

Thank you for being here!

We're looking forward to hearing from you.

Tonight's meeting will be divided into two parts:

PART 1 – Project presentation by design team

PART 2 – Questions moderated by EDC

Zoom tips:



1. Click on the “Participants” button, hover over your name and click on the “Rename” button to add your full name and a picture of yourself.



2. Connect your audio (you will be muted during the presentation but will have the opportunity to unmute if you have a question).



3. Ask a question!
Raise your hand or type into the comment box at any time.

LOWER MANHATTAN COASTAL RESILIENCY PROJECT – BATTERY

Introductory Community Presentation

March 24, 2021



Stantec team



Greg Sprich

PE, ENV SP

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CIVIL ENGINEERING LEAD



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RLA, WEDG

LANDSCAPE ARCHITECTURE LEAD

Lower Manhattan Coastal Resiliency projects



Project location



PROJECT BOUNDARY



Wharf History

Timeline

The earliest known inhabitants in the area were the Lenape



1600

1811

Southwest Battery Fort (now known as Castle Clinton) erected 200ft offshore



1700

1855-1890

Castle Clinton used as the federal immigration center; processed approximately eight million immigrants during this time



1800

1940-1952

Battery Park closed to build Brooklyn-Battery Tunnel and Battery Park Underpass



1900

2019

LMCR Study



2000

2100



1626

Fort Amsterdam constructed by the Dutch for the purposes of trade and defense



1853-1872

Period of waterfront filling to create developable land. Roughly 20% of the larger metropolitan region is built on landfill and much of that fill is varied forms of waste from city development projects and garbage



1890-1941

Castle Clinton acquired by New York City Department of Public Parks and operated as the New York Aquarium



1974

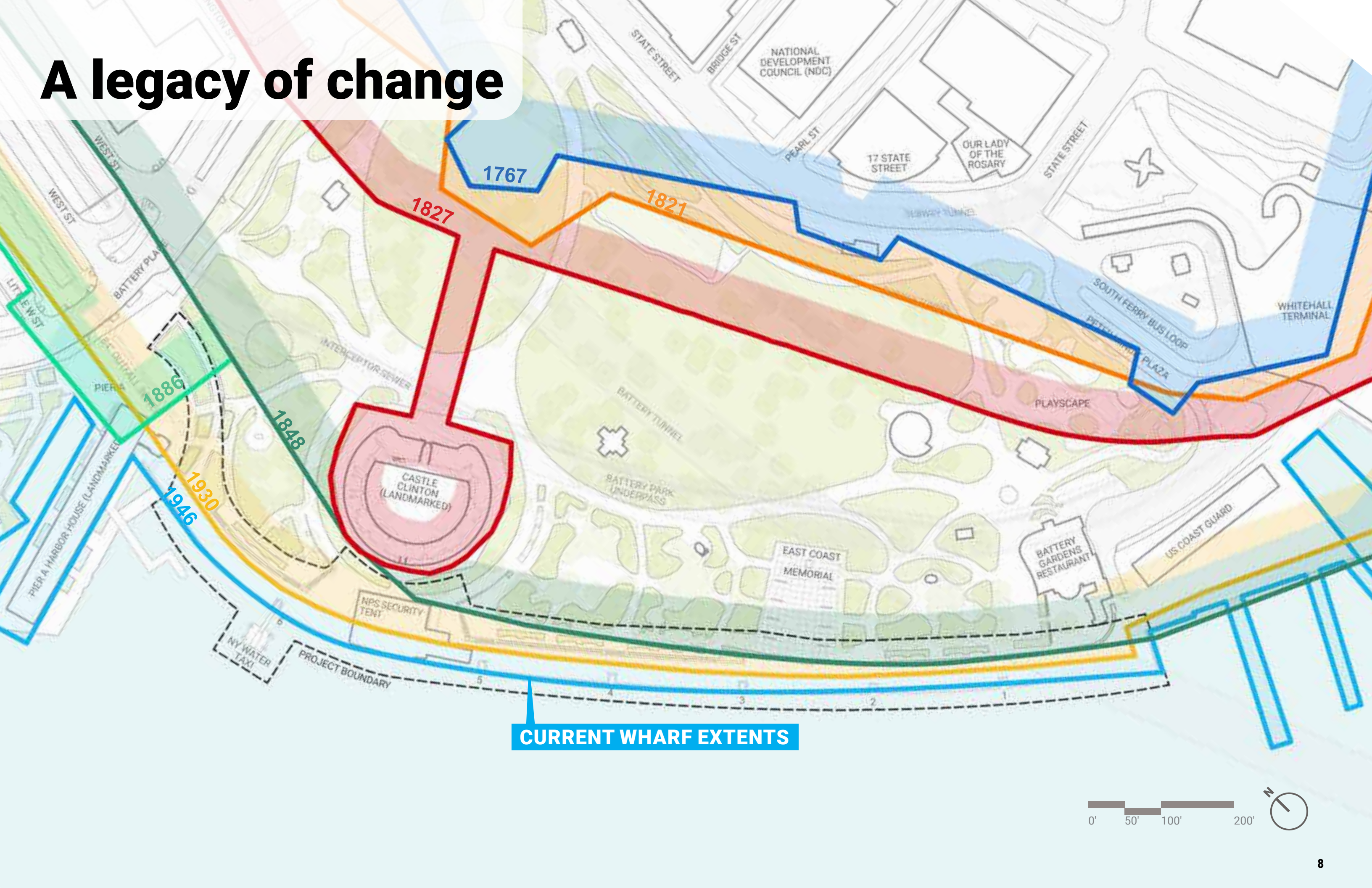
1.2 million cubic yards of earth from the World Trade Center foundation excavation was used to create Battery Park City



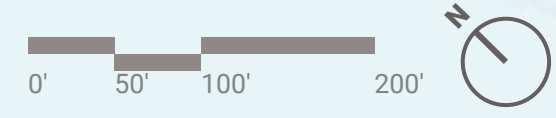
2012

Hurricane Sandy

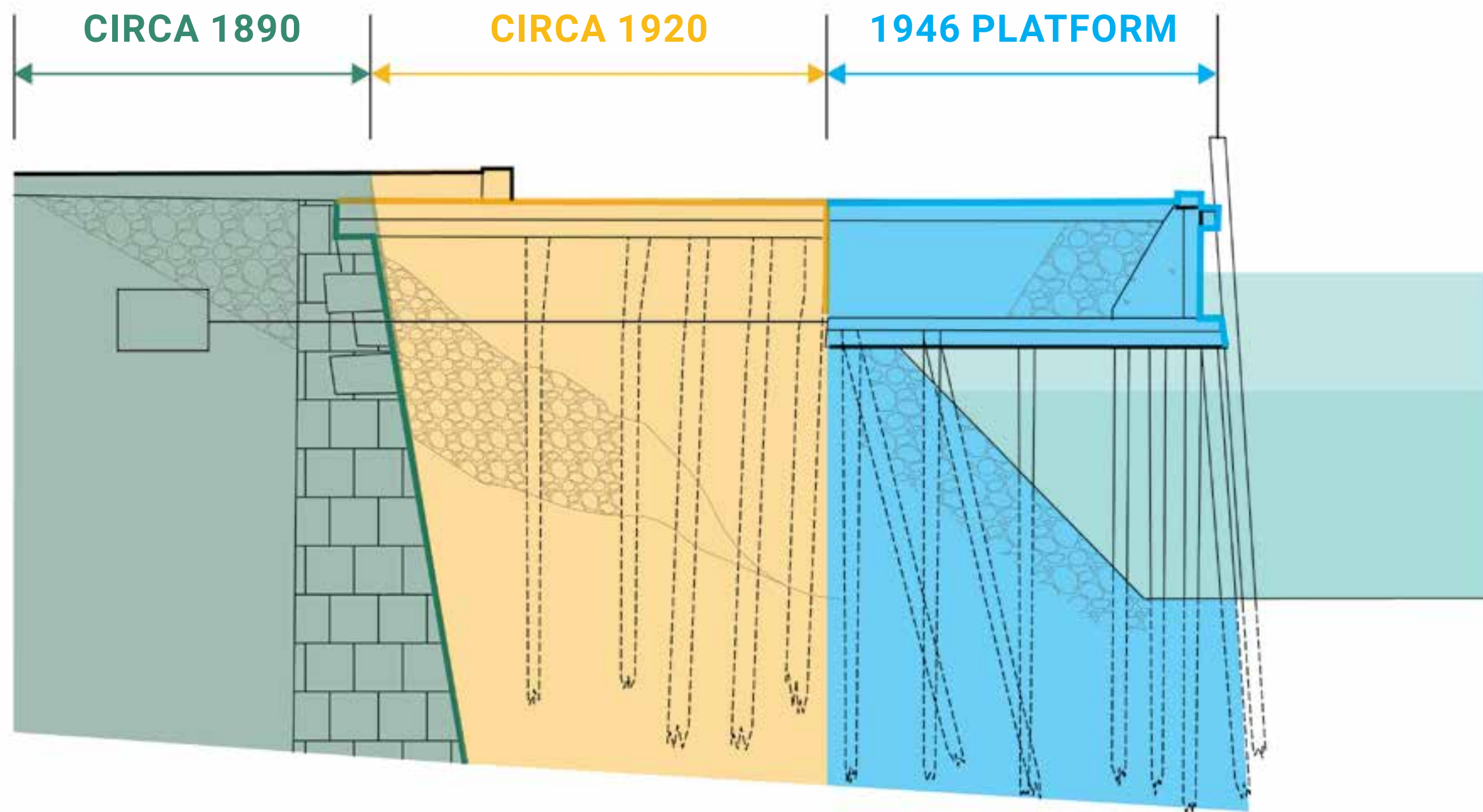
A legacy of change



CURRENT WHARF EXTENTS



WHARF HISTORY



Wharf Activity

Direct waterfront access

**WHARF
ACTIVITY**



FERRY

GARDENS OF REMEMBRANCE

PROMENADE

VARIED SEATING

Frequented by passenger vessels

WHARF ACTIVITY

Ferry service out of the Battery has been operating since 1953, when the Circle Line started taking visitors to the Statue of Liberty.



WHARF ACTIVITY

**Around 2004,
New York Water Taxi also
began running operations
out of the Battery and
berths at slip 6.**



A range of park activities

WHARF
ACTIVITY

INCIDENTAL VIEWS OF THE WATER

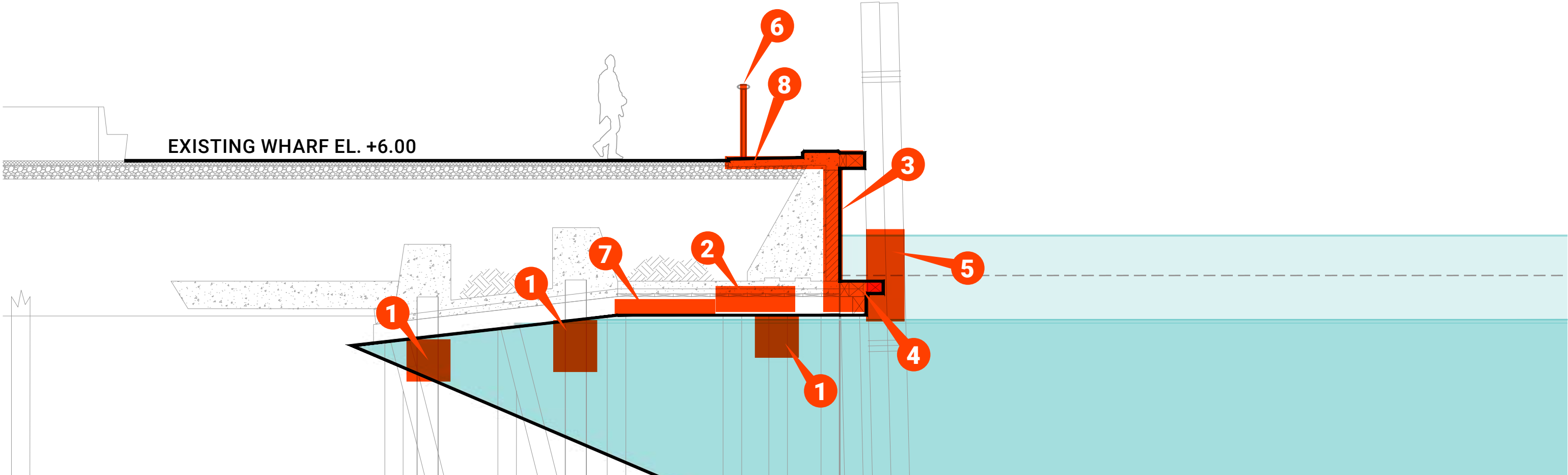


Wharf Condition

The wharf is in poor condition

WHARF CONDITION

- ① SECTIONS OF TIMBER PILES MISSING DUE TO ROT
- ② STRUCTURAL CRACK IN CONCRETE CAP
- ③ EXPOSED CONCRETE GRAVITY WALL FACE DUE TO COLLAPSING GRANITE BLOCK FASCIA
- ④ DAMAGE TO TIMBER LINE CAP
- ⑤ MARINE DEGRADATION AND TIMBER ROT
- ⑥ DAMAGED SEA RAIL
- ⑦ DAMAGED DECK
- ⑧ SINKHOLES



WHARF CONDITION

SINKHOLE

2018

WHARF CONDITION

HEAVED CONCRETE CAP

WHARF CONDITION

EXPOSED CONCRETE GRAVITY WALL FACE

COLLAPSING GRANITE BLOCK FACADE

DAMAGED CONCRETE FOUNDATION

TIMBER PLATFORM EXHIBITING ROT

WHARF CONDITION

EXPOSED AND CORRODED WIRE REINFORCEMENT

MARINE DEGRADATION AND TIMBER ROT

WHARF CONDITION

STRUCTURAL CRACK IN CONCRETE CAP



WHARF CONDITION

SECTIONS OF TIMBER PILES MISSING DUE TO ROT

Timeline

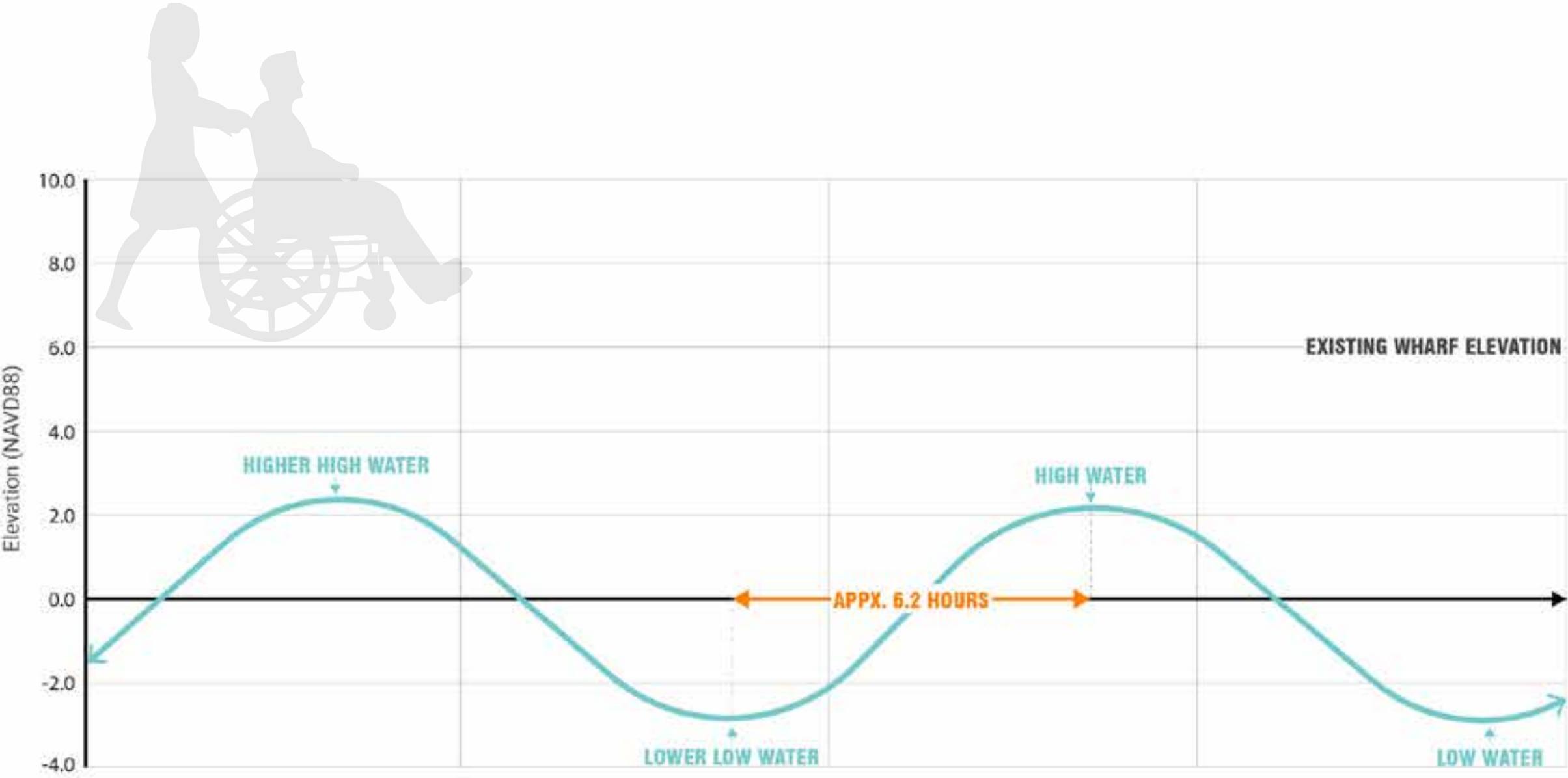
The wharf will continue its history of adaptation as we elevate it to address sea level rise for the next 80 years.



