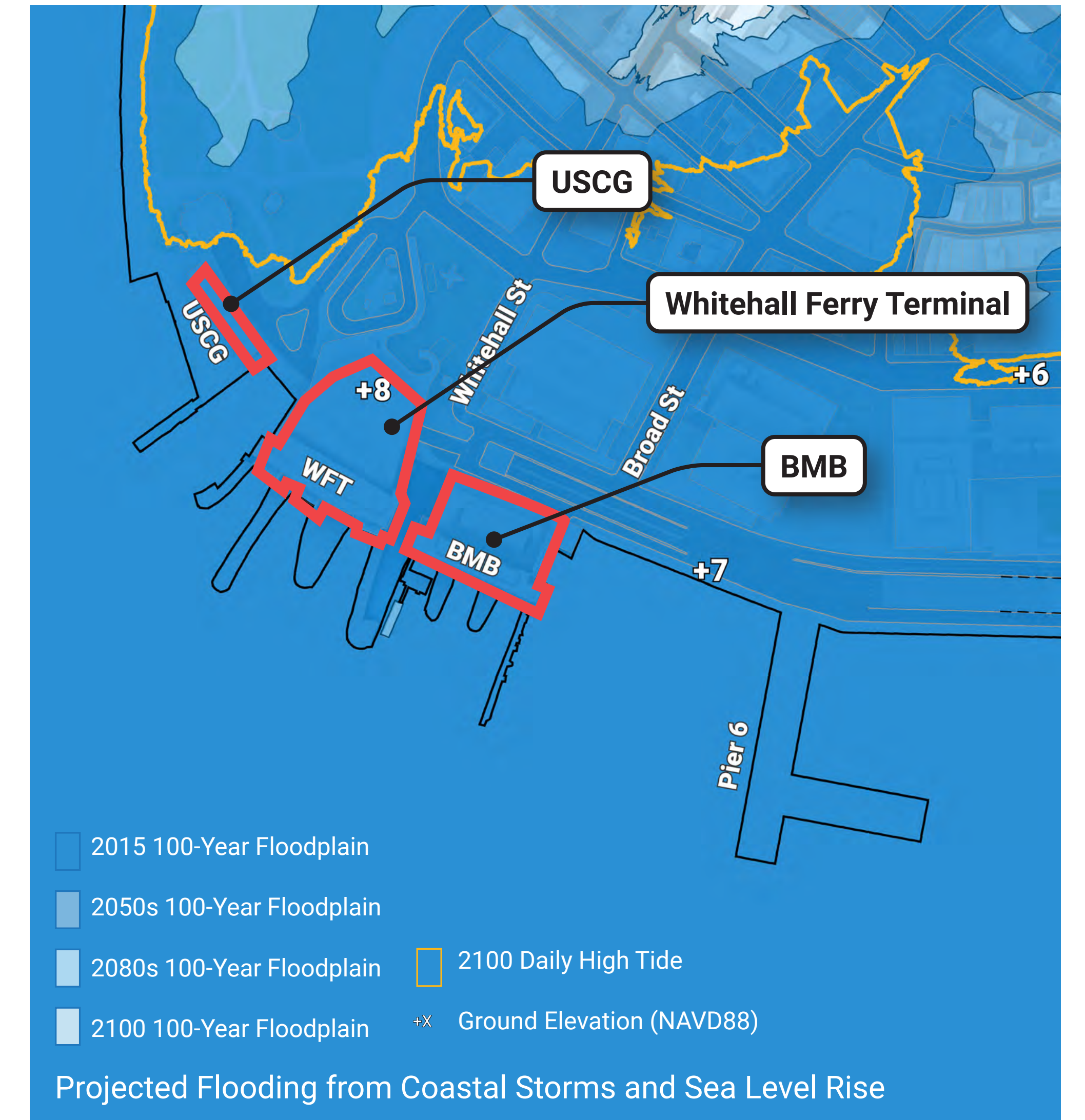
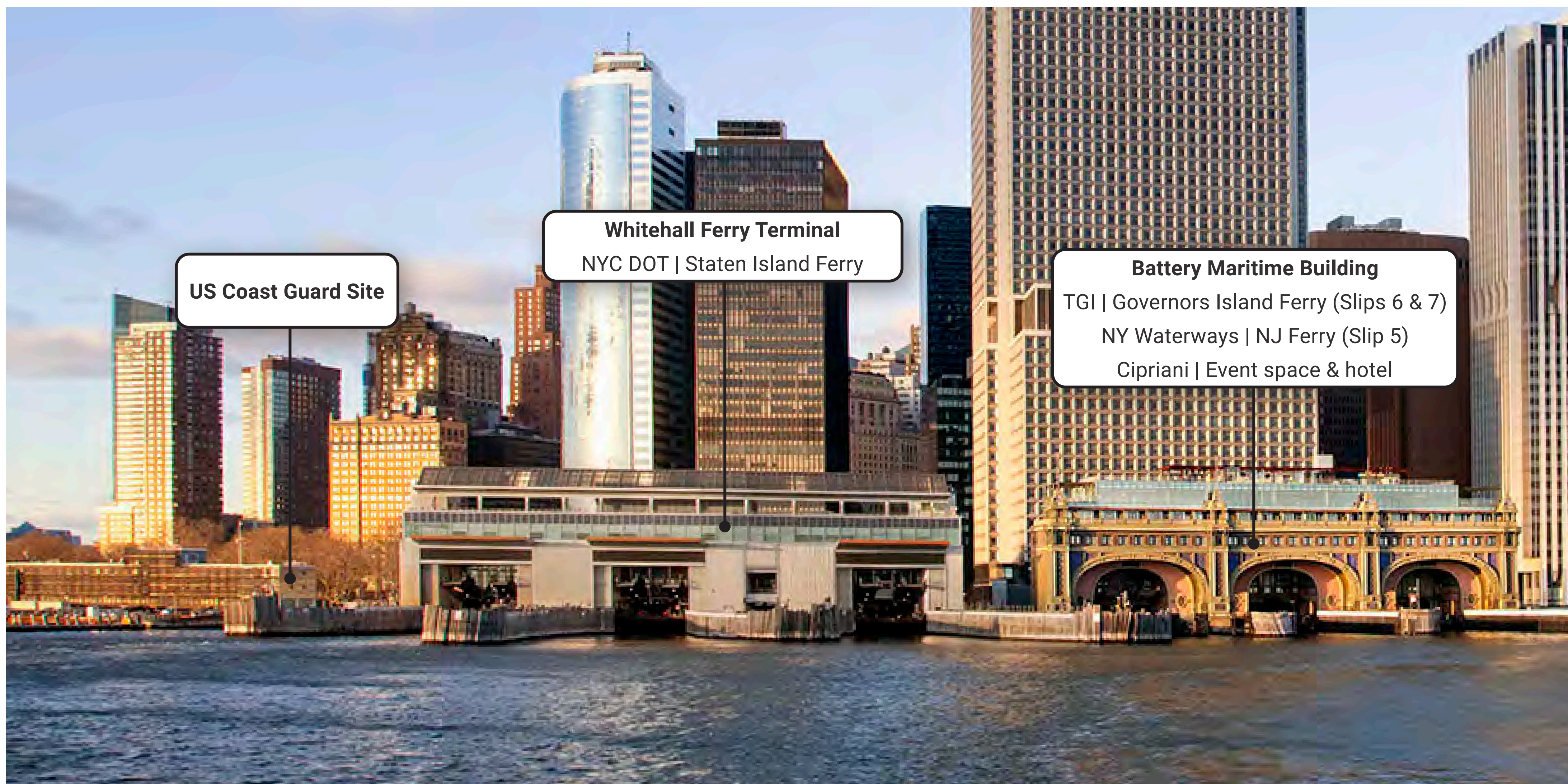
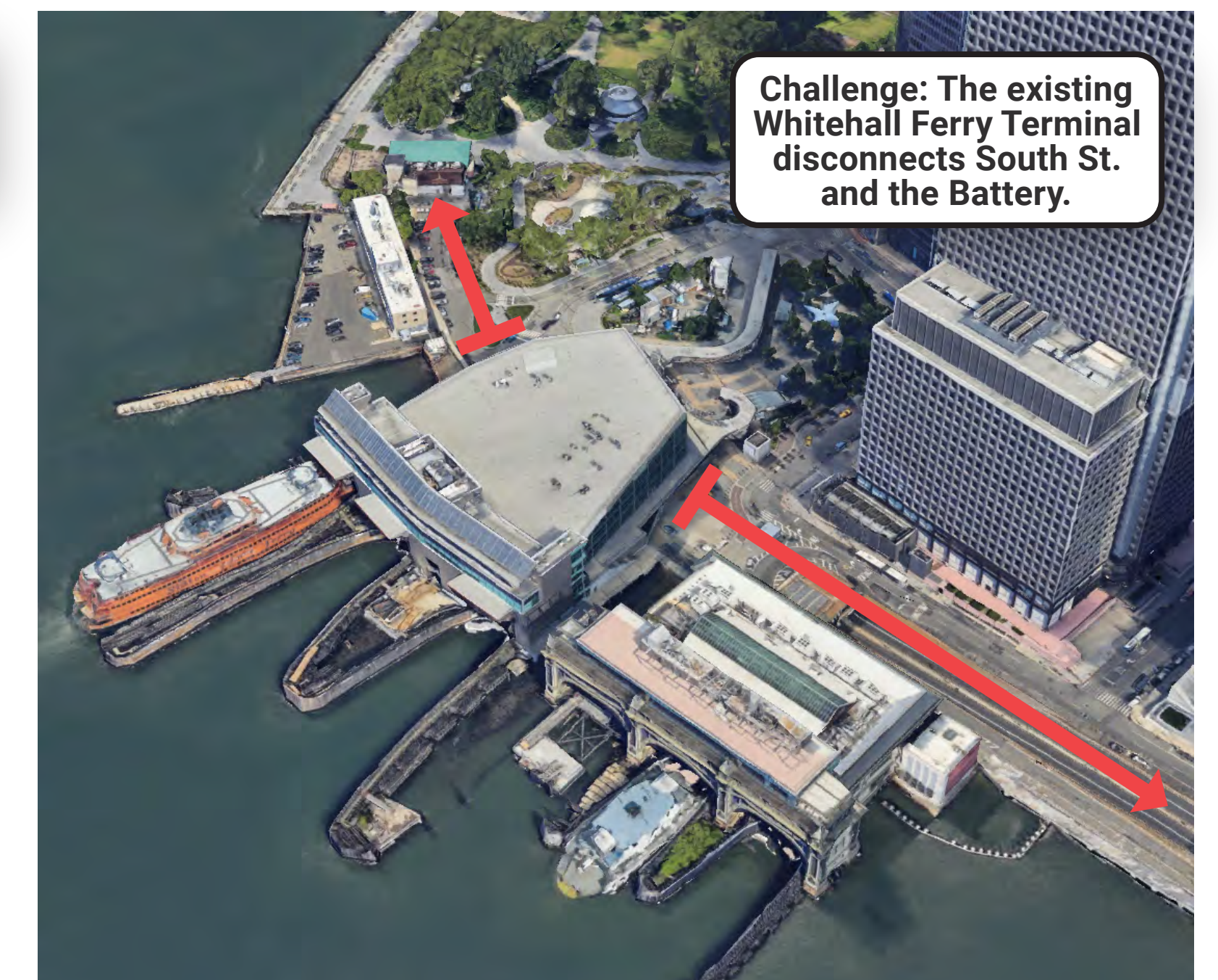
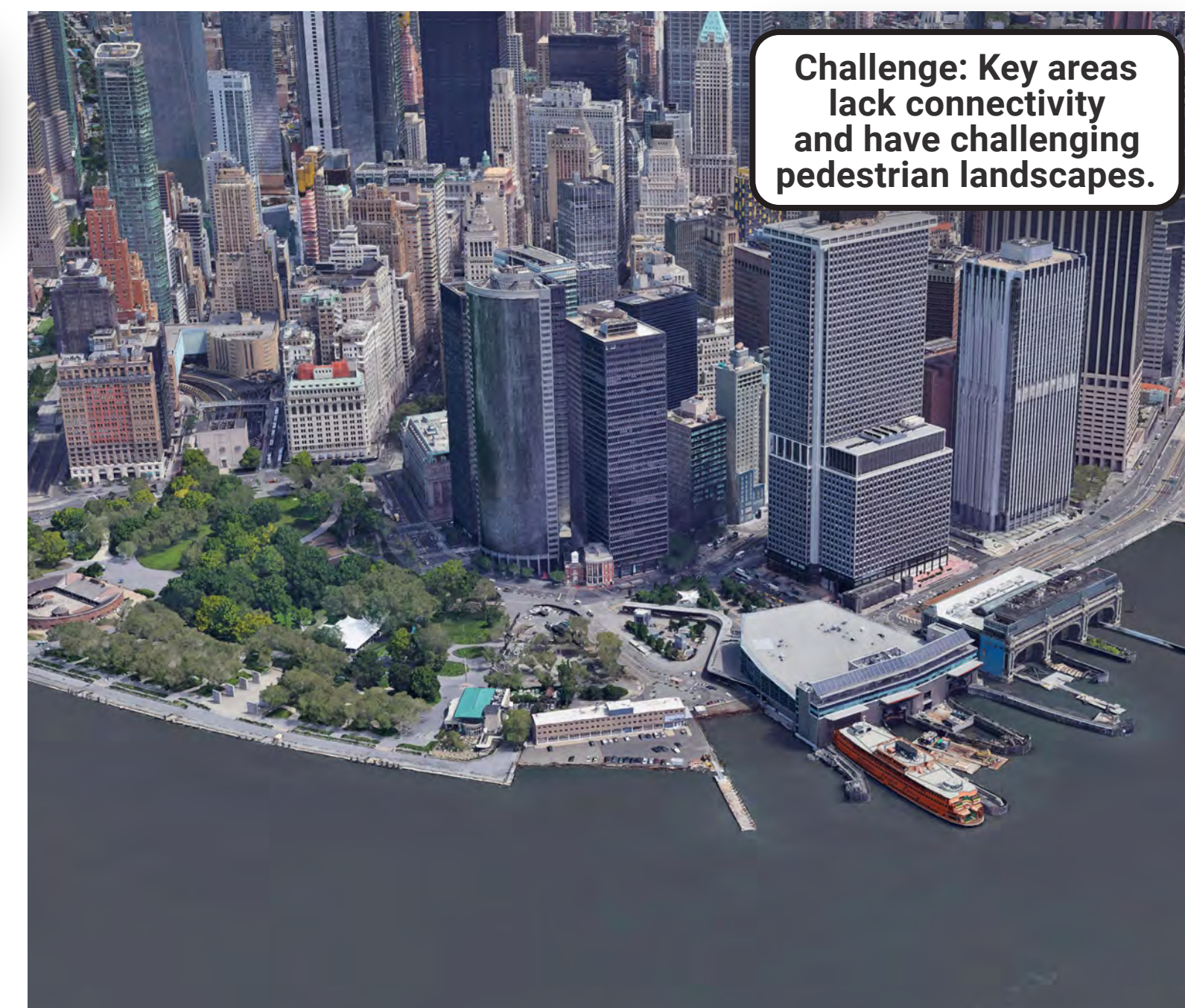


The waterfront between the Battery and Vietnam Veterans Memorial Plaza is a crucial multi-modal transportation hub.

Without action, rising seas will cause the City's ferry terminals to experience monthly service disruptions by the 2050s. By 2100, the facilities will flood daily, impacting day-to-day operations.



In addition to climate risks, the waterfront is also facing other challenges.



Each of these assets is complex and unique, and how we address resilience in one affects the others.

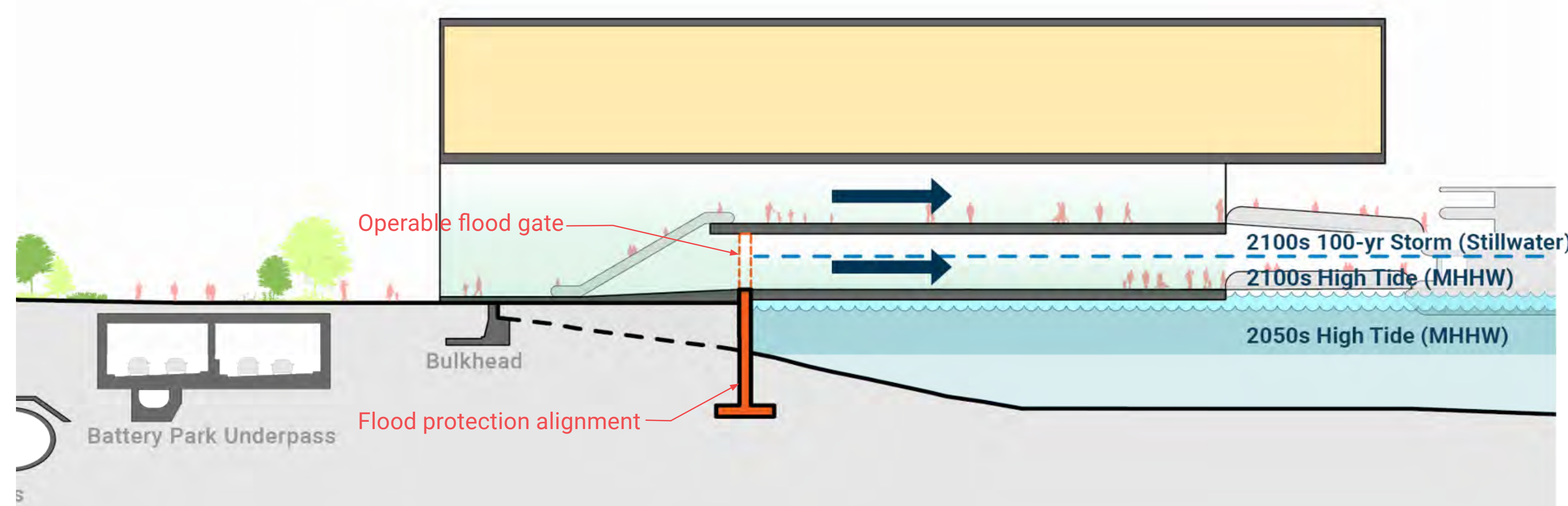
Whitehall Ferry Terminal and the Battery Maritime Building must be protected against flooding, maintain or exceed current service levels, ensure safe and efficient ferry operations, preserve historic landmarks, and support the City's transition to zero-emissions ferry systems.

