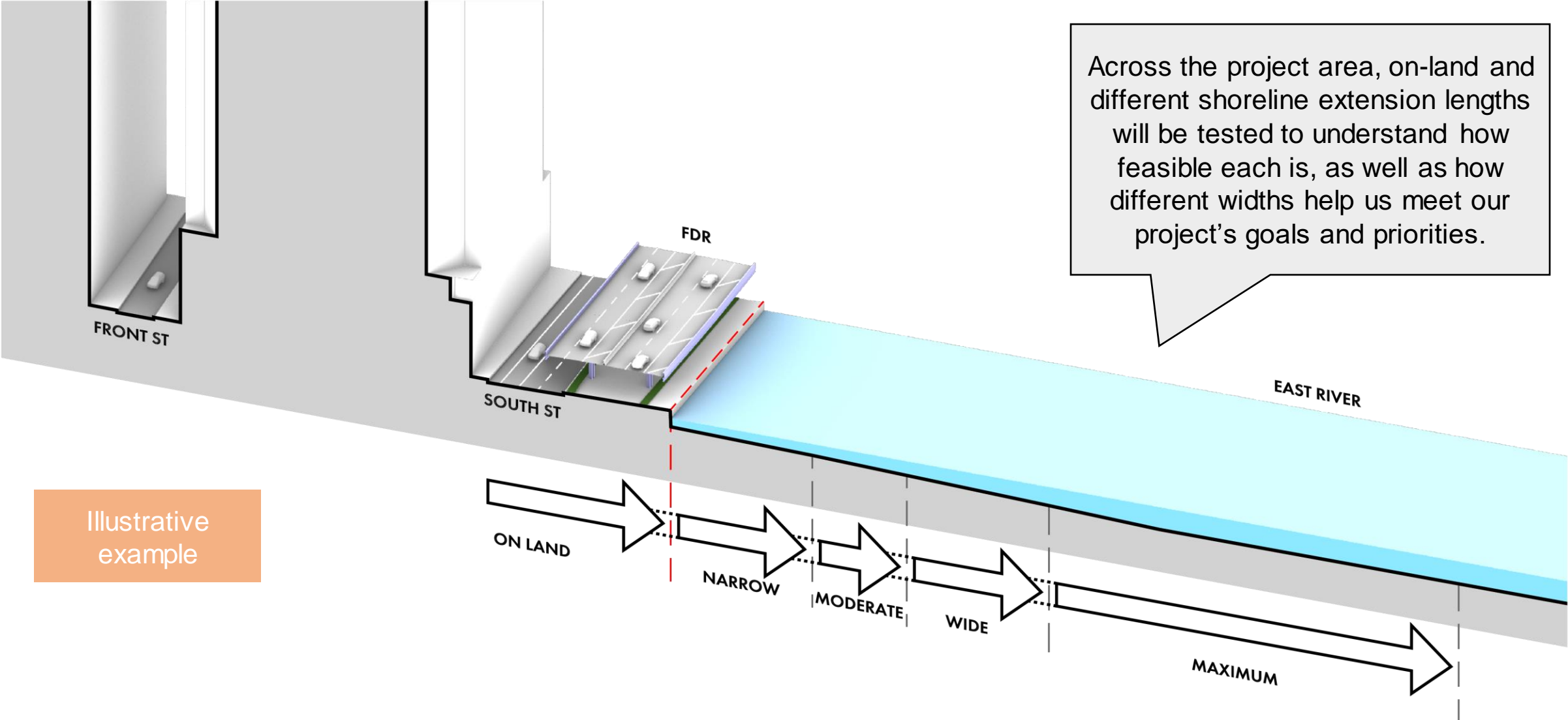
Avoid or minimize negative impacts on existing **environmental resources** or ecosystem services, especially aquatic resources.



Protect and preserve the area's **community and cultural resources**, including historic assets, wherever possible.