Climate Context

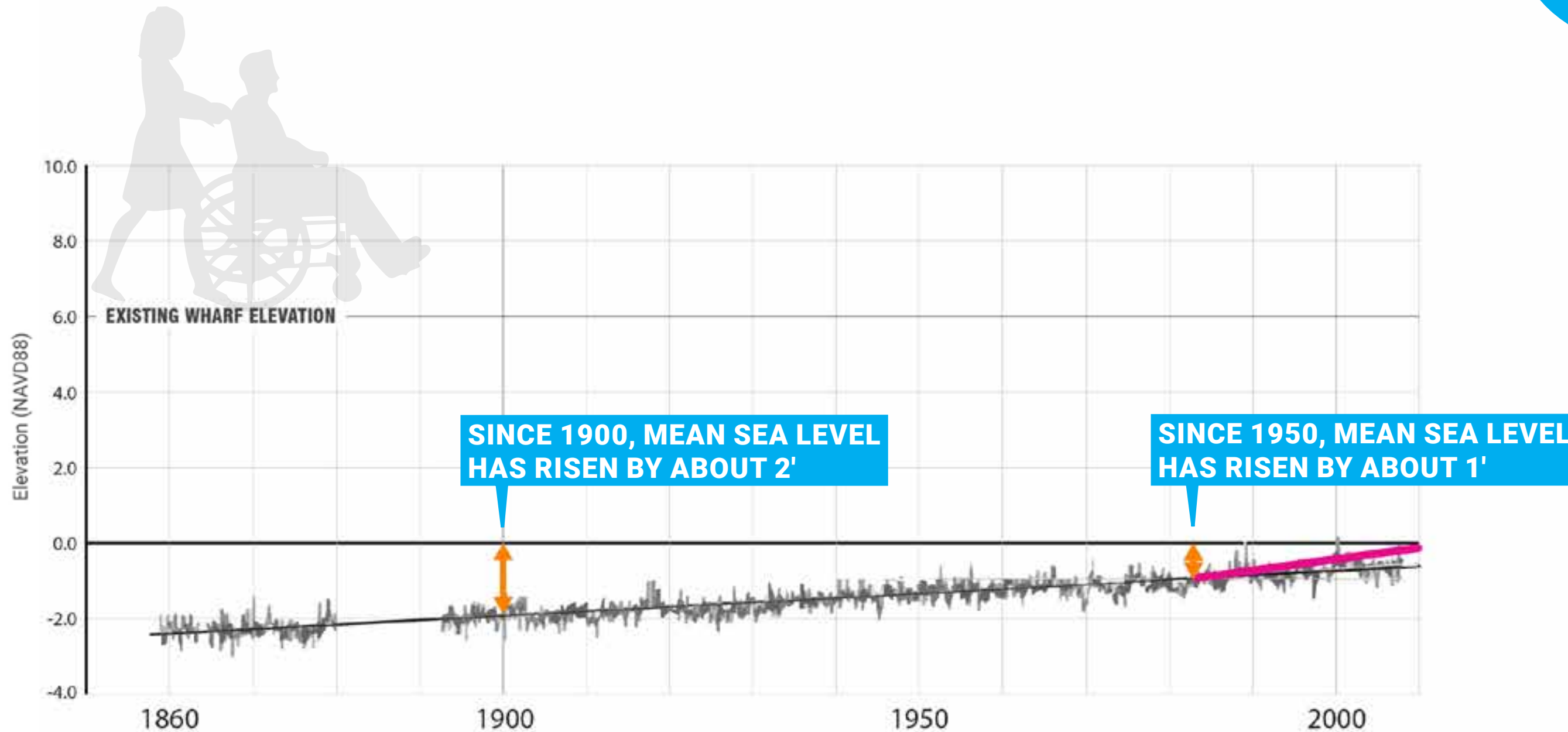
2021 daily water levels

CLIMATE
CONTEXT



Relative sea level rise at the Battery

CLIMATE
CONTEXT

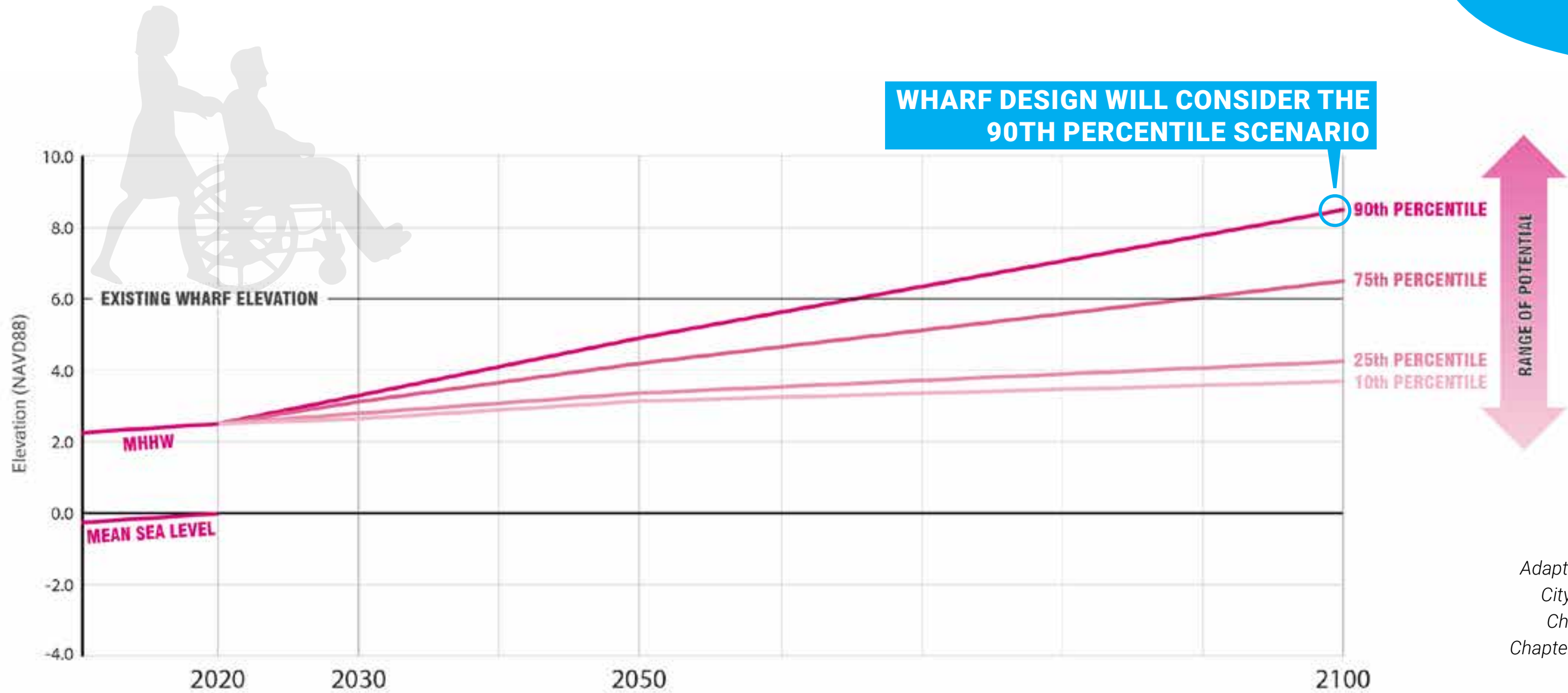


Adapted from New York
City Panel on Climate
Change 2019 Report
Chapter 3: Sea Level Rise

We are seeing a new, more extreme, trendline starting in the 1990s.

Designing with uncertainty

CLIMATE CONTEXT



Adapted from New York City Panel on Climate Change 2019 Report Chapter 3: Sea Level Rise

2021 MHHW

**CLIMATE
CONTEXT**



PRESENT DAY MHHW IS 3.5' BELOW THE WHARF

2050 MHHW if wharf remains at current elevation

CLIMATE
CONTEXT

MHHW IS 1' BELOW THE WHARF

DAILY INUNDATION OF BOAT SLIPS

2080 MHHW if wharf remains at current elevation

CLIMATE
CONTEXT

MHHW INUNDATION REACHES 1' ABOVE THE WHARF

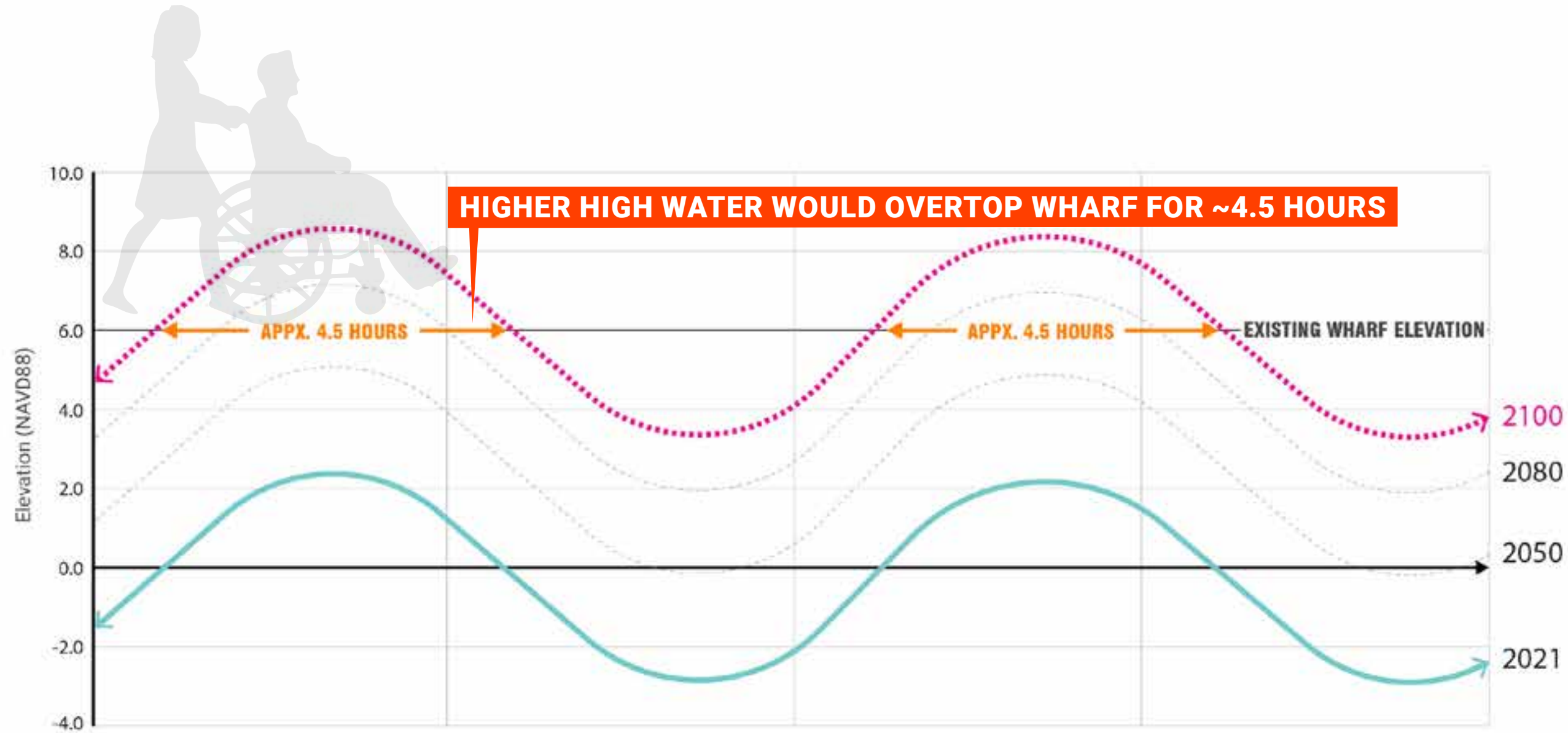
**2100 MHHW if wharf remains
at current elevation**