While doing so we can also enhance the passenger and waterfront pedestrian experience, create space for future ferry service expansions, and improve multi-modal transportation connections.

We must also consider the adjacent US Coast Guard site, which will require flood protection.



In Phase 5, we studied how to make the Whitehall Ferry Terminal and the Battery Maritime Building resilient.

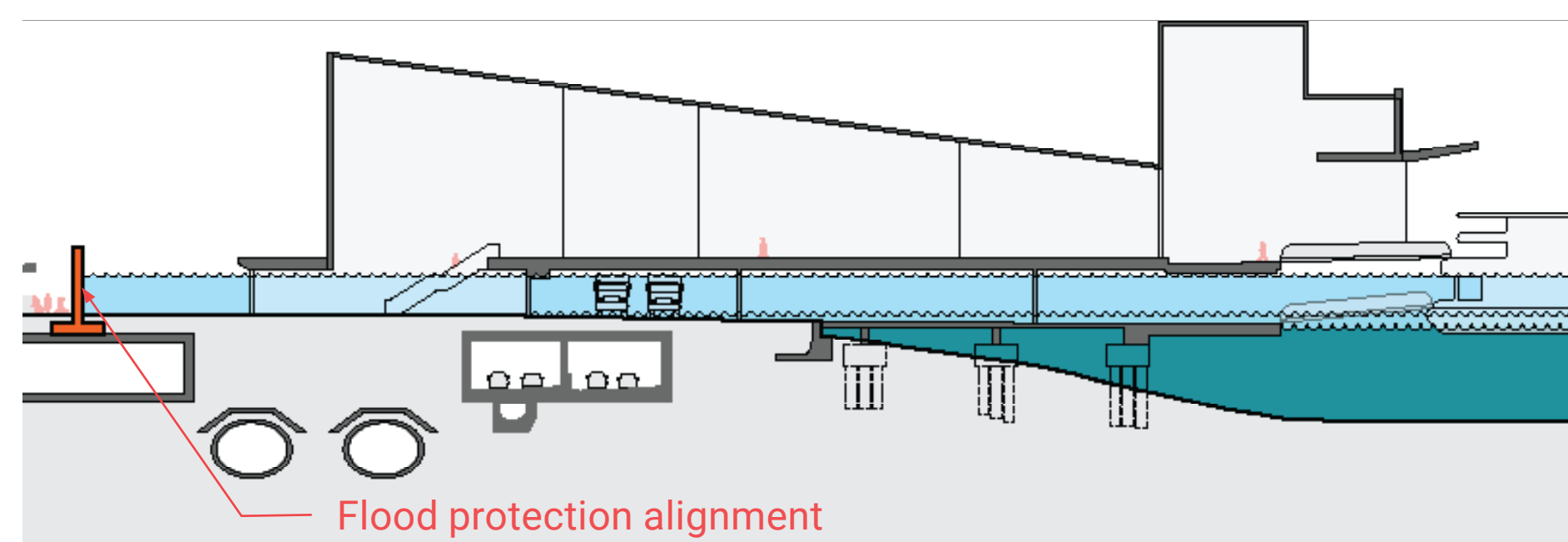


The WFT needs to be reconstructed at a higher elevation with integrated flood defenses and universally accessible gangways that accommodate changing sea levels.

Alternatives Studied but Not Selected:

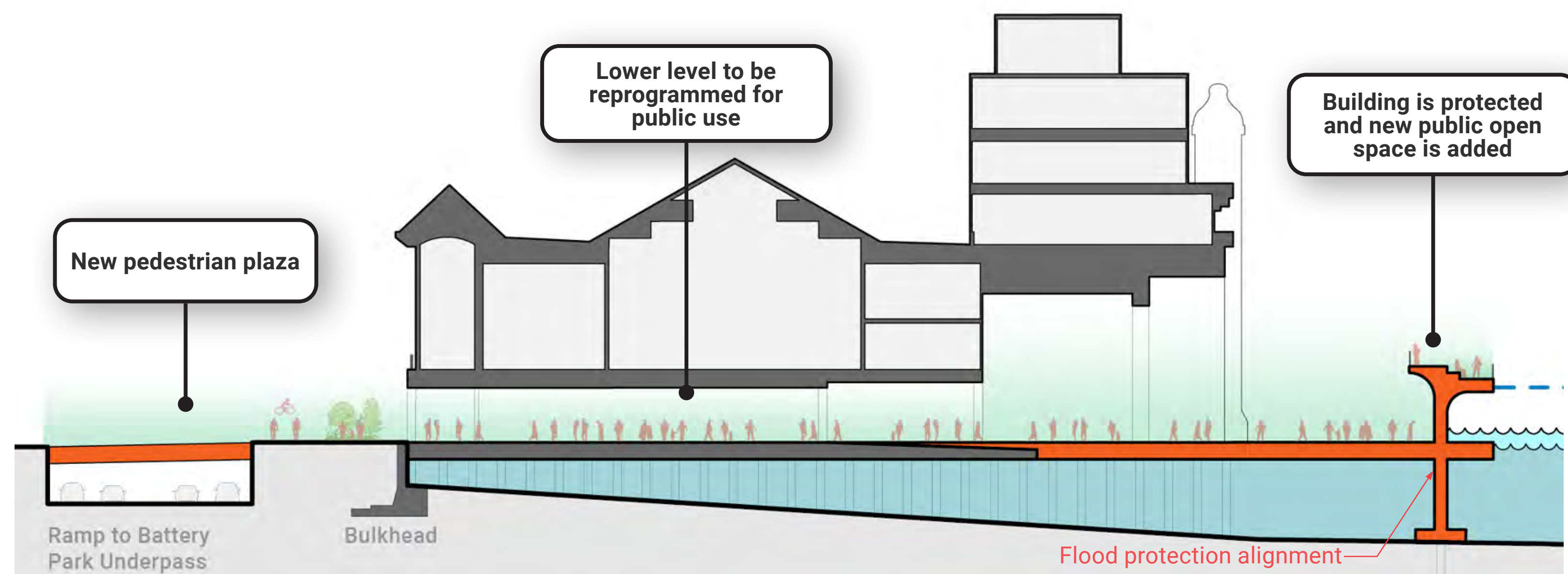
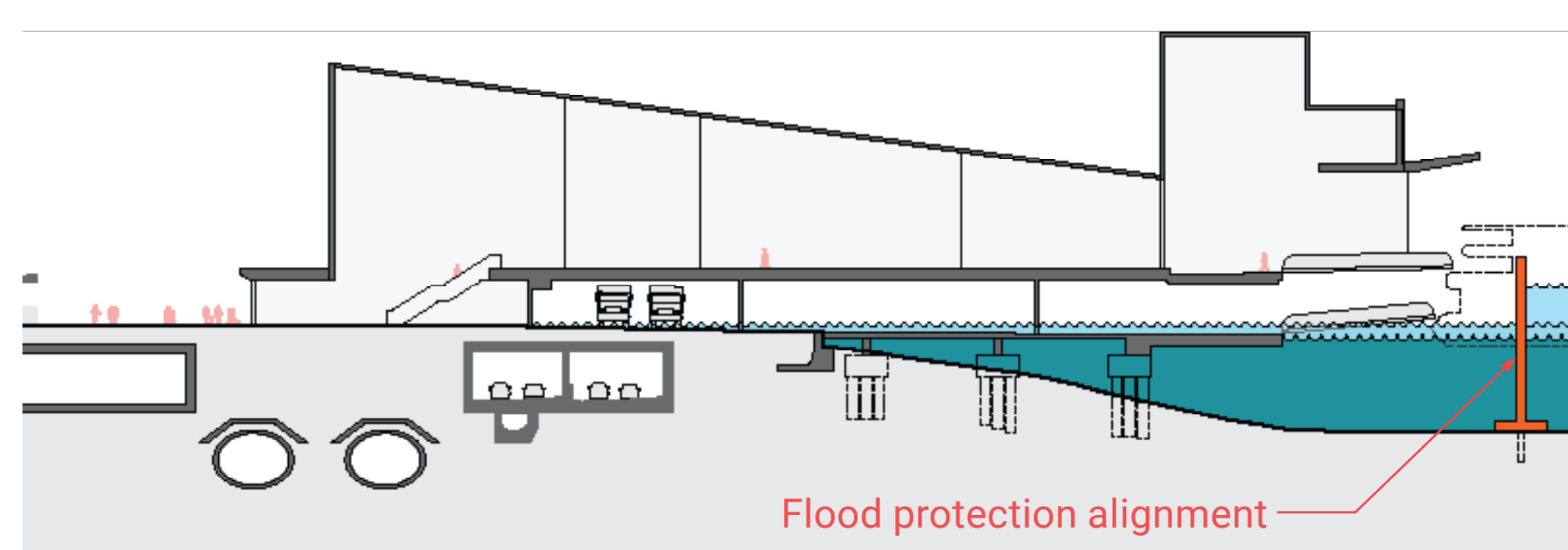
Flood defense system inland of the existing WFT

- Floodwall through Peter Minuit Plaza
- WFT would be left unprotected and subject to tidal flooding.
- Significant construction challenges to build a floodwall above several subway stations and tunnels.



Flood defense system waterside of the existing WFT

- Floodgates would be required to allow boat access to the ferry slips.
- Building left unprotected from sea-level rise.

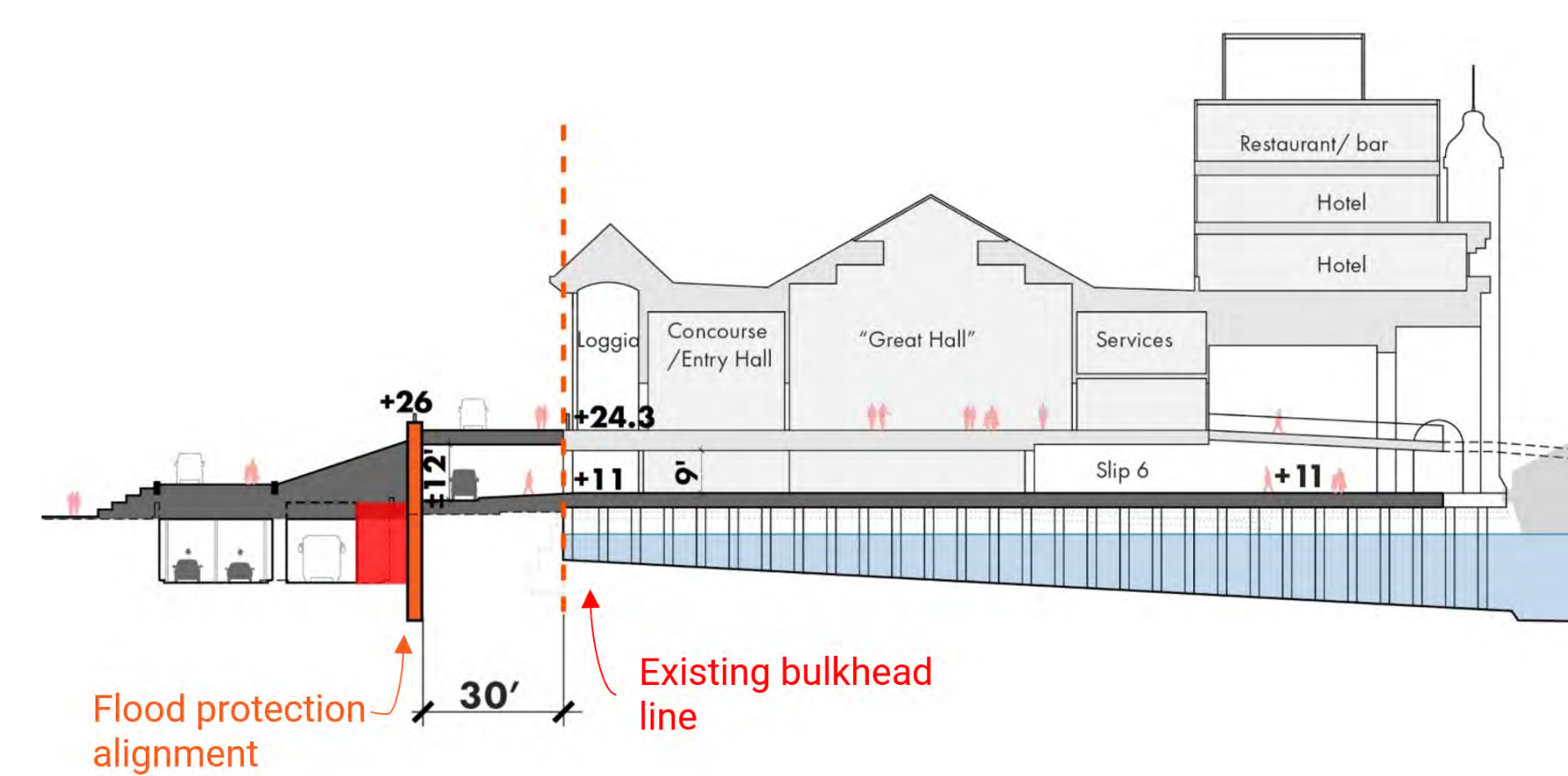


The BMB needs flood defenses outboard of the building to protect and preserve the historically landmarked structure. The GIF will need to be relocated.

Alternatives Studied but Not Selected:

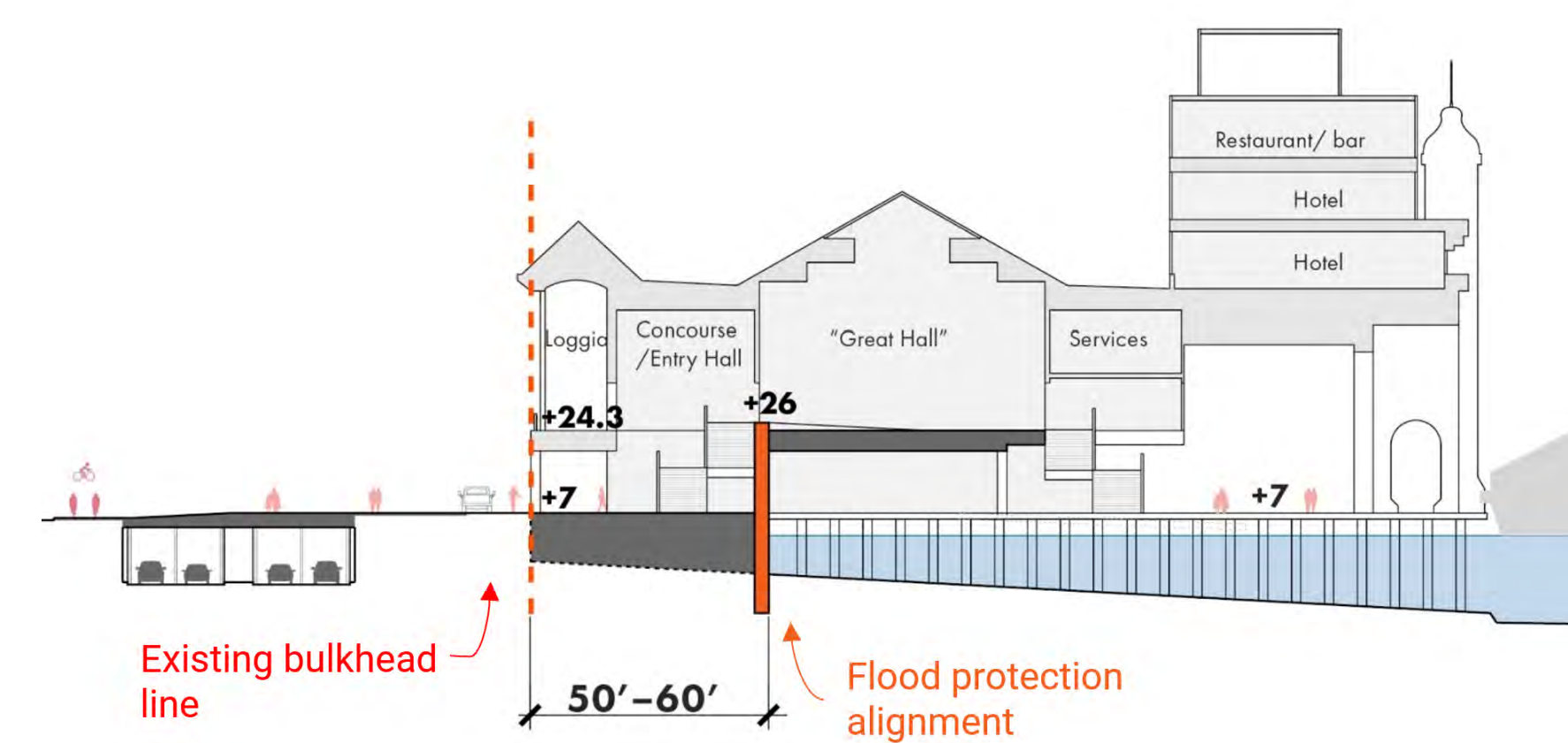
Flood defense system inland of the existing BMB

- Leaves BMB exposed to flooding.
- Challenging to build flood protection while maintaining historic building facade.
- Negatively impacts the Battery Park Underpass.