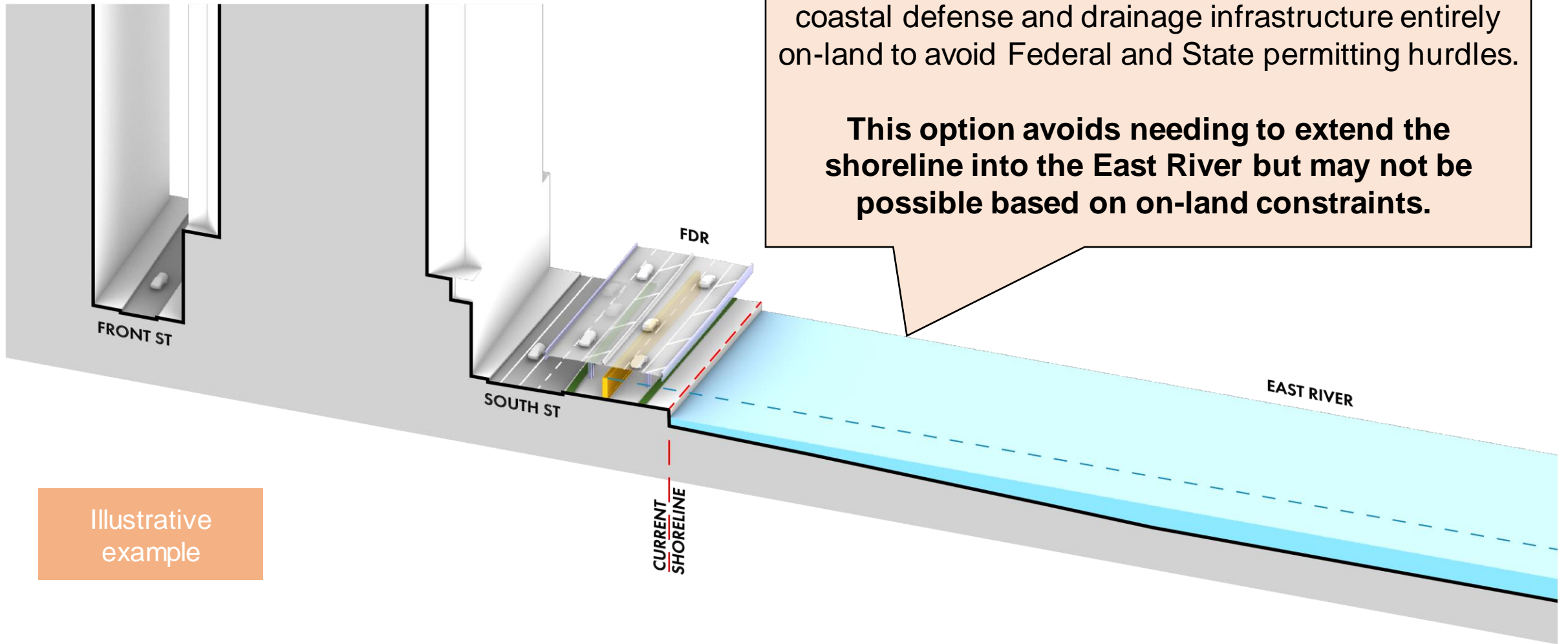
What do our **early project options** look like?