**CLIMATE
CONTEXT**

MHHW INUNDATION REACHES 2.5' ABOVE THE WHARF

2100 daily water levels

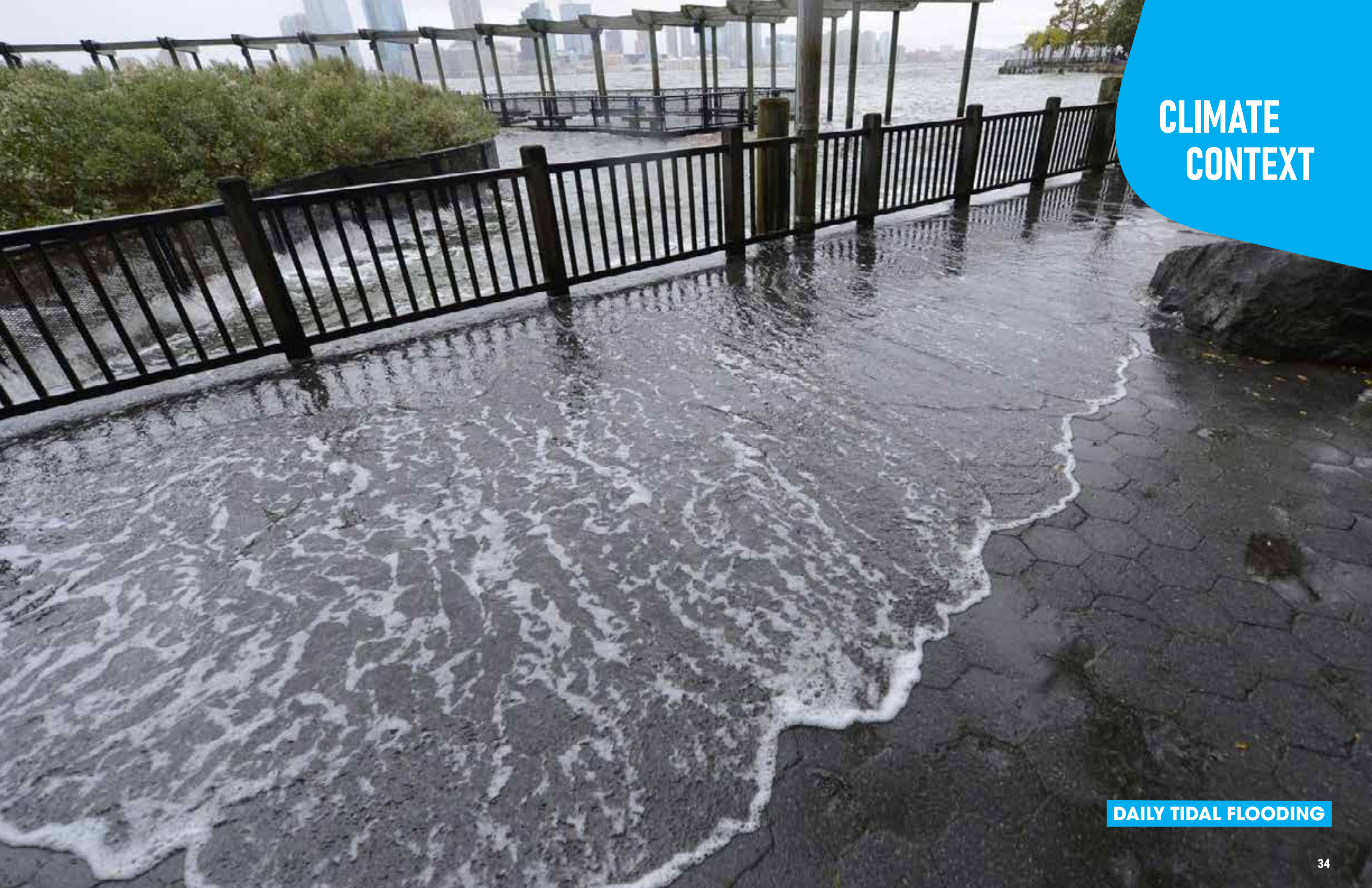
CLIMATE
CONTEXT



CLIMATE CONTEXT



HURRICANE SANDY OCTOBER 29, 2012



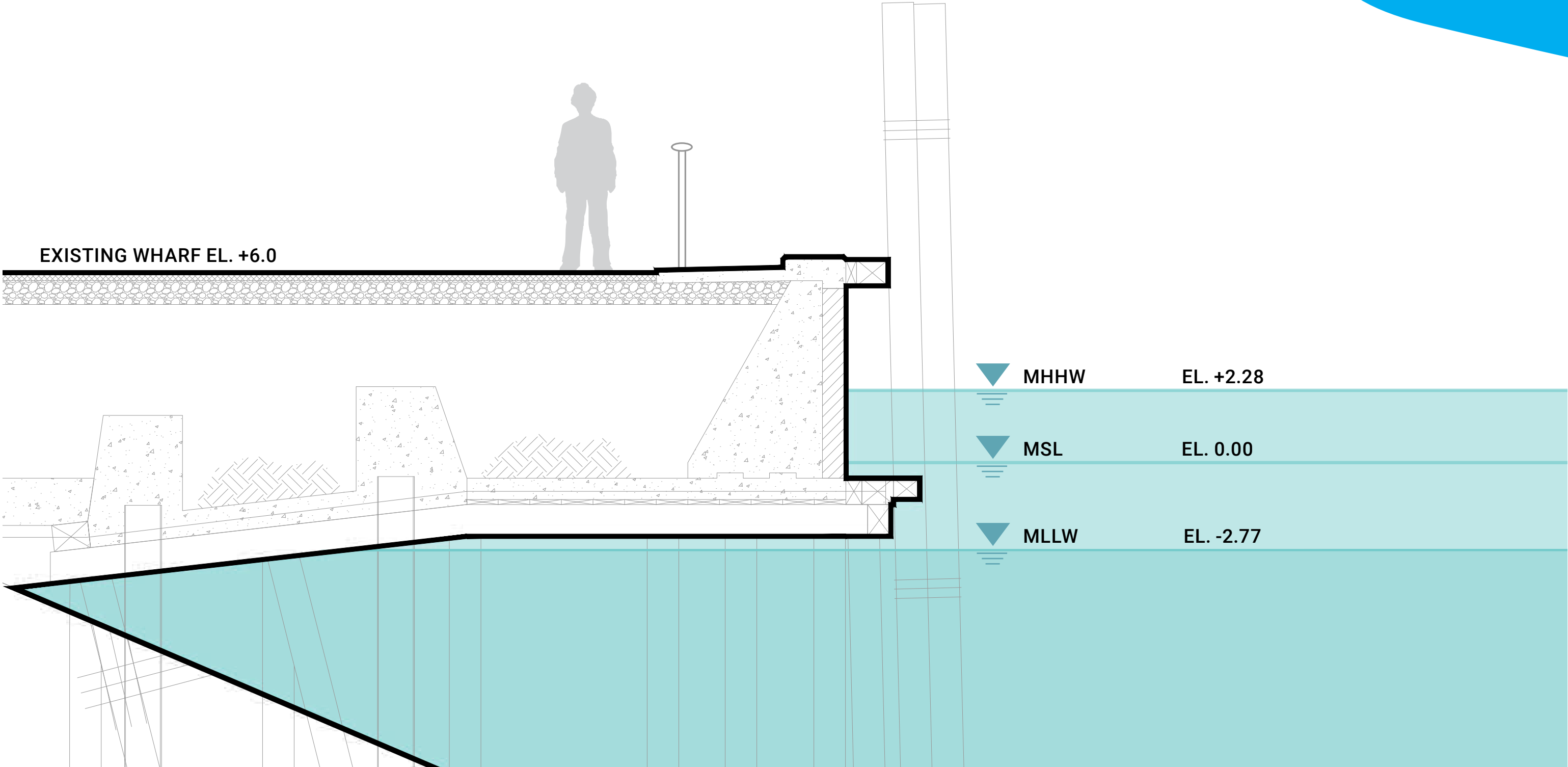
CLIMATE CONTEXT

DAILY TIDAL FLOODING

Design Criteria

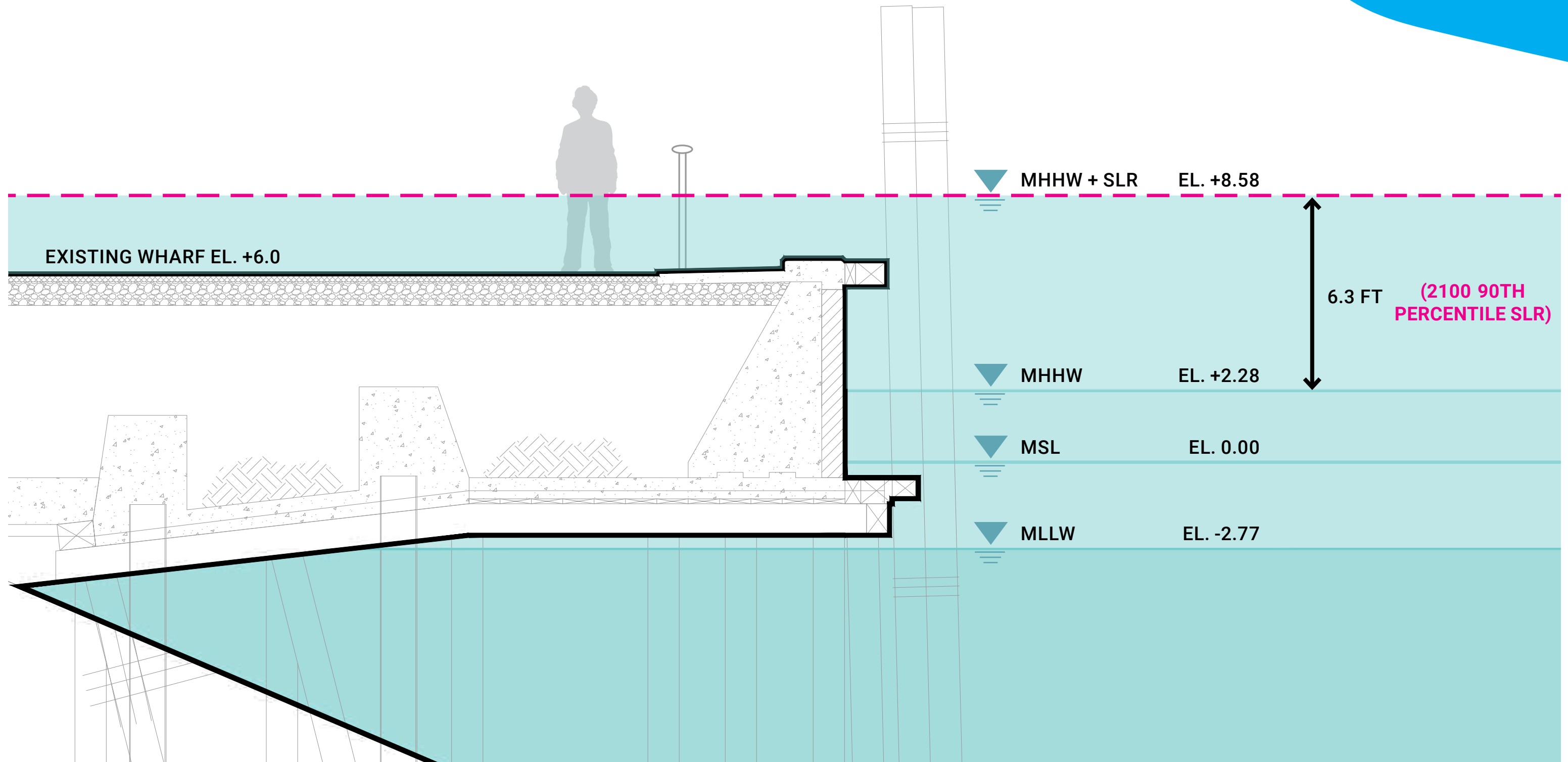
Wharf elevation

DESIGN CRITERIA



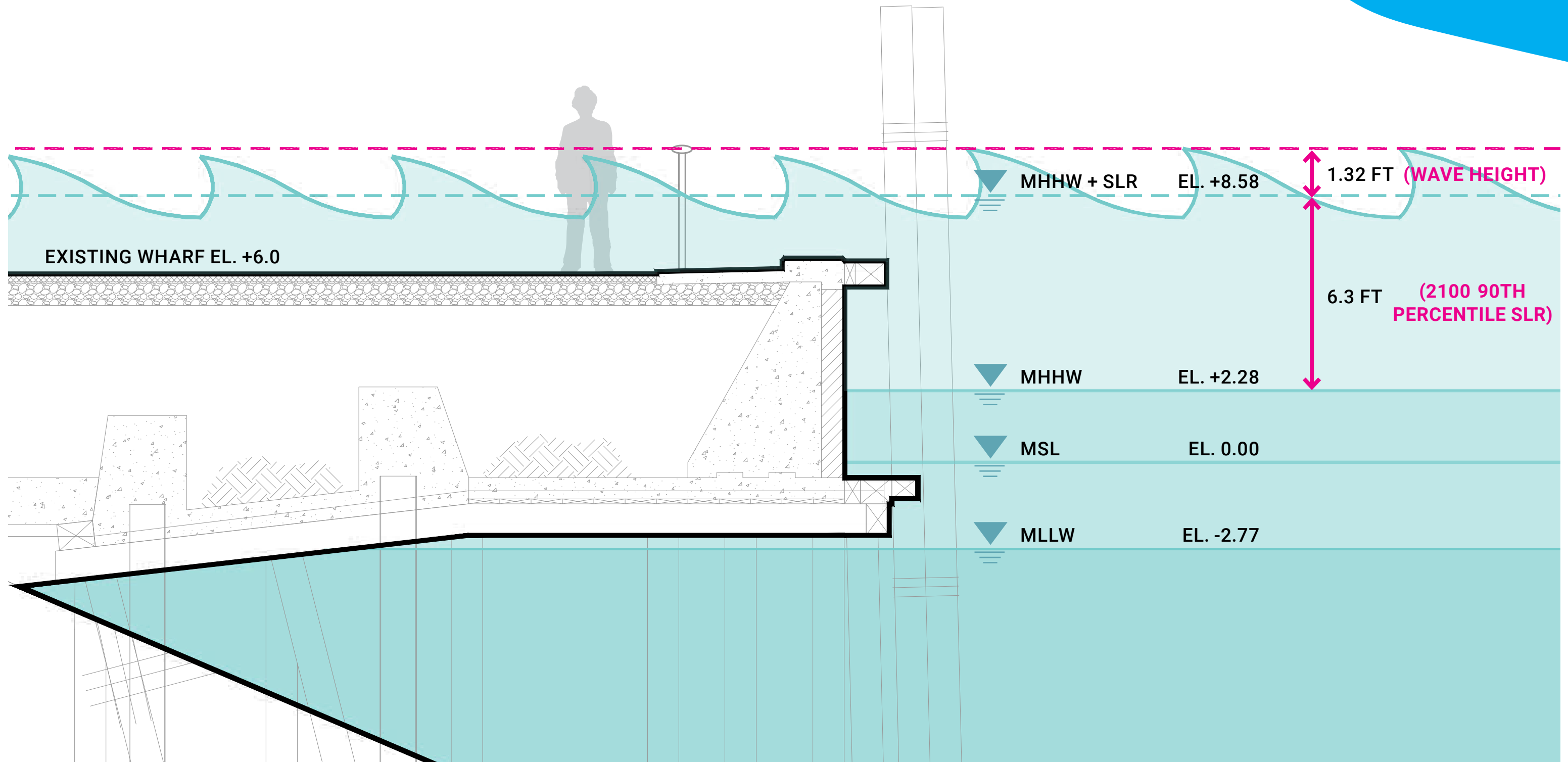
Wharf elevation

DESIGN CRITERIA



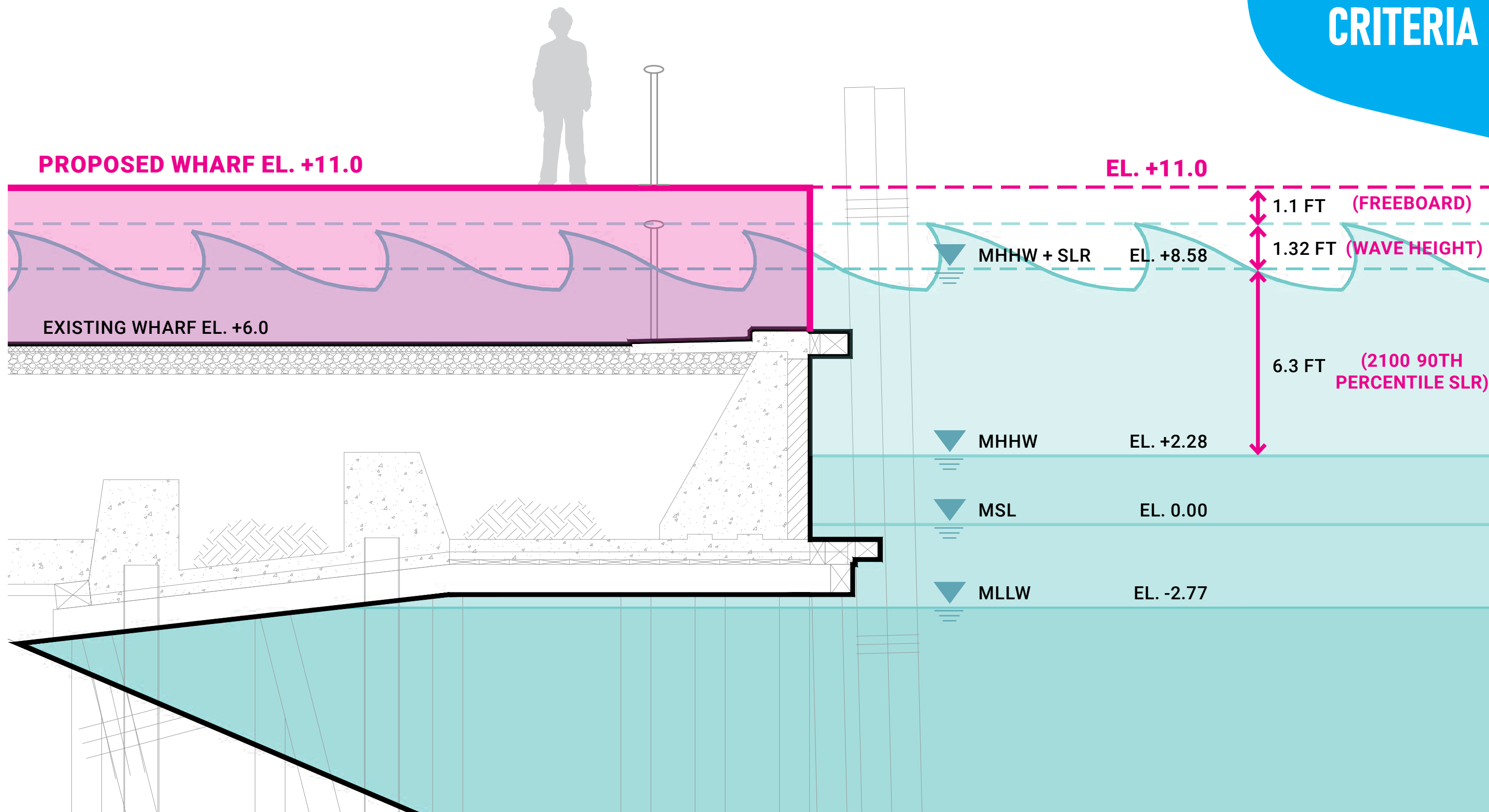
Wharf elevation