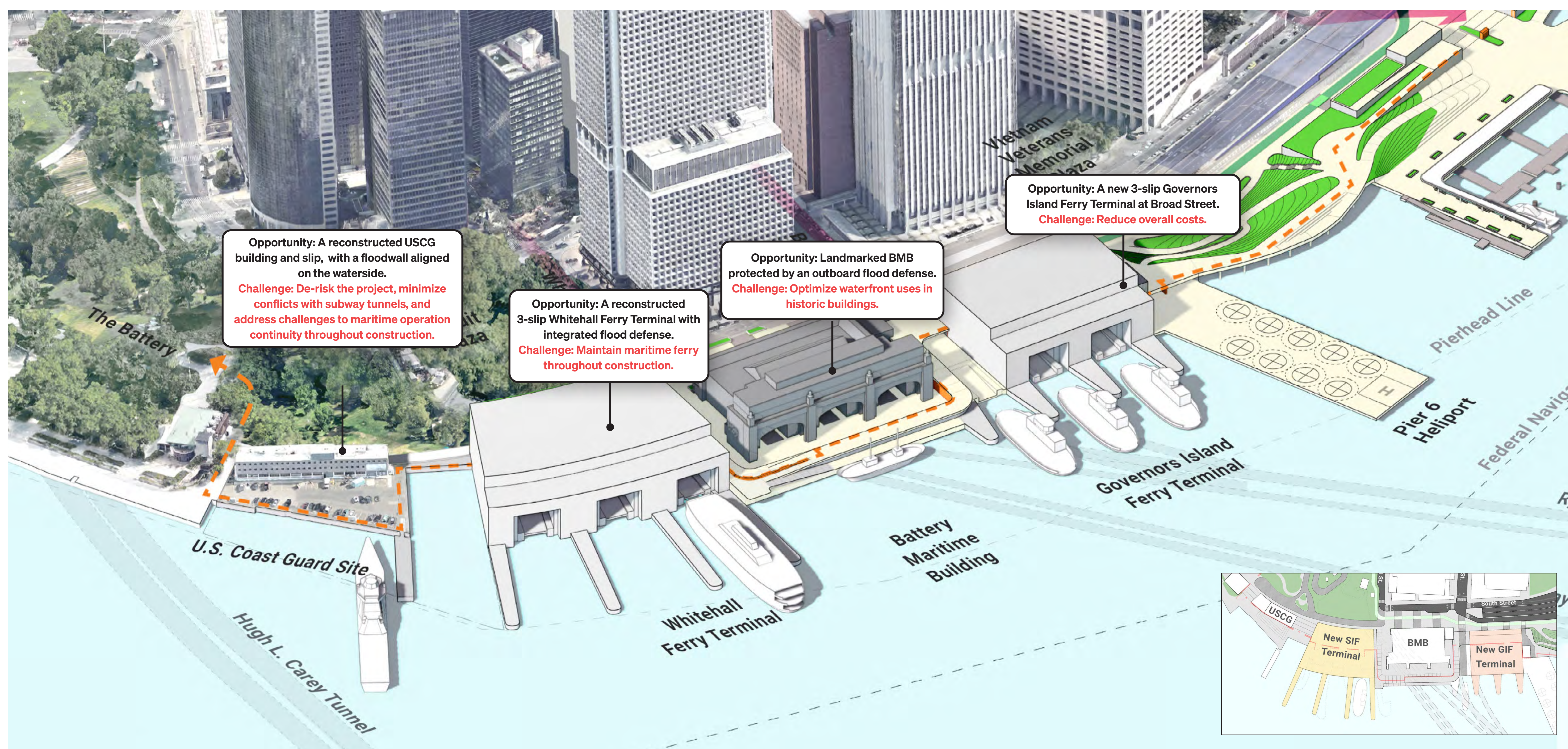


Flood defense system through the existing BMB

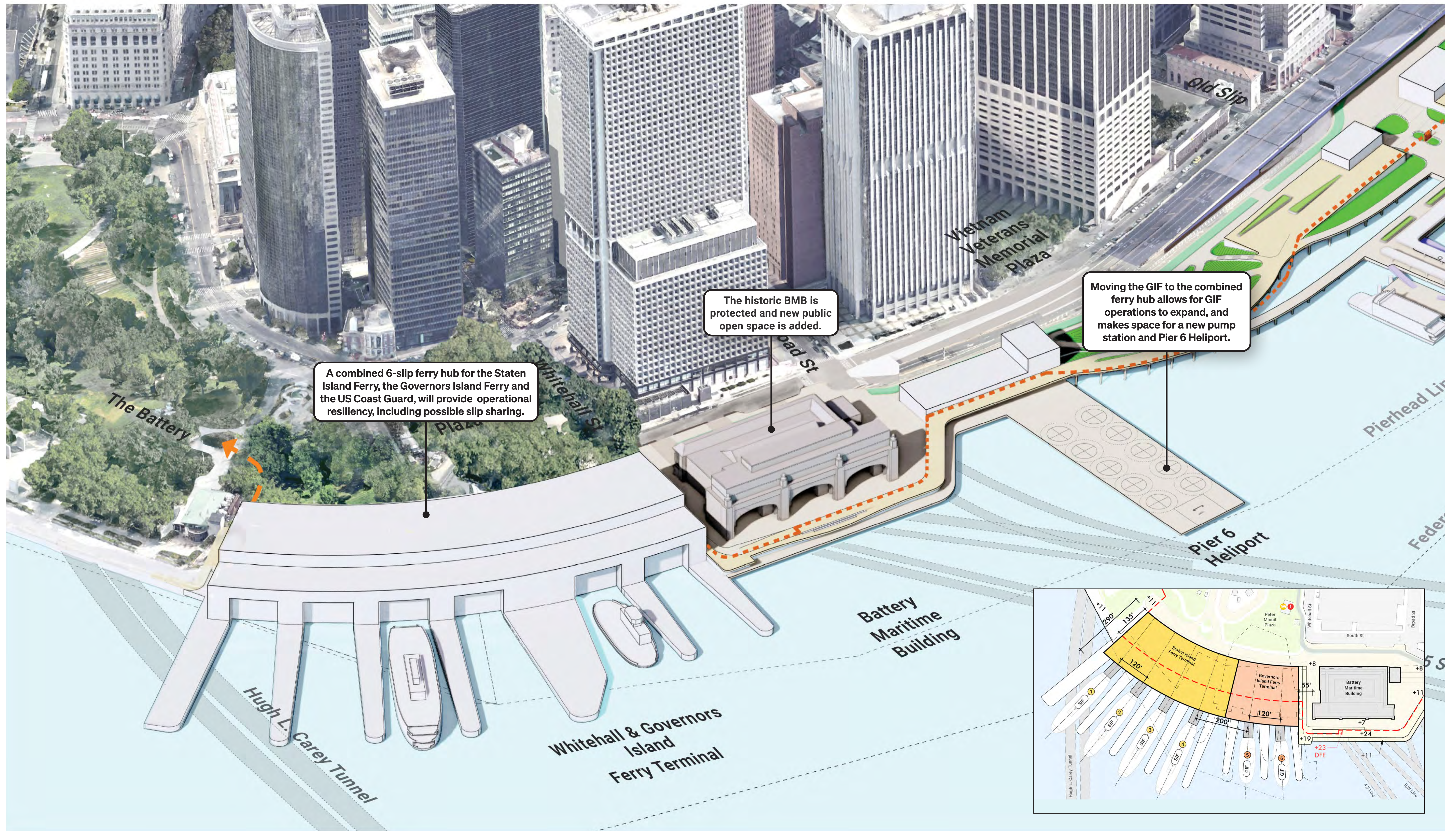
- Leaves a portion of the BMB exposed to flooding.
- Requires reconstruction of portions of the BMB.
- In-water fill is required.



At the end of Phase 5, we landed on a new terminal for each ferry system located on either side of the BMB. In Phase 6, we revisited the conservative configuration, refining our maritime assumptions and the Ferry Hub design.

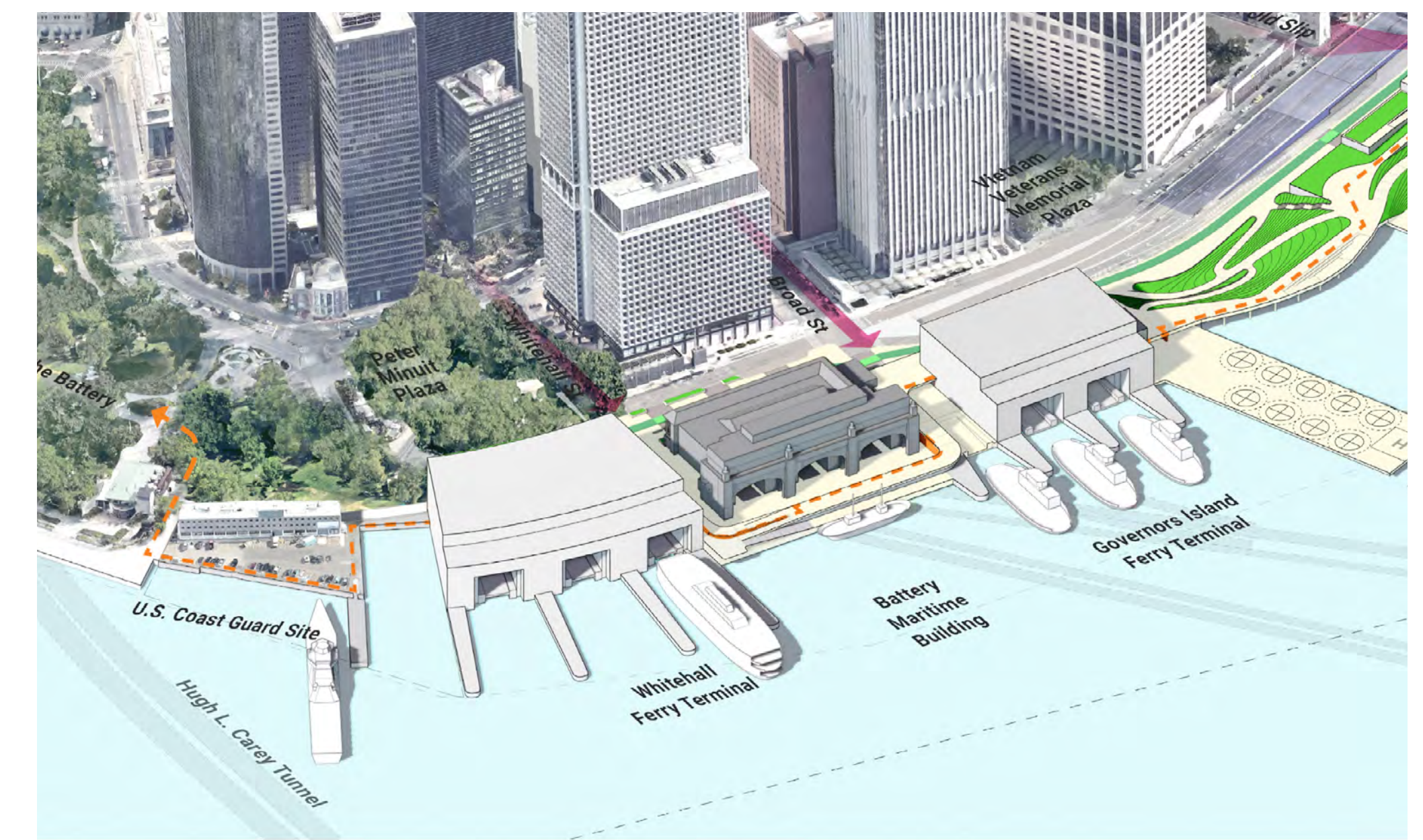
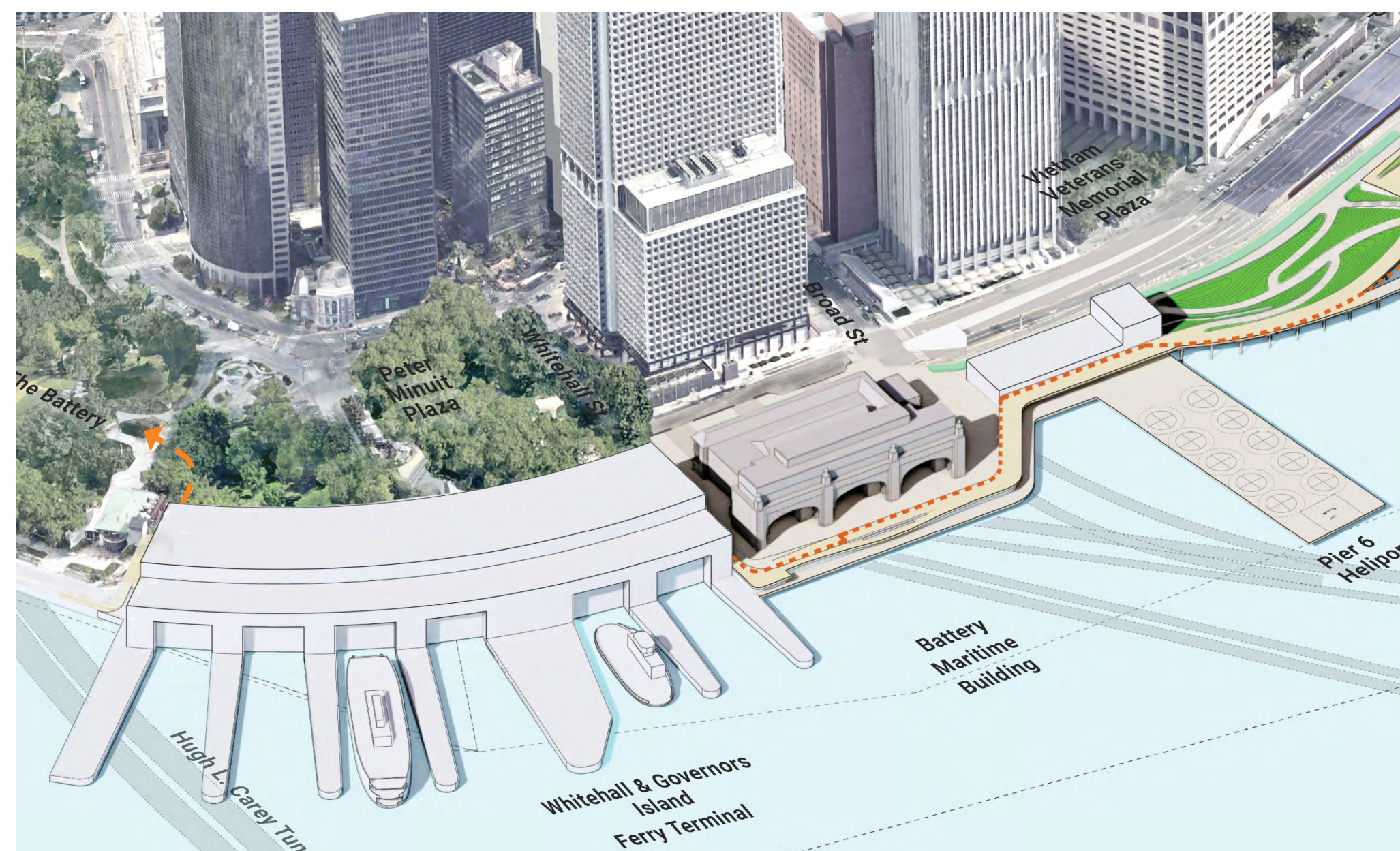


The combined Ferry Hub proposes a 6-slip ferry terminal for SIF, GIF, and the USCG.



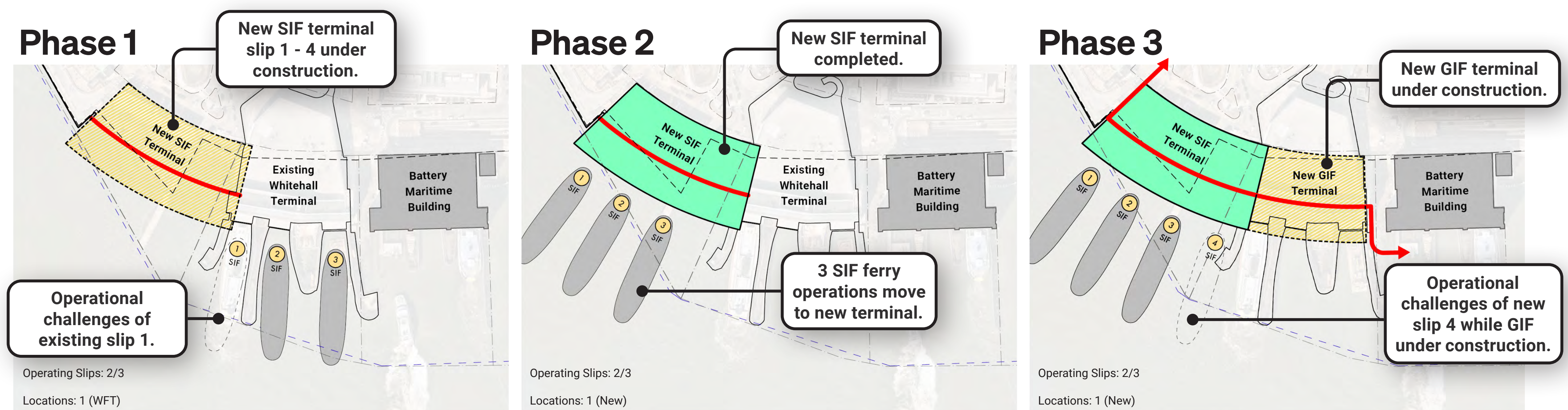
Phase 6 - The proposed Ferry Hub will be better equipped to meet current and future needs.

