

LONG WHARF – FLOOD RESILIENCE MITIGATION PLANNING & FEASIBILITY STUDY



January 31, 2024

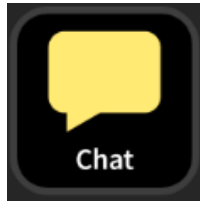


**boston planning &
development agency**

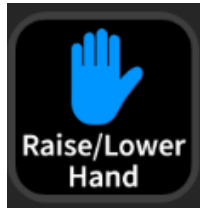
ZOOM TIPS

Welcome! Here are some tips on using Zoom for first-time users.

Your controls are at the bottom of the screen.



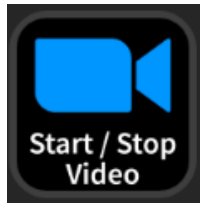
Use the chat to type a comment or ask a question at any time – Team members will monitor the chat



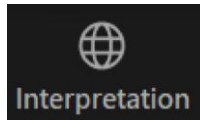
To raise your hand, click “Participants” at the bottom of your screen and then choose the “Raise Hand” option in the participant box or press *9 on your phone




Mute/Unmute – Participants will be muted during the presentation. The host will unmute you during discussion if you raise your hand and it is your turn to talk. To Mute/Unmute on your phone press *6.



Turns your video on/off

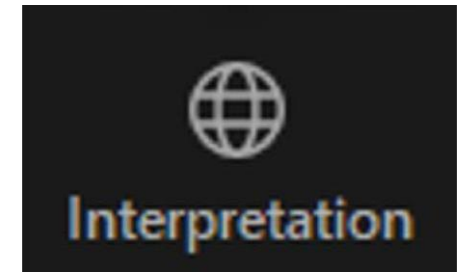


Do you need translations in Spanish, Cantonese, or Mandarin? Click on the globe  at the bottom of the page and select the appropriate language.

LANGUAGE ACCESS

Interpretation is being provided for this meeting in Spanish, Mandarin, and Cantonese.

- Para la interpretación al español, por favor seleccione "**Spanish**"
 - Ø中文普通话语音频道请选择 "**Mandarin**"
 - Ø中文粵語语音頻道請選擇 "**Cantonese**"
-
- A project overview has been posted to the project webpage in English, Spanish, Mandarin, and Cantonese.



ZOOM ETIQUETTE

We want to ensure that this conversation is a pleasant experience for all attendees.

- Please remain muted until called on. If you would like to speak during this time, please use the “Raise Hand” function in Zoom so a BPDA moderator can unmute you.
- Please be respectful of each other’s time.
- We ask that participants limit their questions so that others may participate in the discussion. If you have more questions, please wait until others have had an opportunity to ask questions before asking more questions.
- If we are unable to get your question at this meeting, please put them in the Chat at the end or email dolores.fazio@boston.gov.

MEETING RECORDING

At the request of community members, this event will be recorded and posted on the BPDA's Long Wharf Flood Resilience Mitigation Planning and Feasibility Study project review webpage for those who are unable to attend the Zoom event live:

<https://www.bostonplans.org/planning/planning-initiatives/long-wharf-flood-mitigation-planning-feasibility>

Also, it is possible that participants may be recording the meeting with their phone cameras or other devices. If you do not wish to be recorded during the meeting, please turn off your microphone and camera.

If your camera and microphone are off, you can still participate through the text chat feature.

WELCOME!

Long Wharf – Flood Resilience Mitigation Planning & Feasibility Study

Community Workshop #1

January 31, 2024



IN PARTNERSHIP WITH:



City of Boston
Environment



Boston Water and
Sewer Commission



City of Boston
Parks & Recreation



Massachusetts Bay
Transportation Authority

CONSULTANT TEAM:



●one architecture



BUILDING A COASTAL RESILIENT BOSTON, TOGETHER

Long Wharf on January 13, 2024



Source: Twitter

LONG WHARF | FLOOD RESILIENCE MITIGATION PLANNING & FEASIBILITY STUDY

AGENDA

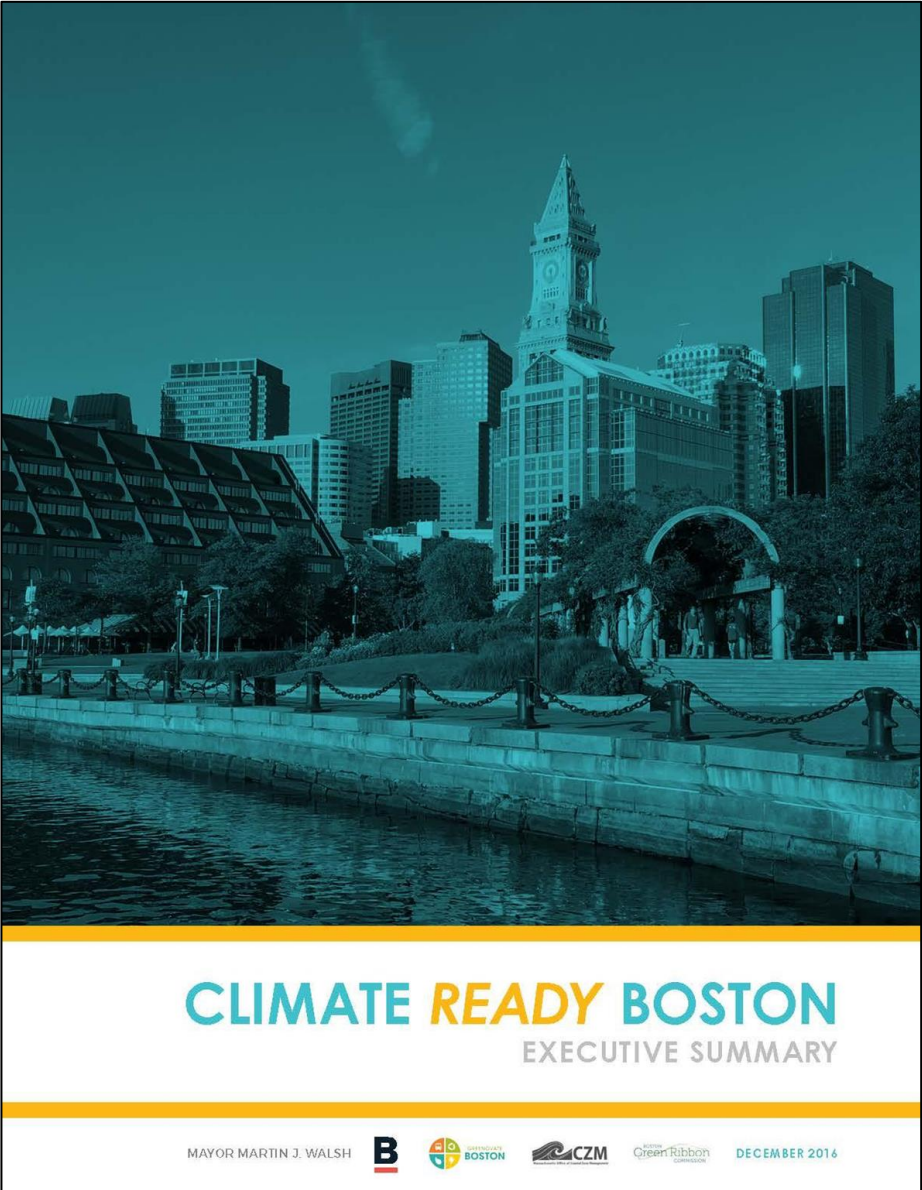
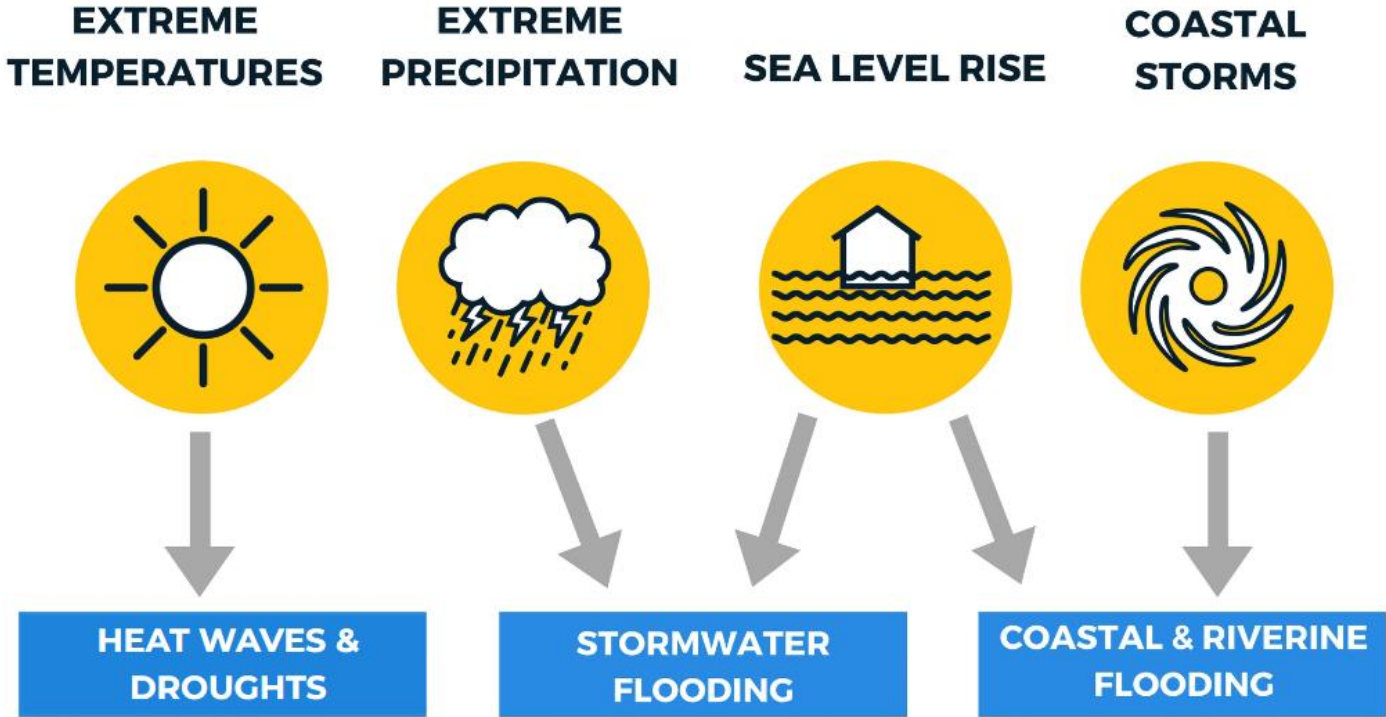
Introductions
Project Goals + Background
Project Context
Existing Conditions
Opportunities + Constraints
Next Steps
Discussion and Feedback

An aerial photograph of a city waterfront, likely Boston, showing a dense cluster of buildings, a harbor with many boats, and a large green park area. The image is overlaid with a semi-transparent blue filter.

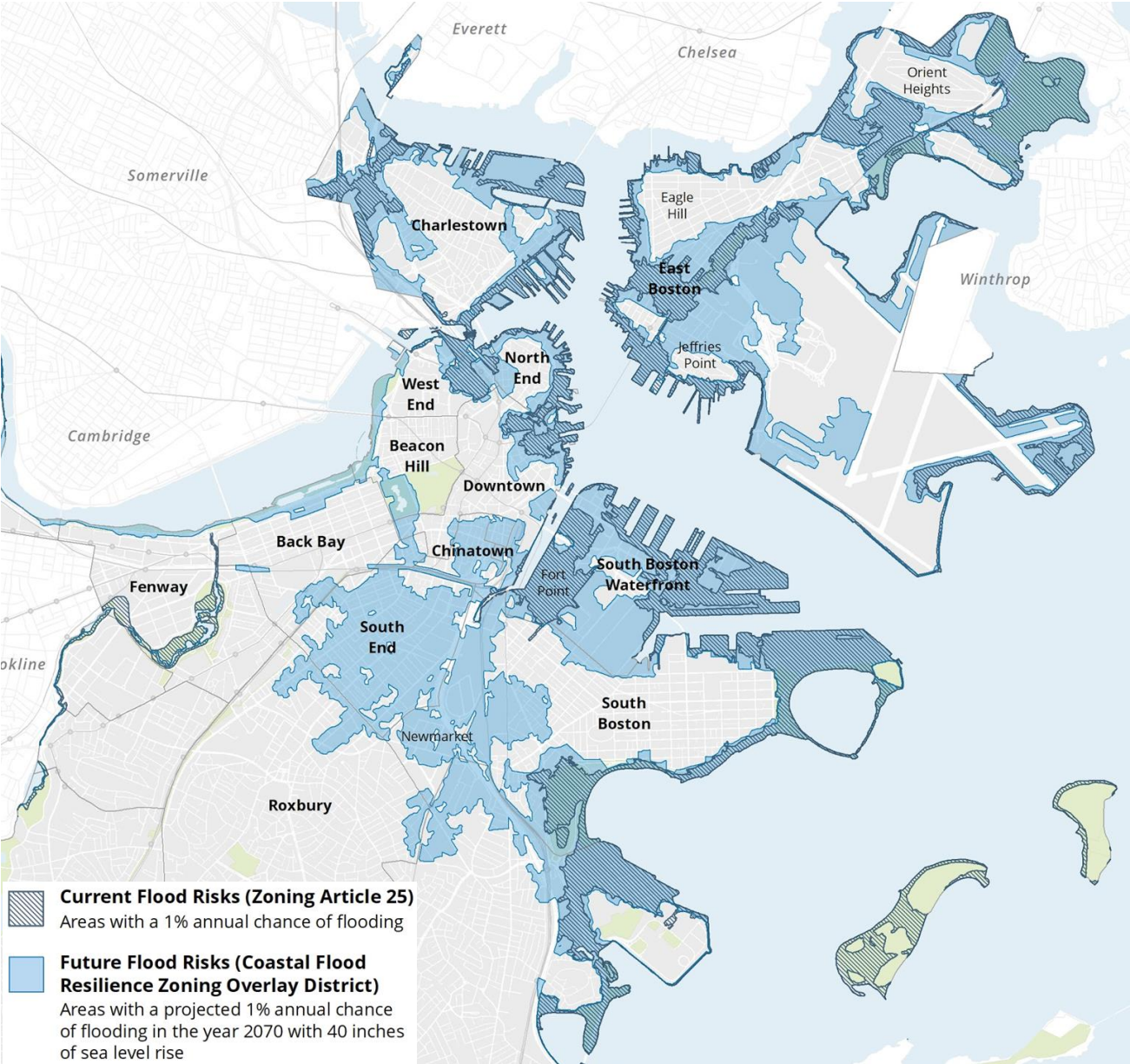
PROJECT BACKGROUND AND GOALS

CLIMATE READY BOSTON

In 2016, the City of Boston released the *Climate Ready Boston* report, which included a comprehensive vulnerability assessment of current and projected risks associated with each of three climate hazards under a low, medium, and high greenhouse gas emissions scenario.



PROJECTED COASTAL FLOOD RISK

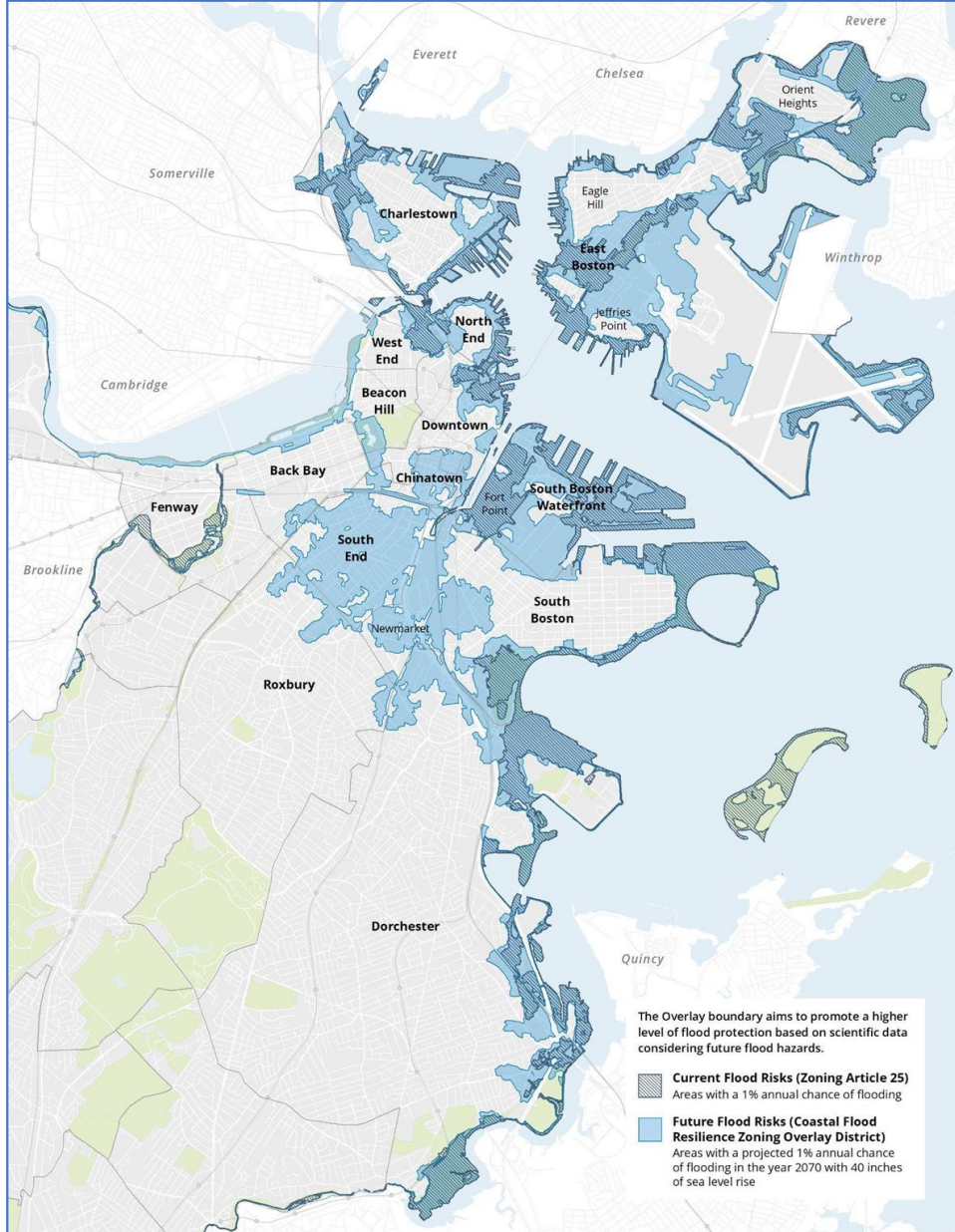


Projections indicate that Boston’s sea levels are likely to rise (from 2013 levels) by approximately 9 inches as early as 2030, and approximately 36 inches as soon as 2070, plus an additional four inches of land subsidence.