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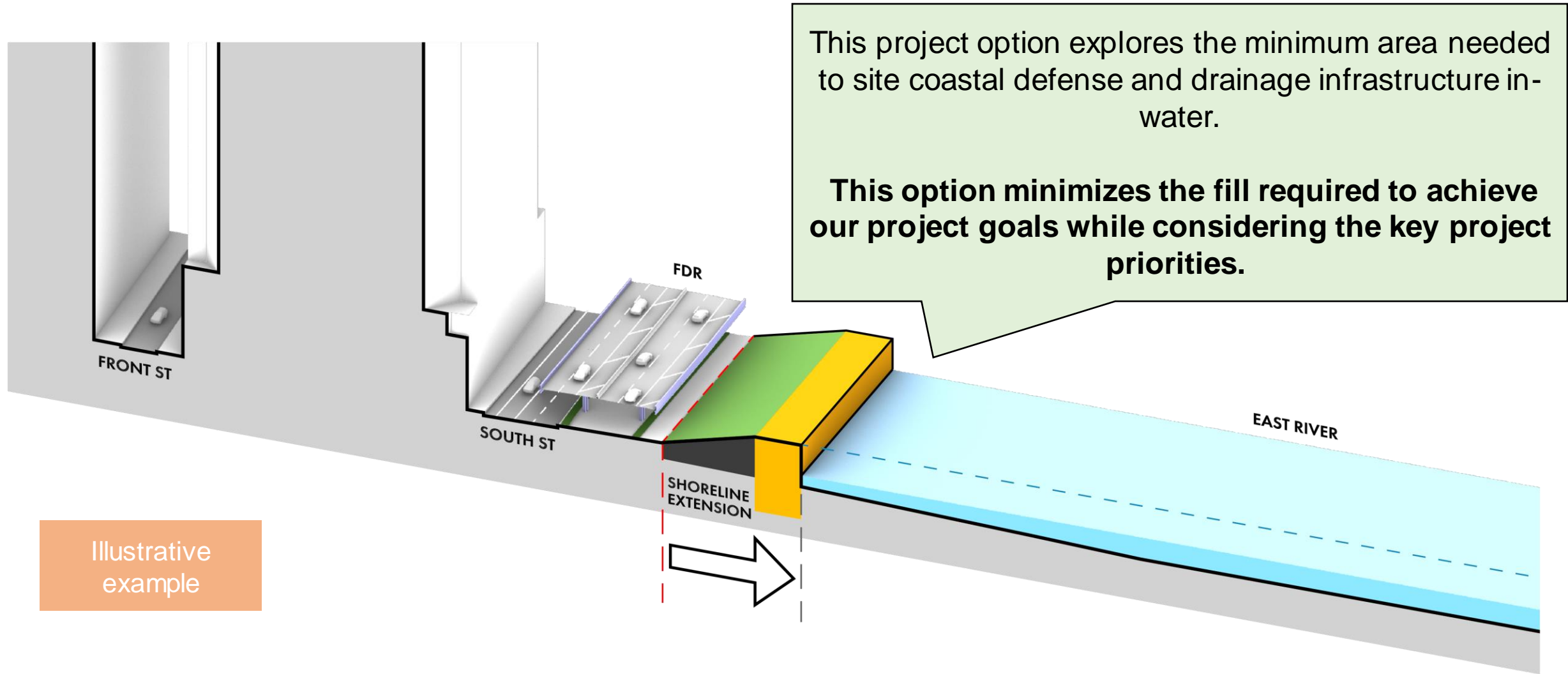
Illustrative example