DESIGN CRITERIA

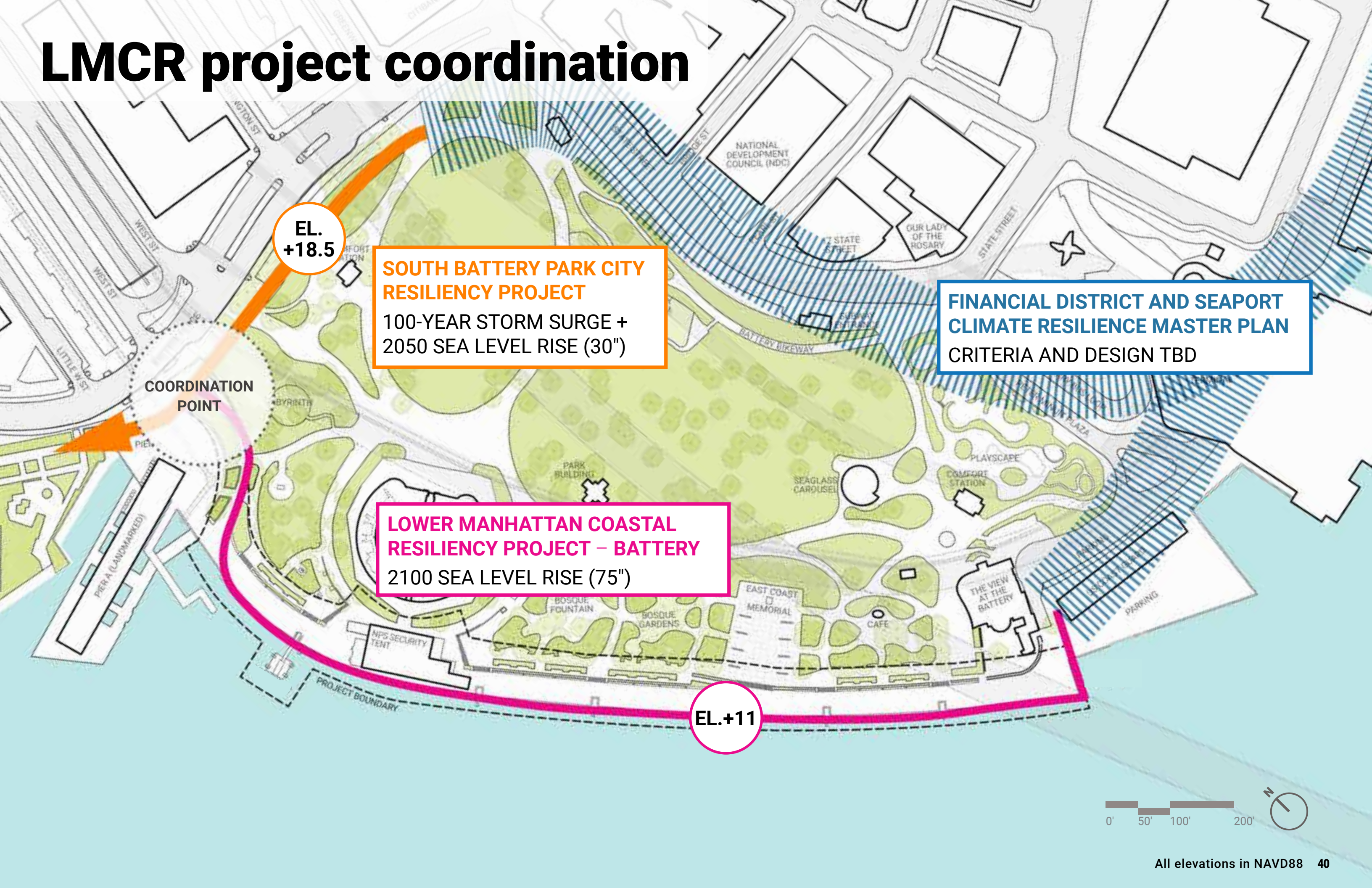


Wharf elevation

DESIGN CRITERIA



LMCR project coordination



EL.
+18.5

**SOUTH BATTERY PARK CITY
RESILIENCY PROJECT**

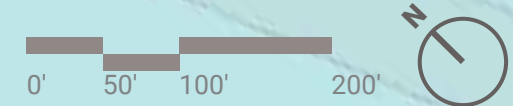
100-YEAR STORM SURGE +
2050 SEA LEVEL RISE (30")

**FINANCIAL DISTRICT AND SEAPORT
CLIMATE RESILIENCE MASTER PLAN
CRITERIA AND DESIGN TBD**

**LOWER MANHATTAN COASTAL
RESILIENCY PROJECT - BATTERY**

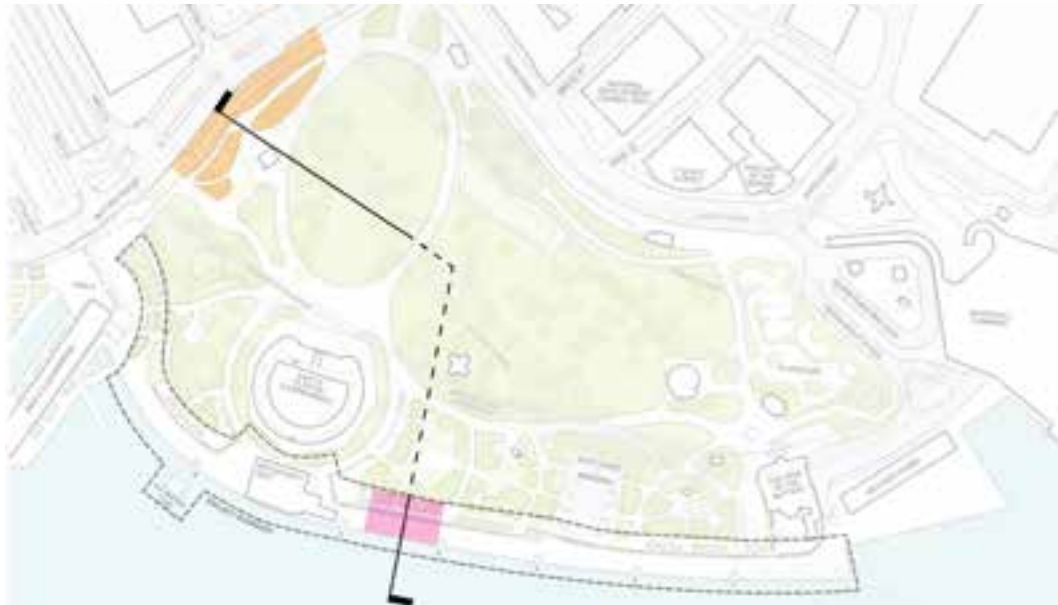
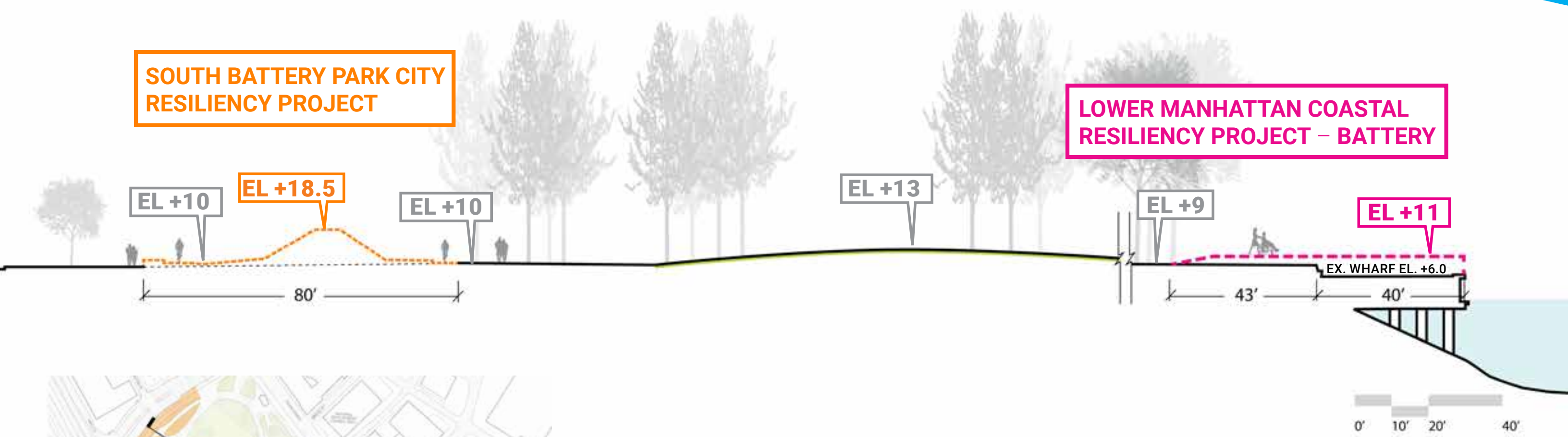
2100 SEA LEVEL RISE (75")