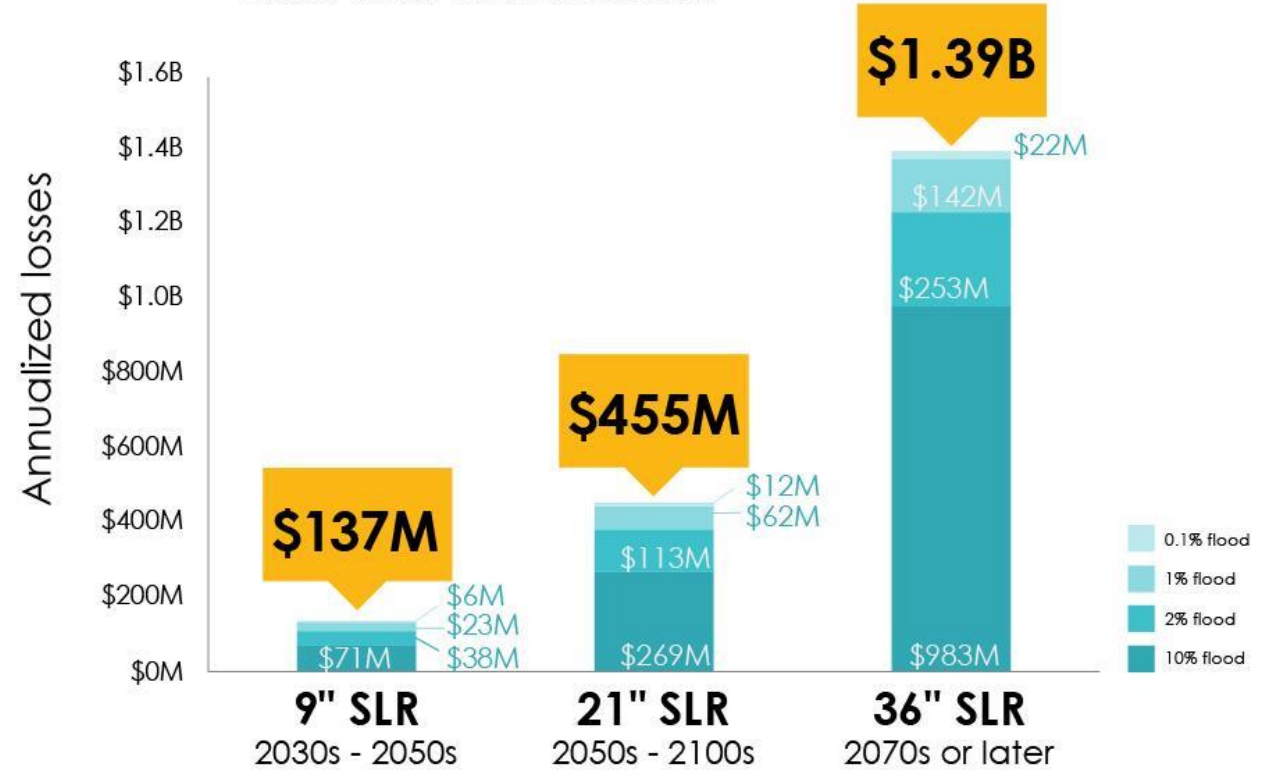
By 2070, we anticipate approximately 40 inches of sea-level rise across the City (or approximately 3 feet).

Storms of greater magnitudes will become more frequent than they have been in the past with increased average rainfall.

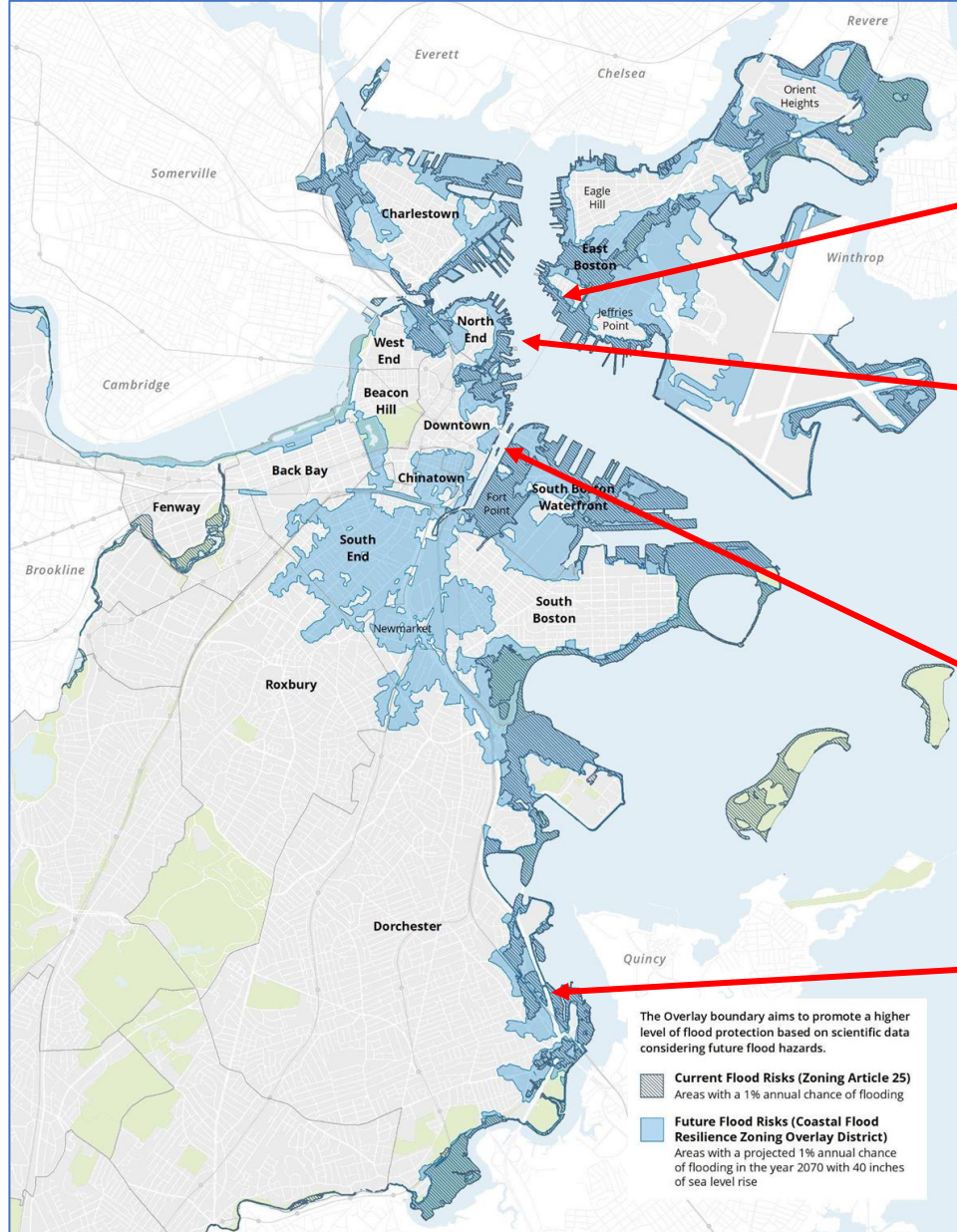
PROJECTED COASTAL FLOOD IMPACTS





Annualized losses will increase with sea level rise...

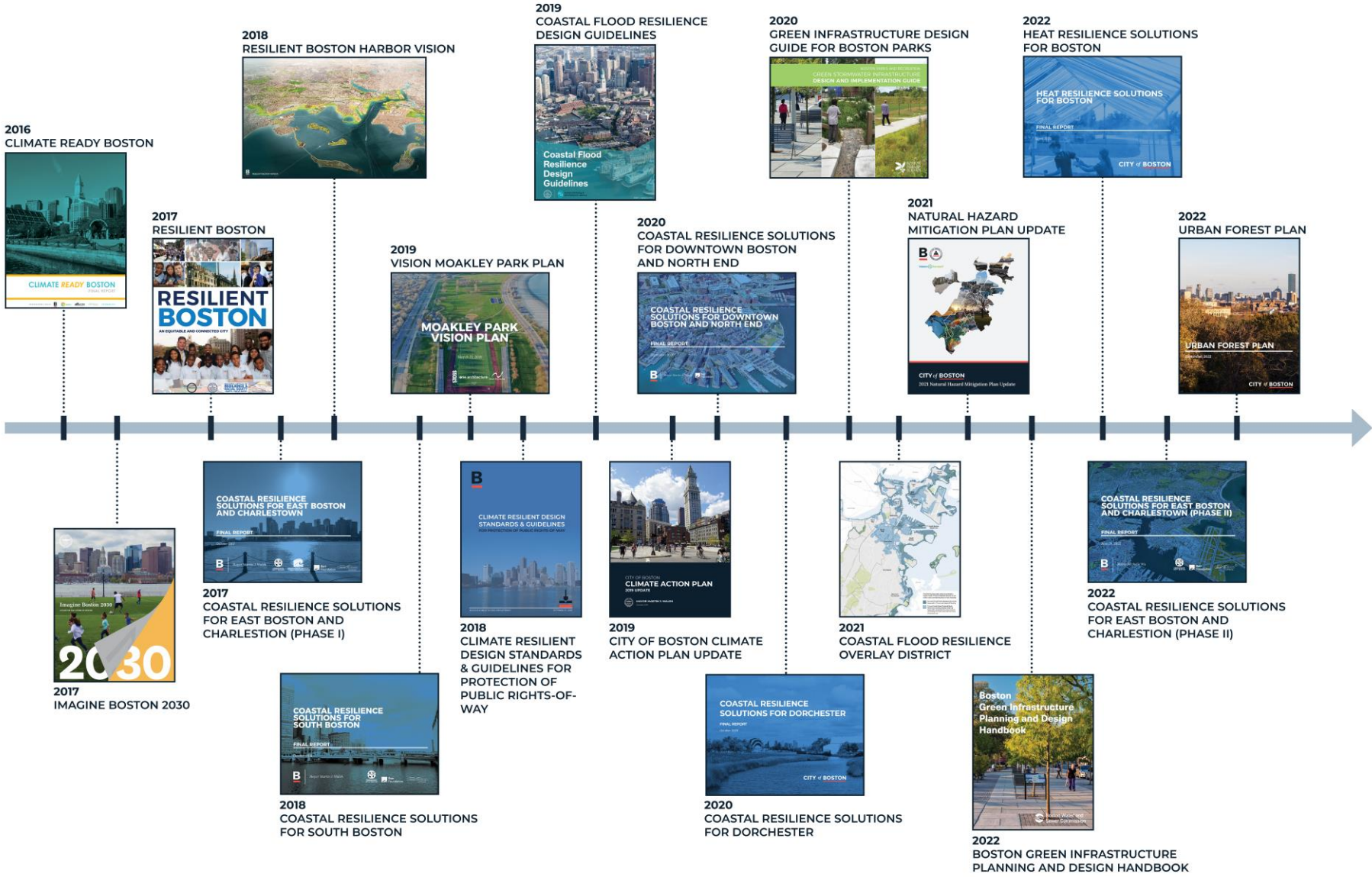


FLOODING IN BOSTON ON DECEMBER 23, 2022

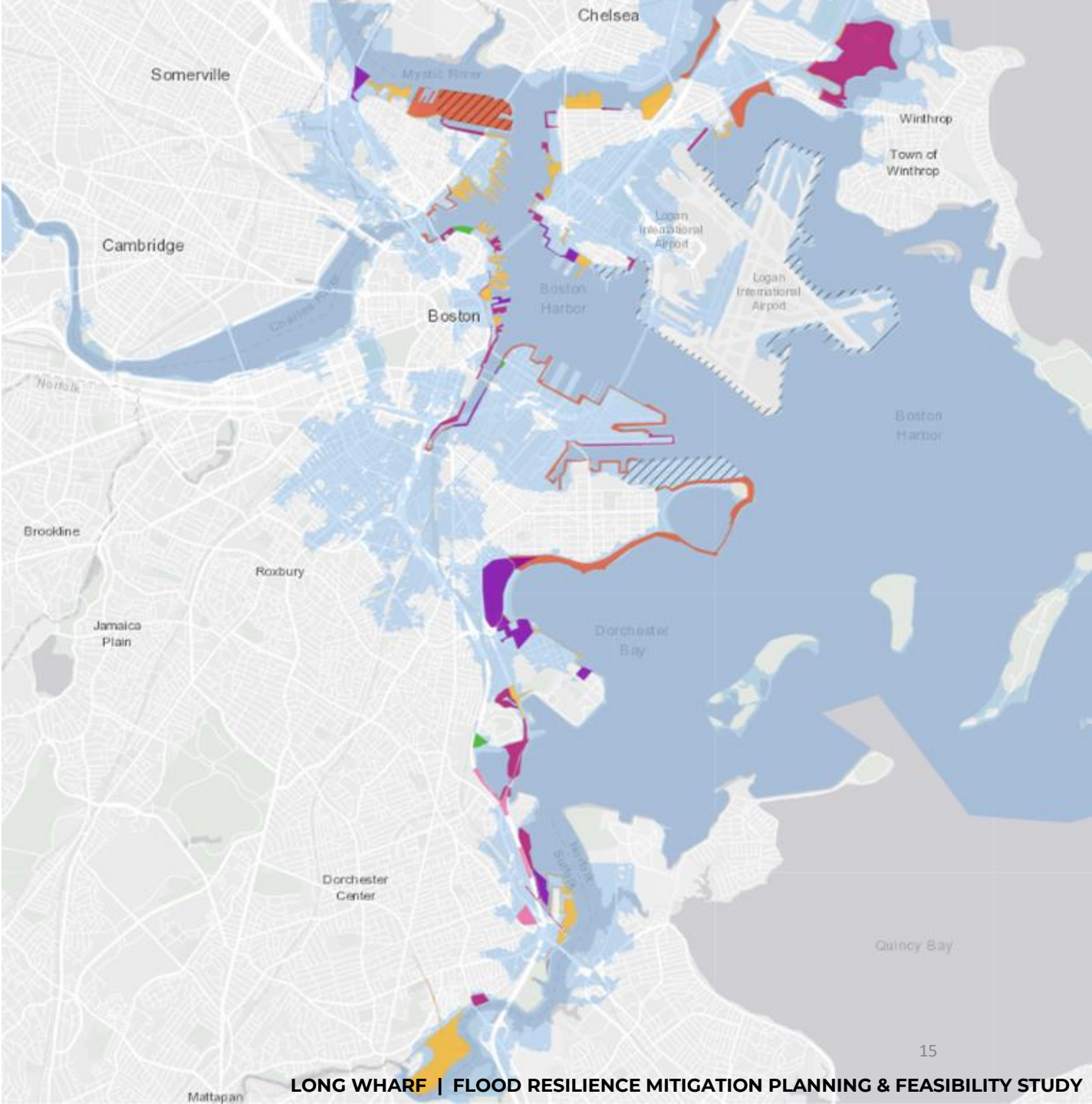


-  1% annual chance storm with 9 inches of SLR (2030s)
-  1% annual chance storm with 40 inches of SLR (2070s)