By leveraging the USCG site for a combined Ferry Hub, we not only achieve 30% cost savings, but we also accelerate the construction timeline by approximately 2 years compared to building separate terminals.



Combined (Phase 6) versus Separate (Phase 5) Ferry Terminals

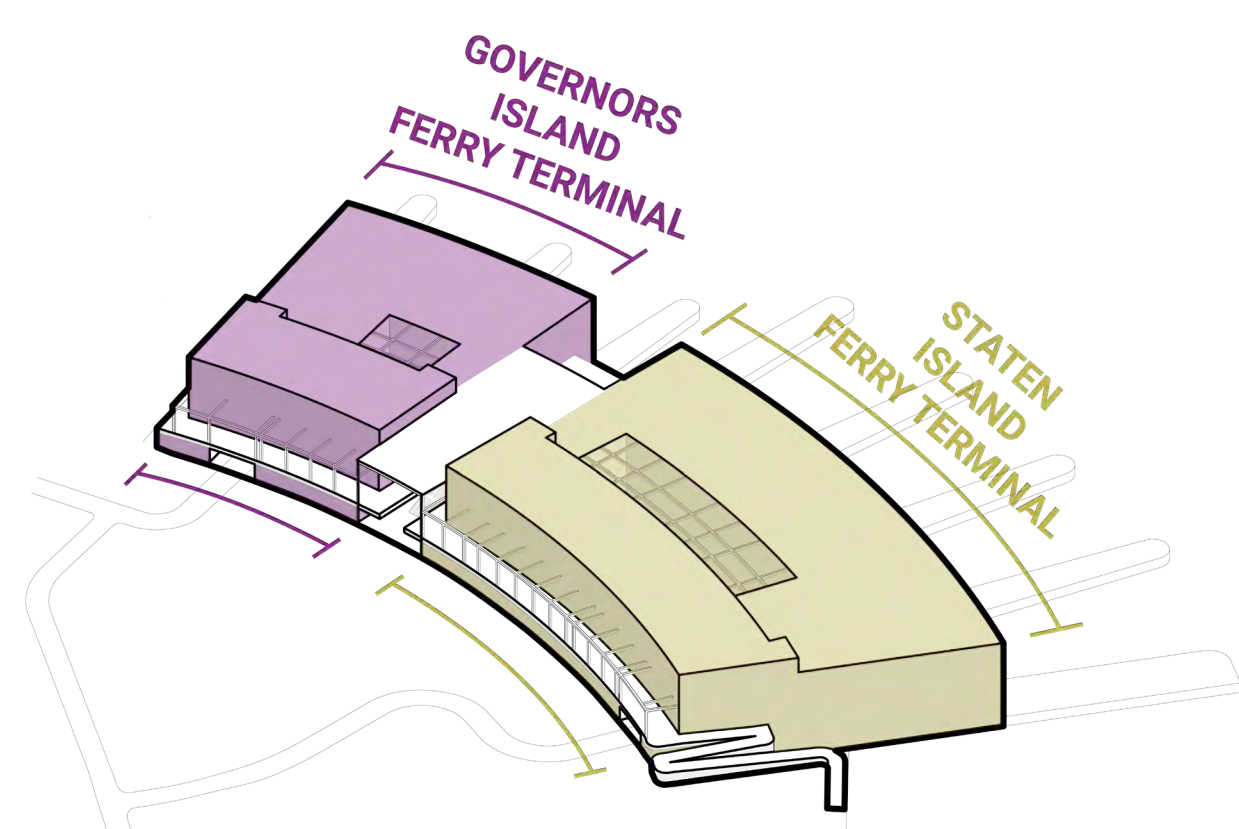
The updated design also ensures continuous operations through construction for the SIF and GIF services. The project team is currently working closely with key stakeholders in the area to identify the best possible construction phasing strategies that would allow for maritime operation continuity.



Possible Phasing Strategy under coordination with DOT

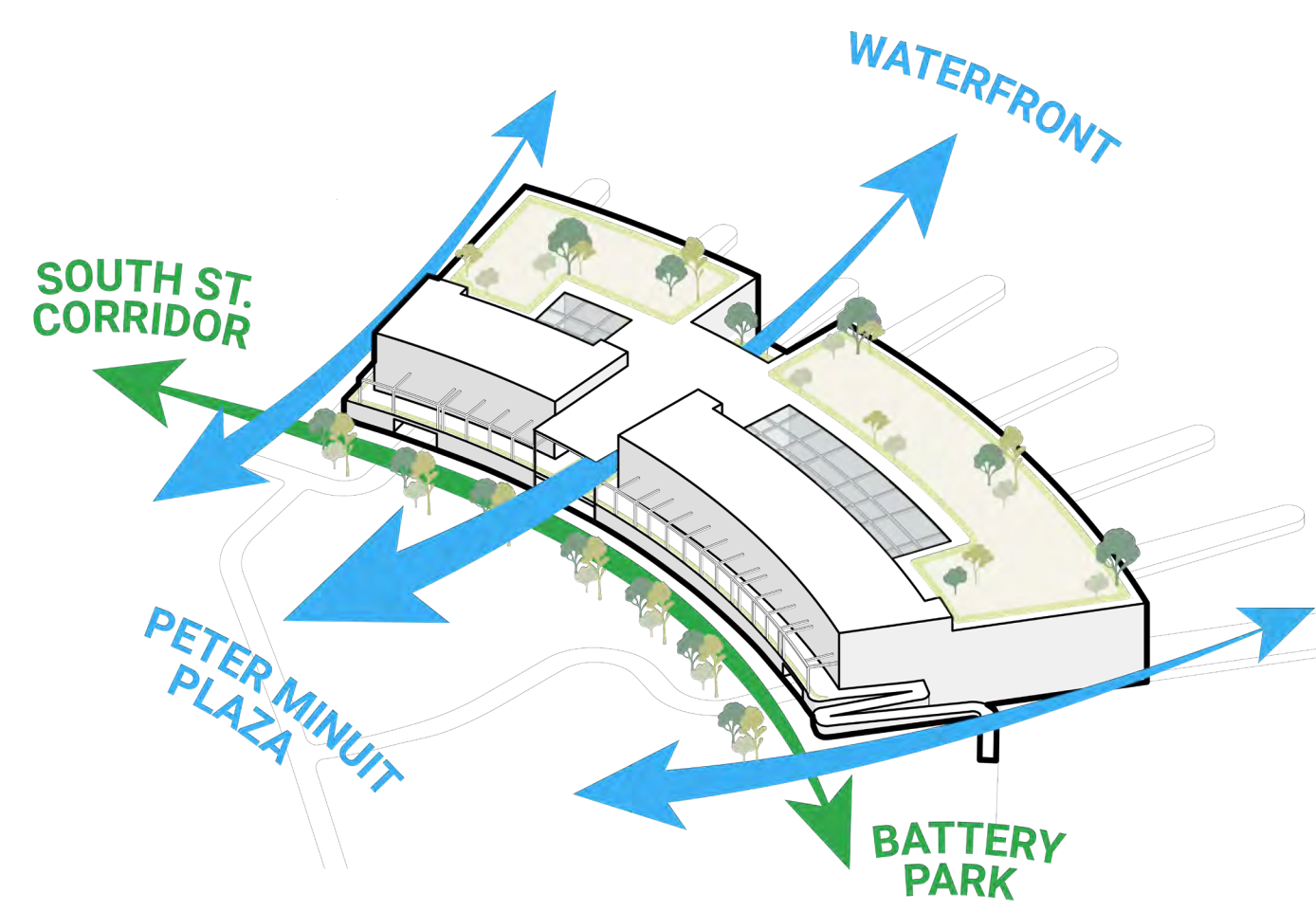


A combined ferry hub optimizes how the southern waterfront is used, improving Lower Manhattan's resiliency, connectivity, accessibility, and efficiency. The new ferry hub...

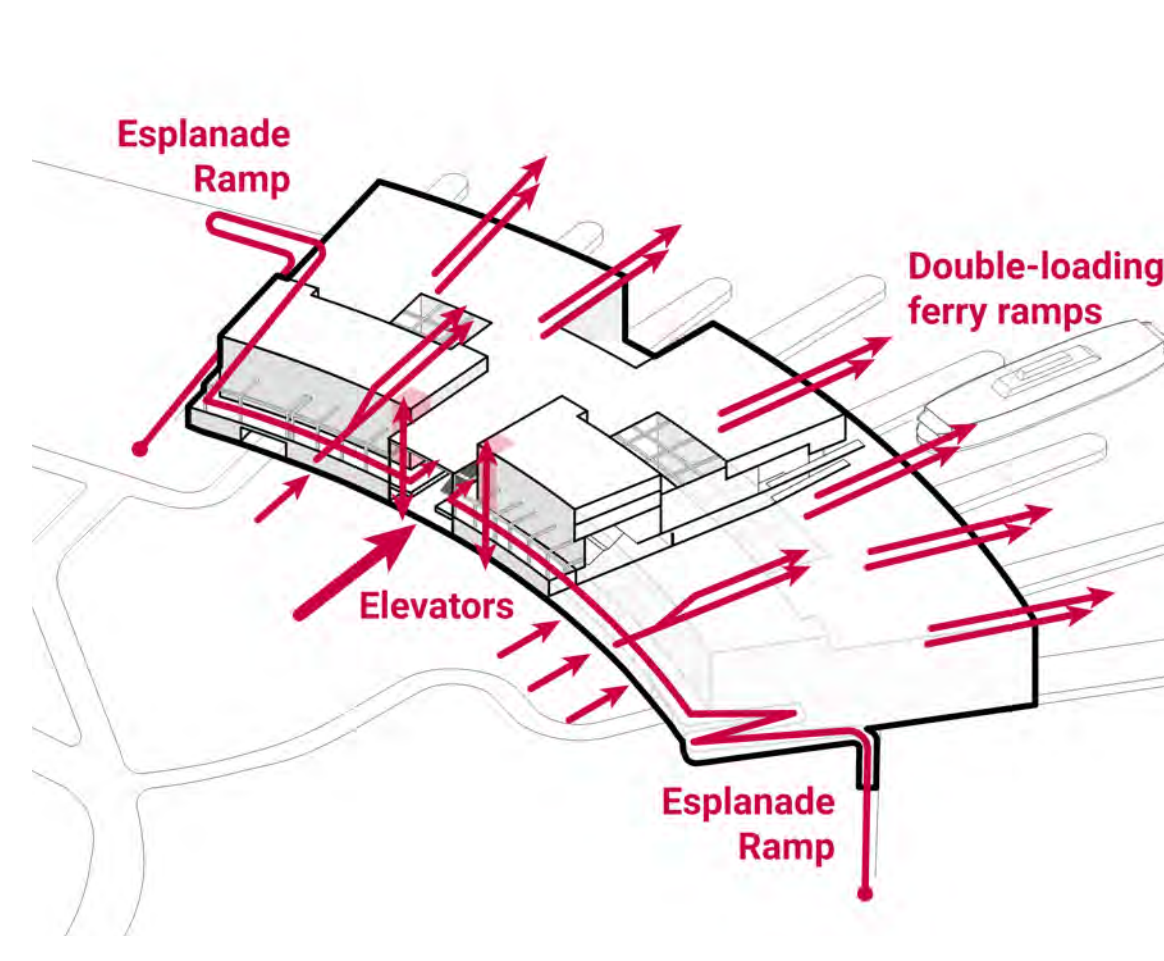


*USCG offices located on upper levels

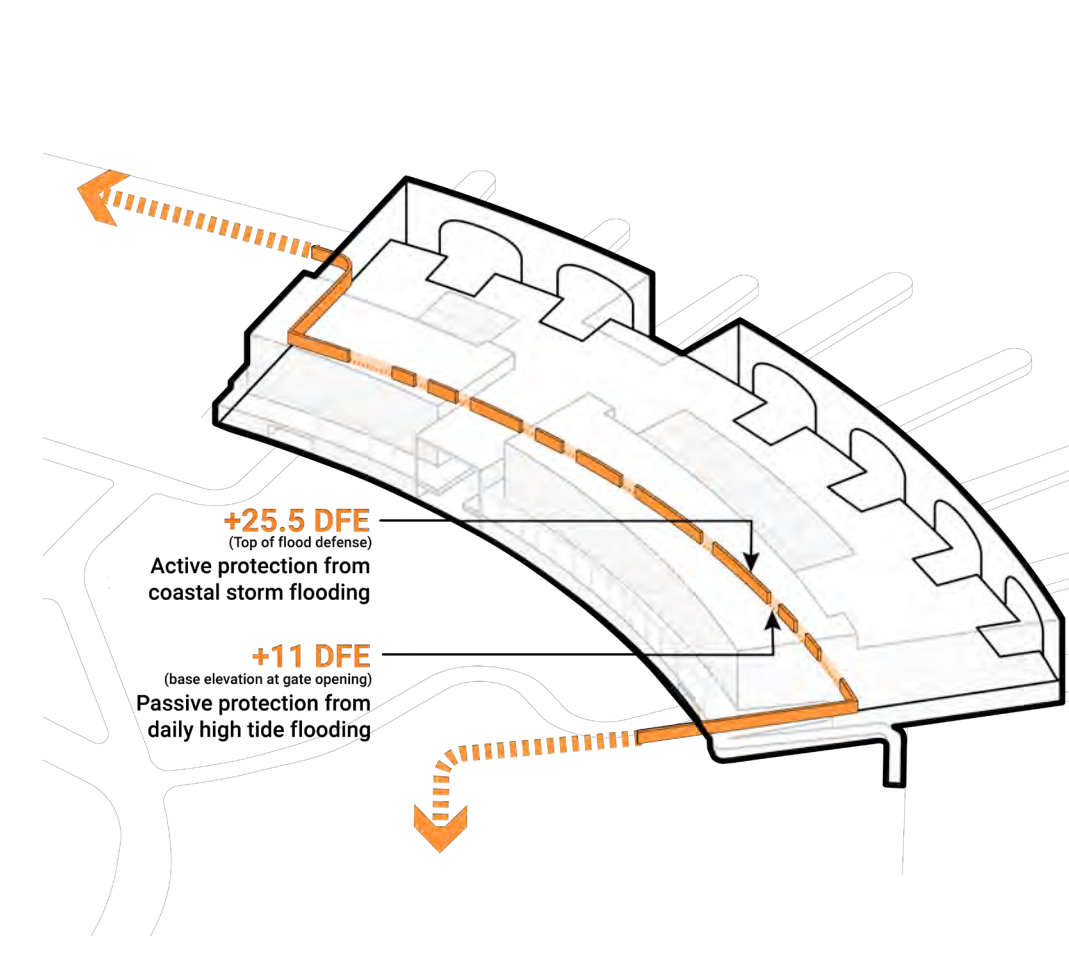
...will provide multiple ferry services, in a single civic building, maintaining and improving existing operations.