EL.+11



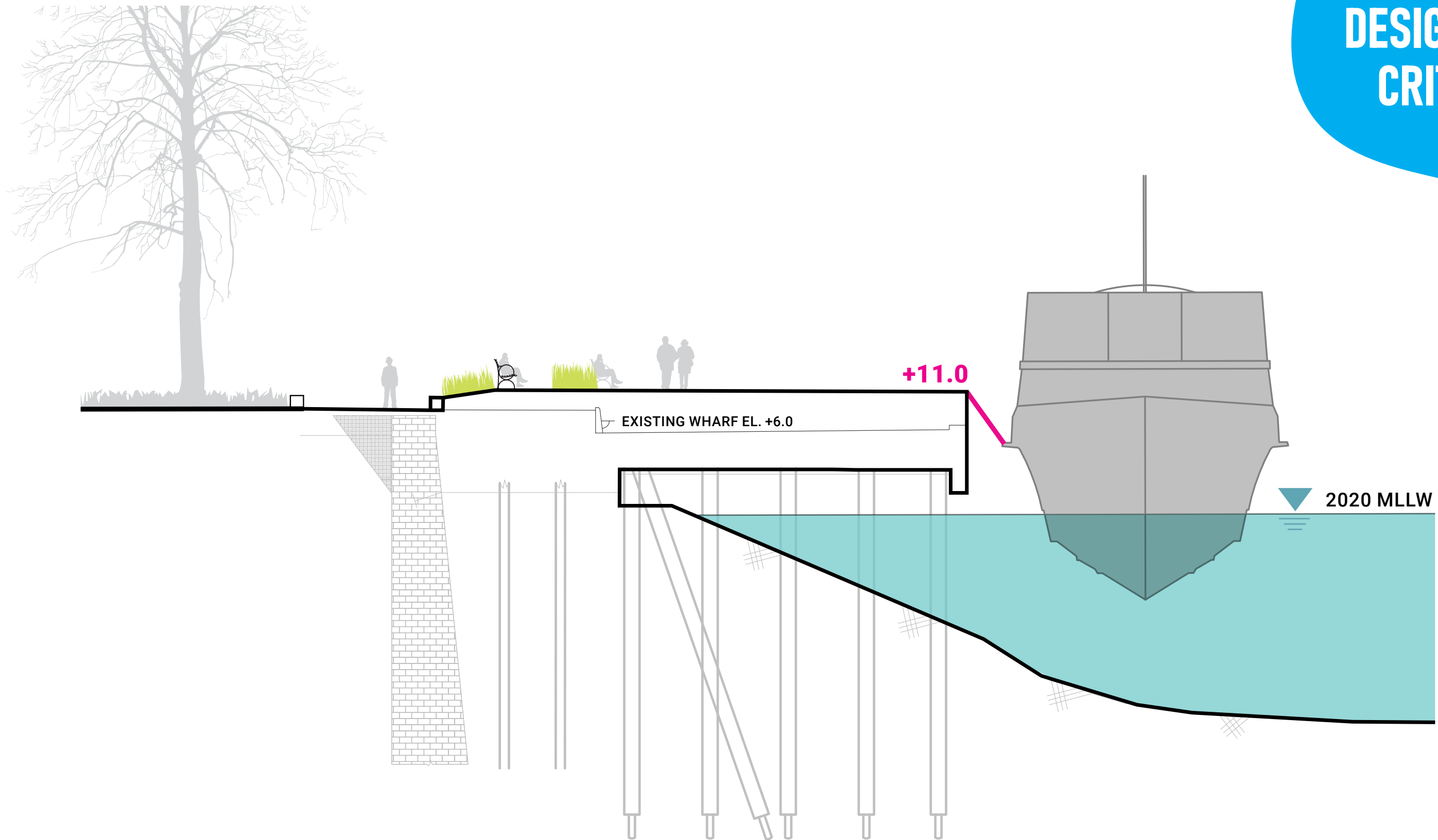
Coordinated adaptation projects

DESIGN CRITERIA



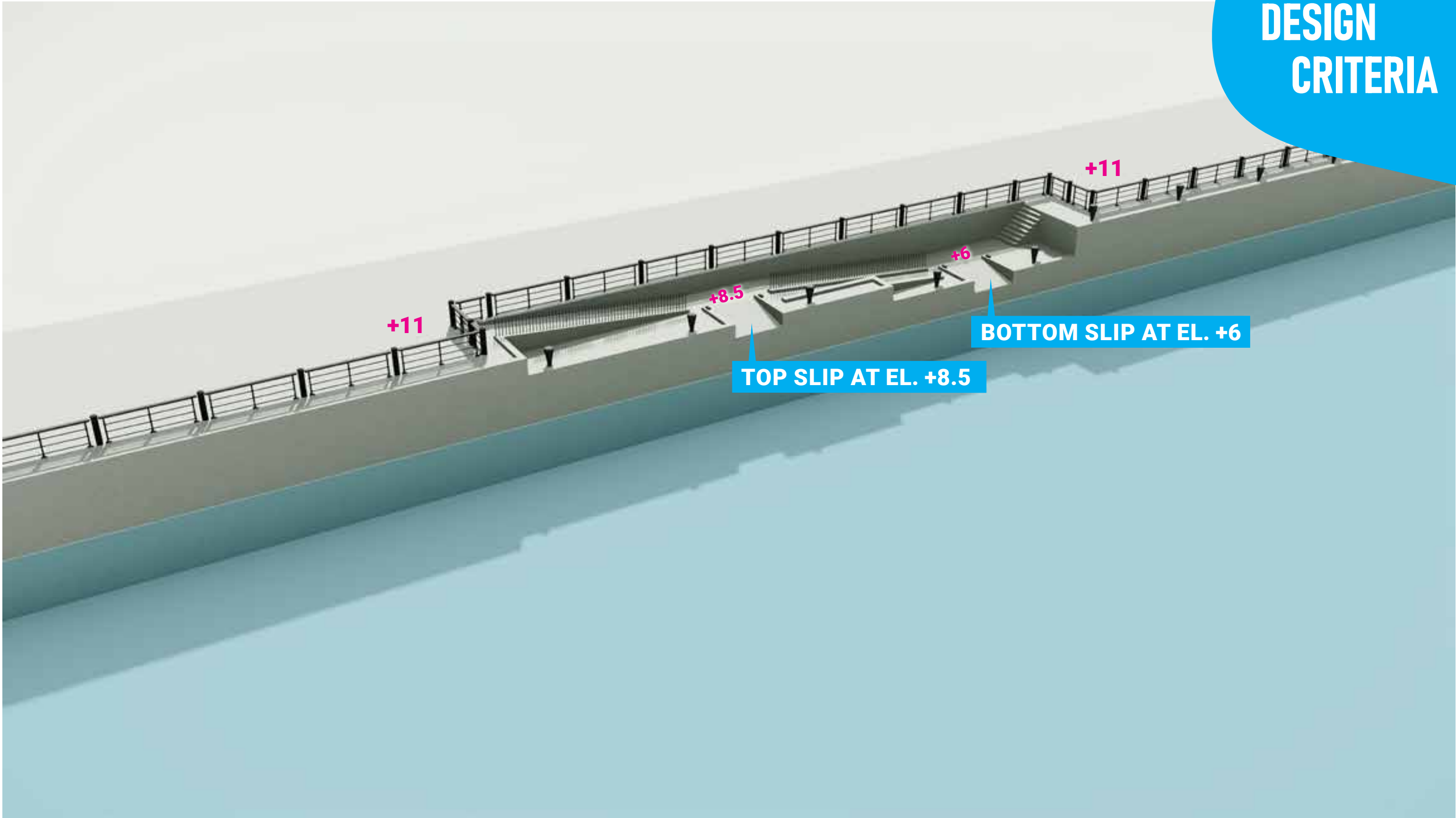
2020 vessel elevations

DESIGN CRITERIA



Two-slip fixed platform

**DESIGN
CRITERIA**



Understanding the Site

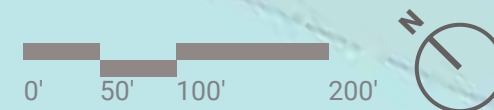
Existing access to wharf

UNDERSTANDING THE SITE



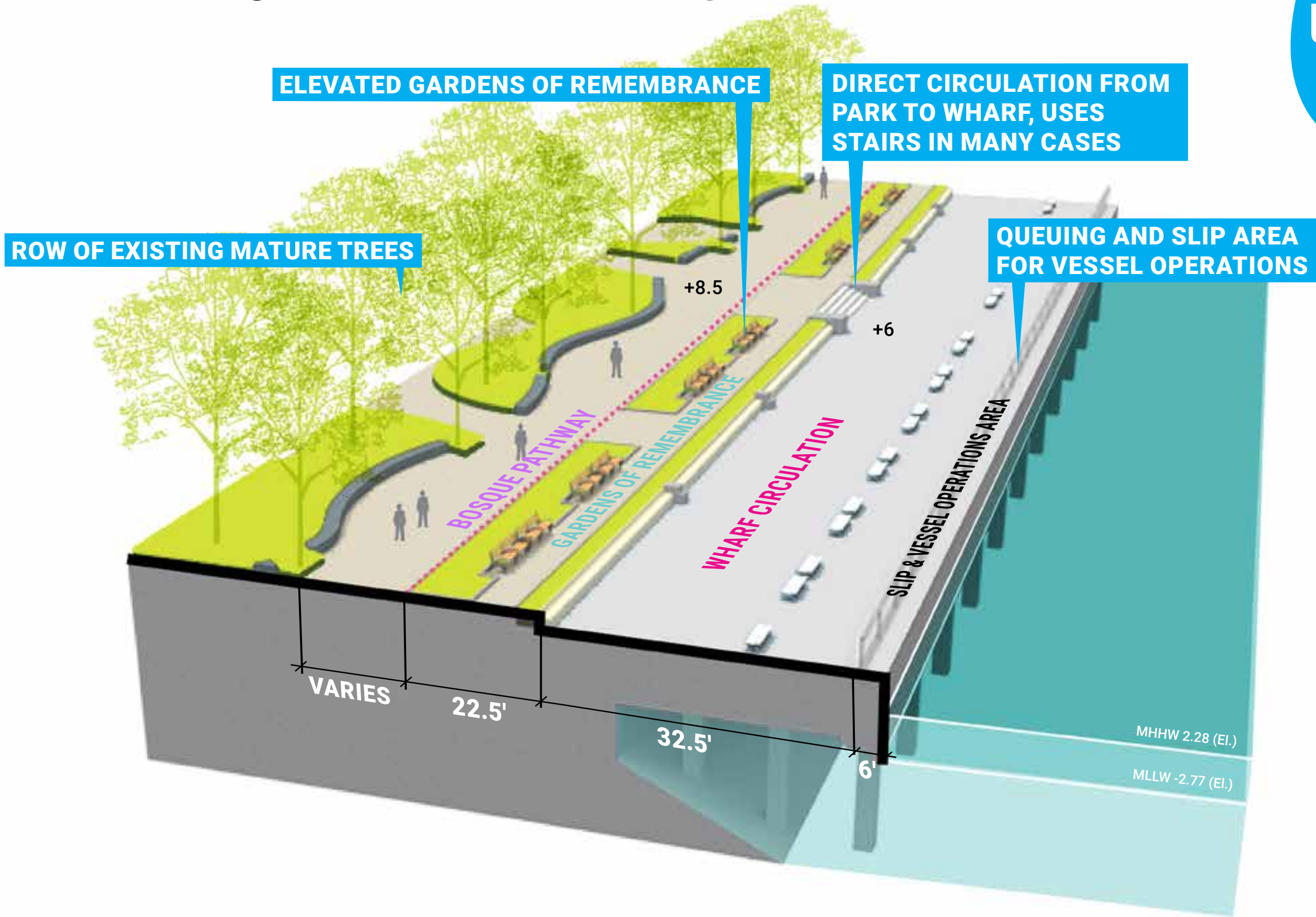
LEGEND

- PARK ENTRANCE
- PRIMARY PATH TO WHARF
- SECONDARY PATH TO WHARF
- STAIRS
- RAMPS / SLOPED PATHWAYS
- MOVABLE SECURITY FENCING
- INACCESSIBLE FOR REPAIRS



Current typical wharf segment

UNDERSTANDING THE SITE



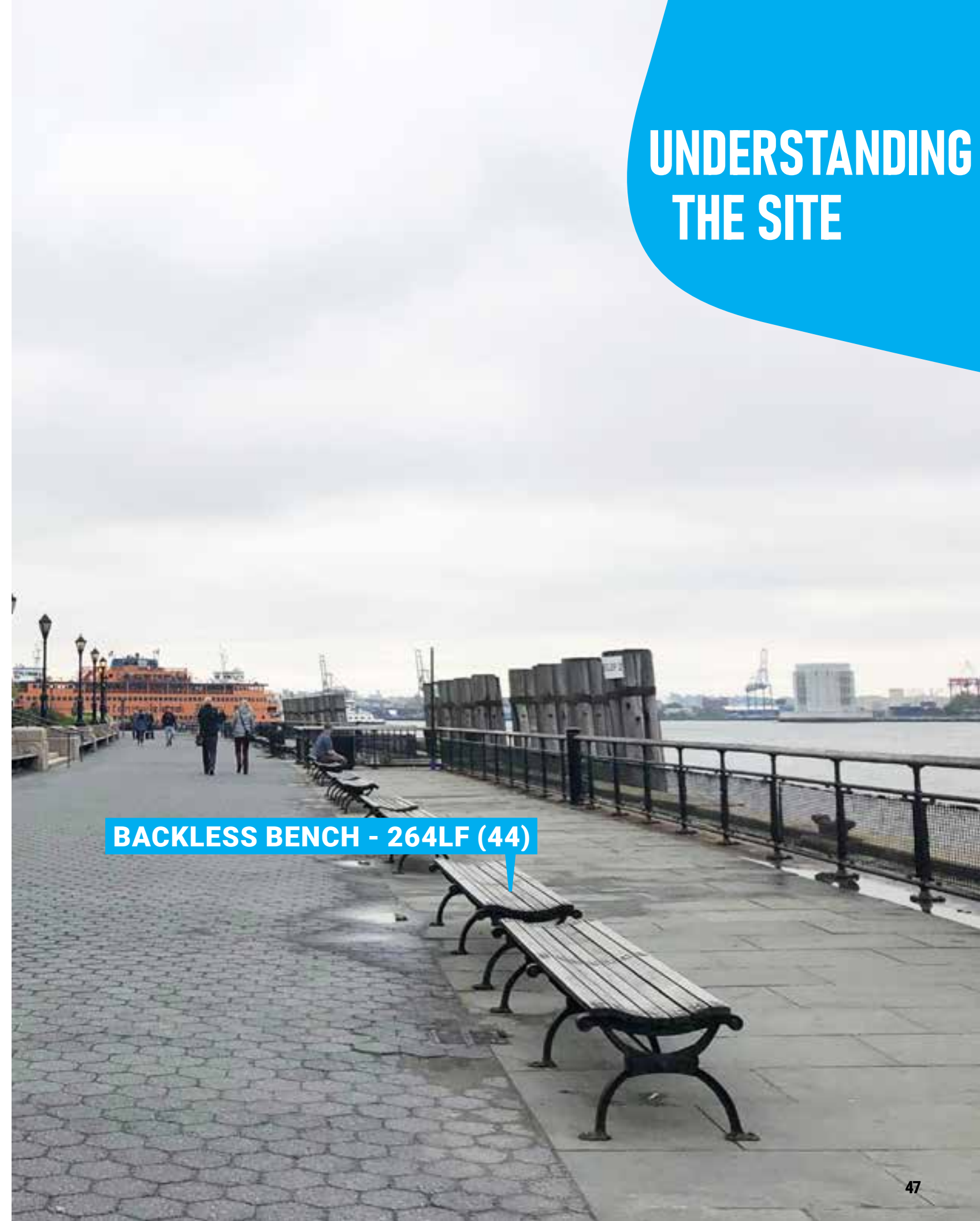
Seating



LINEAR BENCH - 840LF



BACKED BENCH - 224LF (28)



BACKLESS BENCH - 264LF (44)