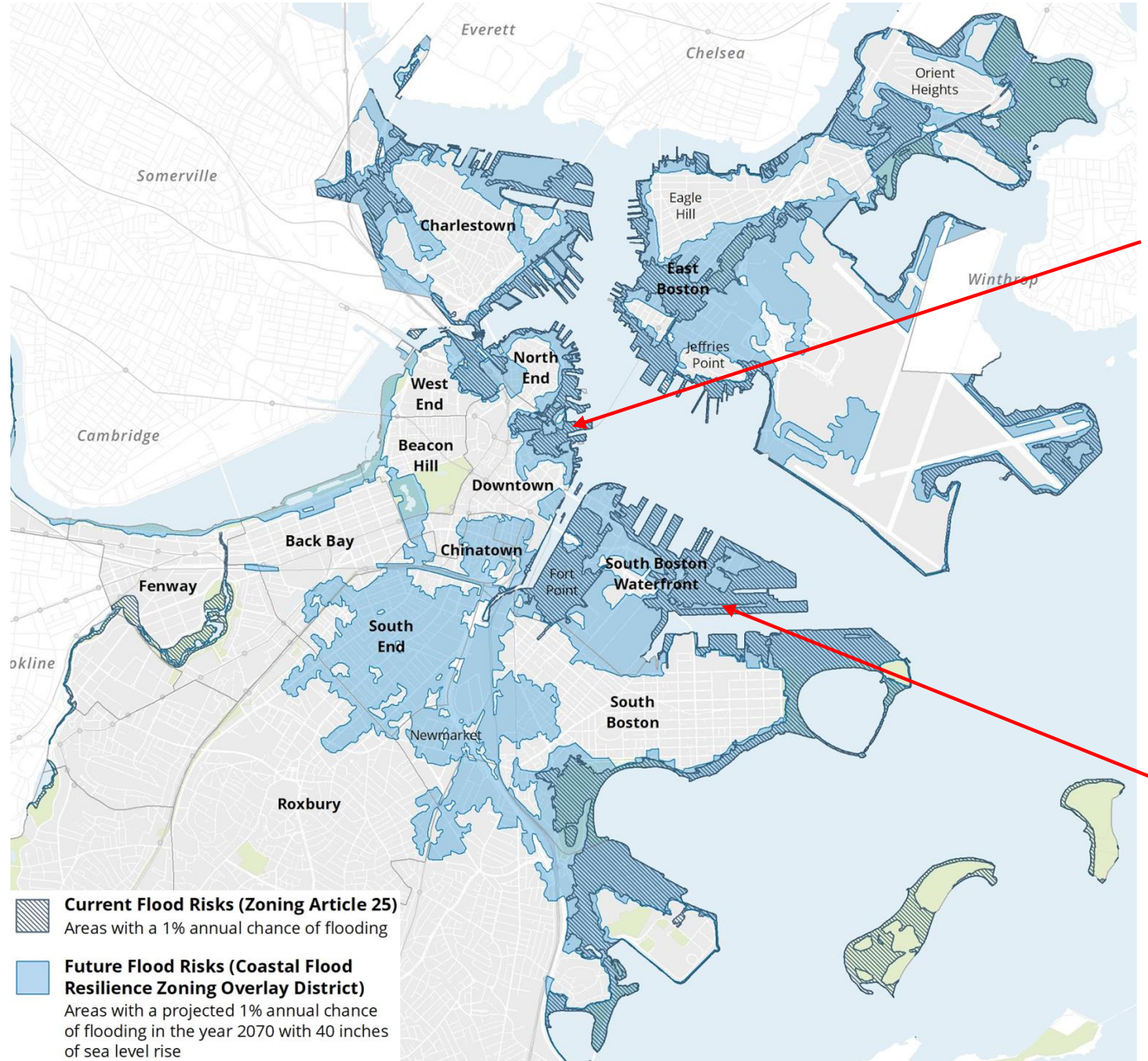
CITYWIDE CLIMATE RESILIENCE EFFORTS



IMPLEMENTATION STATUS OVERVIEW



BPDA PROJECTS (UNDERWAY)

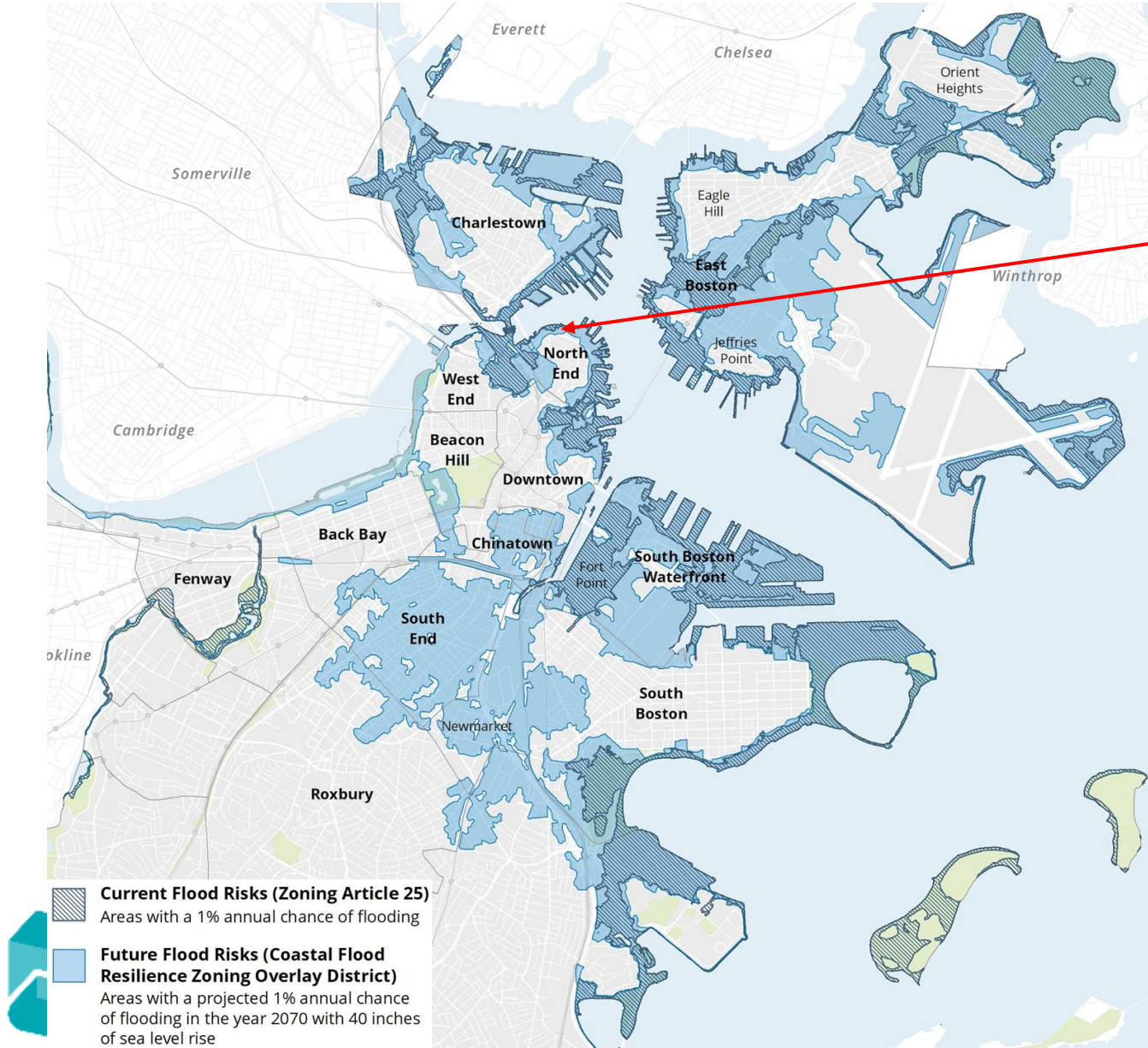


Long Wharf | Downtown
Flood Mitigation Planning & Feasibility Study in-progress

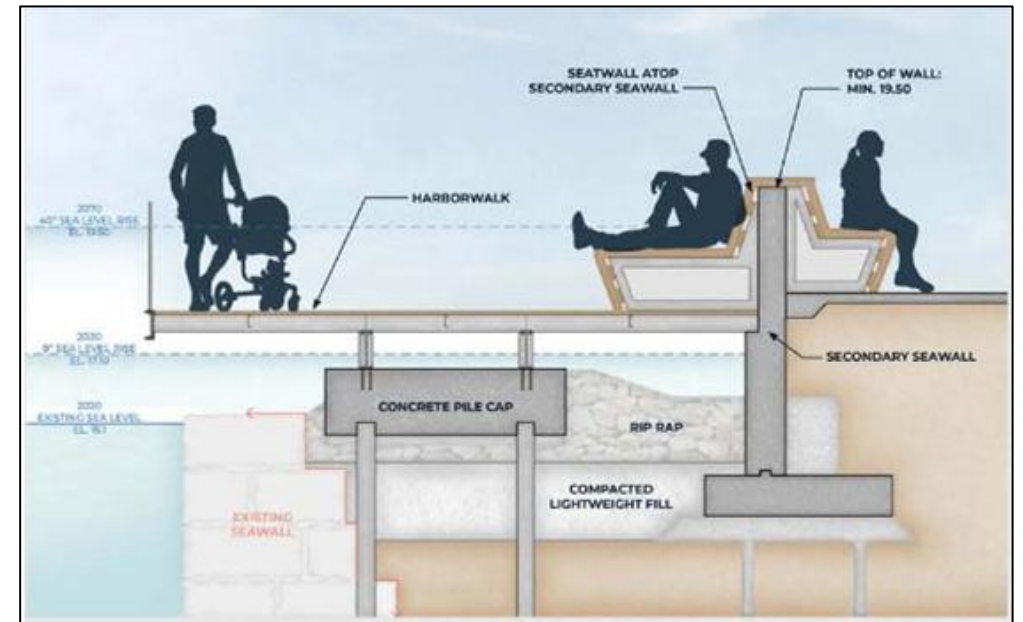


Raymond Flynn Industrial Park | South Boston
Flood Mitigation Planning & Feasibility Study in-progress

CITY PROJECTS IN DOWNTOWN/NORTH END (COMPLETED)

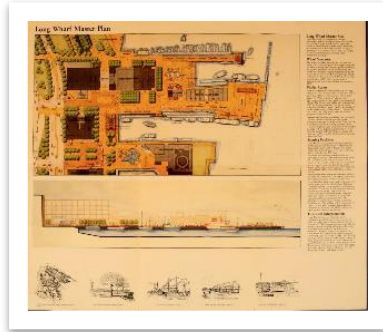


Langone Park & Puopolo Playground | North End
Construction completed in 2020

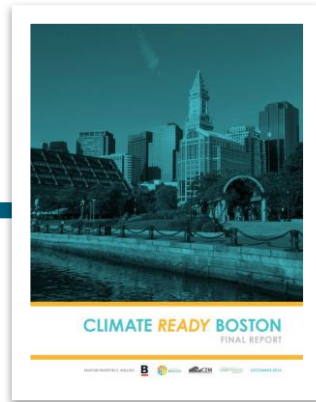


LONG WHARF | FLOOD RESILIENCE MITIGATION PLANNING & FEASIBILITY STUDY

PROJECT BACKGROUND



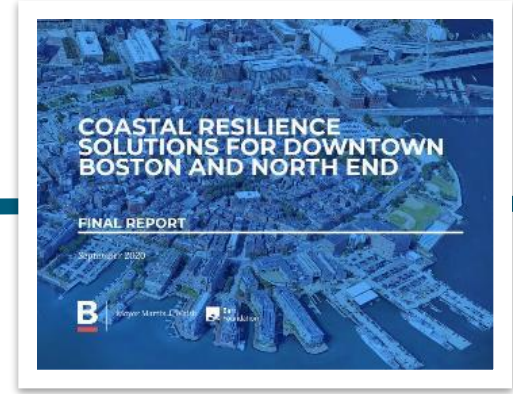
**LONG WHARF
MASTERPLAN (1970)**



**CLIMATE READY
BOSTON (2016)**

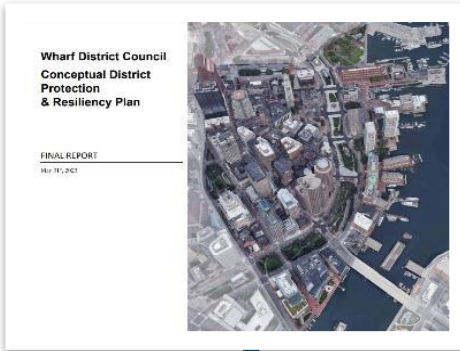


**RESILIENT BOSTON
HARBOR VISION (2018)**

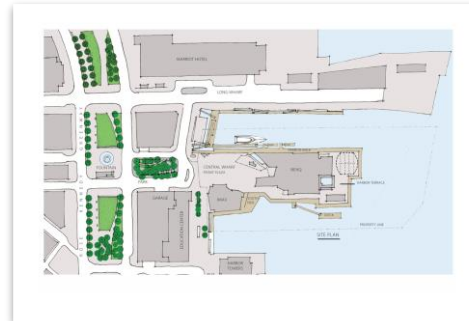


**COASTAL RESILIENCE
SOLUTIONS FOR DOWNTOWN &
NORTH END (2020)**

**WHARF DISTRICT
COUNCIL
RESILIENCY PLAN
(2023)**

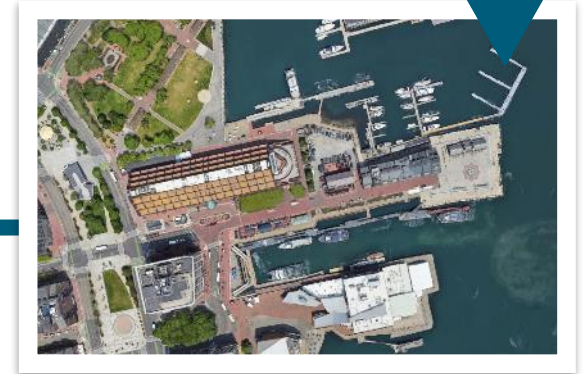


**NEW ENGLAND
AQUARIUM
MASTERPLAN (2023-)**



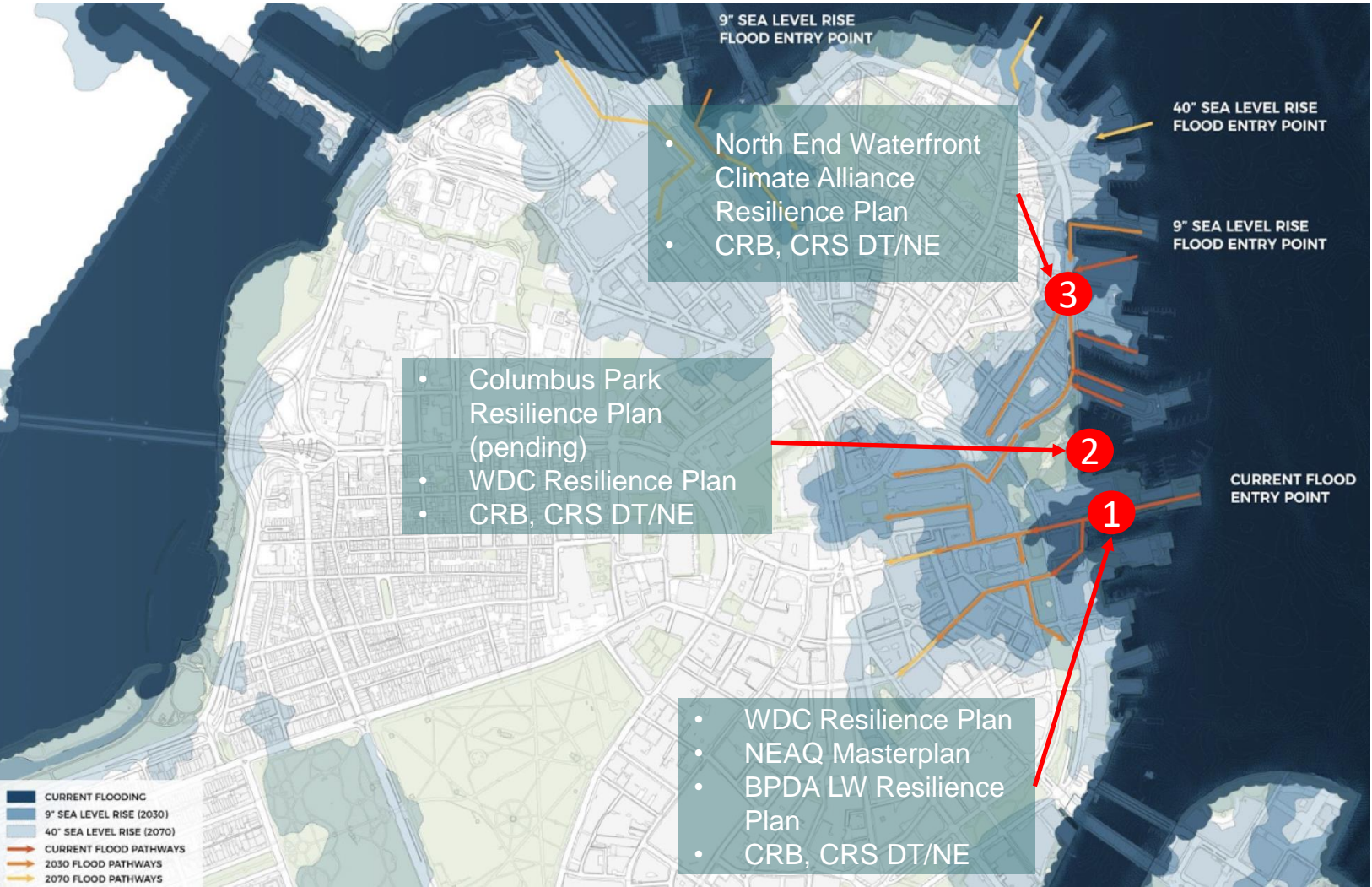
**NORTH END WATERFRONT
CLIMATE ALLIANCE
CONCEPTUAL DISTRICT
PROTECTION & RESILIENCY
PLAN
(2023--)**

WE ARE HERE!