On-land project option

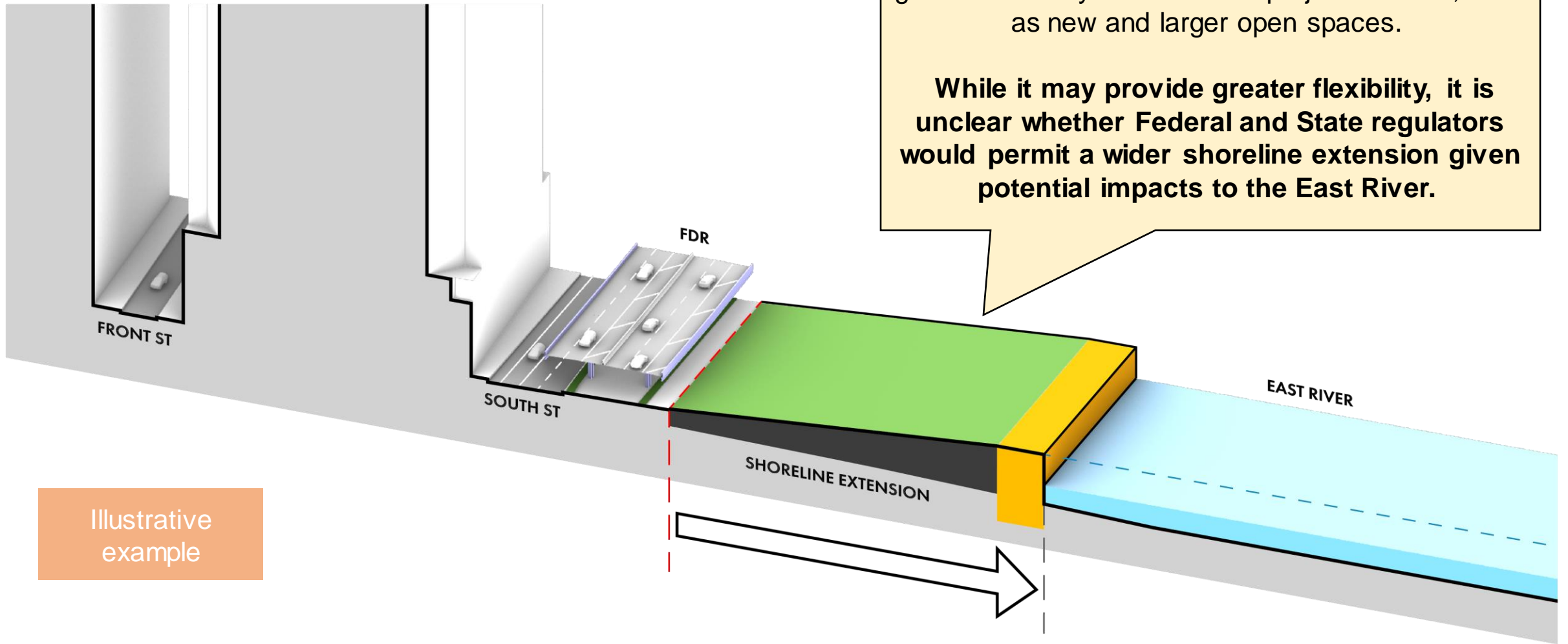


Illustrative
example

Minimum shoreline extension project option



Wider shoreline extension project option



This option considers how the project can provide greater flexibility for additional project benefits, such as new and larger open spaces.

While it may provide greater flexibility, it is unclear whether Federal and State regulators would permit a wider shoreline extension given potential impacts to the East River.