**UNDERSTANDING
THE SITE**

Significant views

UNDERSTANDING THE SITE



LEGEND

- WATER VISIBILITY LINE (WINTER)
- INCIDENTAL VIEWS
- FRAMED VIEWS

TO STATUE OF LIBERTY

PANORAMIC VIEW



Incidental views

**UNDERSTANDING
THE SITE**



Framed views

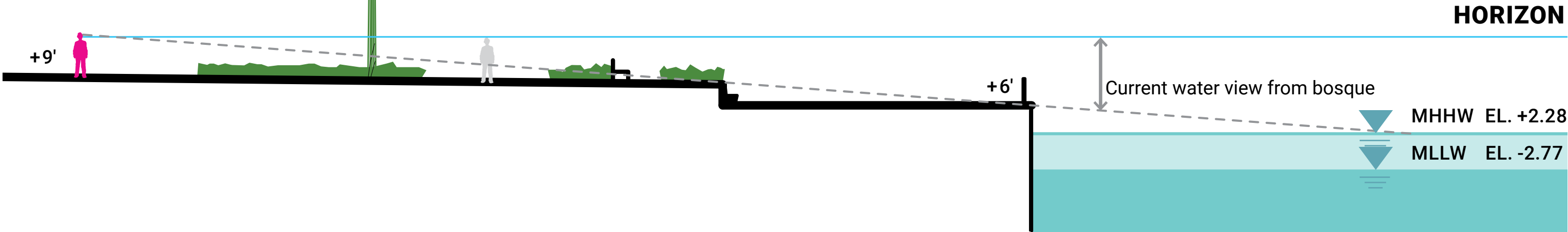
UNDERSTANDING
THE SITE



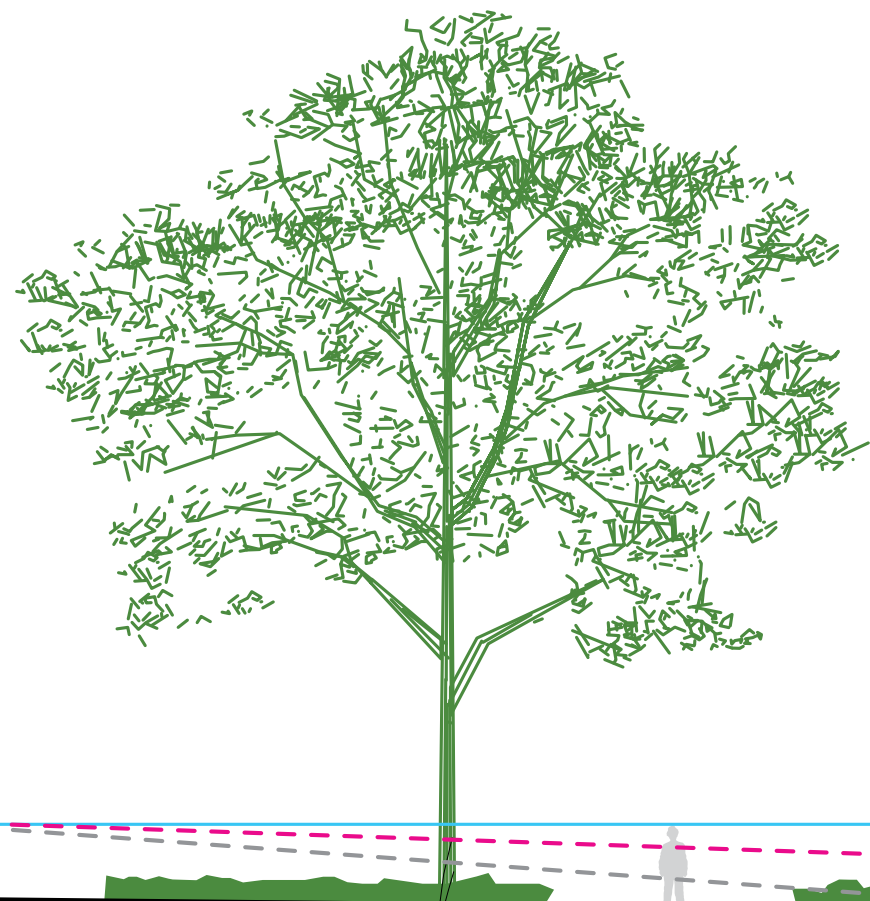
View of the water horizon



Current water view from bosque



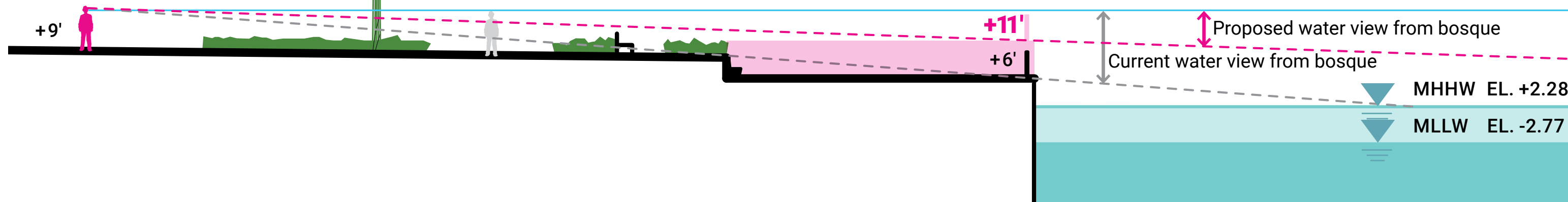
View of the water horizon



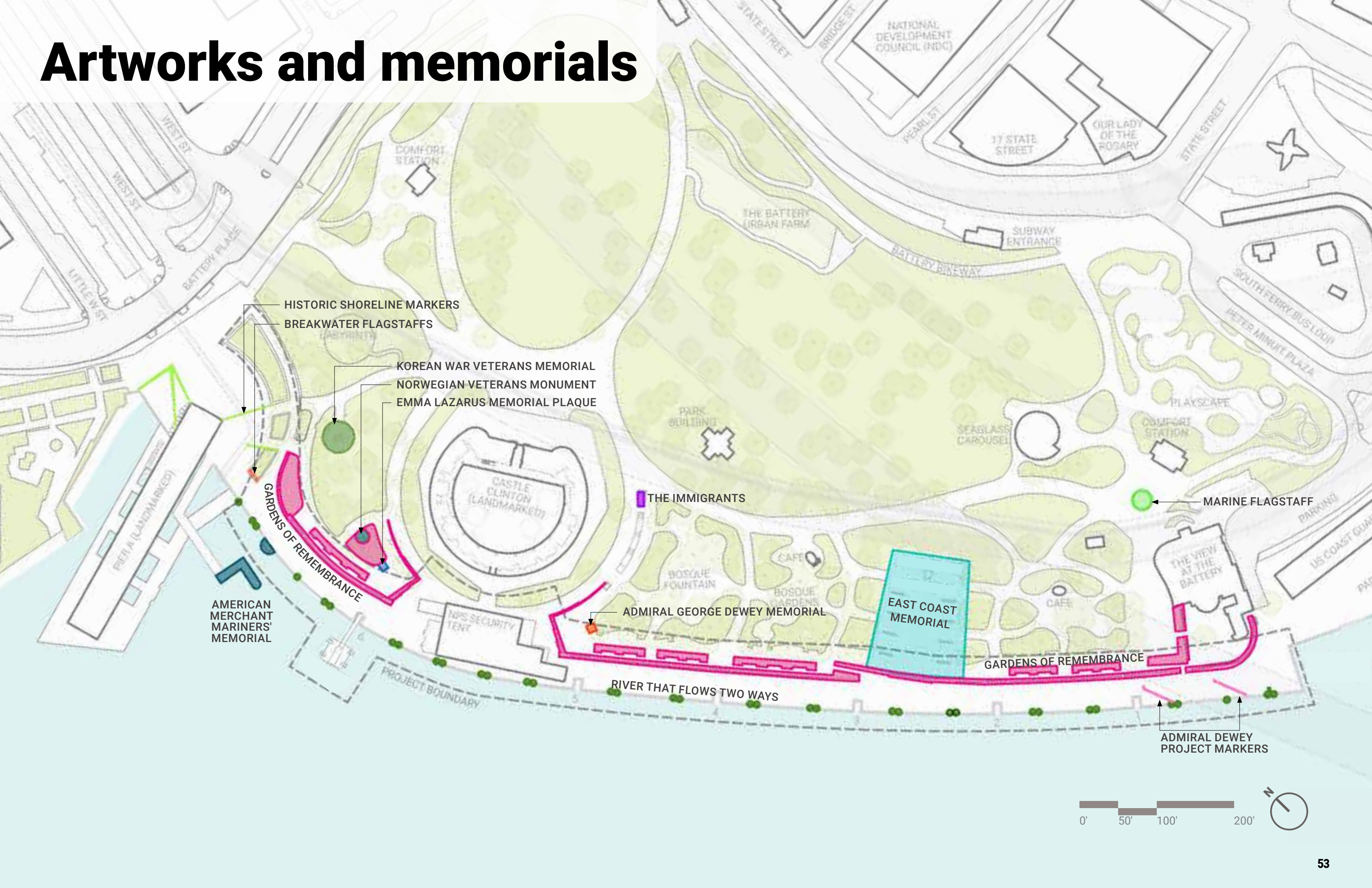
Current water view from bosque



Proposed reduced view of water, with preserved water horizon



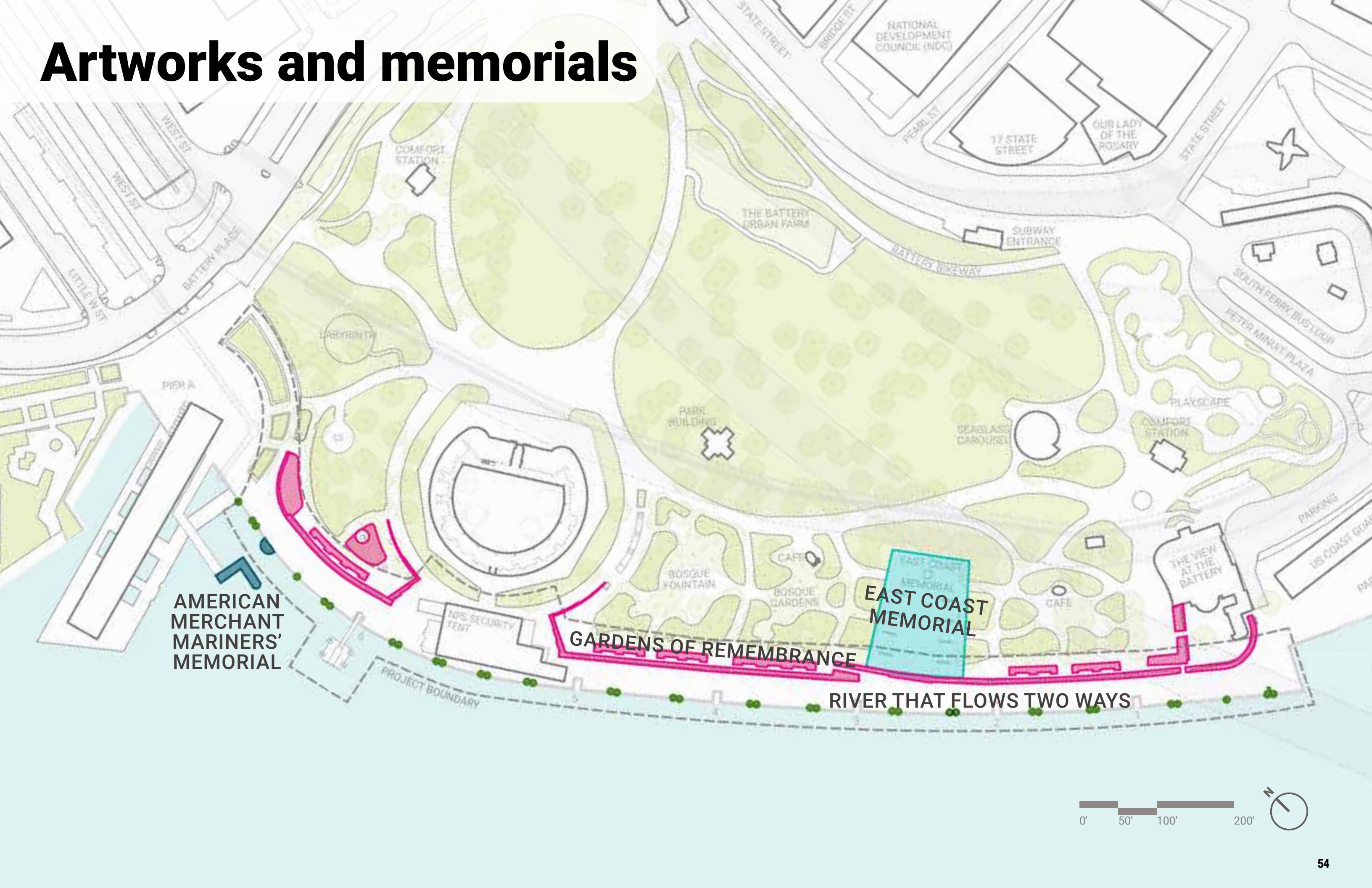
Artworks and memorials



- HISTORIC SHORELINE MARKERS
- BREAKWATER FLAGSTAFFS
- KOREAN WAR VETERANS MEMORIAL
- NORWEGIAN VETERANS MONUMENT
- EMMA LAZARUS MEMORIAL PLAQUE
- AMERICAN MERCHANT MARINERS' MEMORIAL
- ADMIRAL GEORGE DEWEY MEMORIAL
- EAST COAST MEMORIAL
- THE IMMIGRANTS
- MARINE FLAGSTAFF
- ADMIRAL DEWEY PROJECT MARKERS



Artworks and memorials



AMERICAN
MERCHANT
MARINERS'
MEMORIAL

GARDENS OF REMEMBRANCE

EAST COAST
MEMORIAL

RIVER THAT FLOWS TWO WAYS



UNDERSTANDING THE SITE



Gardens of Remembrance
DESIGNER: PIET OUDOLF
DATE: 2003



East Coast Memorial
ARTIST: ALBINO MANCA
DATE: 1963



American Merchant Mariners' Memorial

ARTIST: MARISOL ESCOBAR

DATE: 1988



19818

The River That Flows Two Ways

ARTIST: WOPO HOLUP

DATE: 2000



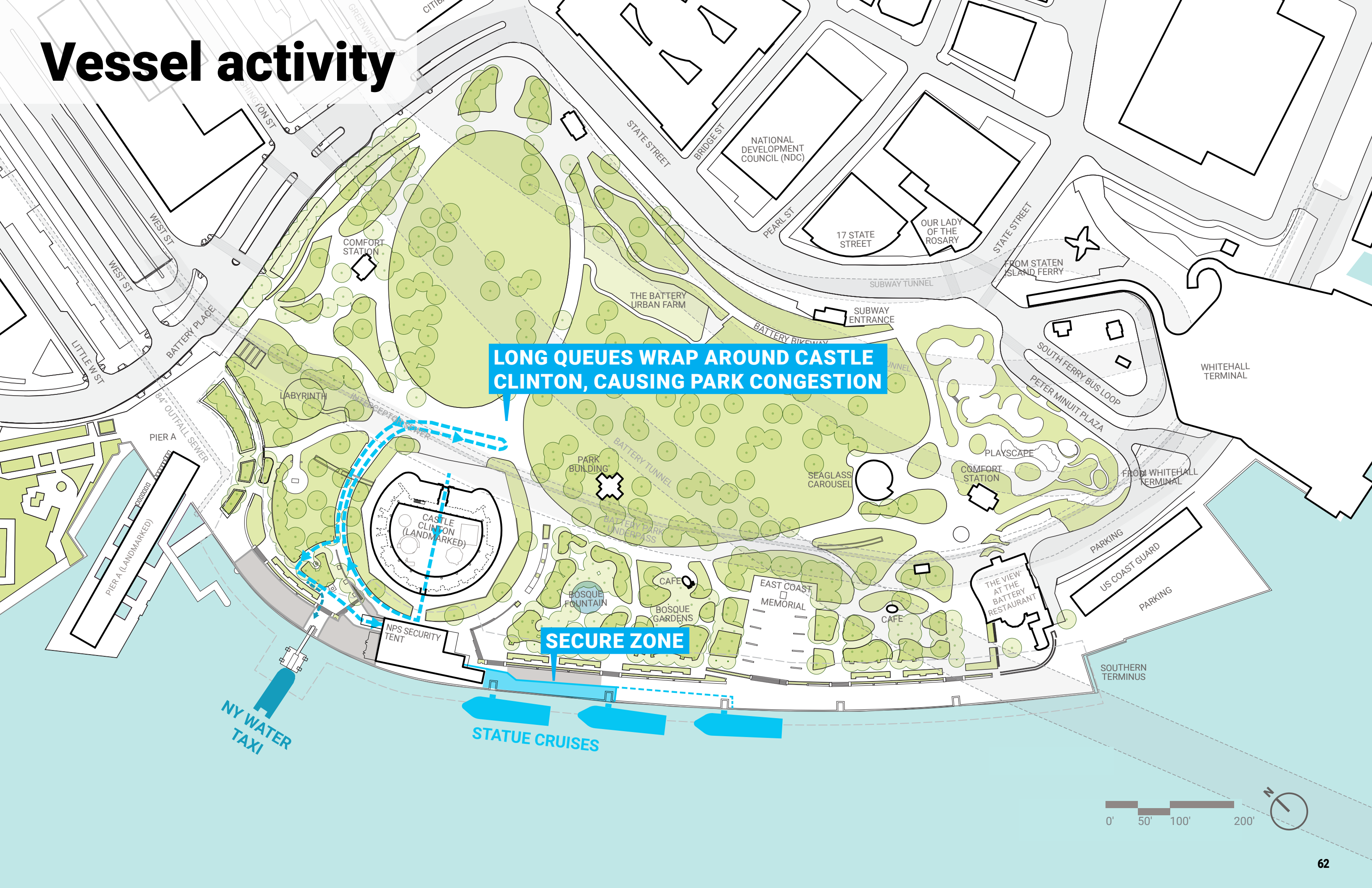
Castle Clinton National Monument
ARCHITECT: JOHN MCCOMB JR.
DATE: 1811

A departure point

UNDERSTANDING THE SITE

Approximately 4.2 million people visit Liberty Island annually. 80% depart from the Battery.

Vessel activity



LONG QUEUES WRAP AROUND CASTLE CLINTON, CAUSING PARK CONGESTION

SECURE ZONE

NY WATER TAXI

STATUE CRUISES



Statue Cruises queuing

UNDERSTANDING
THE SITE





UNDERSTANDING THE SITE

STEEP SLOPE MAKES IT DIFFICULT FOR PEOPLE TO BOARD

UNDERSTANDING THE SITE

SECURITY SCREENING

NEW YORK WATER TAXI

Lines for New York Water Taxi and Statue Cruises overlap, causing confusion.

Design Goals

Design goals



Prepare for Climate Change

1. Reconstruct and elevate the wharf approximately 5 feet to address its deteriorating condition while also taking into account future sea level rise.
2. Tie into adjacent resilience projects.
3. Improve drainage.



Support Site Uses

1. Accommodate Statue of Liberty, Ellis Island, and Water Taxi vessels during and after construction.
2. Prioritize universal design.
3. Maintain sufficient seating.



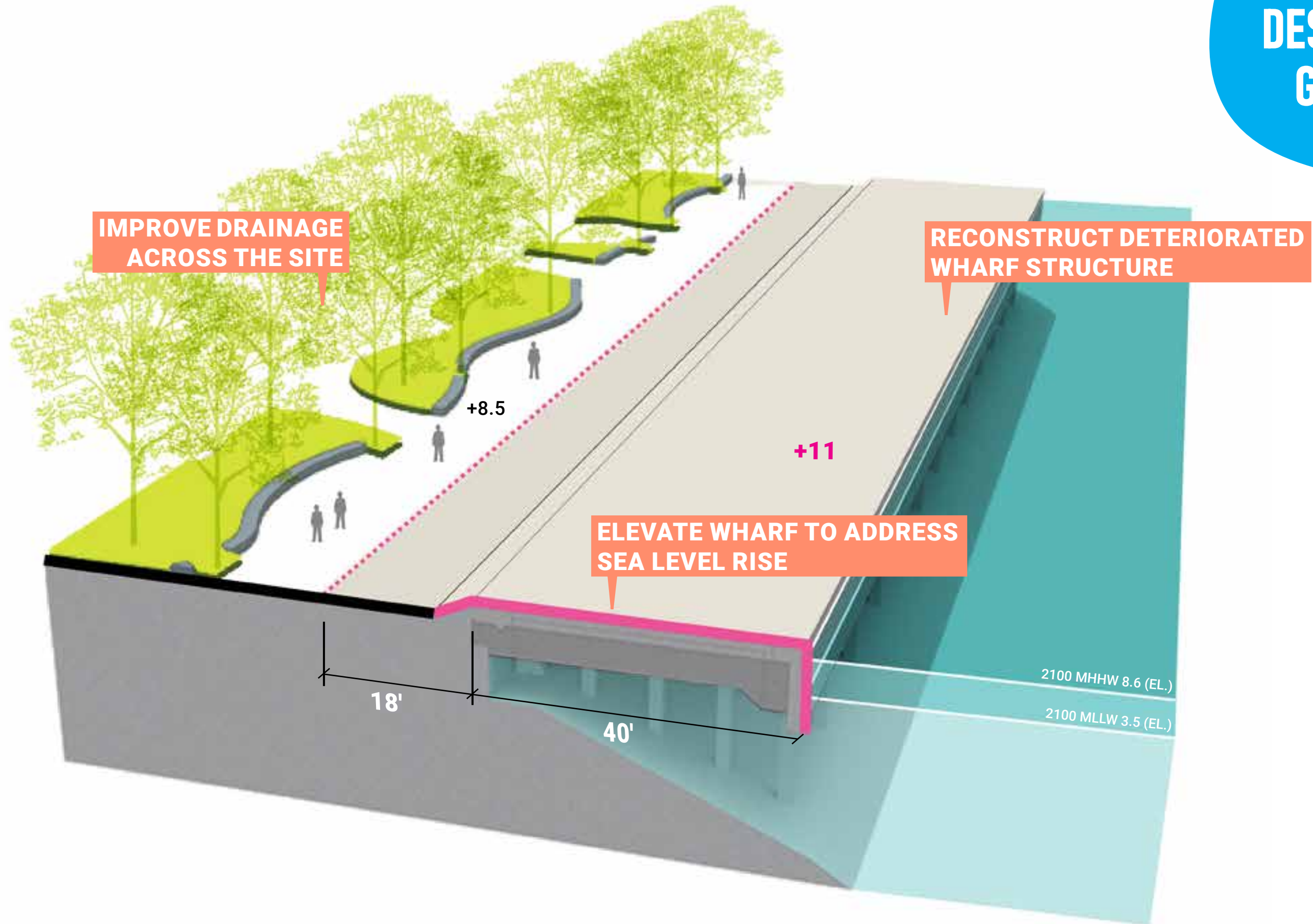
Preserve and Enhance Park Character

1. Maximize visibility of water/edge.
2. Minimize disturbance to physical structures, view corridors, and character of park.
3. Conserve existing artworks.
4. Minimize adverse impacts on historic structures and trees.
5. Reuse existing site materials.
6. Maximize sustainability of design/construction.
7. Provide new planting and public amenities.
8. Protect the park's historic resources.



Prepare for climate change

DESIGN GOALS





Preserve and enhance park character



LIMIT IMPACT TO EXISTING TREES

PRESERVE GARDENS OF REMEMBRANCE

MINIMIZE VISUAL OBSTRUCTIONS TO THE WATER

IMPLEMENT A RESILIENT PLANTING SYSTEM



Support site uses

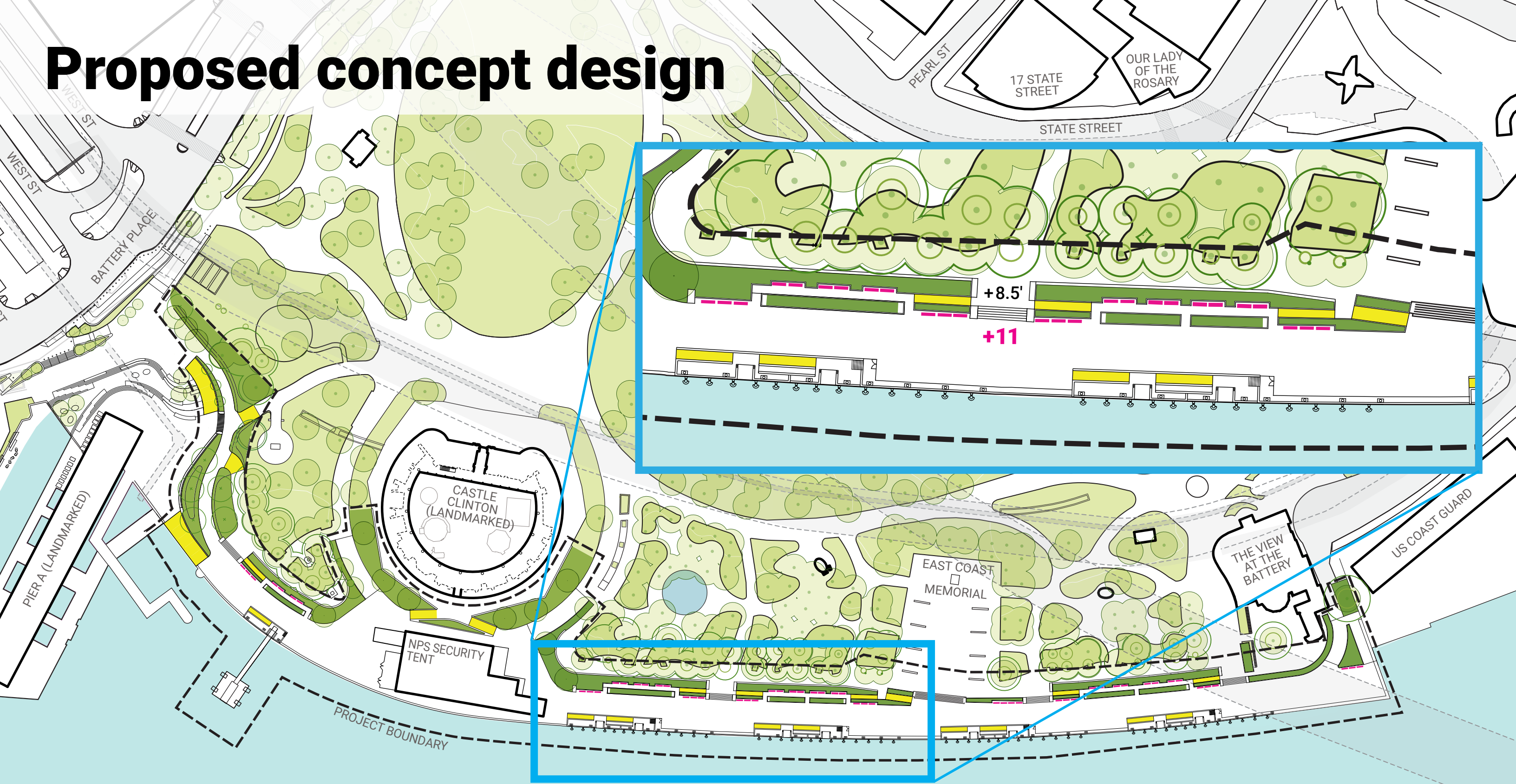
ENSURE CIRCULATION FROM
PARK TO WHARF IS INTUITIVE
AND ACCESSIBLE