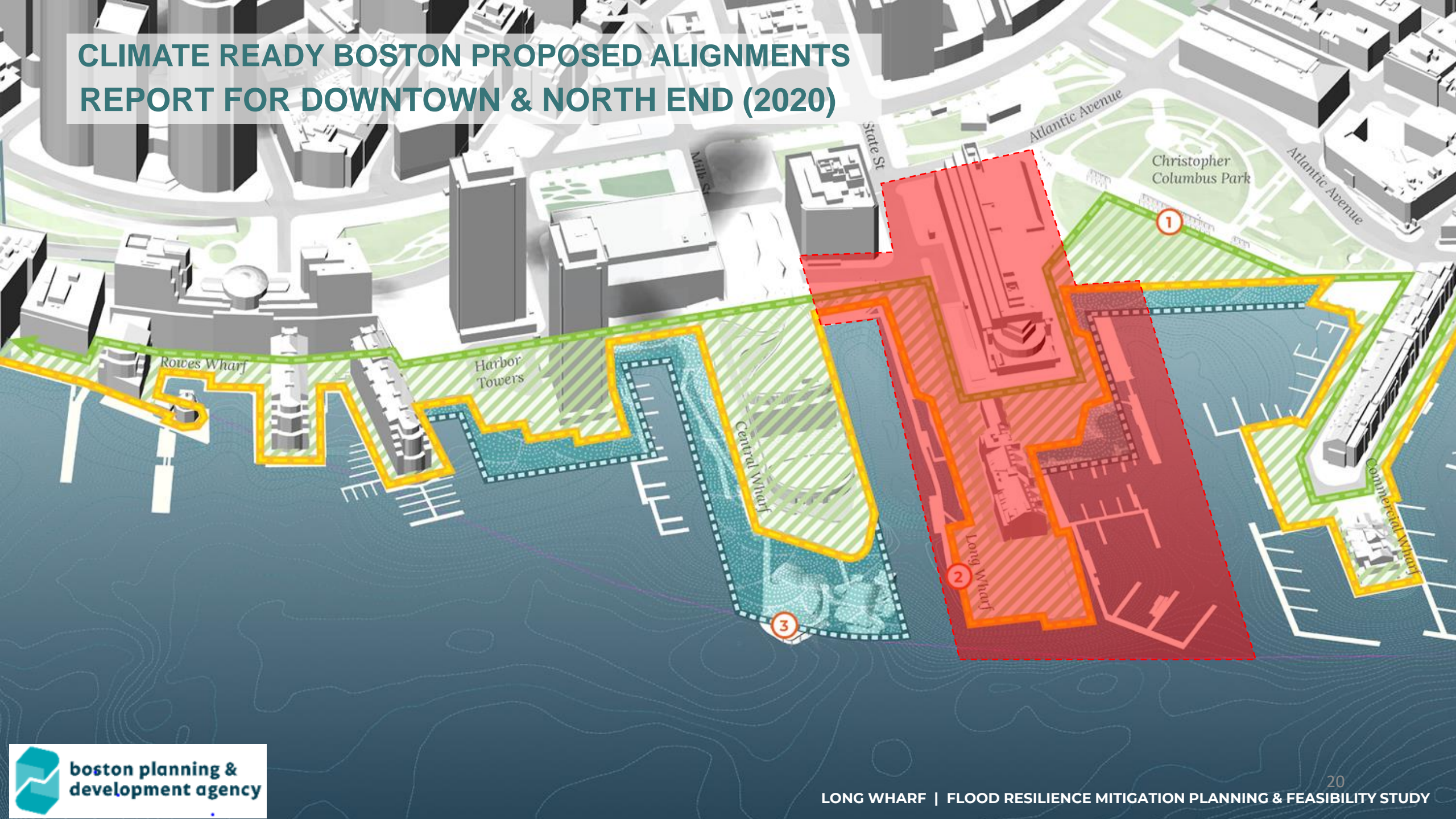
**FLOOD RESILIENCE MITIGATION
PLANNING & FEASIBILITY STUDY
FOR LONG WHARF (2024)**

NEAR AND LONG TERM FLOOD RISK IN DOWNTOWN AND NORTH END



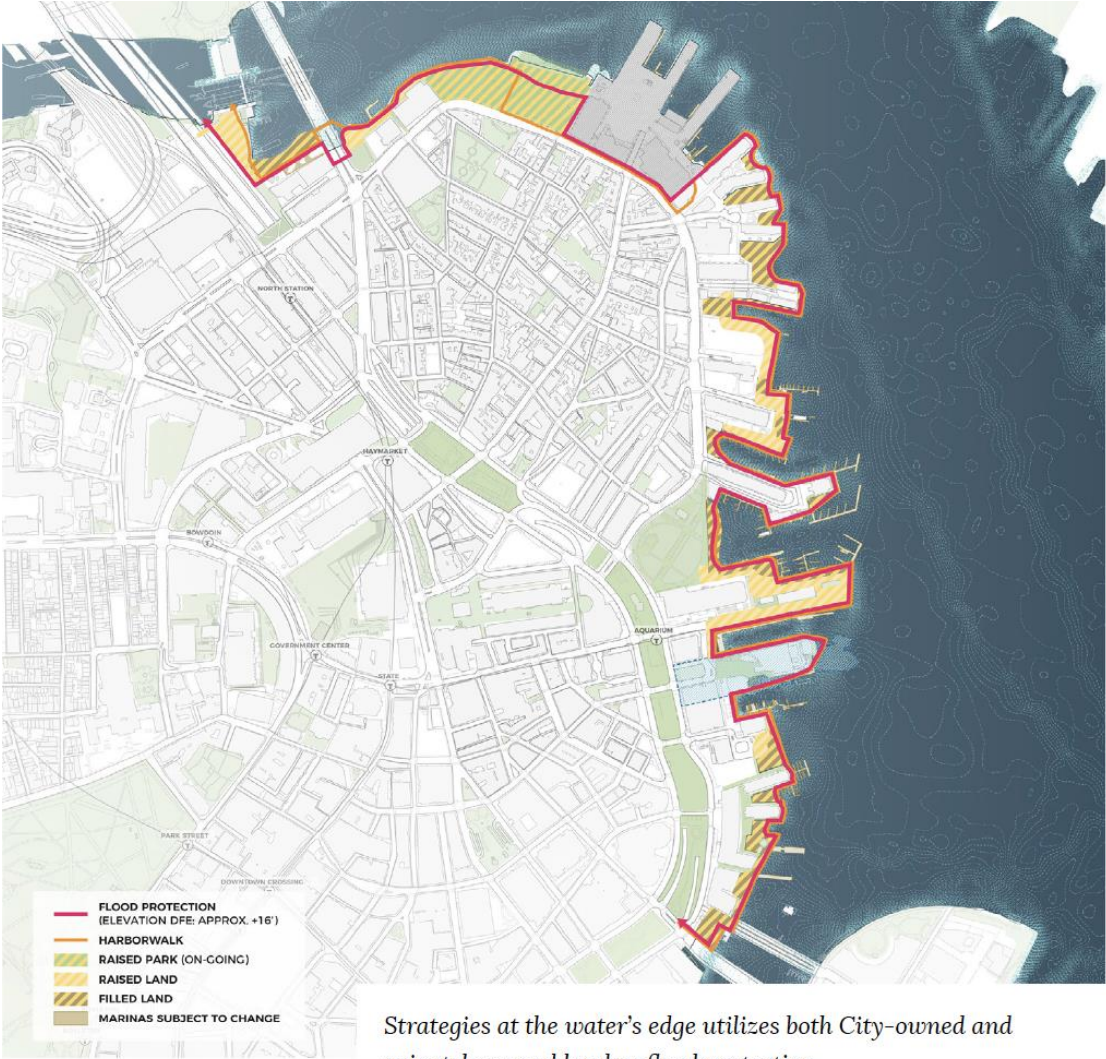
- 1** Long Wharf
Status: In Progress
- 2** Christopher Columbus Park
Status: Planning
- 3** North End & Waterfront
Status: Community Planning Starting
- 1-3** Downtown and North End 2030 Flood Path

CLIMATE READY BOSTON PROPOSED ALIGNMENTS REPORT FOR DOWNTOWN & NORTH END (2020)



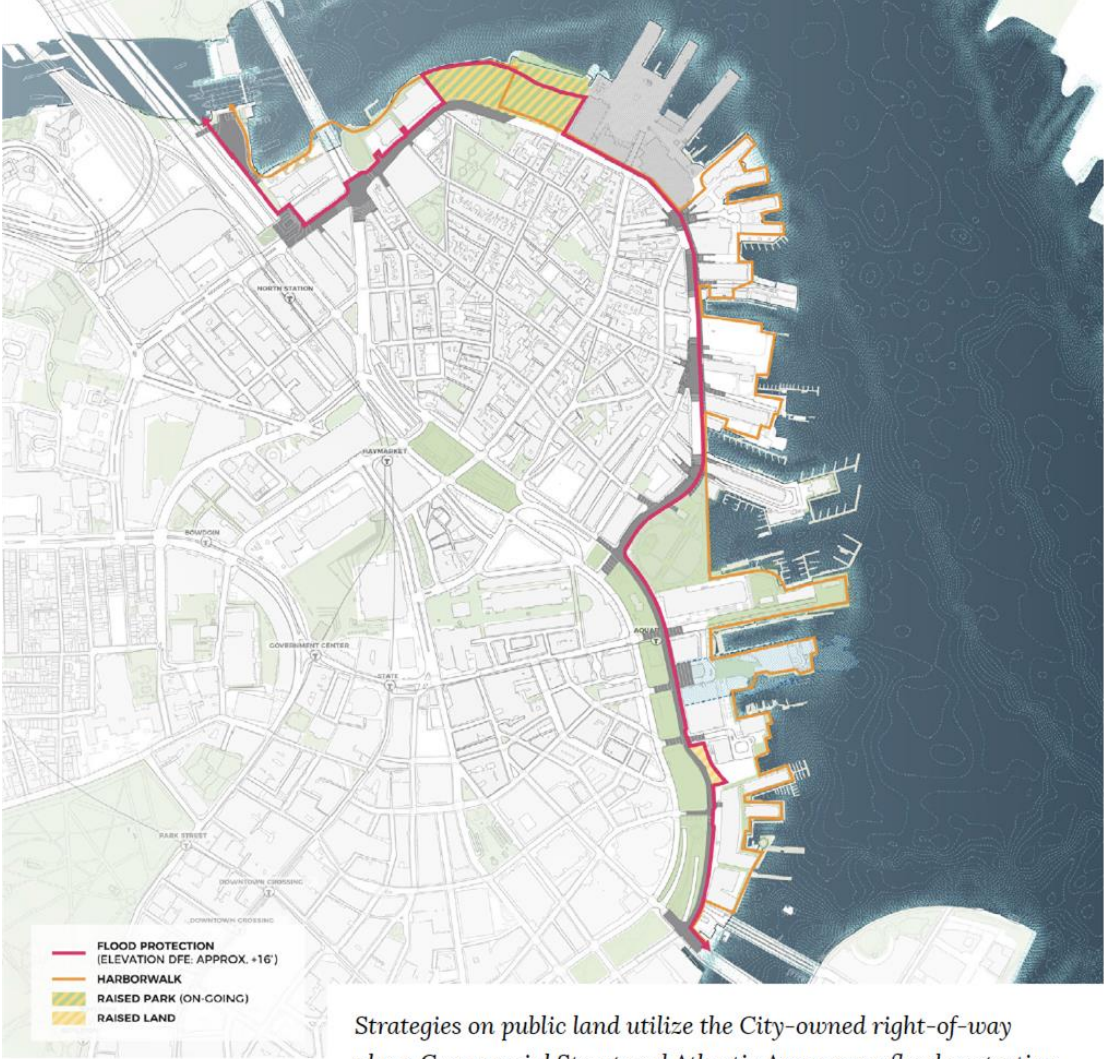
RESILIENCE STRATEGIES IN DOWNTOWN AND NORTH END

STRATEGIES ALONG THE WATERFRONT



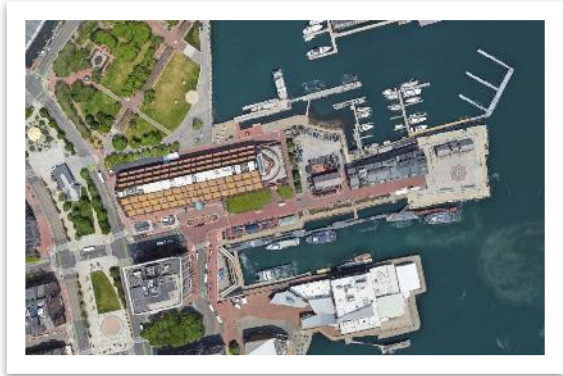
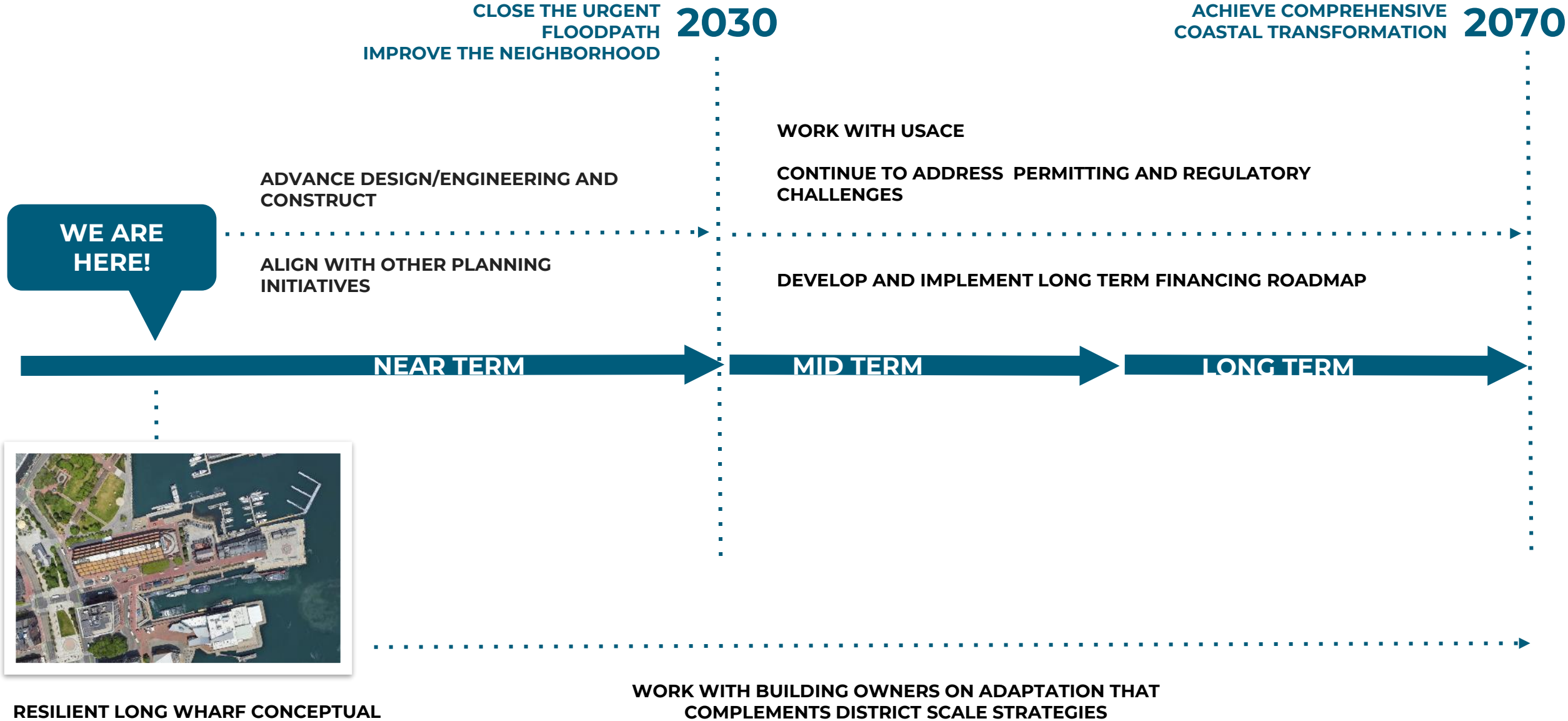
Strategies at the water's edge utilizes both City-owned and privately owned land as flood protection.

STRATEGIES IN THE PUBLIC RIGHT OF WAY



Strategies on public land utilize the City-owned right-of-way along Commercial Street and Atlantic Avenues as flood protection.