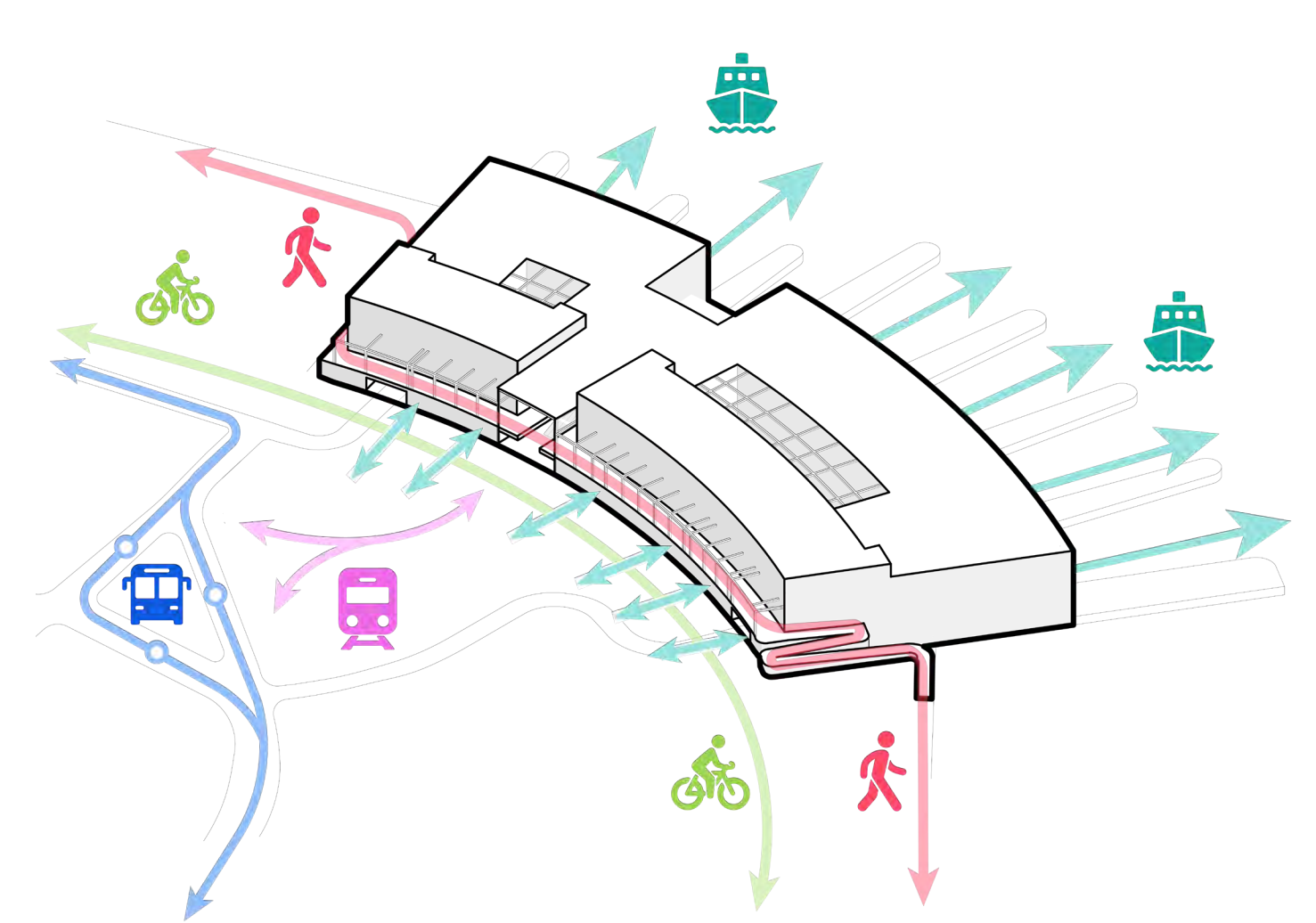
...will connect the waterfront, Peter Minuit Plaza and the Battery Park.



...will provide universal access and efficient multi-level boarding.



...has passive protection from daily high-tide flooding and active protection from coastal storm flooding.



...is a multi-modal commuting hub that connects the urban fabric.

We're building on the legacy of a combined multi-modal hub in this location.



1908: 7-Slip Municipal Ferry Terminal (Never Built)



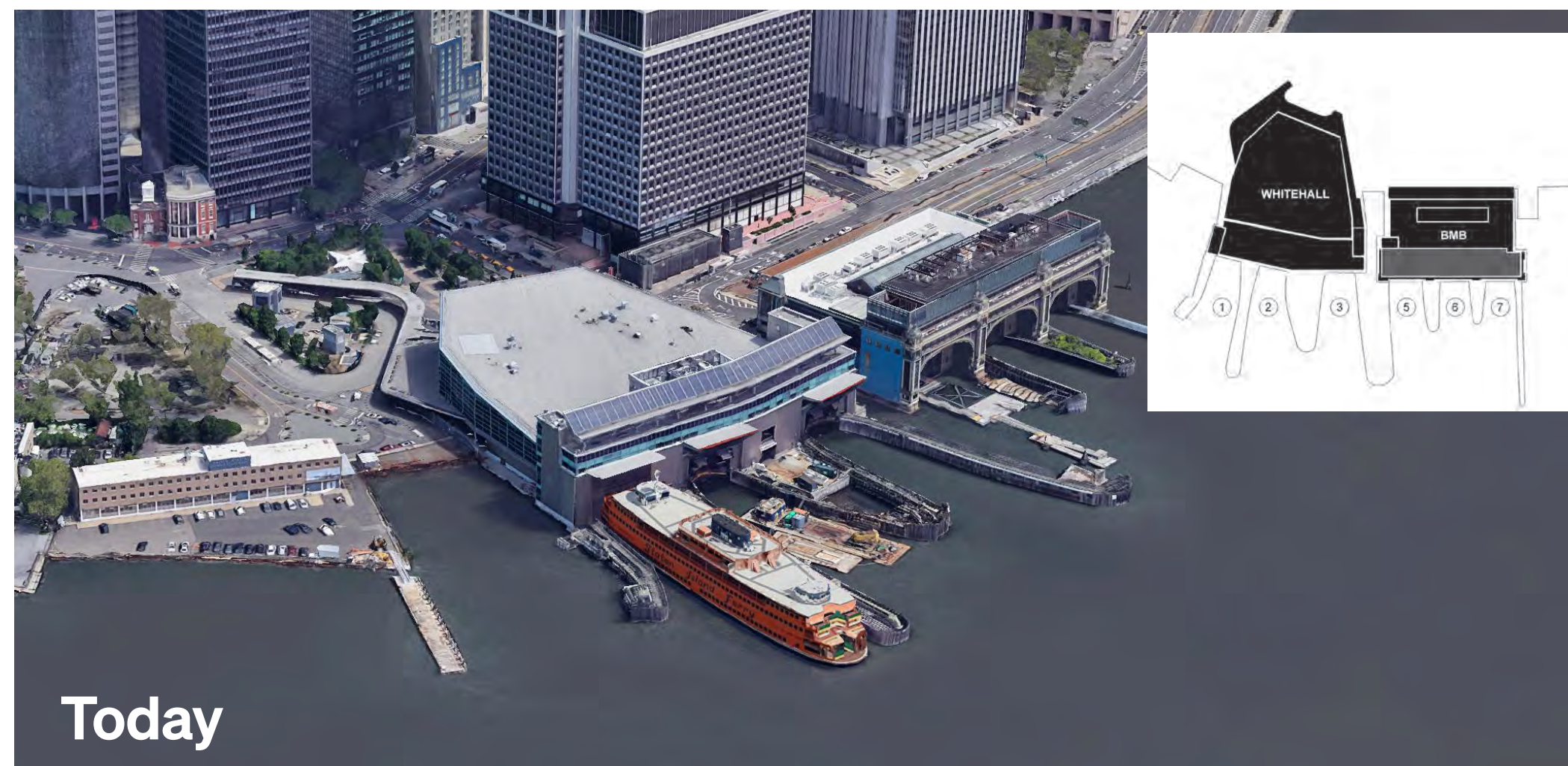
1911: Elevated "El Train" connects to the 2nd level



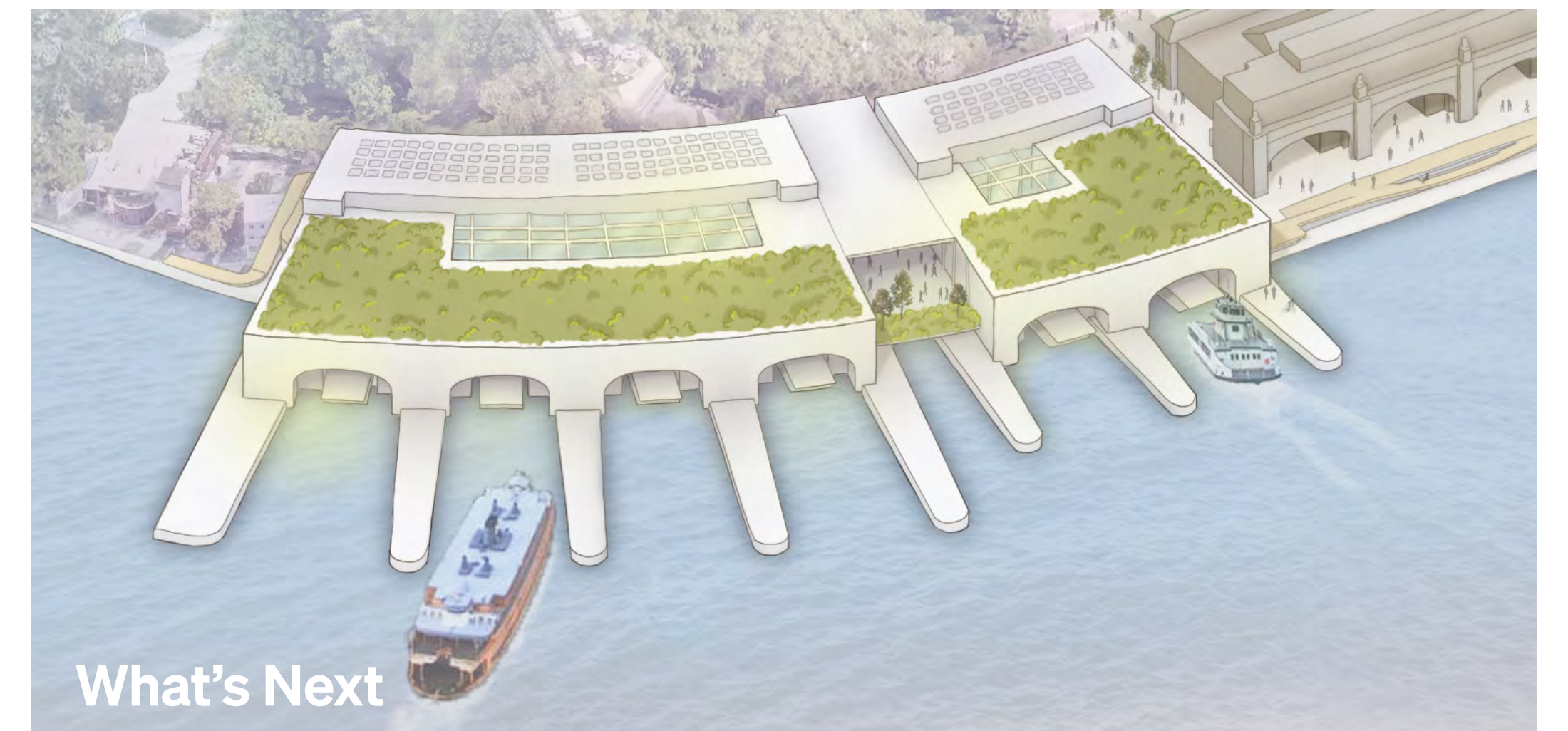
1950s: Staten Island Ferry (Whitehall)



1990s



Today



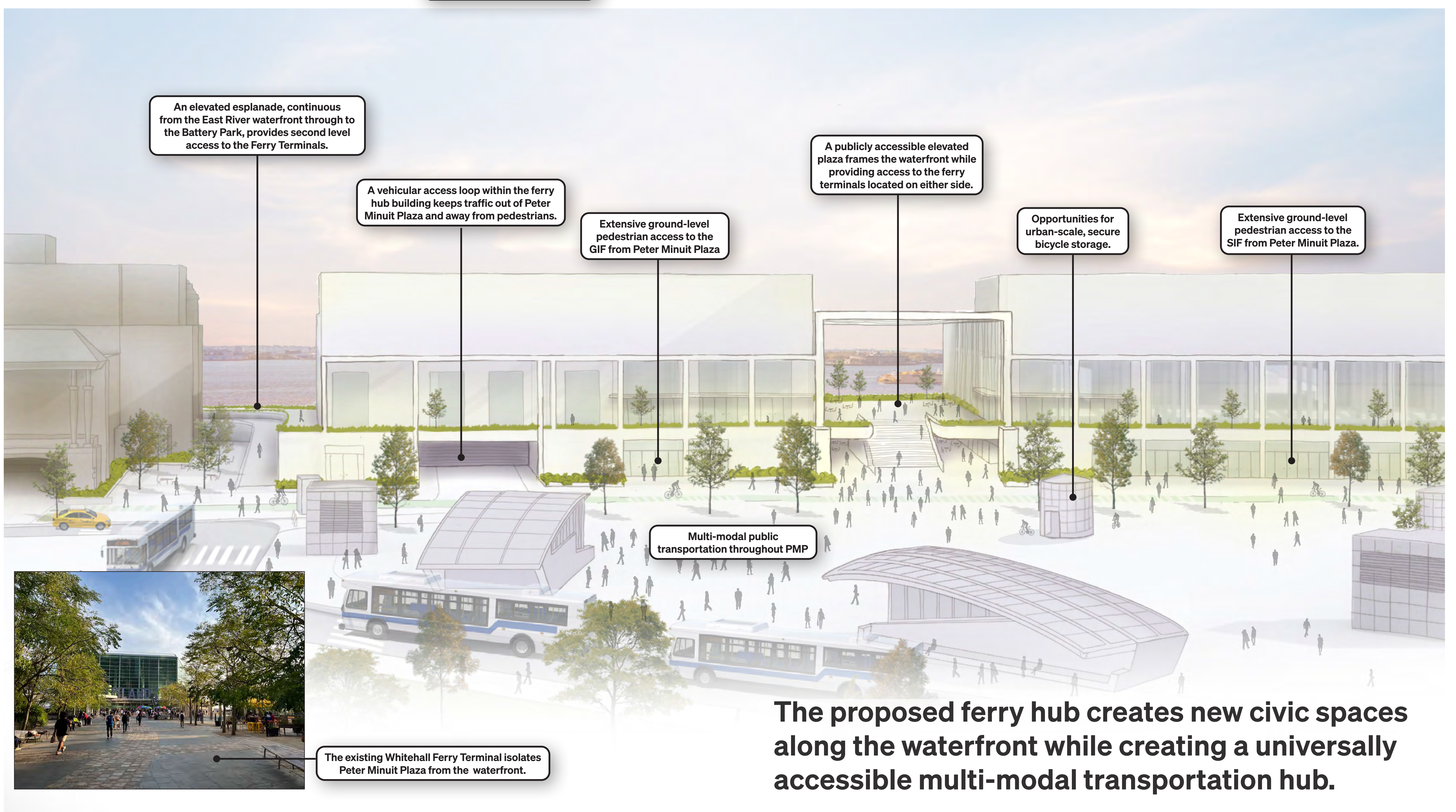
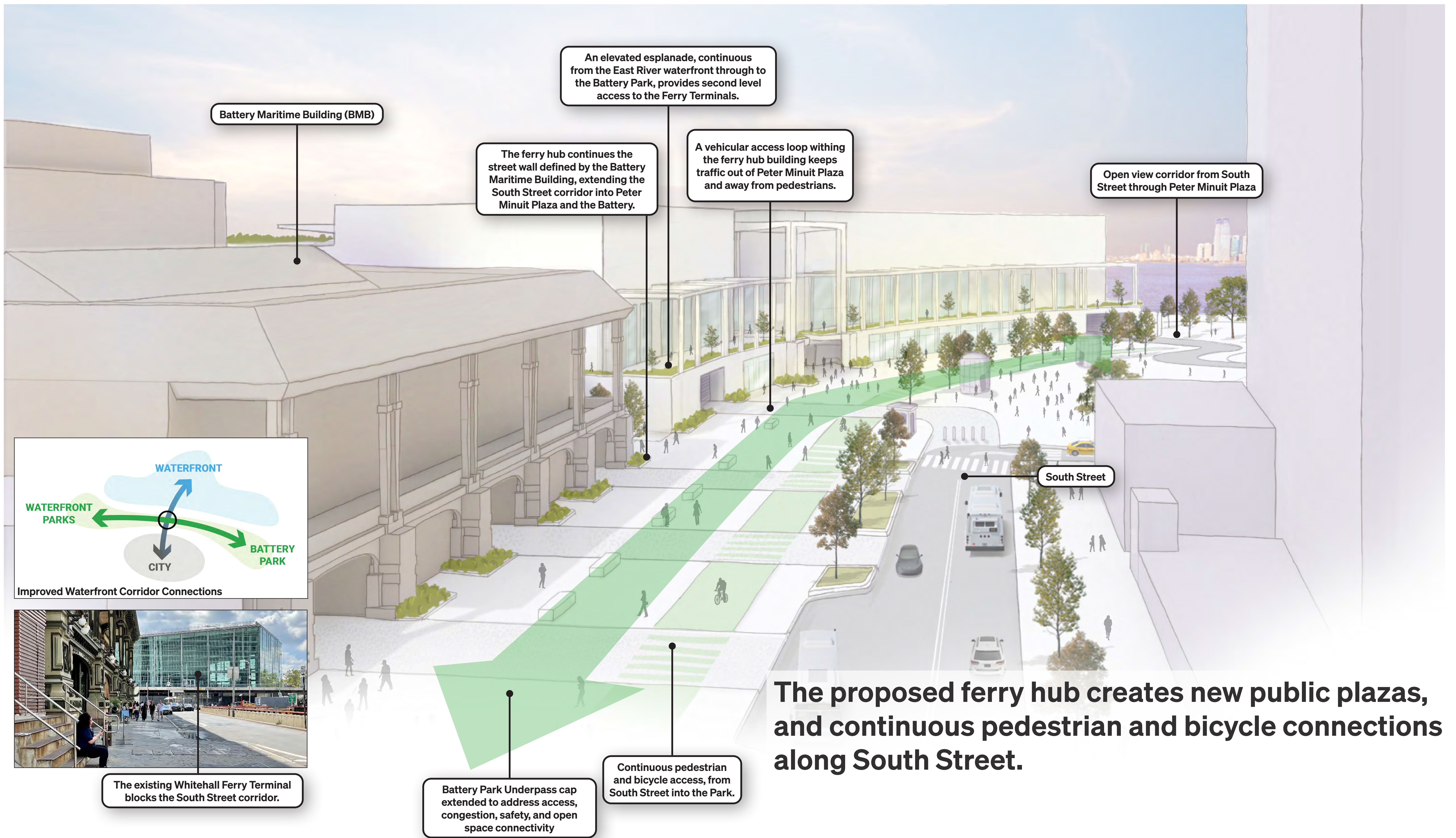
What's Next

The new ferry hub will promote a sustainable future for NYC.