PRIORITIZE UNIVERSAL DESIGN

MAINTAIN ACCESSIBLE
VESSEL OPERATIONS

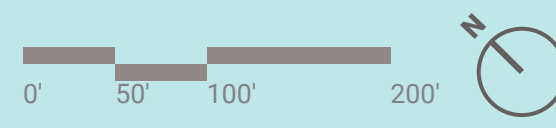
Design Concept

Proposed concept design

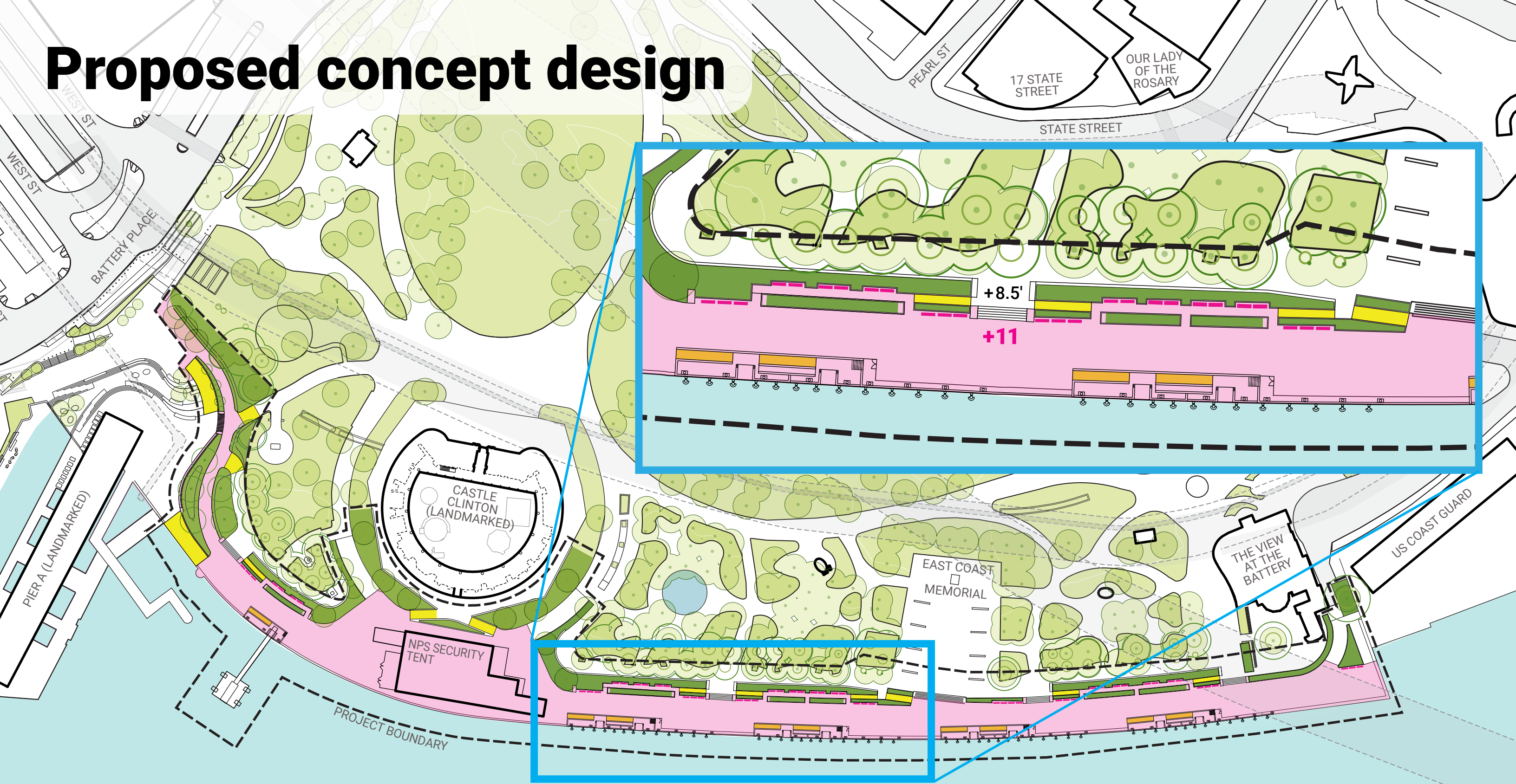


LEGEND




- RAMPS WITH HANDRAILS
- NEW / RESTORED PLANTING
- WORLD'S FAIR BENCH



Proposed concept design

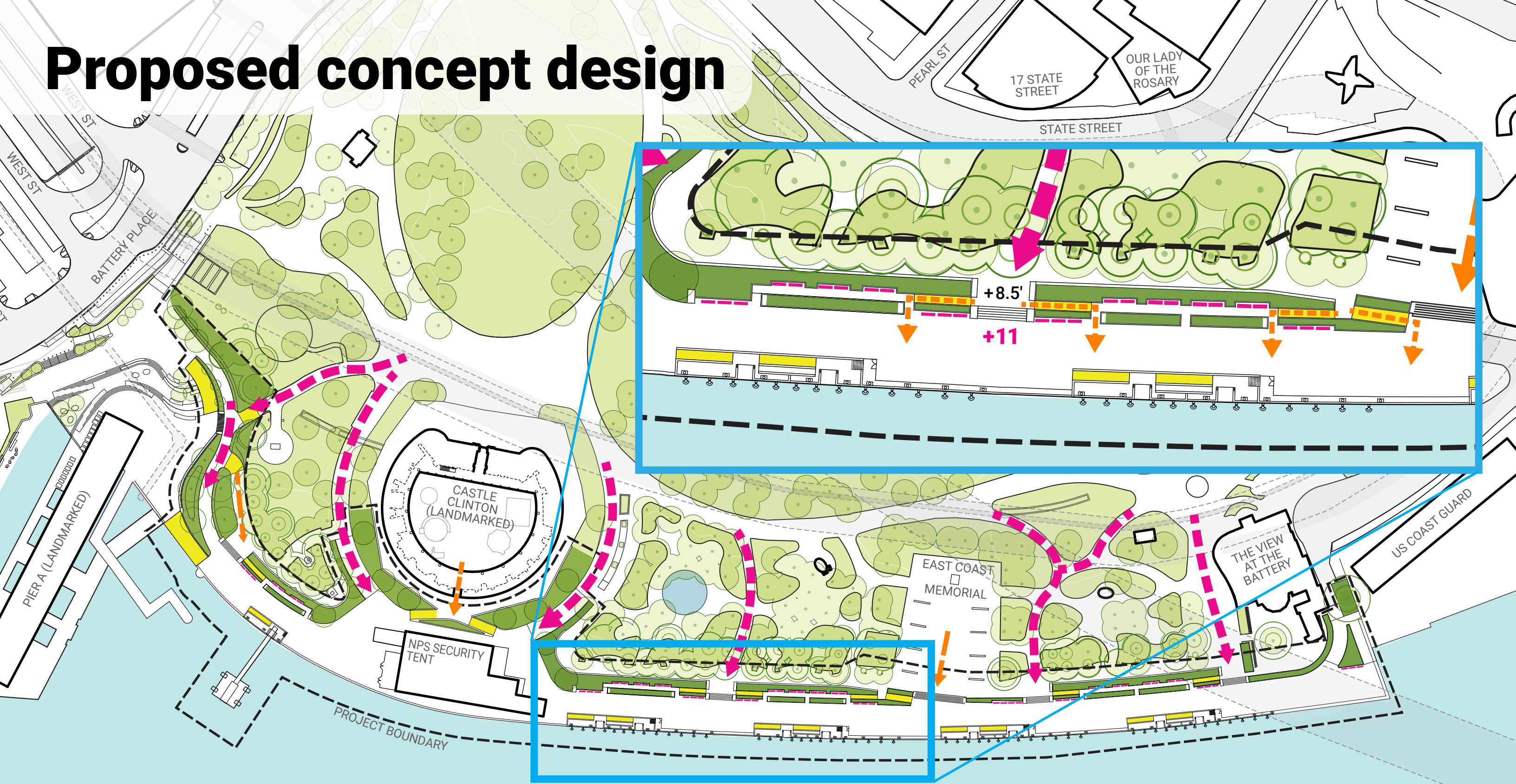


LEGEND

-  RAMPS WITH HANDRAILS
-  NEW / RESTORED PLANTING
-  WORLD'S FAIR BENCH



Proposed concept design

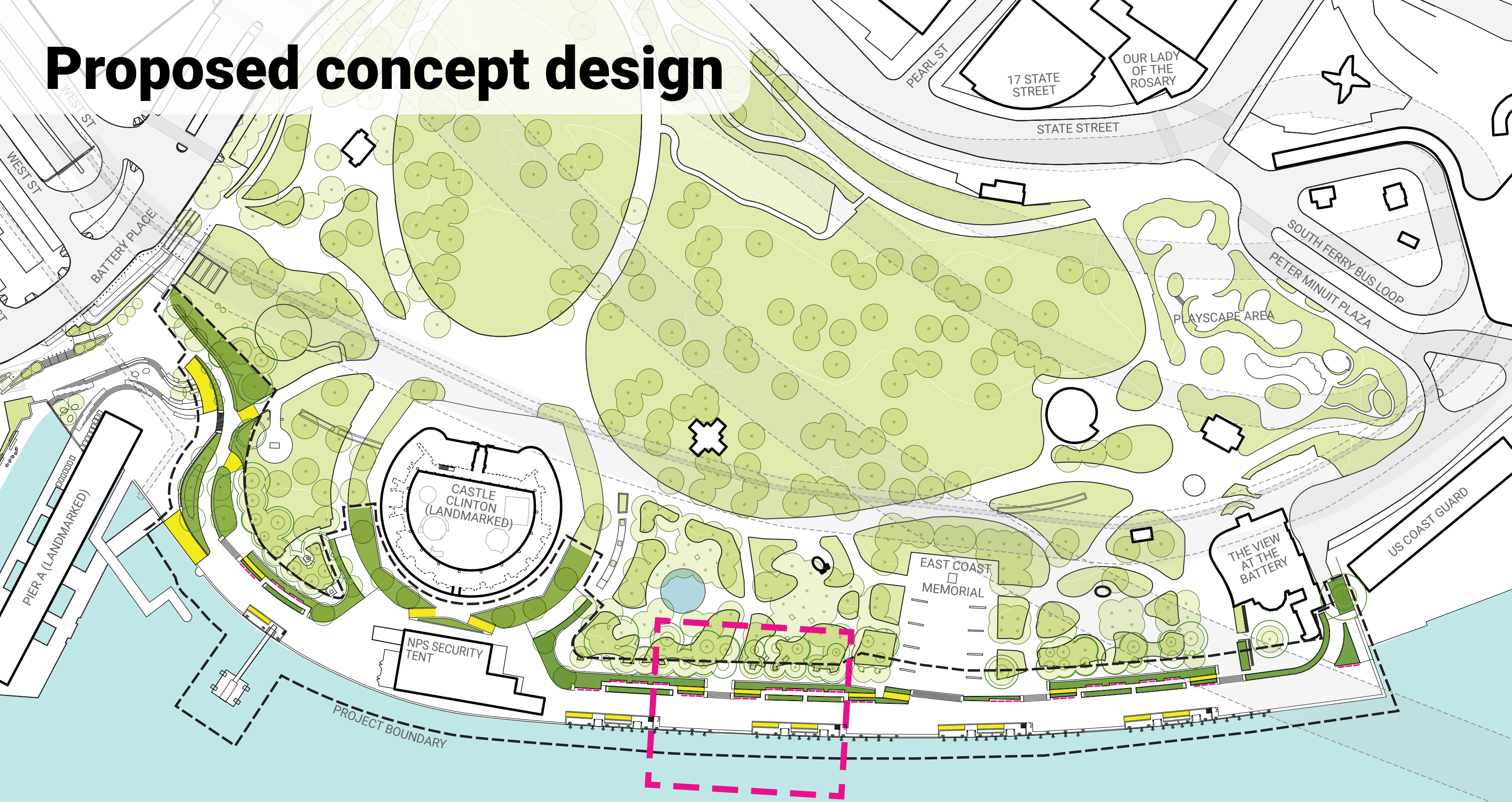


LEGEND




- RAMPS WITH HANDRAILS
- NEW / RESTORED PLANTING
- WORLD'S FAIR BENCH



Proposed concept design



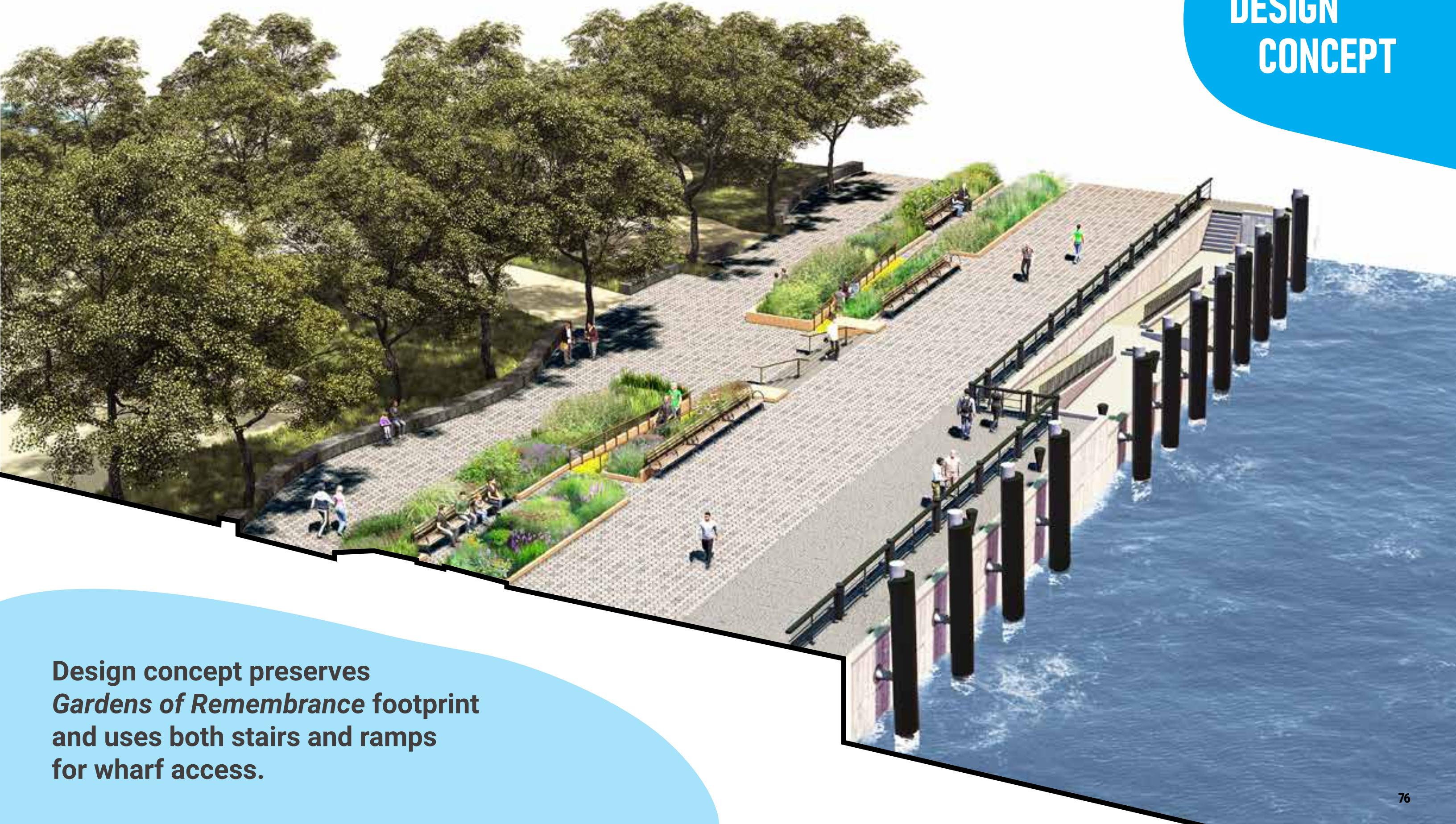
LEGEND

-  RAMPS WITH HANDRAILS
-  NEW / RESTORED PLANTING
-  WORLD'S FAIR BENCH



Typical wharf segment

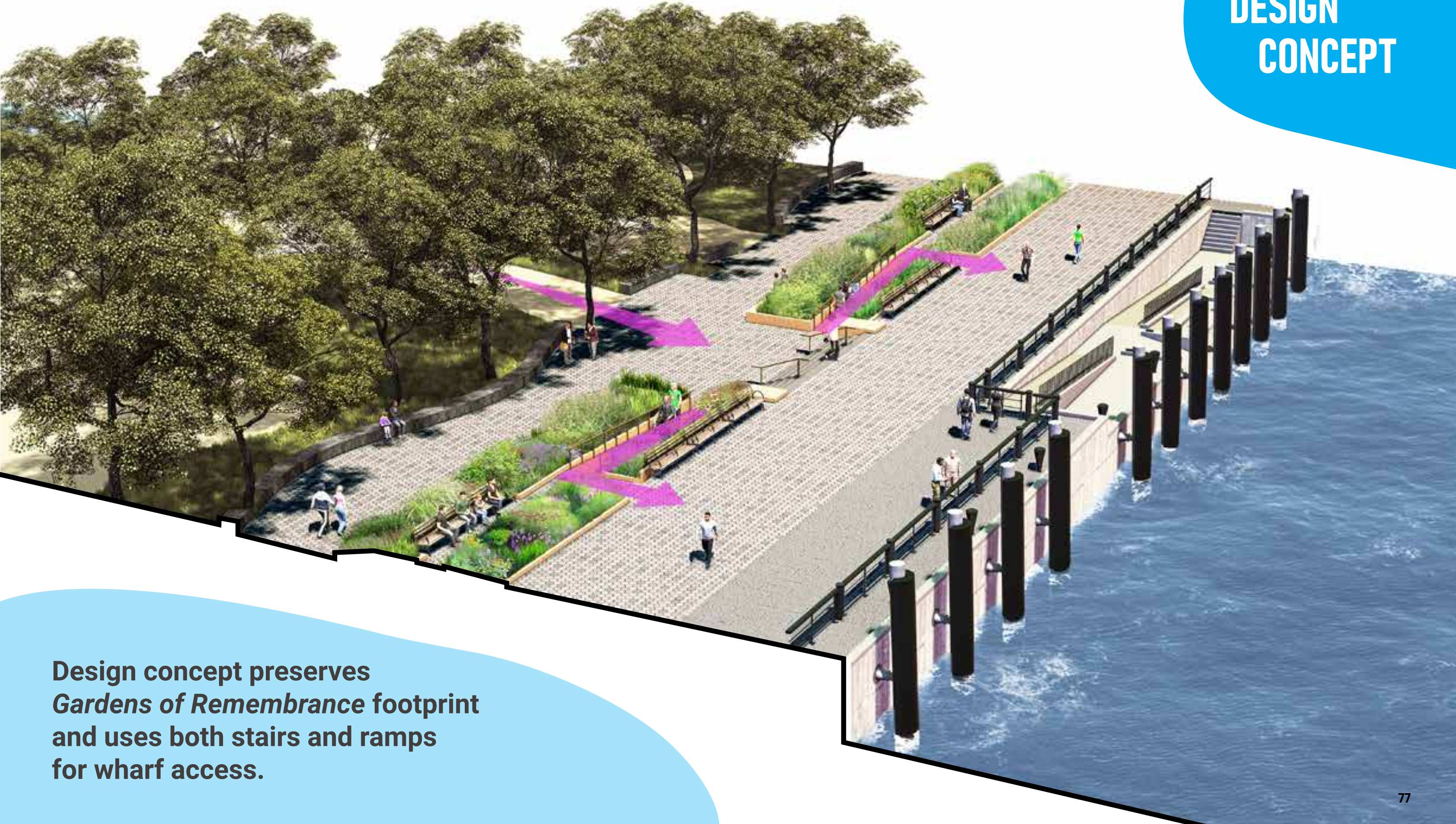
DESIGN
CONCEPT



Design concept preserves
Gardens of Remembrance footprint
and uses both stairs and ramps
for wharf access.

Typical wharf segment

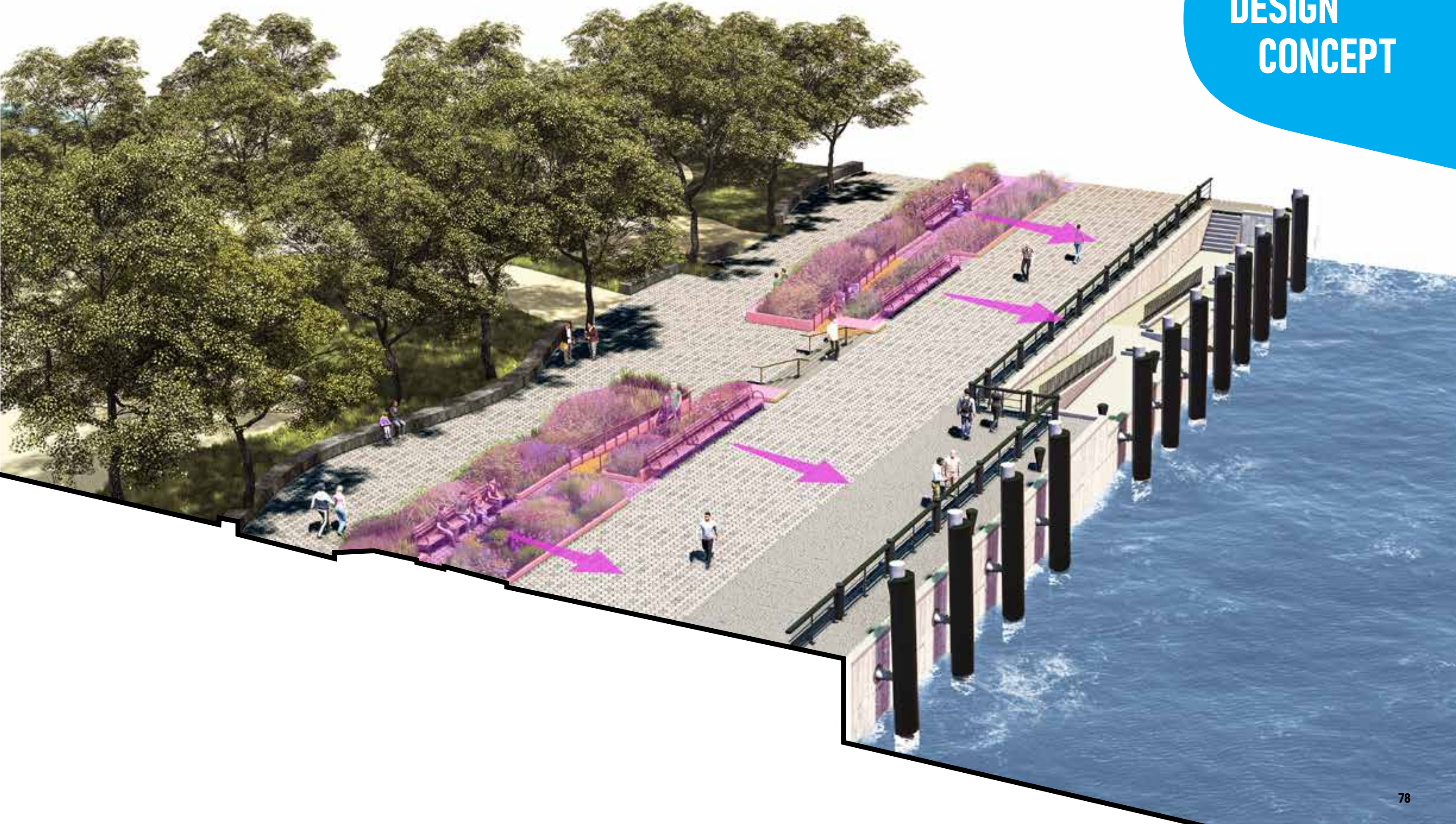
DESIGN