IMPLEMENTATION TIMELINE

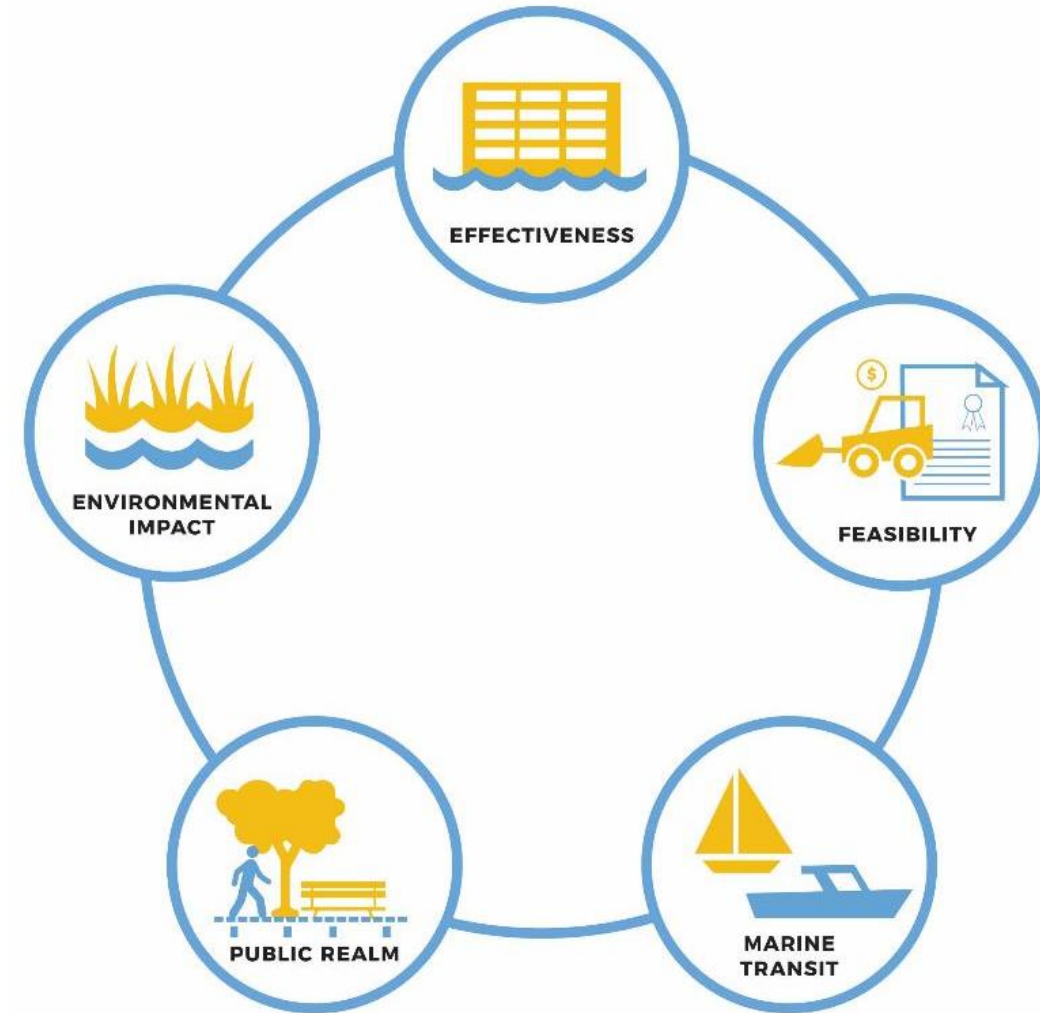


RESILIENT LONG WHARF CONCEPTUAL DESIGN (2024)

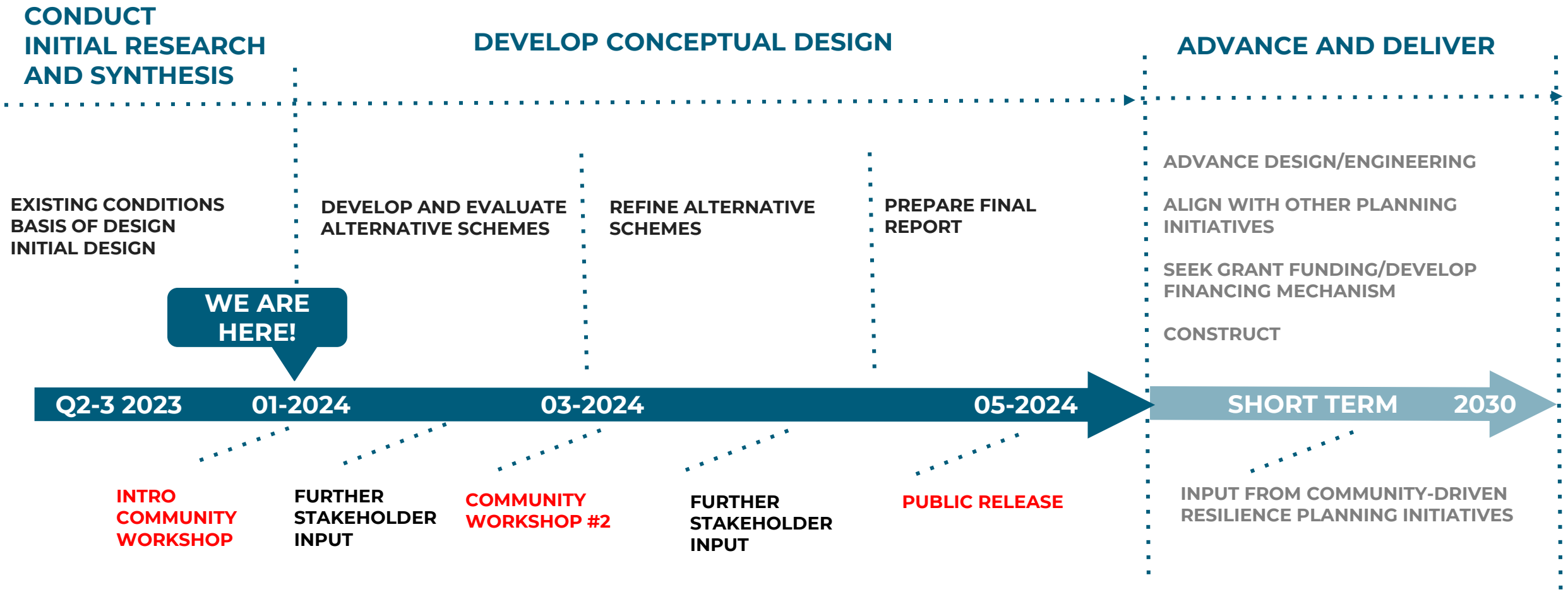
PROJECT GOALS

Develop a **set of inclusive, welcoming and implementable alternative designs** that:

- Provide flood control
- Protect/Improve critical infrastructure
- Create an accessible & equitable public realm
- Strengthen relationships between people & water
- Respect history of the wharf
- Ensure tie-ins and resolve operational, engineering and other challenges with partner projects and planning initiatives
- Contribute to closing off the entire 2030 flood pathway
- Develop design and engineering assessments for grant funding candidacy



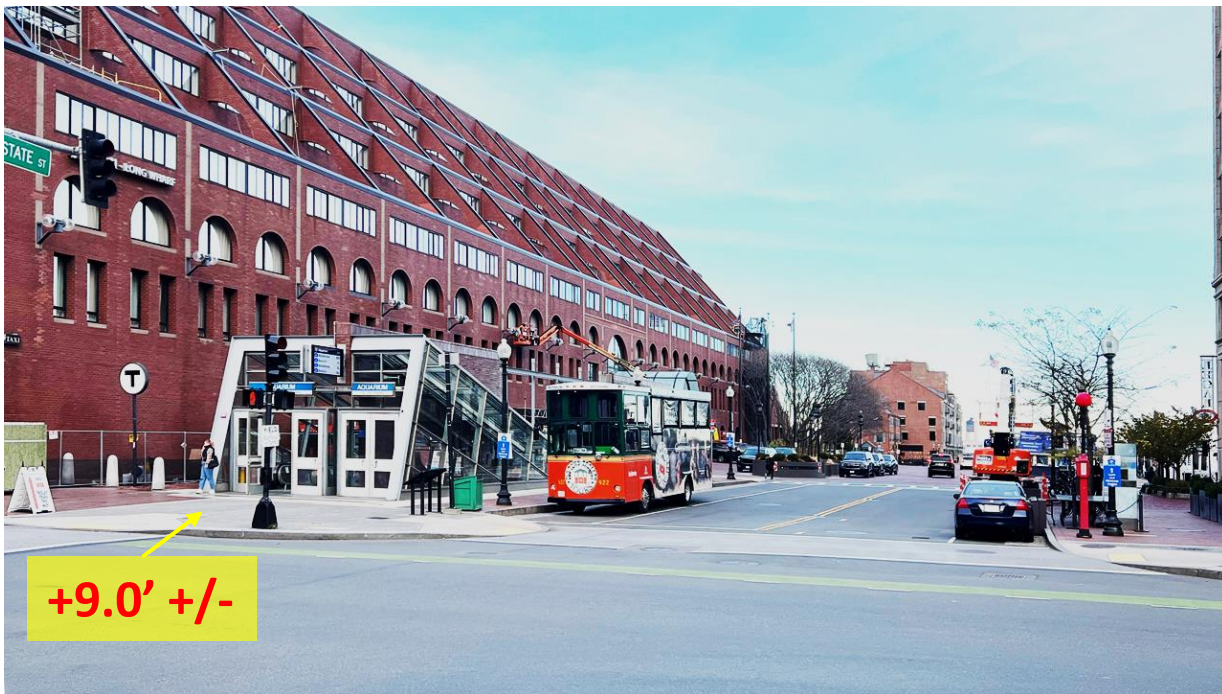
IMPLEMENTATION TIMELINE – NEXT STEPS



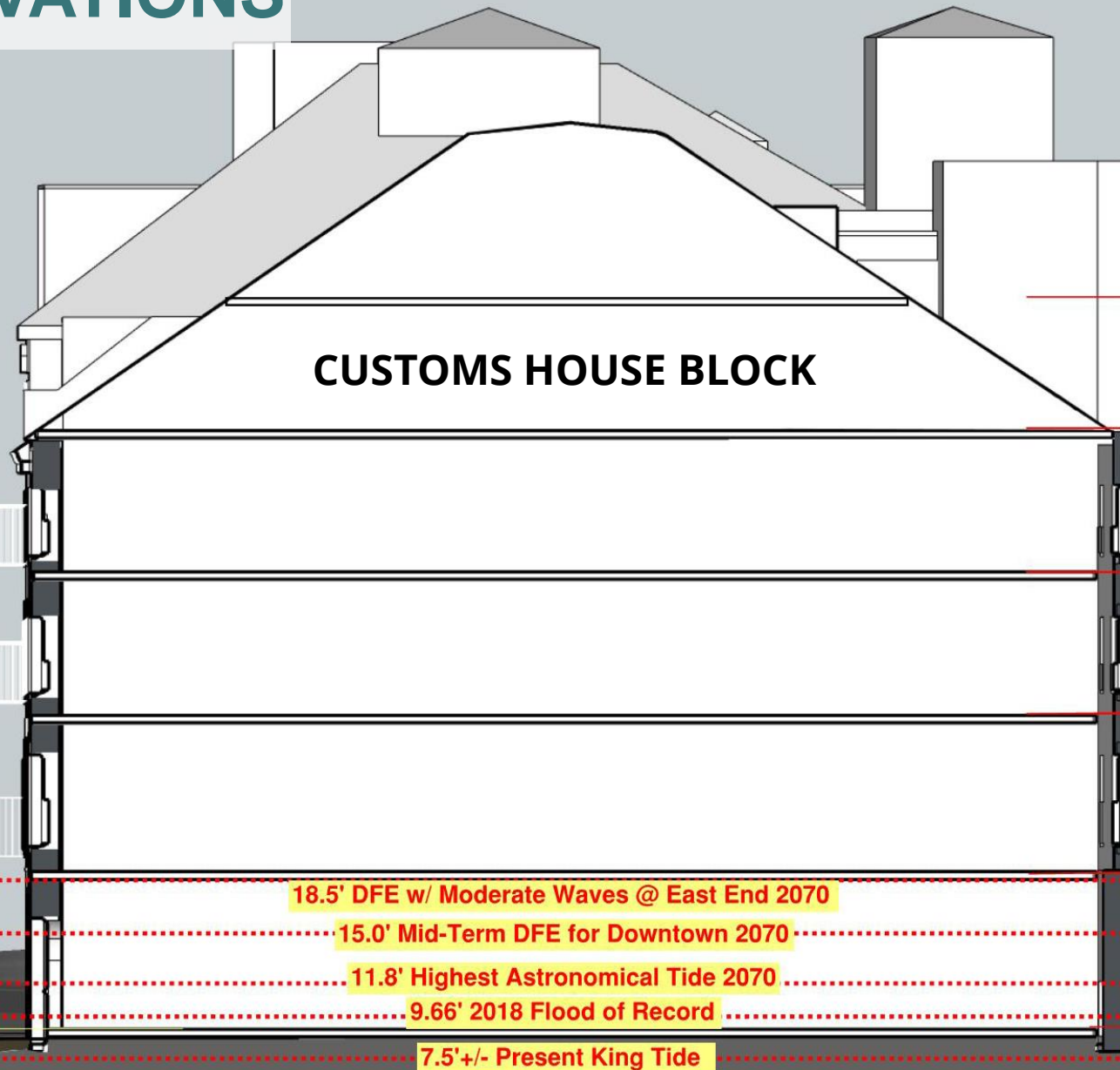
KING TIDE FLOODING- TODAY (EL. 7.5 +/- NAVD88)



2018 WINTER STORM FLOOD OF RECORD (EL. 9.66 NAVD88)



FLOOD ELEVATIONS



18.5' DFE w/ Moderate Waves @ East End 2070

15.0' Mid-Term DFE for Downtown 2070

11.8' Highest Astronomical Tide 2070

9.66' 2018 Flood of Record

7.5'+/- Present King Tide

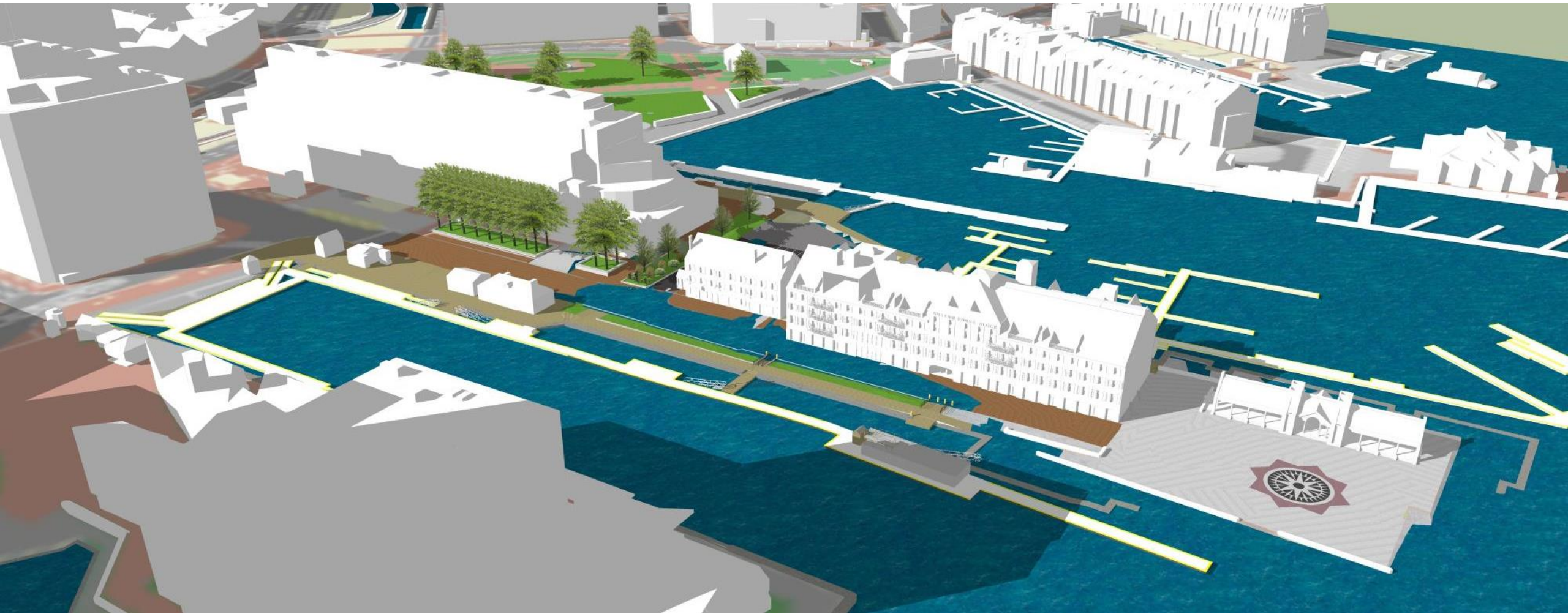
8'-5"
9'-3"
9'-5"
10'-3"
10'-4"

8.91'

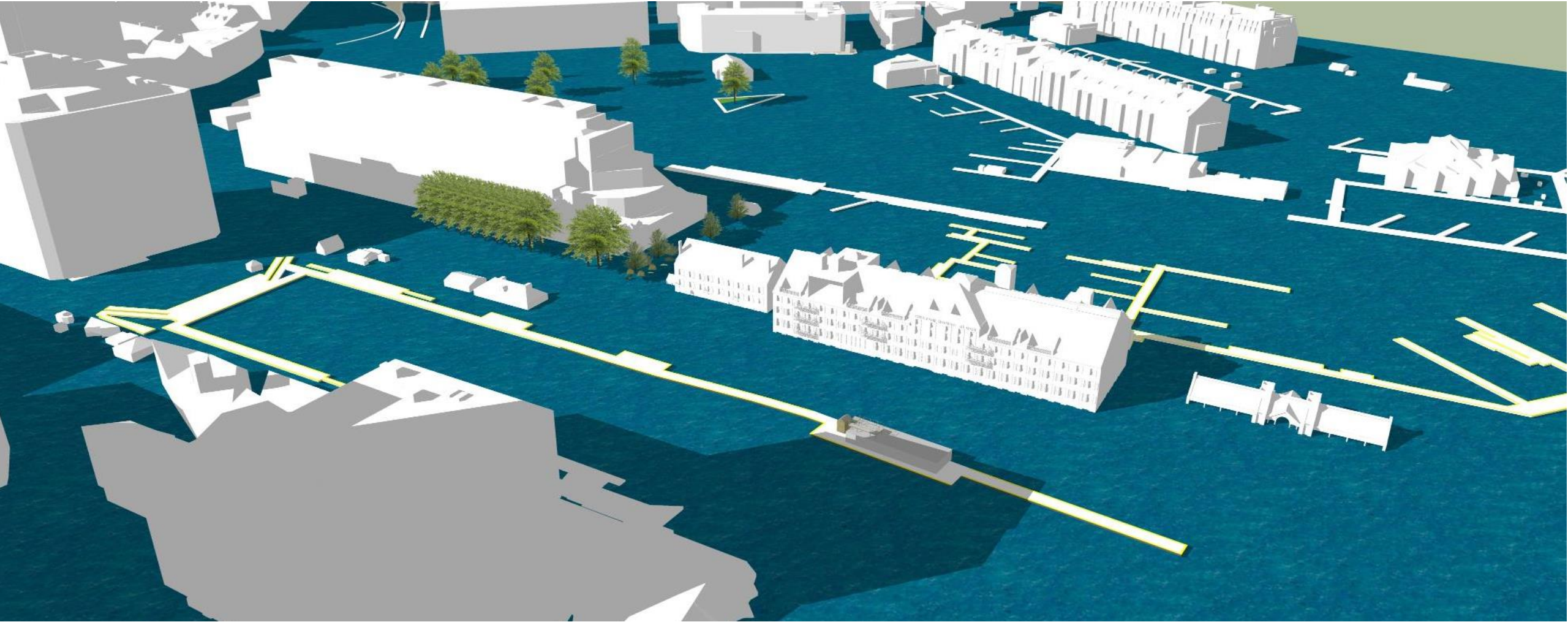
EXISTING CONDITIONS MODEL



FLOOD IMPACTS: WATER ELEVATION = 7.5' NAVD88 (SIMILAR TO KING TIDE TODAY)



FLOOD IMPACTS: WATER ELEVATION = 15.0' NAVD88



FLOODPROOFING GOALS

- Block flood paths to Downtown Boston
- Raise grades on Long Wharf to prevent flooding during 2070 astronomical high tide without flood barrier intervention
- Protect infrastructure on Long Wharf
- Utilize modular floodproofing strategies to address potential long-term storm surge events

HOW TO USE MENTIMETER TO PARTICIPATE IN UPCOMING FEEDBACK OPPORTUNITIES?