- Daylighting**
Waiting areas take advantage of natural daylighting provided by the proposed roof skylights.
- PV Arrays**
The site provides optimal solar orientation for PV arrays, benefitting from natural solar gain and aligning with the project's overall goals of low-to-no carbon emissions and a clean-energy grid.
- Blue / Purple Roof**
Capturing and storing rainwater helps reduce urban heat, enhances energy efficiency, manages stormwater runoff and reduces water pollution.
- Green Roof**
Expansive roof areas offer the potential for green roofs, which not only help mitigate stormwater runoff and serve as an effective passive cooling strategy, but also support biodiversity.
- Low Embodied Carbon Construction**
The ferry terminal presents an opportunity to pioneer low-carbon building materials and techniques such as hybrid and mass-timber construction.
- Interior Conditioned Spaces buffered by Unconditioned Spaces**
Unconditioned boarding areas act as buffer spaces which help modulate indoor temperature, lowering the cooling and heating loads in the building.
- Electric Ferries**
The Ferry Hub design incorporates infrastructure for zero-emissions fuel sources for ferries and micro freight.
- Passive Strategies**
Utilize passive heating and cooling strategies wherever possible between conditioned and unconditioned spaces.
- Low-Embodied Carbon Materials and Construction Techniques**
The Ferry Hub design focuses on improving energy efficiency, conserving natural resources and meeting future regulatory standards, while aligning with global climate goals.



The new multi-modal ferry hub will reconnect the East River waterfront with Peter Minuit Plaza and the Battery.



Seaport Pier is vulnerable to flooding. If nothing is done, only Pier 17 will remain.



Seaport shown in the 2080s at High Tide

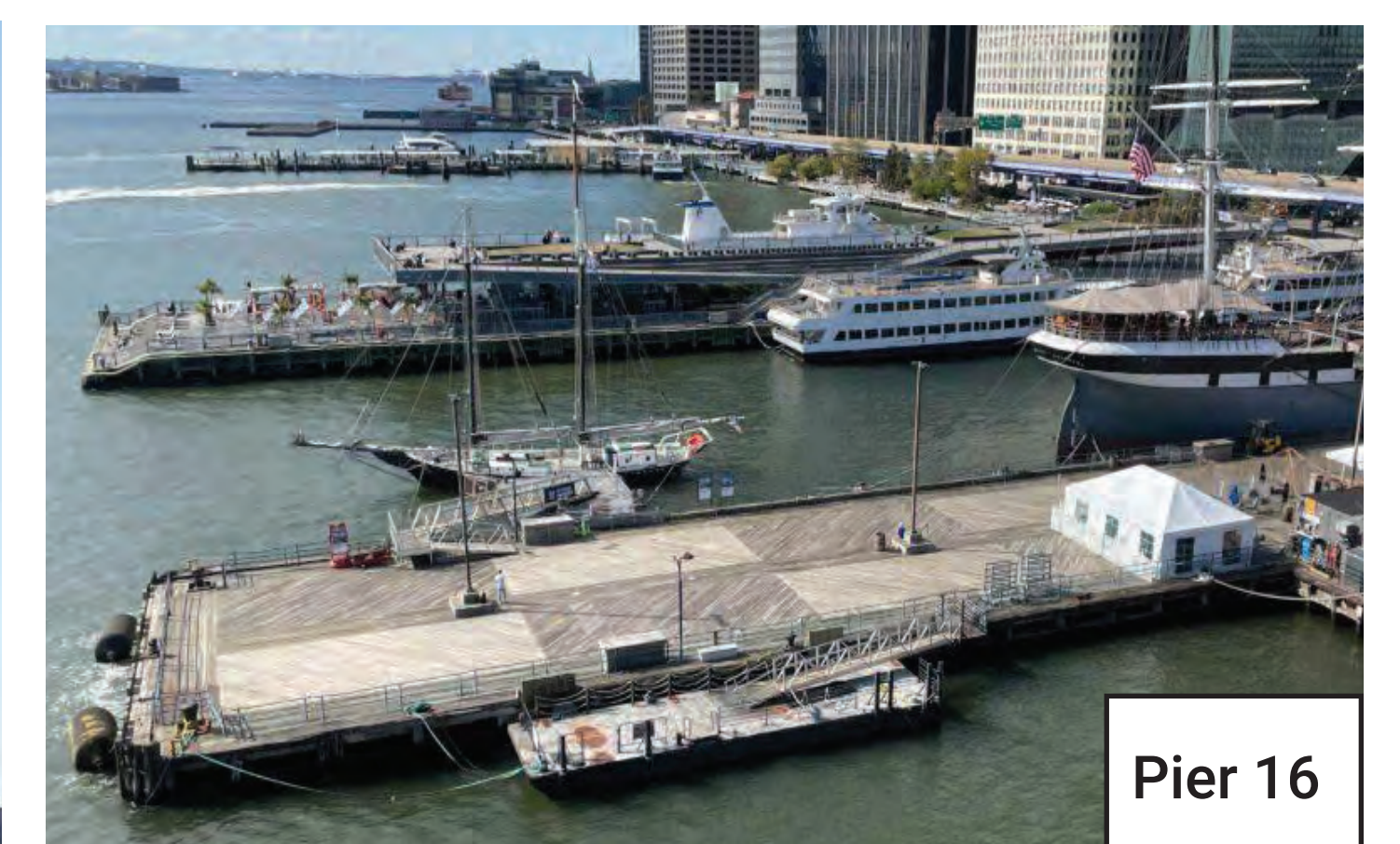
South Street Seaport has been a hub of maritime activity since the 17th century, but without action, this historic neighborhood will be vulnerable to flooding.

This project proposes building long-term flood defense by extending the shoreline and reconstructing low-lying piers at a higher elevation.

If we do not act soon, Pier 15, Pier 16, the East River Esplanade, and Seaport Beach will face inevitable flooding.



Pier 15 two-story public pier



Pier 16



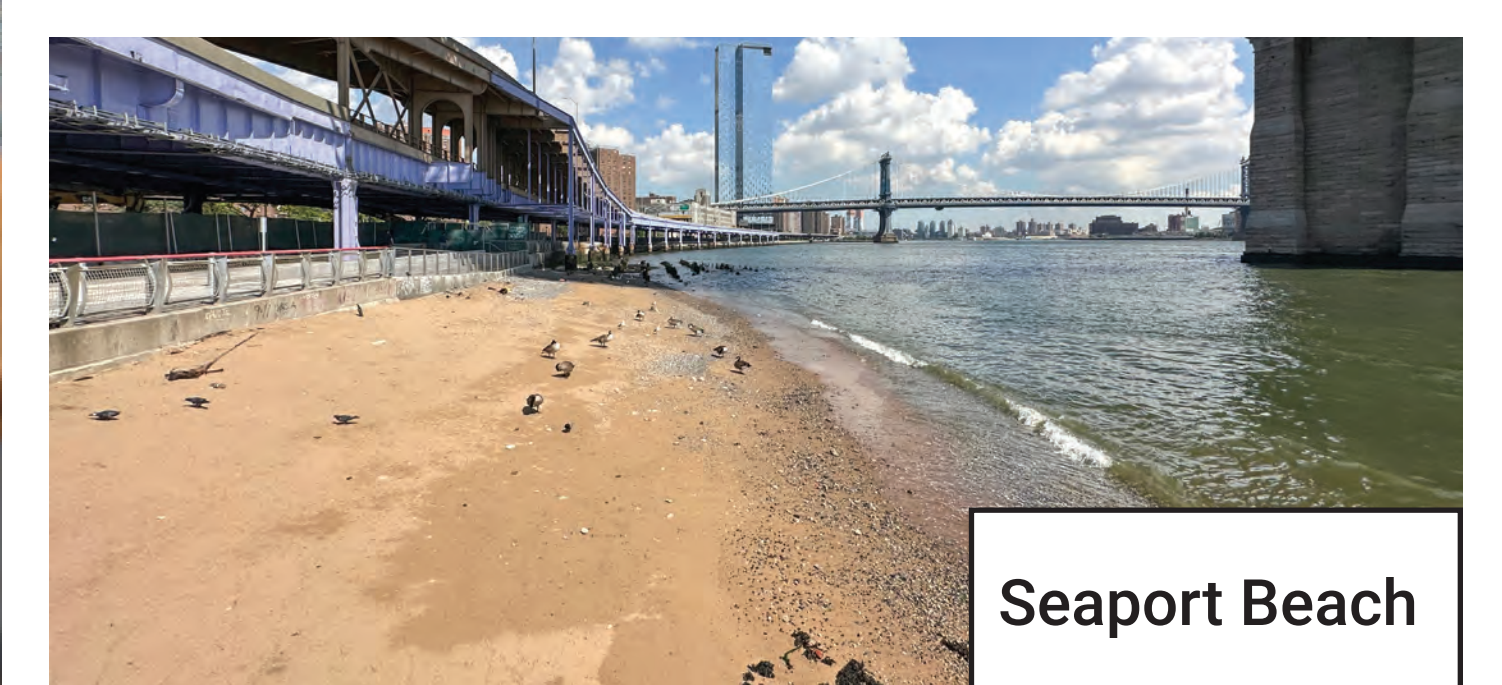
Pier 17



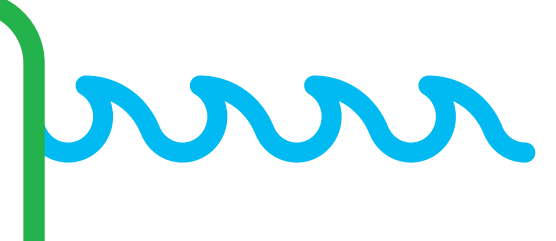
East River Esplanade



View of Wavertree from Tin Building

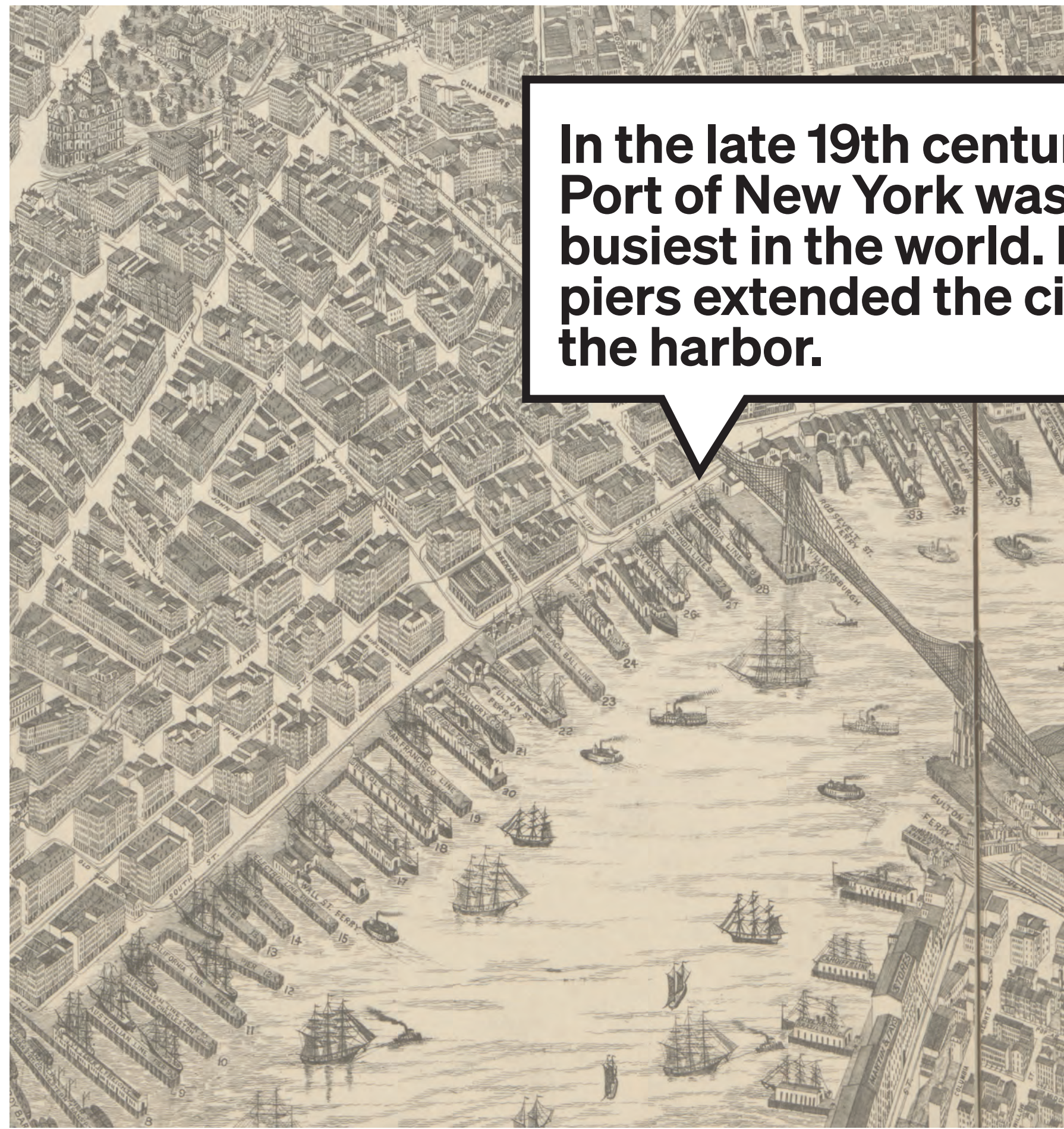


Seaport Beach

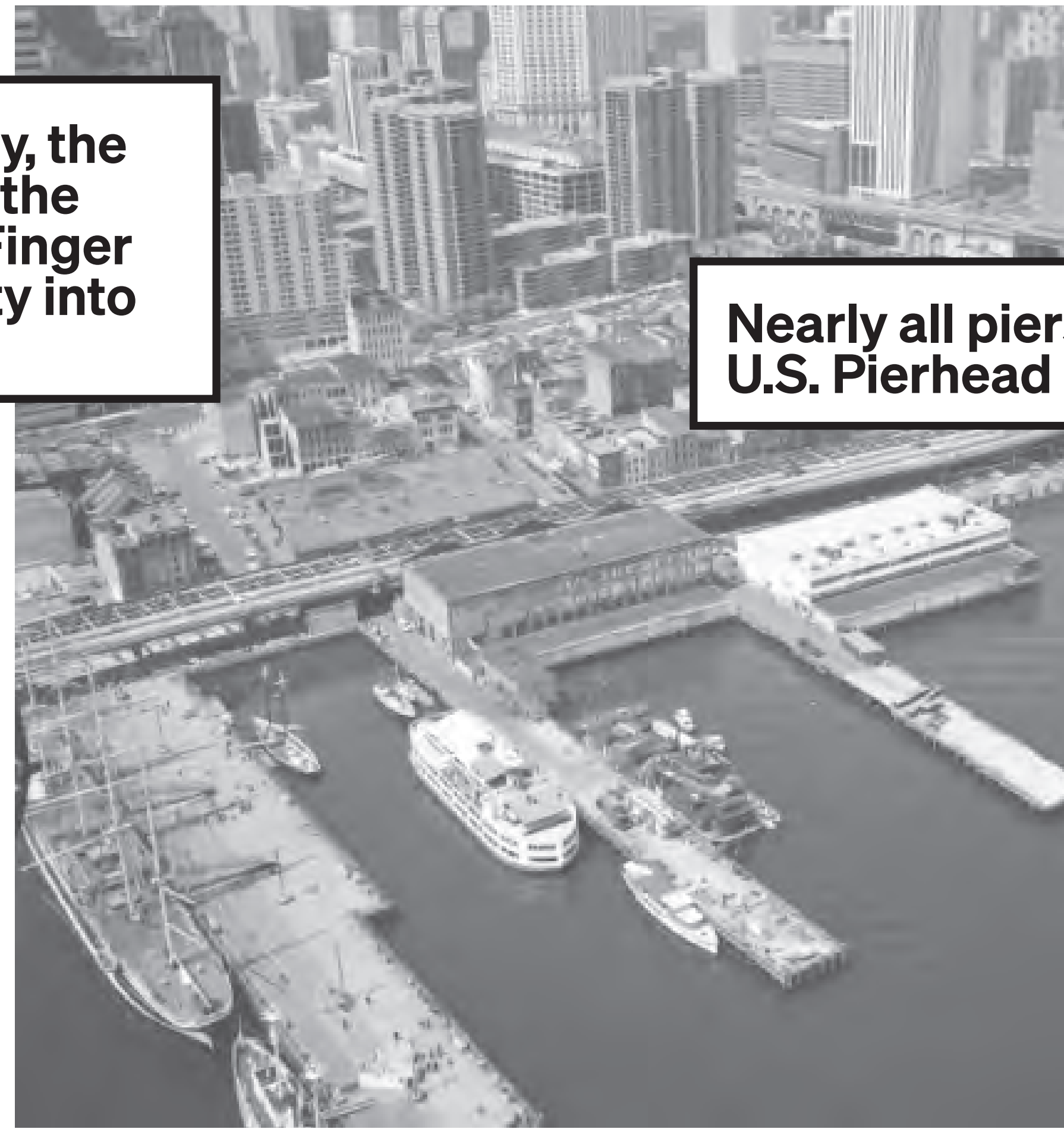


As the South Street Seaport has evolved over the decades, so have the piers.