CONCEPT



Design concept preserves
Gardens of Remembrance footprint
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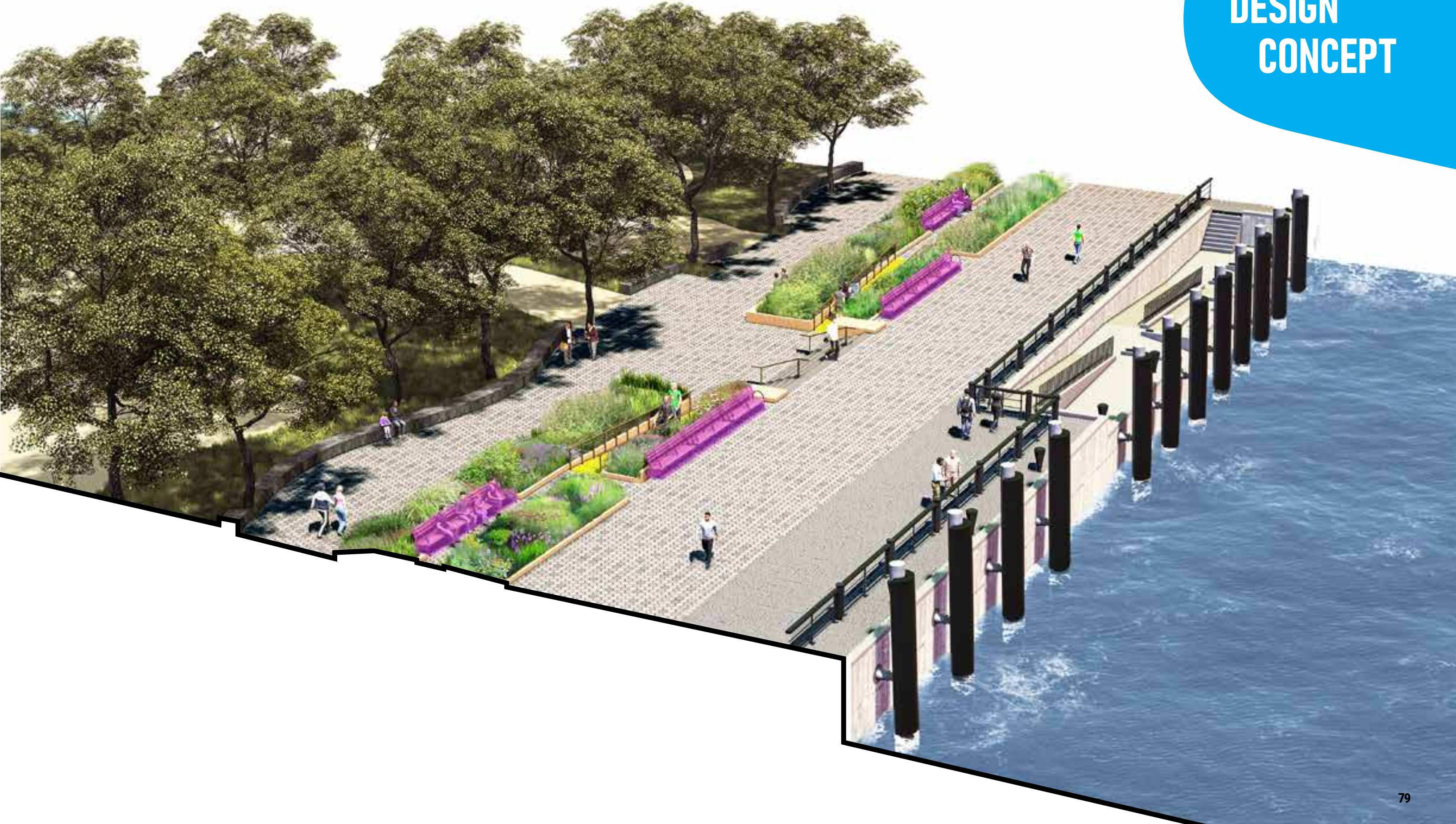
Typical wharf segment

DESIGN
CONCEPT

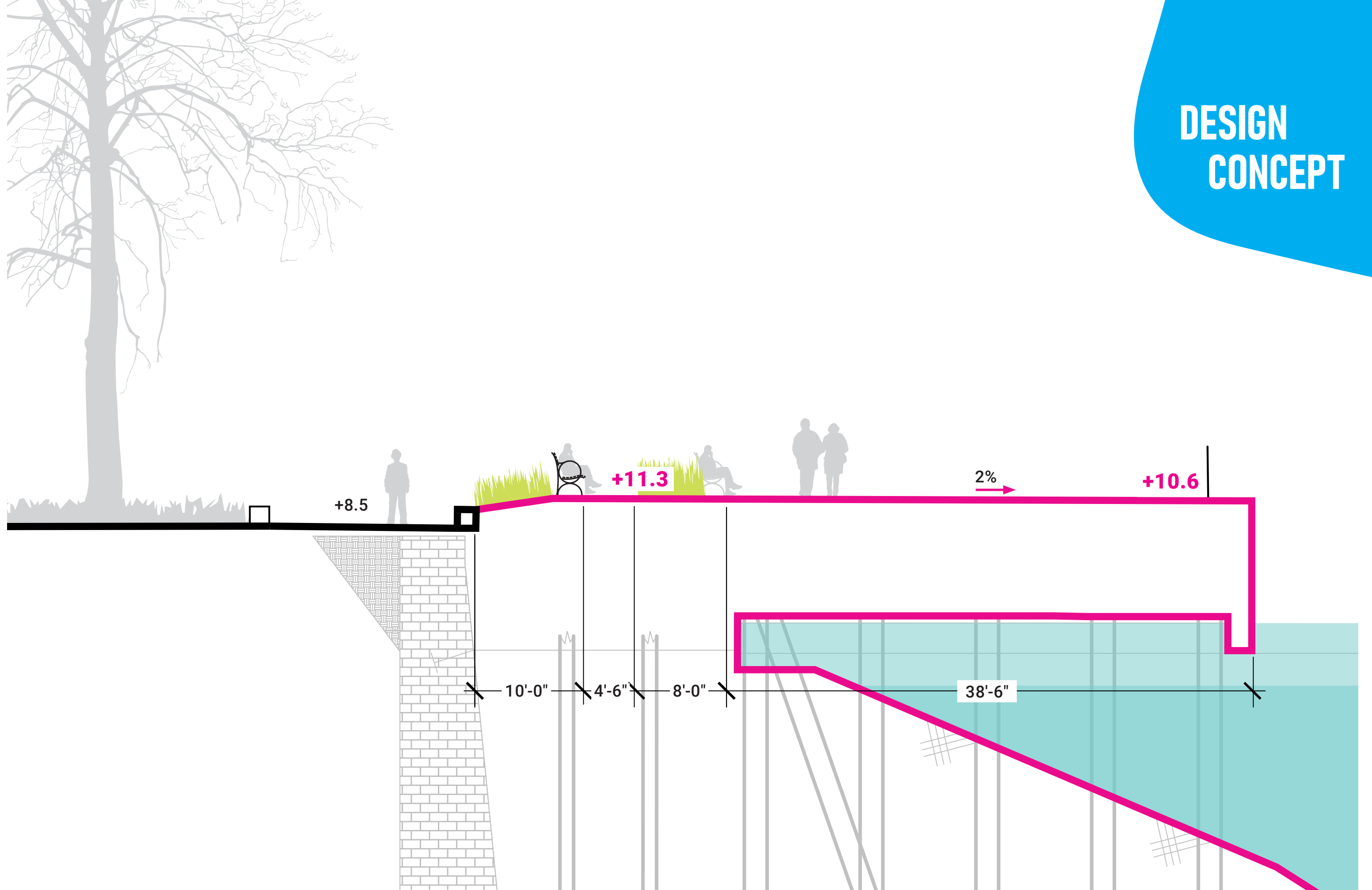


Typical wharf segment

DESIGN
CONCEPT



DESIGN CONCEPT



**DESIGN
CONCEPT**



DESIGN CONCEPT



Project Timeline

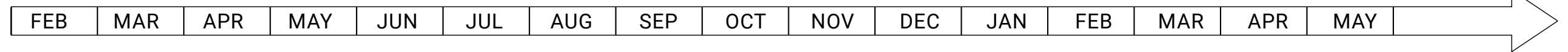
PROJECT TIMELINE

**WE ARE
HERE**

2021



2022



STAKEHOLDER ENGAGEMENT

● PUBLIC MEETING
3/24

OUTREACH ROUND II

YOUR FEEDBACK!

OUTREACH ROUND III

YOUR FEEDBACK!

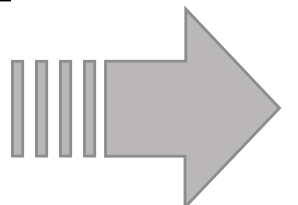
DESIGN

CONCEPT DESIGN (30%)

PRELIMINARY DESIGN (50%)

FINAL DESIGN (75-100%)


CONSTRUCTION




Questions?

Thank you for listening.

There are two ways to ask a question or submit a comment.

 Ask a question!
Raise your hand.

 Or, type into the comment
box at any time.

Check back to our website:

<https://www1.nyc.gov/site/lmcr/progress/battery-coastal-resilience.page>