WEB BROWSER



What is a priority for you?

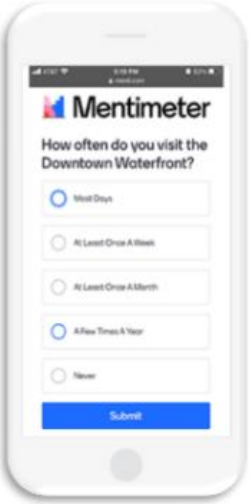
water transportation
public access
signage
equity
resiliency
access
restrooms
sunlight
welcoming
quiet spaces
equity
signage
resiliency
access
restrooms
sunlight
welcoming

VISIT: [MENTI.COM](https://www.menti.com)

ENTER CODE: [2451 4353](https://www.menti.com/join/24514353)

OR

SMART PHONE



How often do you visit the Downtown Waterfront?

Most Days

At Least Once A Week


At Least Once A Month

A Few Times A Year

Never

Submit

SCAN QR:



WHAT FEATURES AT LONG WHARF ARE YOU MOST CONCERNED ABOUT FLOODING?

SCAN QR BELOW



OR

VISIT:

[MENTI.COM](https://menti.com)

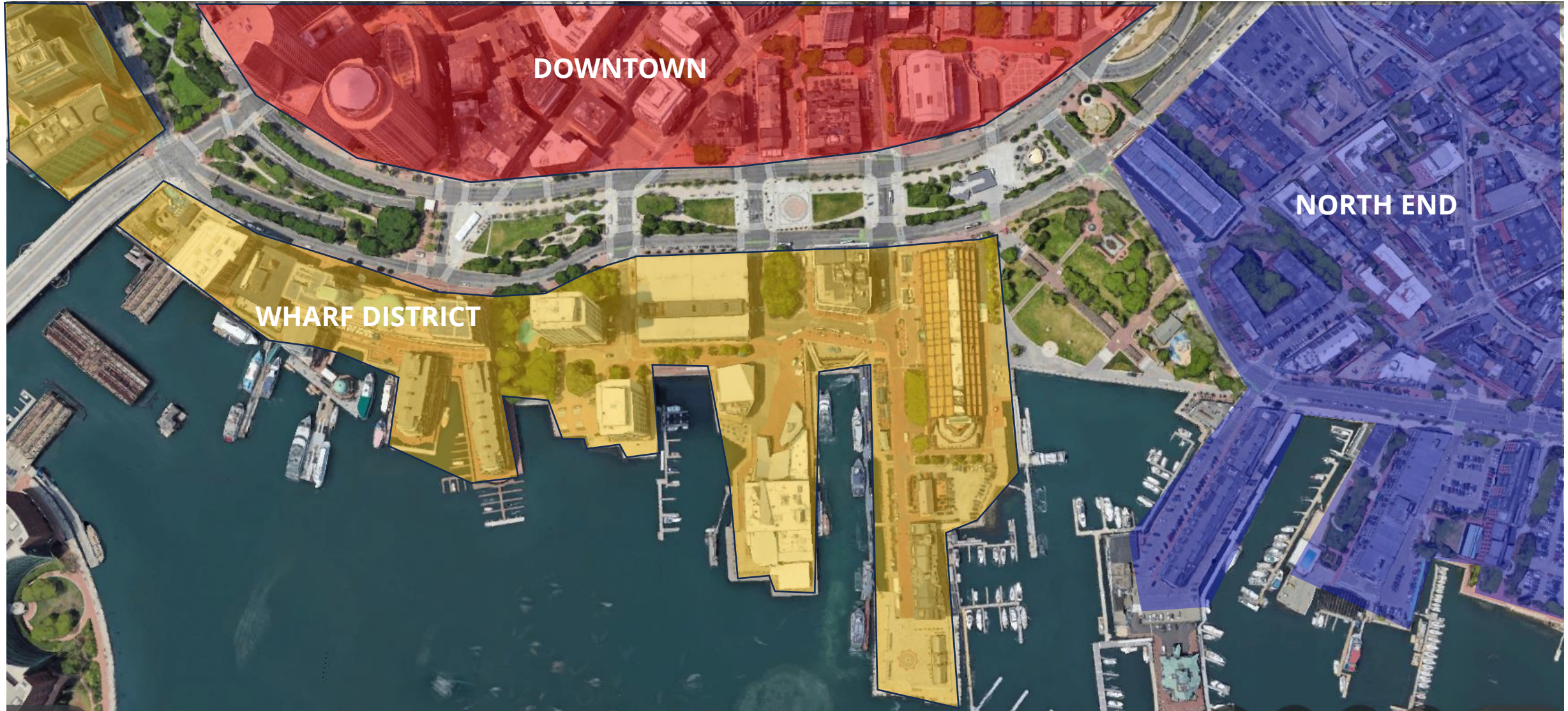
ENTER CODE:

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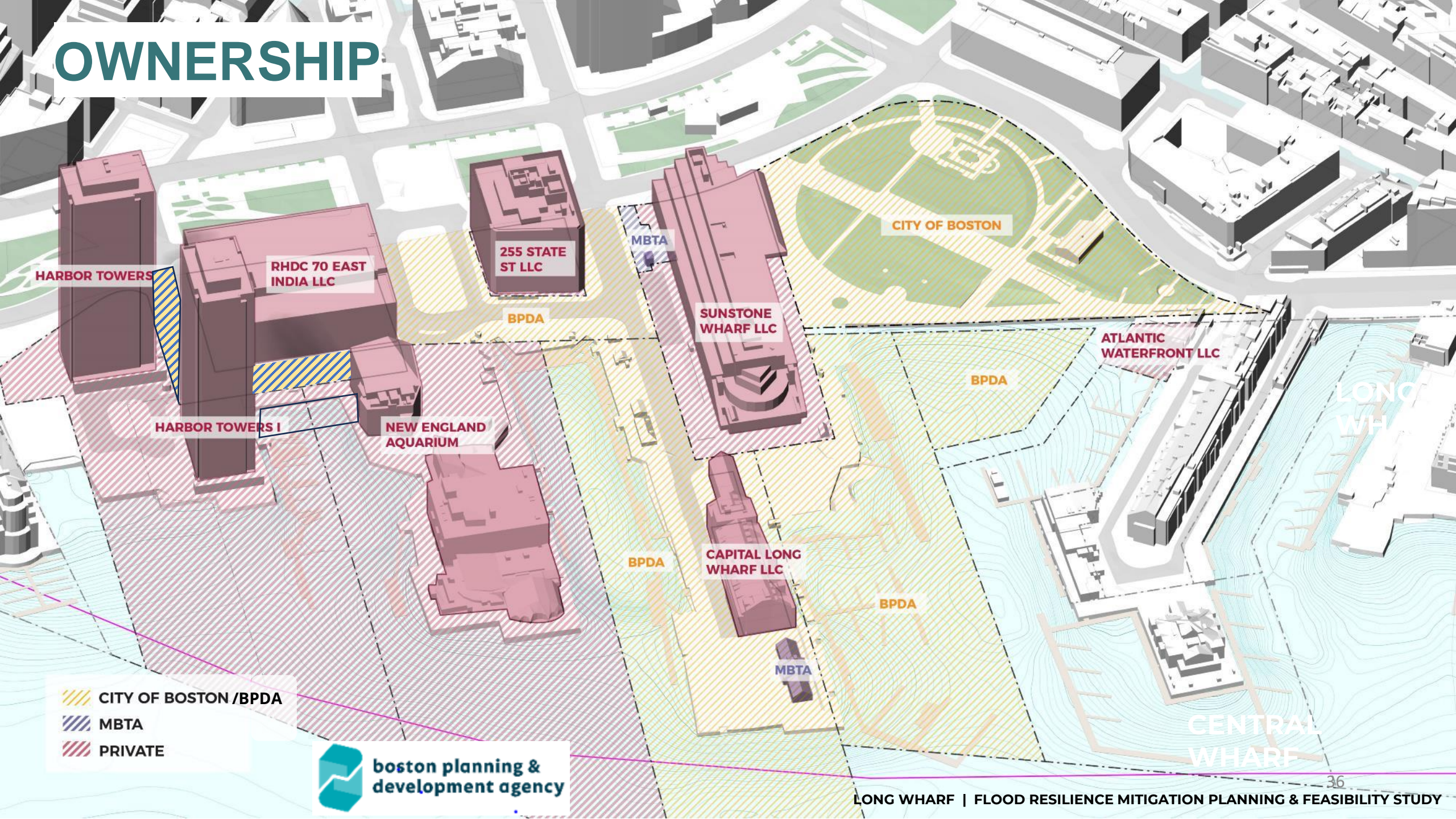


PLANNING AND DESIGN CONTEXT

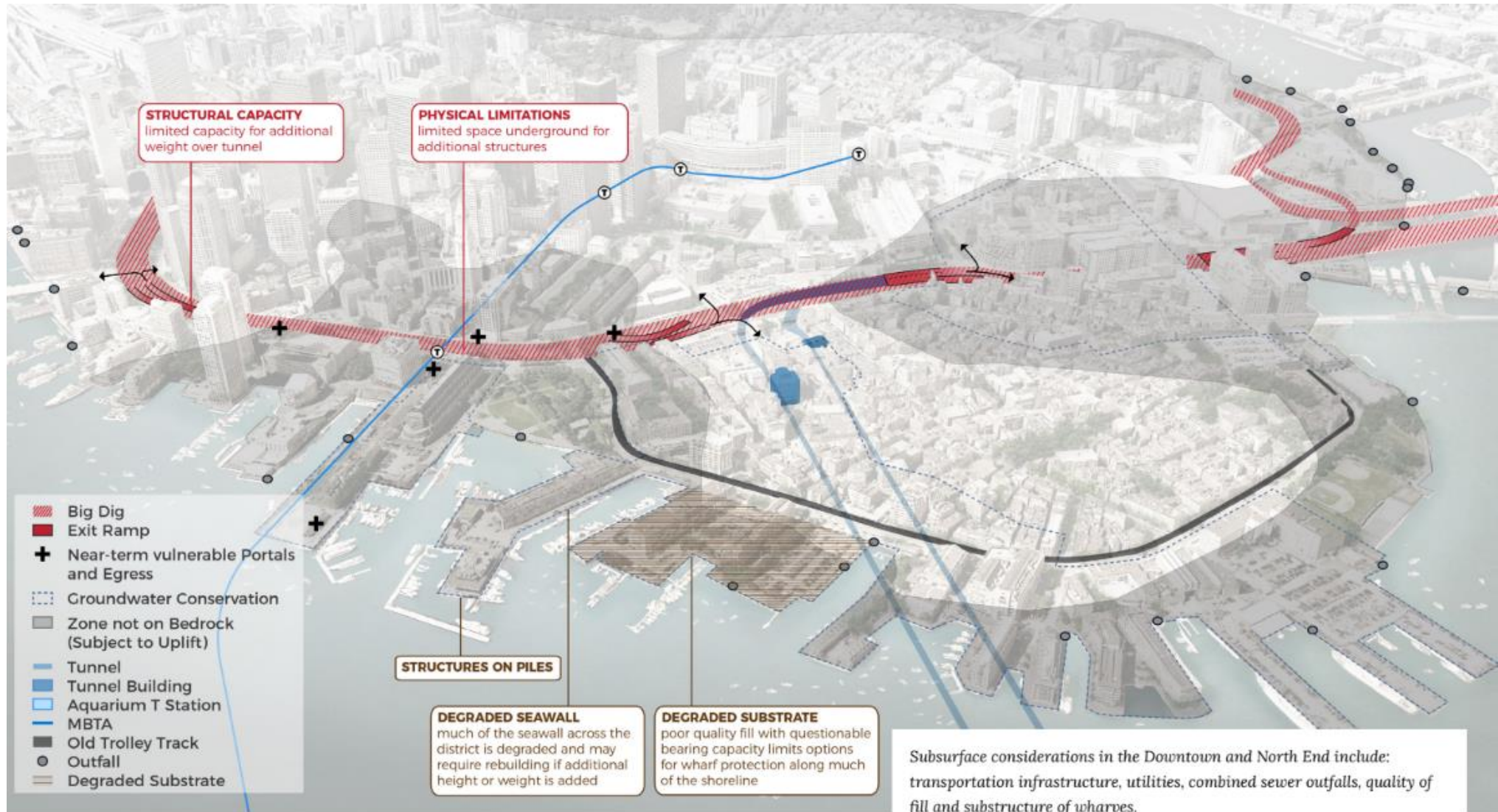
KEY NEIGHBORHOODS



OWNERSHIP



TRANSPORTATION AND CRITICAL INFRASTRUCTURE



Source: *Climate Resilience Solutions for Downtown Boston and North End* (2020)