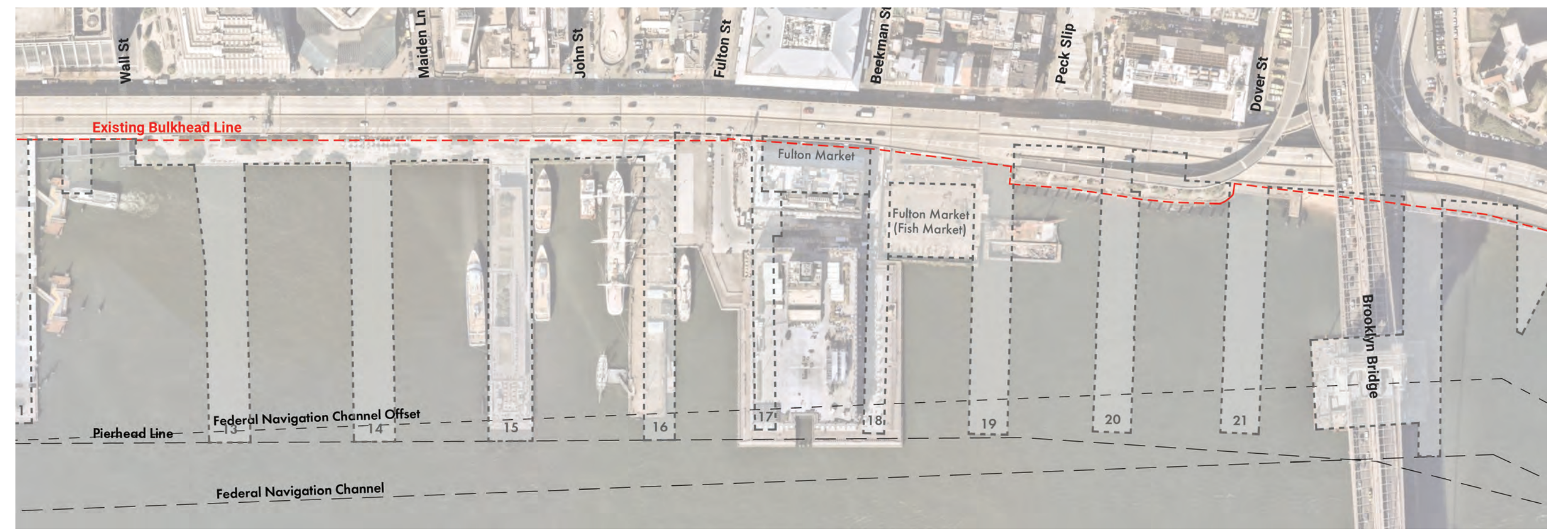
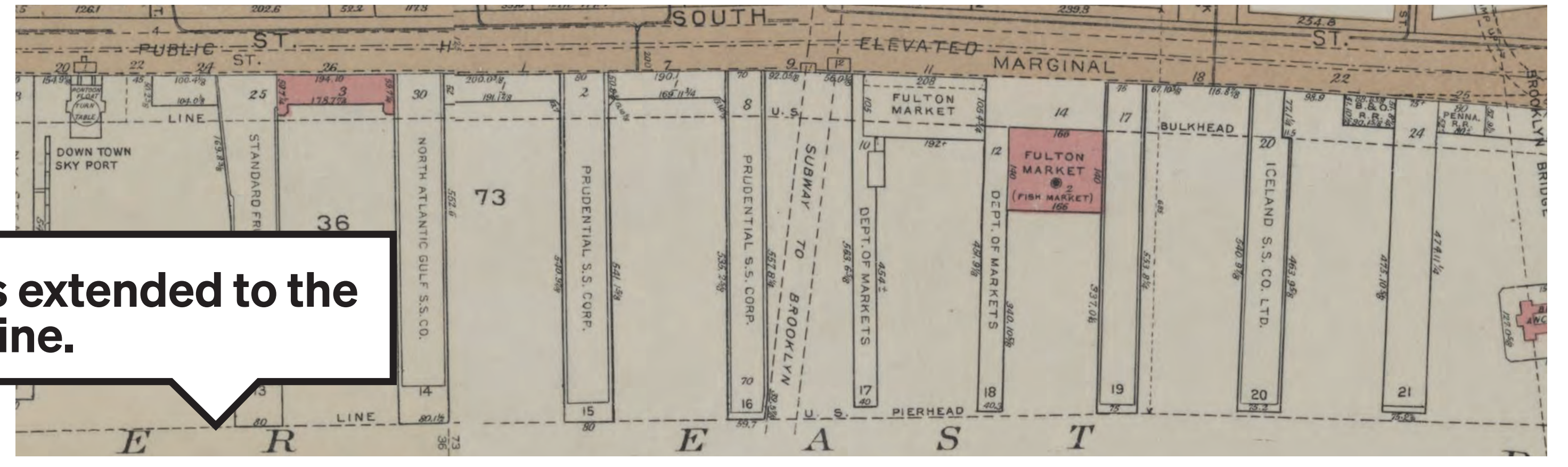
Only piers 15, 16, and 17 remain today.



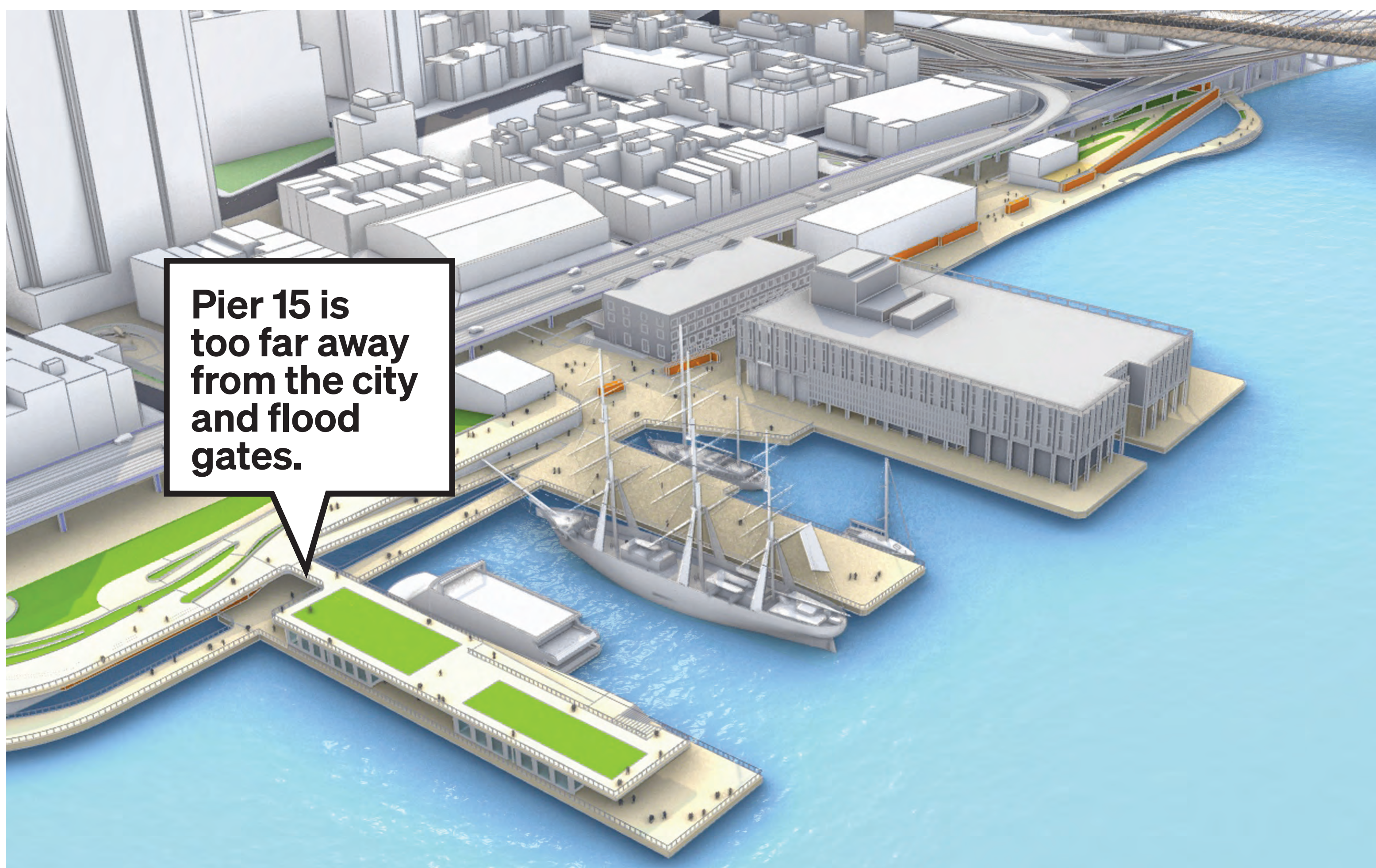
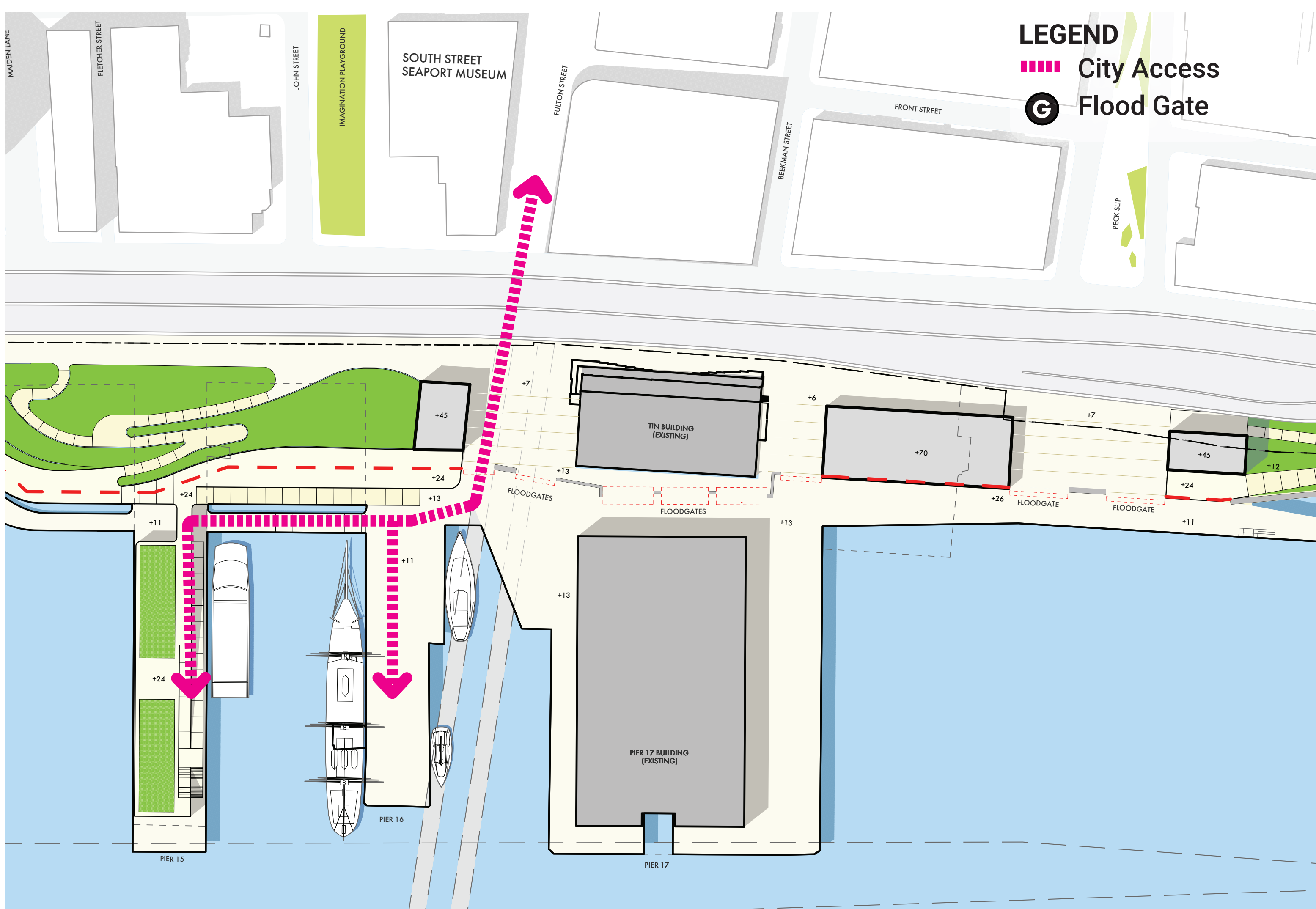
In the late 19th century, the Port of New York was the busiest in the world. Finger piers extended the city into the harbor.



Nearly all piers extended to the U.S. Pierhead line.

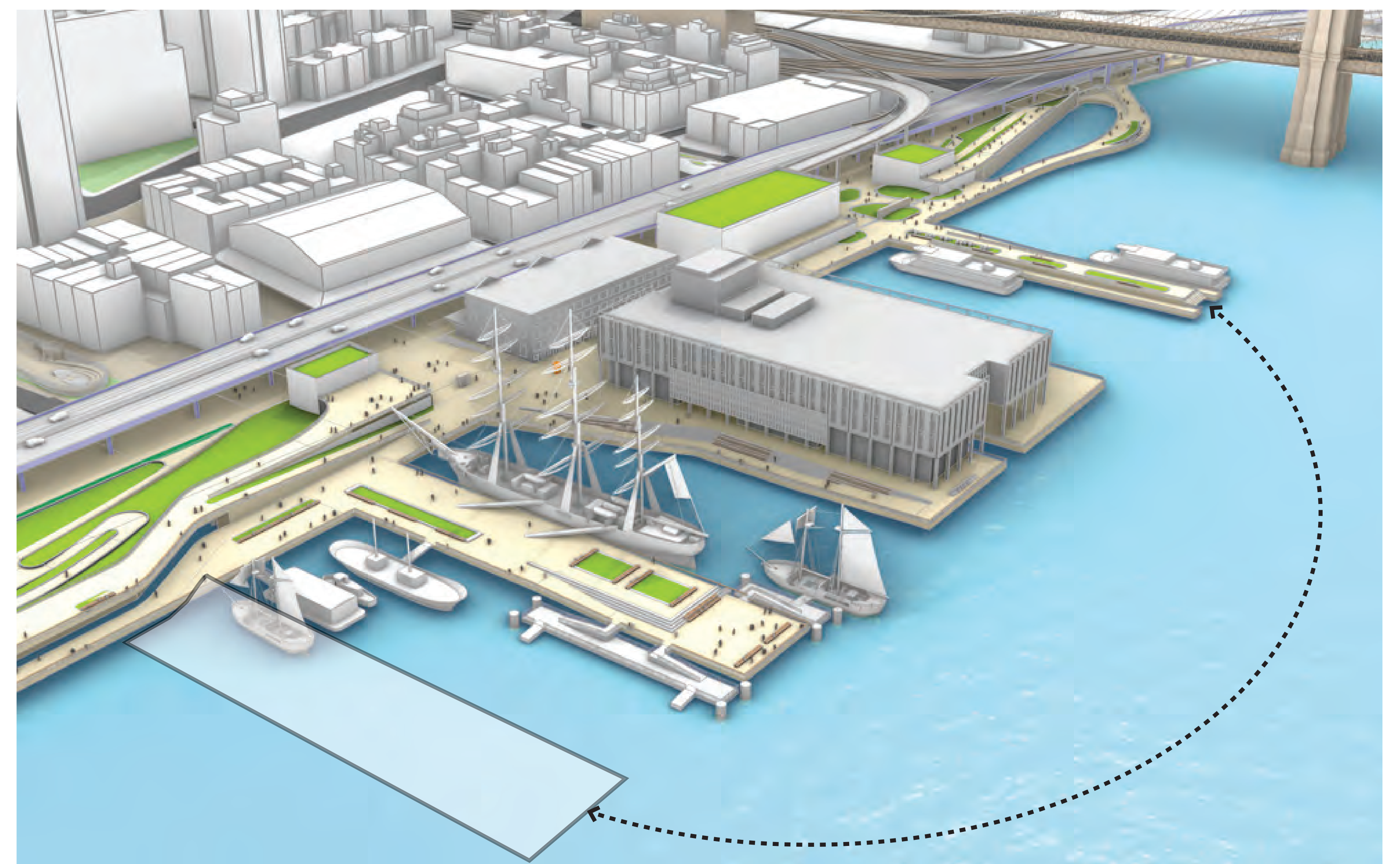
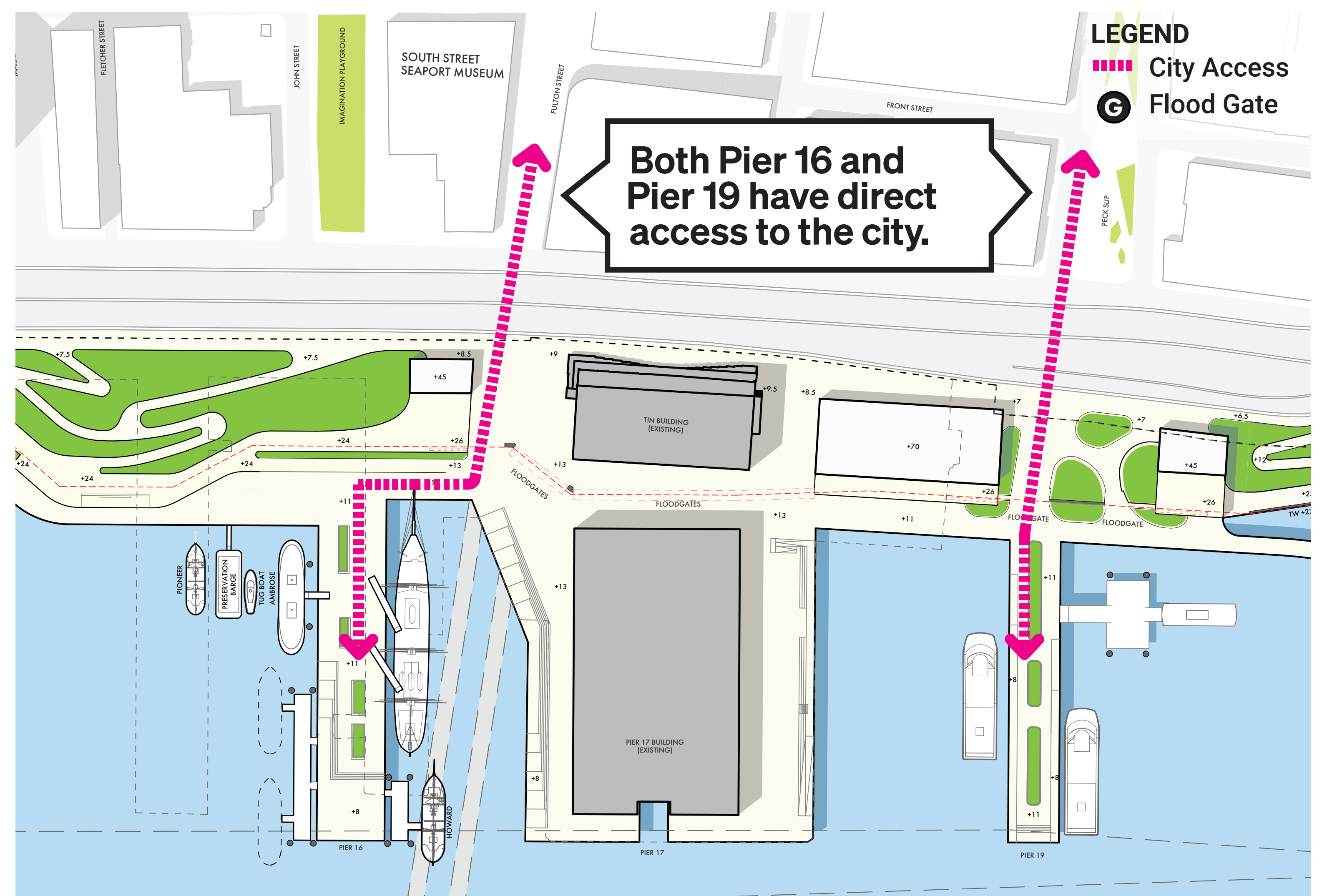