Illustrative
example

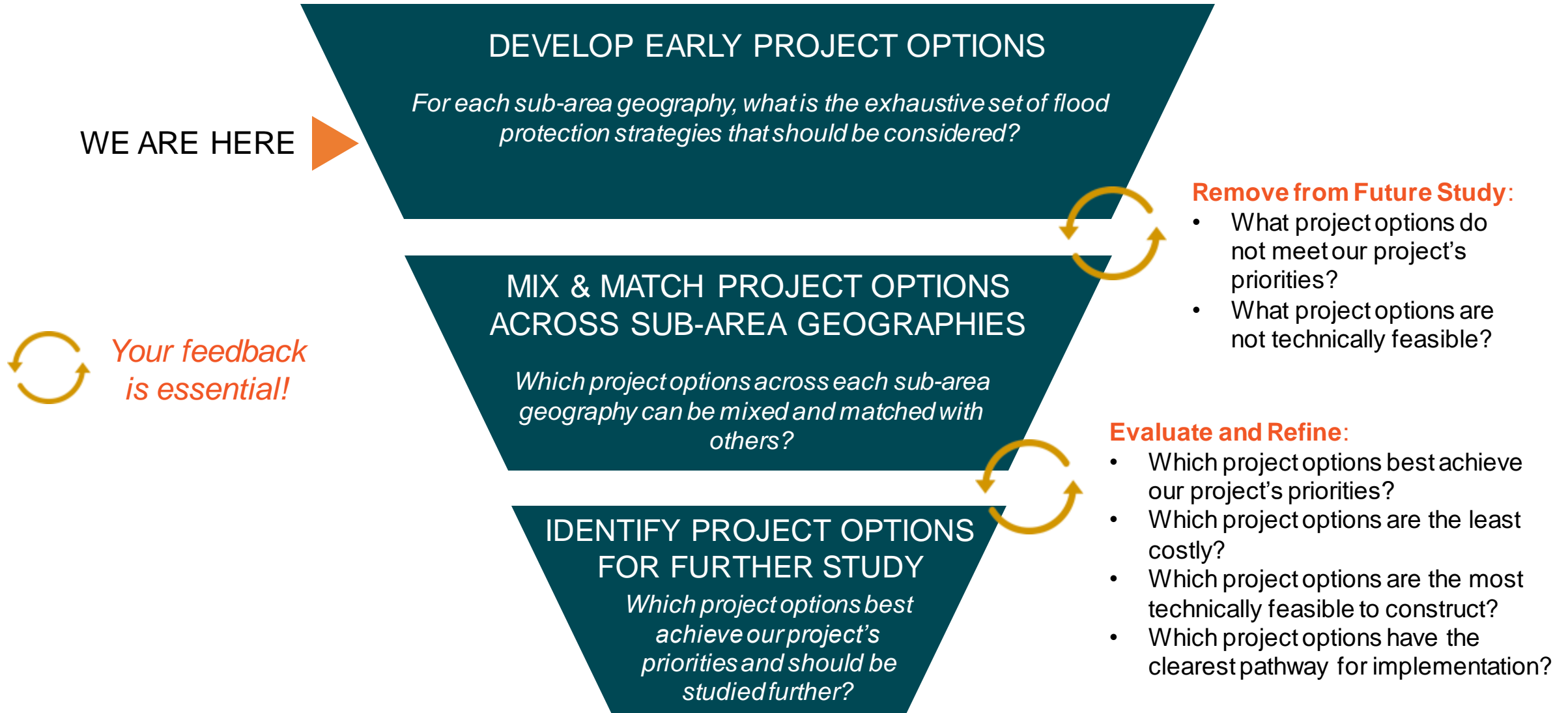
What are the project's **next steps**?

Where are we in the **planning process**?



Presentation in progress. Presentation will re-start at the beginning of every half-hour.

Our **design process** to determine project options



Presentation in progress. Presentation will re-start at the beginning of every half-hour.


How can you stay involved?

- 1. 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/>)
- 2. Ask an Expert:** Using our website, submit questions and comments to our team of engineers, urban planners, designers, and more!
- 3. Spring Open House:** We plan to share more details on potential project options and we look forward to your feedback!
- 4. Stay in touch!** Sign up for our email newsletter to stay up-to-date on our website!

Where should I go now?

Welcome to the Fidi-Seaport Virtual Open House!
Learn about the Fidi-Seaport Climate Resilience Plan in another language:
[Haga clic aquí para entrar a la sala en español](#) [点击此处进入中文房间](#)

1 **STEP #1: Project and Open House Overview**




Enter Room


Welcome! Please join this room to learn more about the Fidi-Seaport Climate Resilience Plan and get more information about navigating our Virtual Open House!

Here the project team will explain the format of this virtual event and provide more information about the project including our goals and next steps in the planning process.

Language translation services will be provided

 This presentation will begin every 30 minutes on the half hour


2 **STEP #2: Small Group Workshops**




Enter Room

We want to hear from you!

Join members of the project team in small-group workshops to discuss public open space, transportation and mobility, and community resources. Tell us what you think should be protected and preserved as well as what could be improved!