GREEN INFRASTRUCTURE

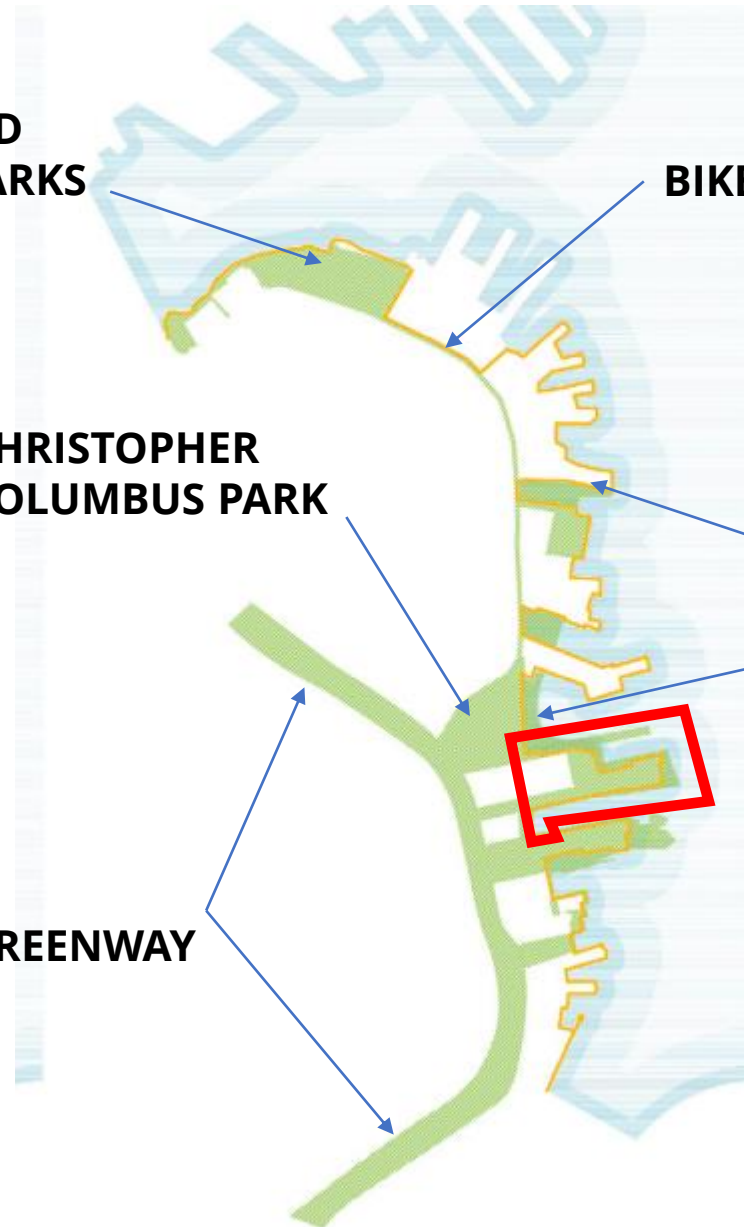
LANGONE AND
PUOPPOLO PARKS

BIKEWAY

CHRISTOPHER
COLUMBUS PARK

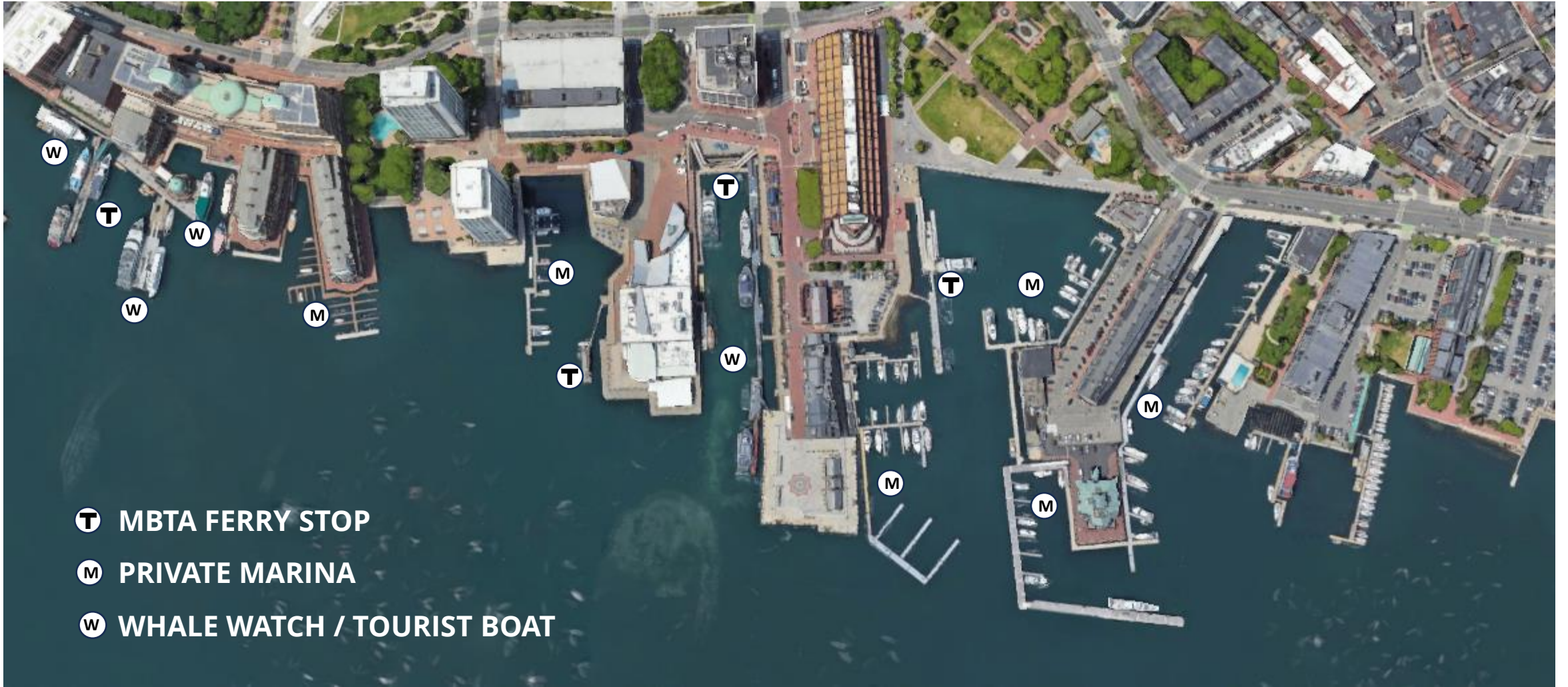
HARBORWALK

GREENWAY

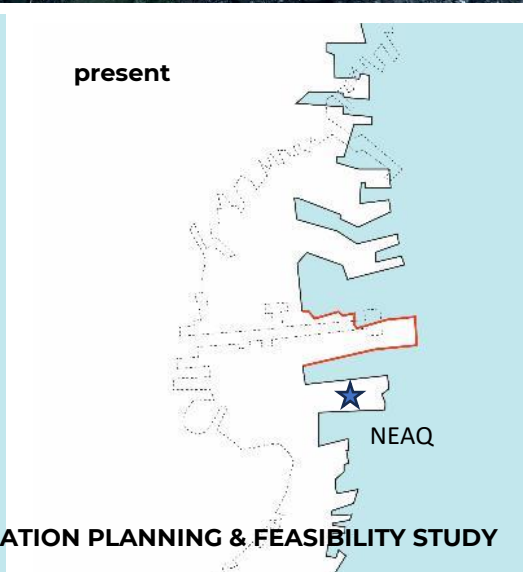
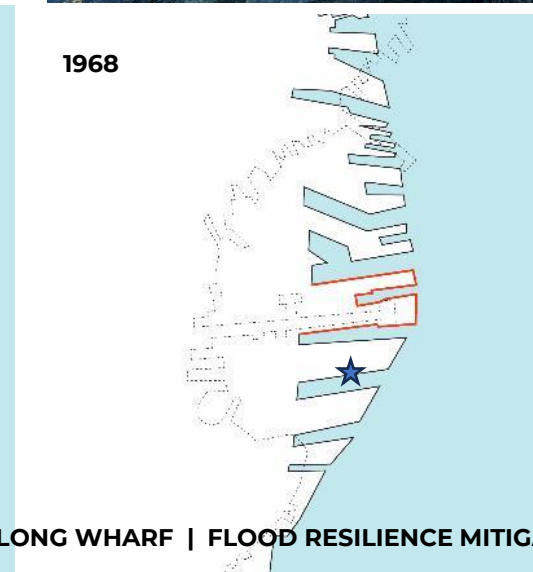
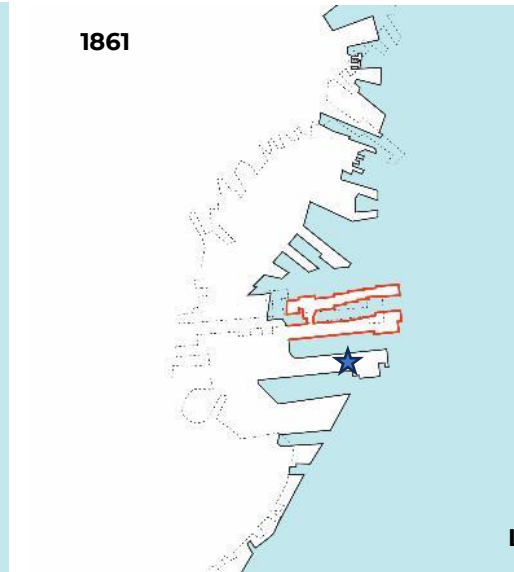
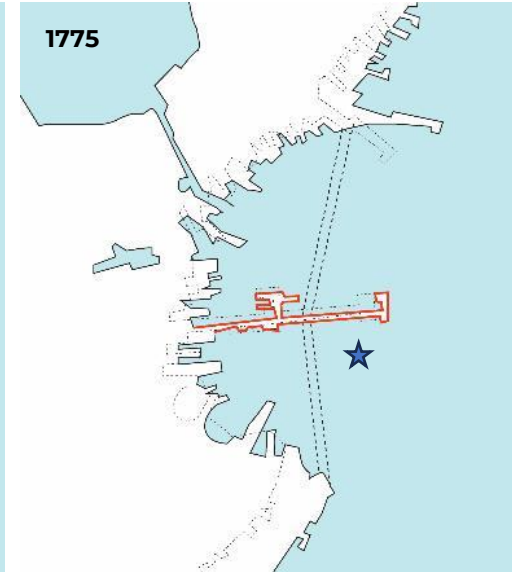
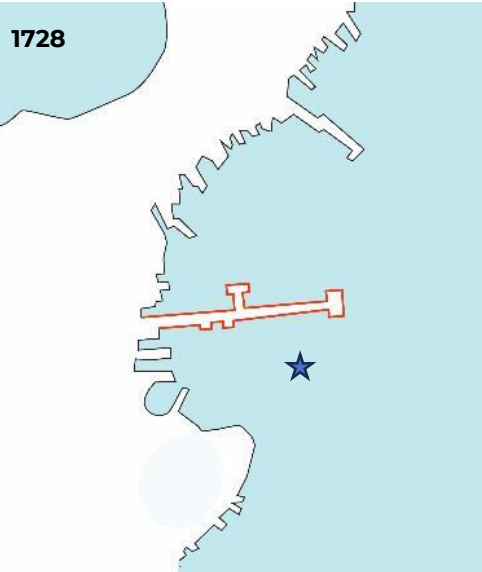
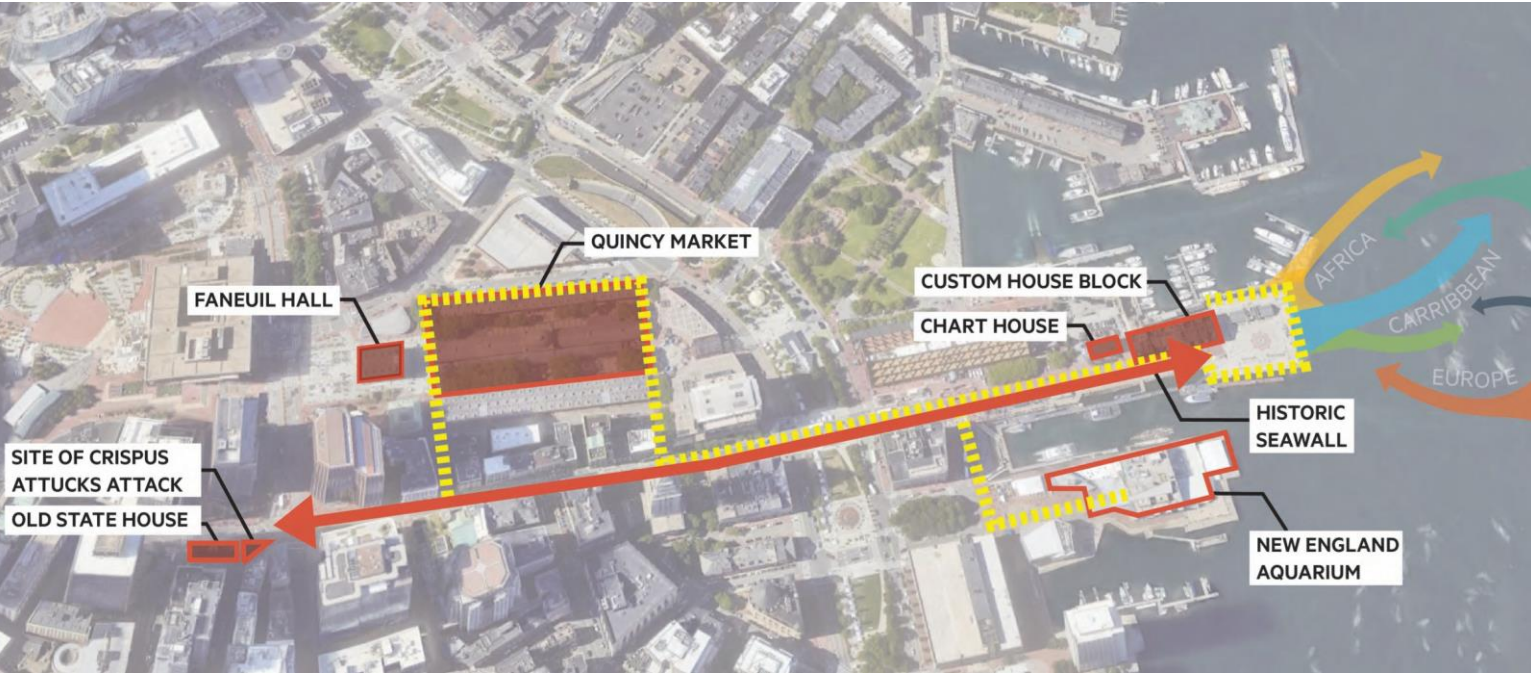


Source: *Climate Resilience Solutions for
Downtown Boston and North End (2020)*

WATER-DEPENDENT USES



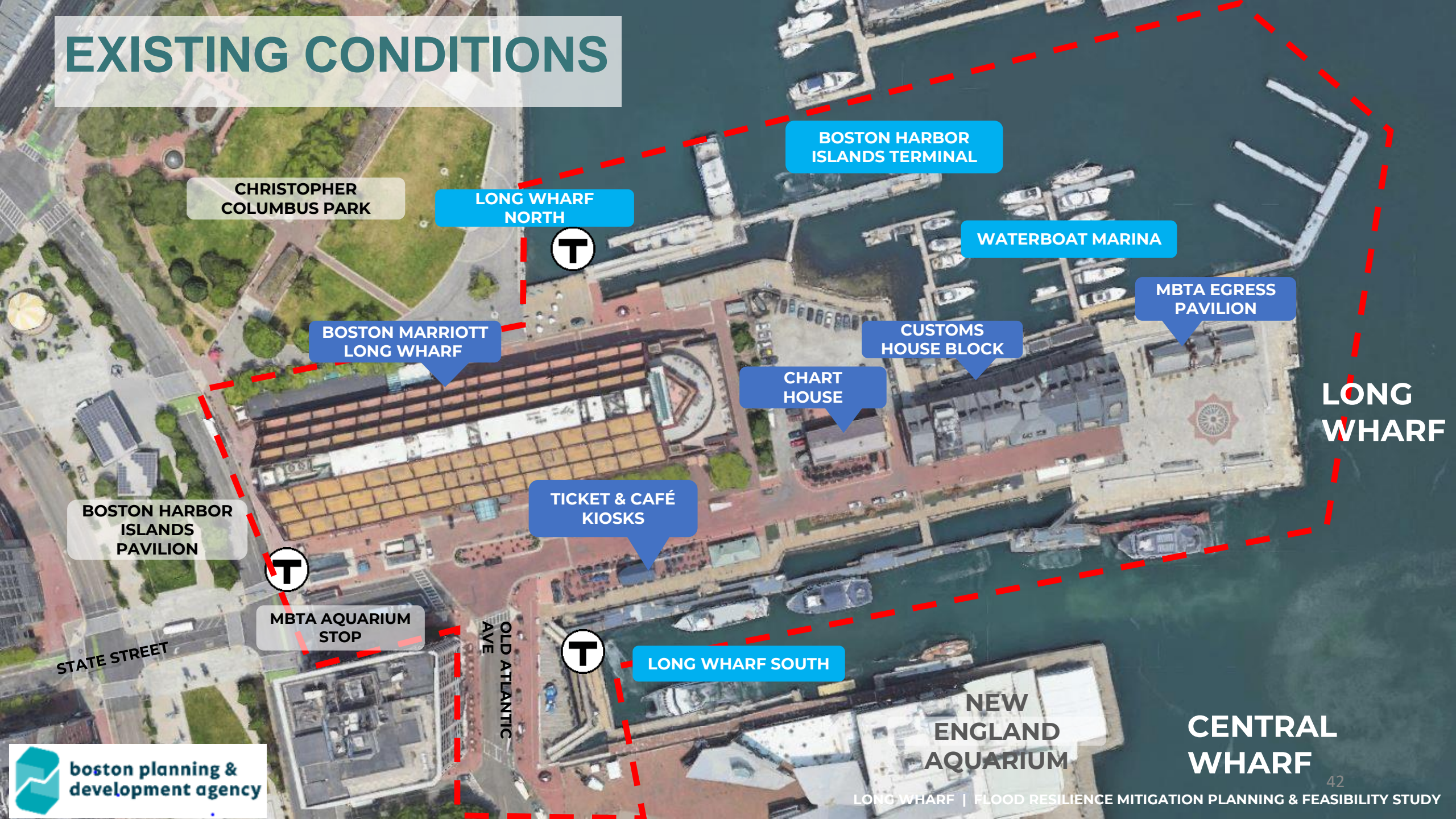
HISTORY



An aerial photograph of a city waterfront, likely Boston, showing a dense cluster of buildings, streets, and a harbor with numerous boats. The image is overlaid with a semi-transparent blue filter. The text "EXISTING CONDITIONS" is centered in large, white, bold, sans-serif capital letters.