How has the design been refined?



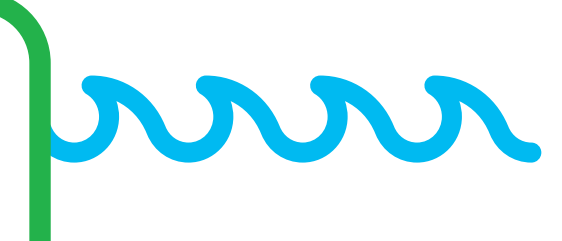
Phase 5 - Previous Design

Phase 5 revealed that reconstructing Pier 15 is too costly, lacks emergency land access, and is too distant from the flood gates.



Phase 6 - Current Design

Phase 6 proposes replacing Pier 15 with Pier 19, offering a more cost-effective solution that increases flexibility for vessel docking and programming.



This design creates space for vessel docking, new city views, and direct connections from the city to the waterfront.



To the north of Fulton Street, Pier 19 will create additional space for boats and provide direct access from the pier to the city. This new pier pays homage to the historic pier that once stood there in the mid 20th century.

The multi-level esplanade creates continuous connections along the shoreline. Gently sloped paths weave through the landscape, linking public spaces to the neighborhoods and nearby Seaport destinations.

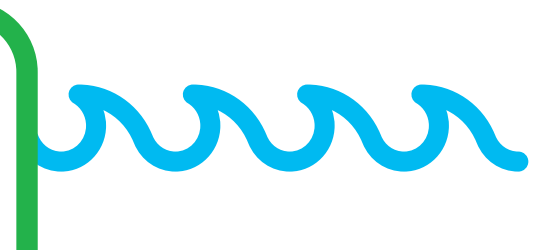
Beyond providing connections along the East River, the esplanade offers views of historic vessels and waterfront dining opportunities overlooking the city.



Upper-level esplanade looking North toward Pier 17.



Fulton St. serves as a gateway to the Seaport waterfront, offering views of historic vessels like the the Wavertree.



Seaport Piers integrates a flood defense system into the city.

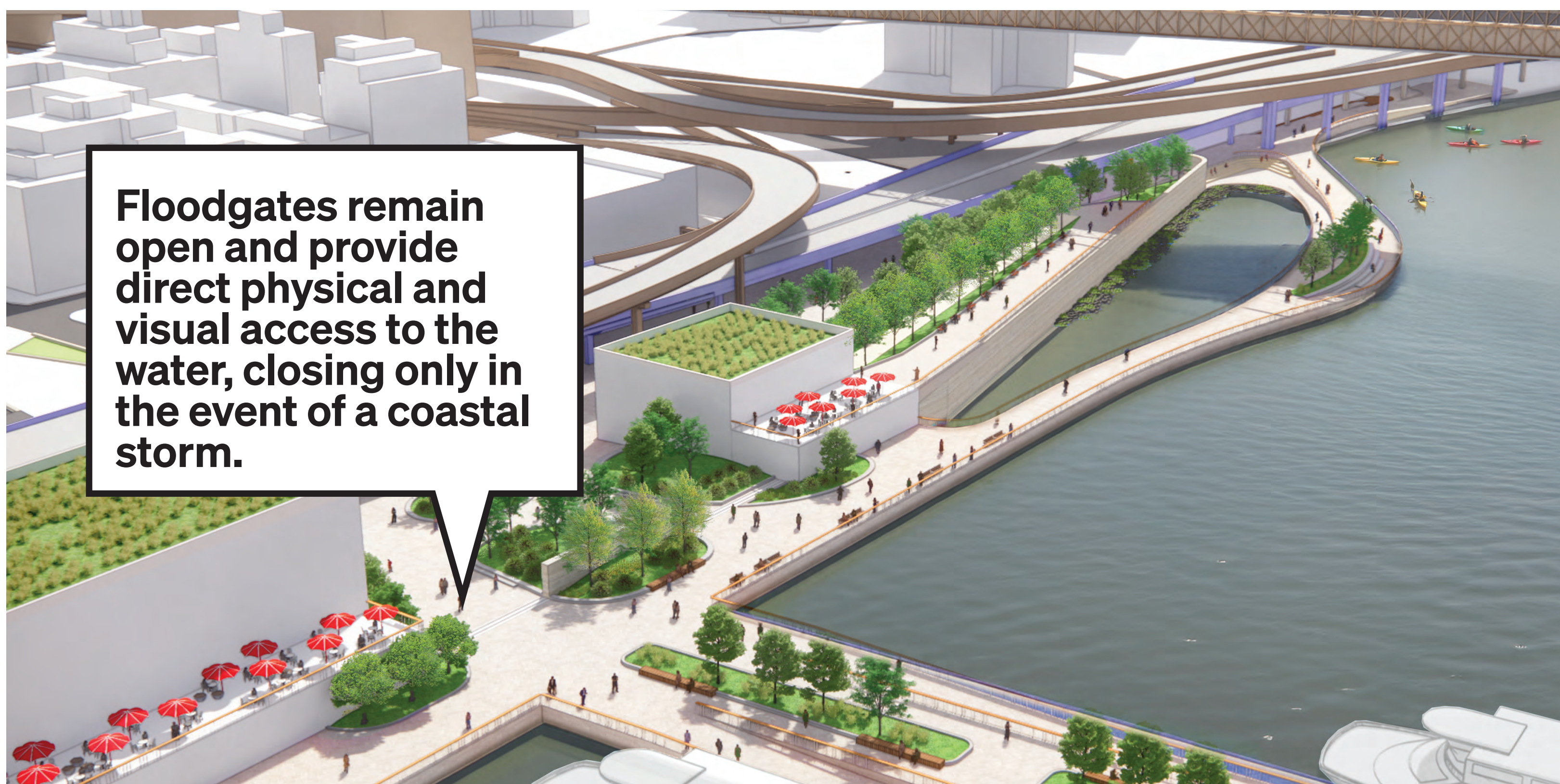
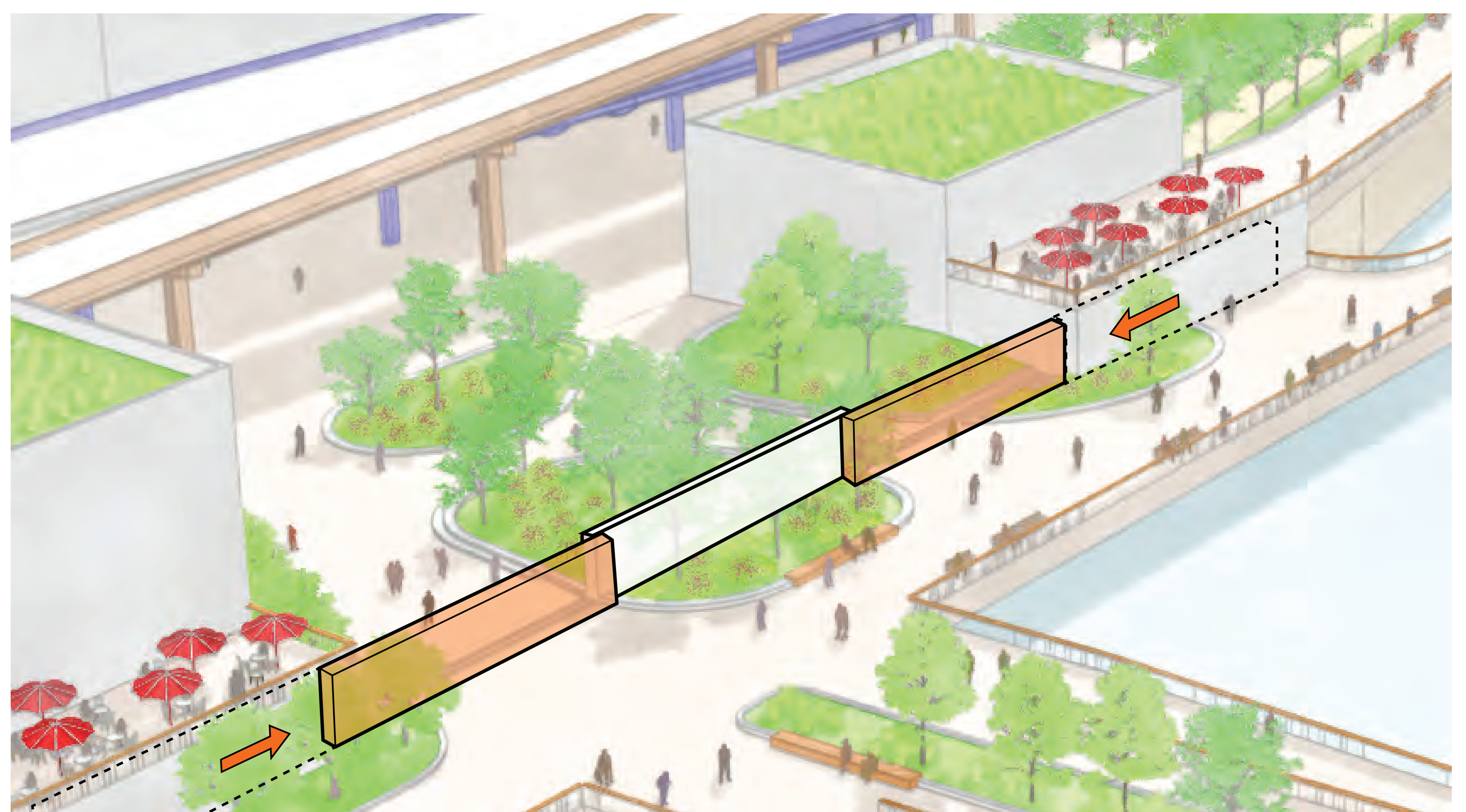
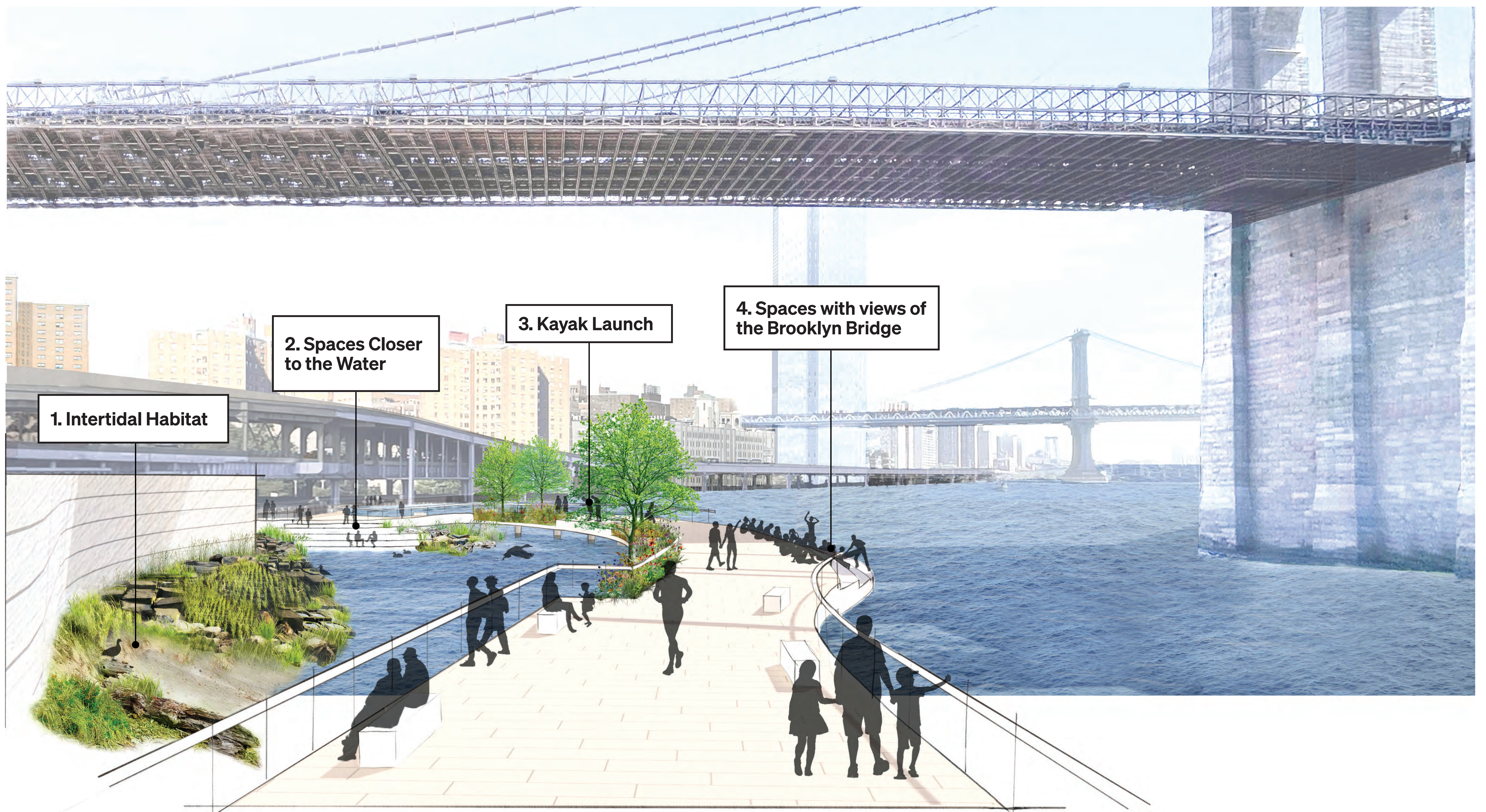


Illustration of how the floodwall and flood gates would protect Lower Manhattan during a storm.

Floodgates are hidden from view during normal weather conditions and can be quickly deployed in the event of a coastal storm to provide a continuous line of flood defense to +23 feet NAVD88.



Seaport Piers enhances the waterfront experience.



1. Intertidal constructed wetland at Hunts Point Landing. Horseshoe crabs appeared within the first couple seasons after construction.



2. "Get-down" spaces step down along the waterfront, allowing visitors to interact closely with the water.



3. Kayak Launch at Brooklyn Bridge Park.



4. The landscape frames views of the Brooklyn Bridge Park.