 These workshops will begin every 30 minutes on the half hour


3 **STEP #3: Still Have Questions?**



Enter Room

Still have questions?
Looking to understand next steps?
We're here to help!

Join here to speak with members of the consultant team, New York City Economic Development Corporation (NYCEDC), and the Mayor's Office of Resiliency (MOR).

 Project Q&A will take place throughout the entire evening!
Stop in anytime.

Where should I go next?

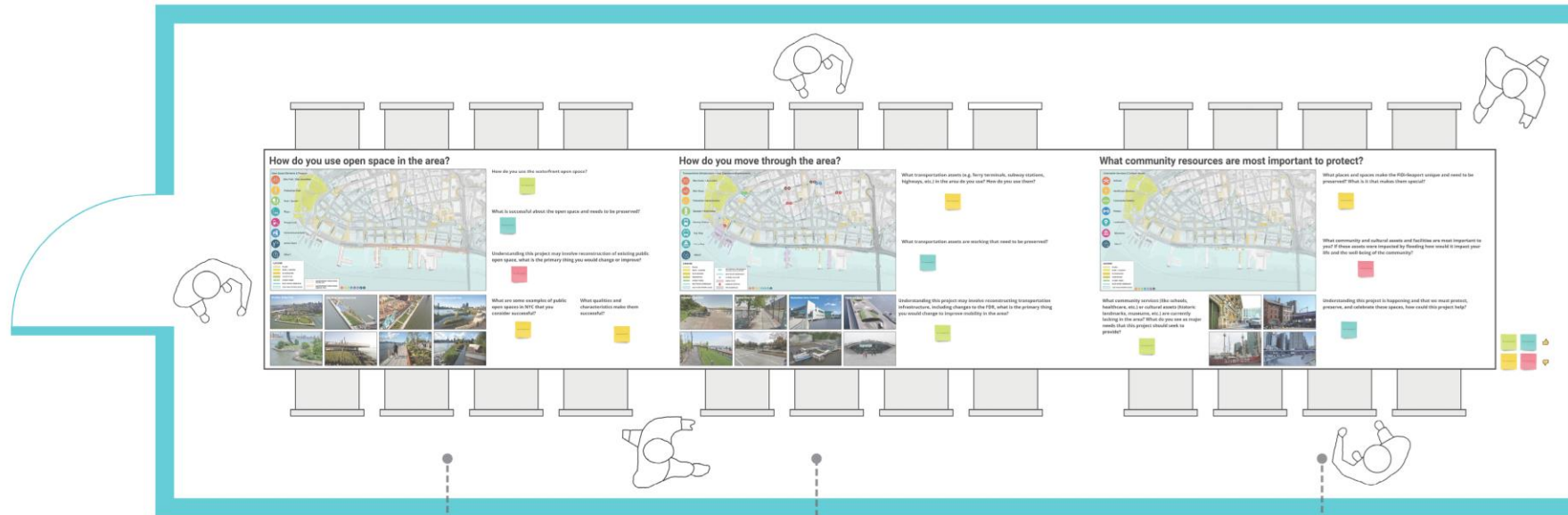
Please exit the introductory presentation and join the workshop link under Step 2.

Still have questions following the workshop?

Please exit the workshop and join the Q&A link under Step 3.

Presentation in progress. Presentation will re-start at the beginning of every half-hour.

What should I expect in the **workshops** and how will my feedback be used?



1

OPEN SPACE

[1] To help us to **evaluate and prioritize the open space alternatives**

[2] To test that our select alternatives are addressing the **open space needs** of these stakeholders

2

TRANSPORTATION & MOBILITY

[1] To help us to **evaluate and prioritize the transportation and mobility alternatives**

[2] To test that our select alternatives are addressing the **access and mobility needs** of these stakeholders

3

COMMUNITY RESOURCES

[1] To help us to **evaluate and prioritize the spaces people value most** within the framework of our alternatives

[2] To test that our select alternatives are addressing the **community's needs**