EXISTING CONDITIONS

EXISTING CONDITIONS



CHRISTOPHER COLUMBUS PARK

LONG WHARF NORTH

BOSTON HARBOR ISLANDS TERMINAL

WATERBOAT MARINA

MBTA EGRESS PAVILION

BOSTON MARRIOTT LONG WHARF

CUSTOMS HOUSE BLOCK

CHART HOUSE

LONG WHARF

BOSTON HARBOR ISLANDS PAVILION

TICKET & CAFÉ KIOSKS

MBTA AQUARIUM STOP

LONG WHARF SOUTH

NEW ENGLAND AQUARIUM

CENTRAL WHARF

STATE STREET

OLD ATLANTIC AVE

EXISTING CONDITIONS – SOUTH SIDE

**MARRIOTT
LOADING
DOCK**

**CONSOLIDATED
ACTIVITY ON EDGE**

EXISTING CONDITIONS – SOUTH SIDE

VIBRANT CAFÉ SPACE & TICKET SALES ACTIVITY

PEDESTRIAN WALKWAY ALONG HARBORWALK; LIMITED QUEUING SPACE AND NO SHADE

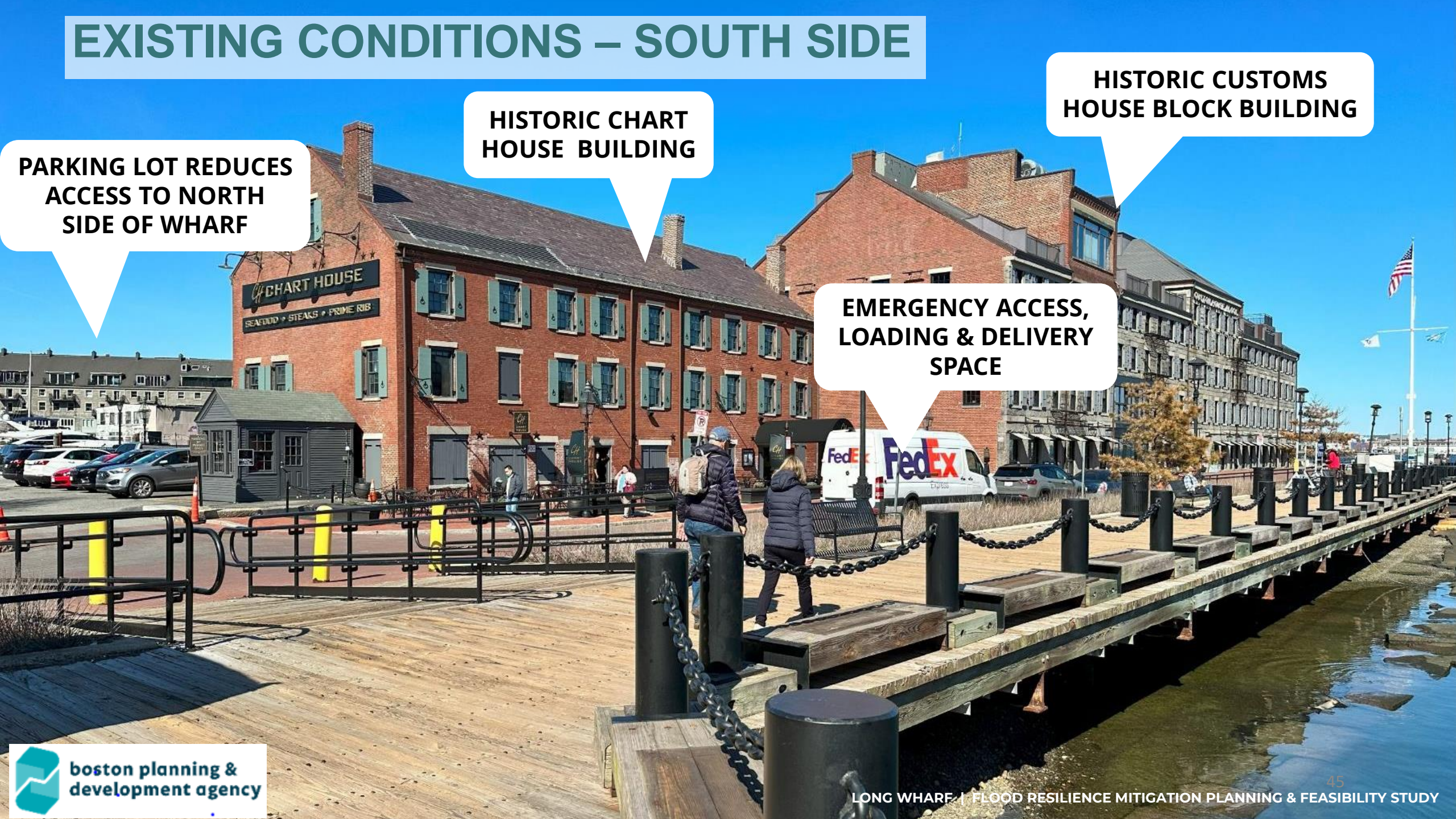
EXISTING CONDITIONS – SOUTH SIDE

**HISTORIC CUSTOMS
HOUSE BLOCK BUILDING**

**HISTORIC CHART
HOUSE BUILDING**

**PARKING LOT REDUCES
ACCESS TO NORTH
SIDE OF WHARF**

**EMERGENCY ACCESS,
LOADING & DELIVERY
SPACE**



EXISTING CONDITIONS - EAST END

**UNDERUTILIZED
SPACE AT MBTA
EGRESS PAVILION**

**LITTLE SHADE &
ACTIVITY AT WIDE,
OPEN PLAZA**

**GREAT VIEWS
ACROSS HARBOR**



EXISTING CONDITIONS - EAST END

**OPPORTUNITIES
FOR GATHERING AT
WATER'S EDGE**

**SMALL INFORMATION
PANELS**

**OPEN, UNDER-UTILIZED PLAZA
AT END OF WHARF**

EXISTING CONDITIONS – NORTH SIDE

BOARDWALK WITH HEAVY PEDESTRIAN TRAFFIC REQUIRES MAINTENANCE AND REPAIRS

ROCKY BEACH & WALL REMNANTS

EXISTING CONDITIONS – NORTH SIDE



**LONG WHARF
NORTH FERRY
ACCESS**

**PUBLIC
AMENITIES**



WHAT DO YOU VALUE/LIKE ABOUT LONG WHARF MOST OF ALL?

SCAN QR BELOW



OR

VISIT:

[MENTI.COM](https://www.menti.com)

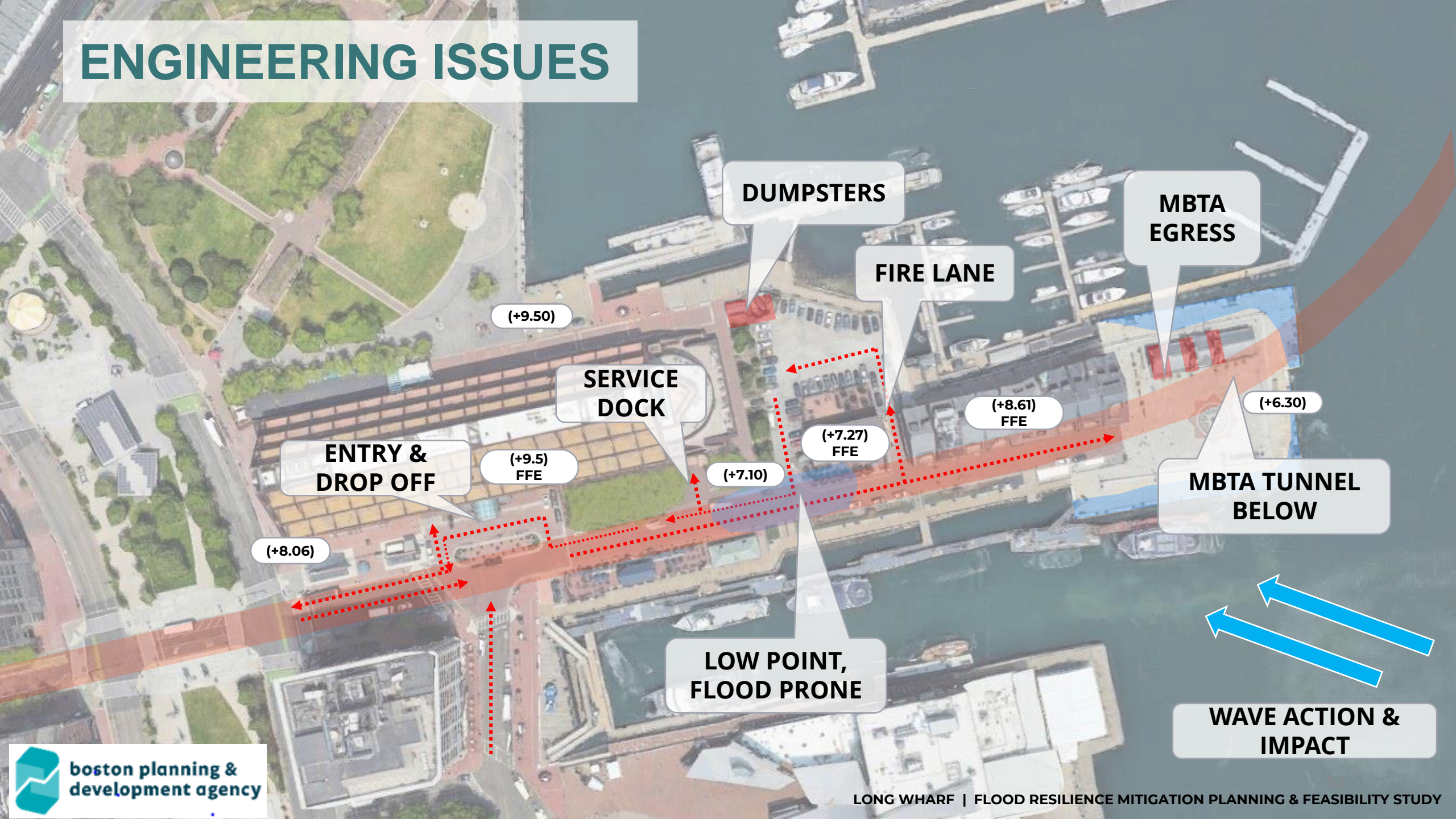
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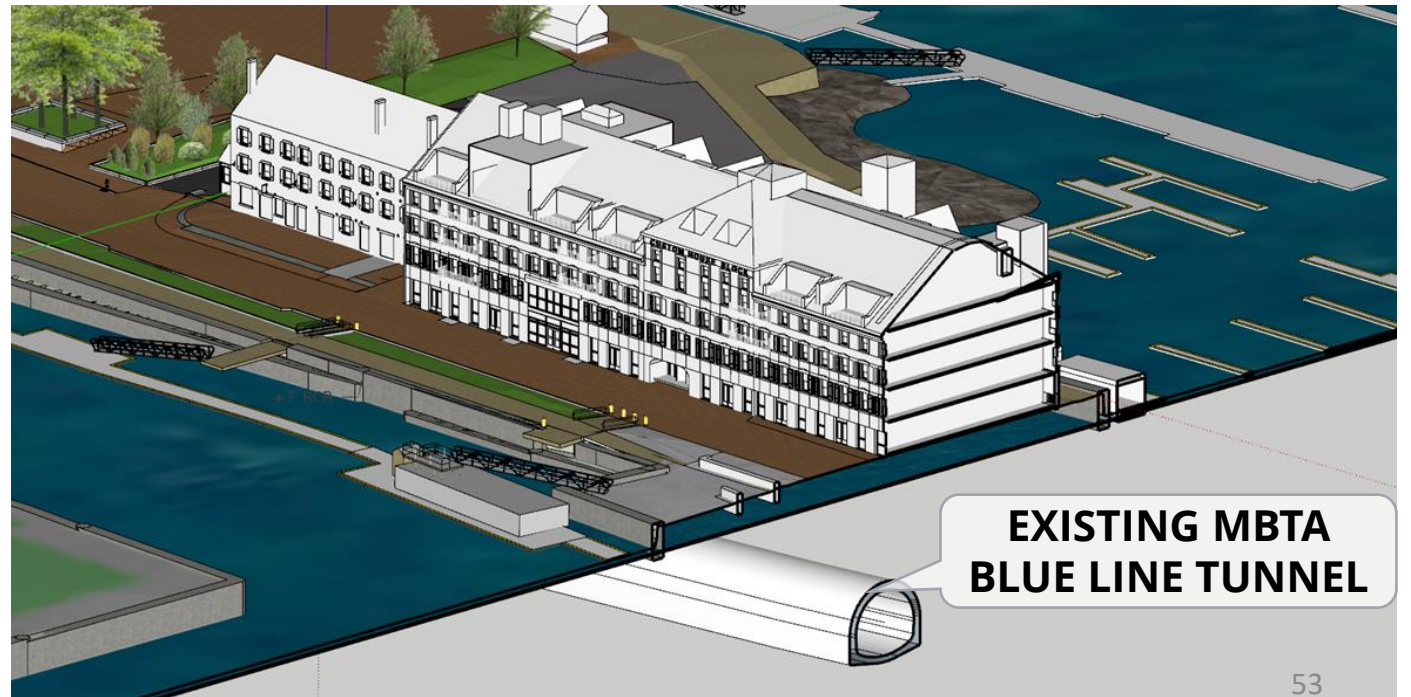
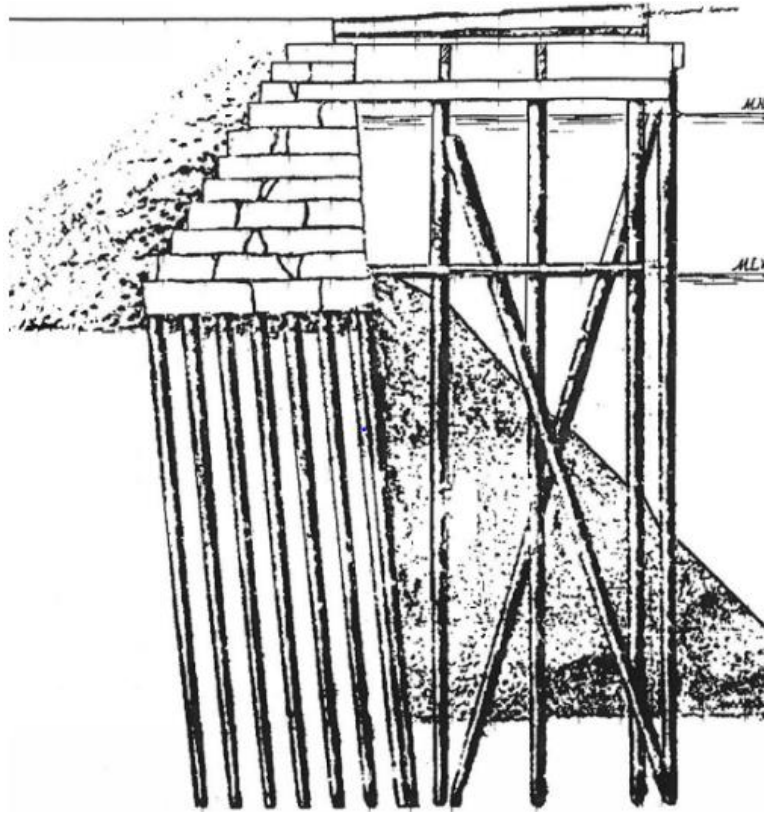
An aerial photograph of a city waterfront, likely Boston, showing a dense cluster of buildings, a harbor with many boats, and a park area. The image is overlaid with a semi-transparent blue filter.

OPPORTUNITIES & CONSTRAINTS

ENGINEERING ISSUES



ENGINEERING ISSUES – LOADING ON SEAWALL, WHARF & TUNNEL



LOADING ON OLD SEAWALLS IS DIFFICULT

EXISTING MBTA
BLUE LINE TUNNEL

MARINE TRANSIT ISSUES

QUEUING SPACE & SHADE NEEDED

OPPORTUNITY TO CONSOLIDATE DOCKS?

MAXIMIZE BERTHING OPPORTUNITIES

CONNECTION FROM BOSTON HARBOR ISLAND PAVILION

HARBOR ISLANDS TERMINAL

LONG WHARF NORTH

WATERBOAT MARINA



DUMPSTERS

QUEUING SPACE & SHADE NEEDED

GATE 3

GATE 4

GATE 2



LONG WHARF SOUTH

GATE 1

POTENTIAL TO REORGANIZE SERVICE & LOADING

MAINTAIN FAIRWAYS FOR BOAT TRAFFIC

PUBLIC REALM ISSUES

CONNECTIONS TO CHRISTOPHER COLUMBUS PARK

PARKING IN PRIME WATERFRONT PROPERTY

INTEGRATE ROCKY INTERTIDAL ZONE

UNDERUTILIZED MBTA SHELTER

ACCESS CONFLICTS WITH QUEUING

HOT, SUNNY, EXPOSED

HARBORWALK

VIEWS TO FERRIES

RELATIONSHIP TO NEAQ

MAXIMIZE VIEWS TO EAST BOSTON & HARBOR

OPPORTUNITIES – BUILT EDGES



Source: Wikimedia Commons

**CHICAGO RIVERWALK,
CHICAGO**



Source: John Turnbull, Flickr

**BARANGAROO RESERVE,
AUSTRALIA**

OPPORTUNITIES - EXPERIENTIAL EDGES

Source: Wikimedia Commons



**KALVEBOD WAVES,
DENMARK**

Source: Stoss



**LEWIS MALL (CONCEPT),
EAST BOSTON**

OPPORTUNITIES - URBAN BEACH

Source: Wikipedia Commons



**SUGAR BEACH,
TORONTO**

Source: Wikipedia Commons



**PIER 4 BEACH AT BROOKLYN BRIDGE PARK,
NEW YORK**

OPPORTUNITIES - HISTORIC ADAPTATION

Source: Commonwealth Pier - Pembroke



**COMMERCIAL WHARF,
BOSTON**

Source: Commonwealth Pier - BPDA



**15 NECCO AT FORT POINT CHANNEL,
BOSTON**

OPPORTUNITIES – LOCAL EXAMPLES



Source: Weston&Sampson

**LANGONE PARK AND PUOPOLO PLAYGROUND
BOSTON**



Source: Boston Globe

**MARTINS PARK,
BOSTON**

WHAT DESIGN FEATURES, USES, FACILITIES, AND IMPROVEMENTS WOULD YOU LIKE TO SEE AT LONG WHARF?

SCAN QR BELOW



OR

VISIT:

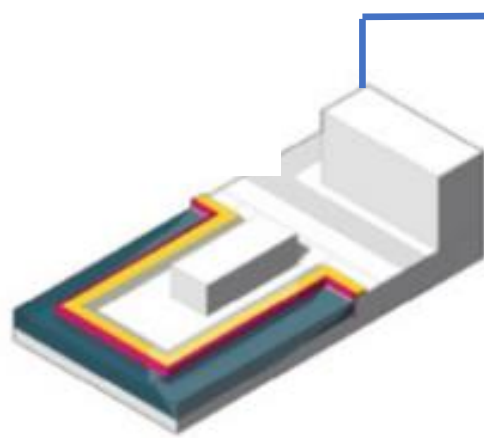
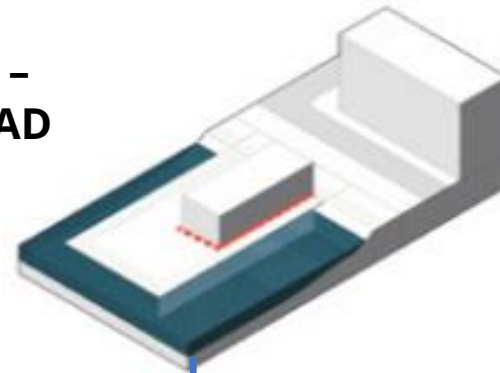
[MENTI.COM](https://www.menti.com)

ENTER CODE:

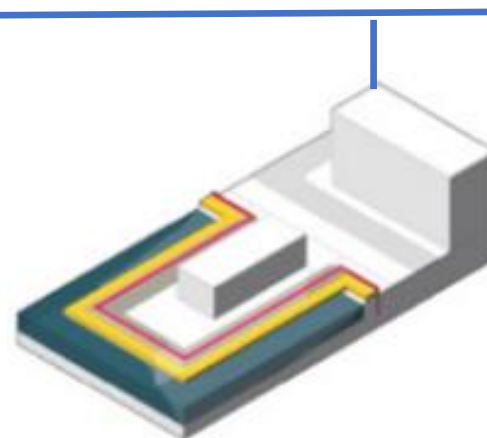
2451 4353

FLOOD RESILIENCY TOOL KIT (PASSIVE)

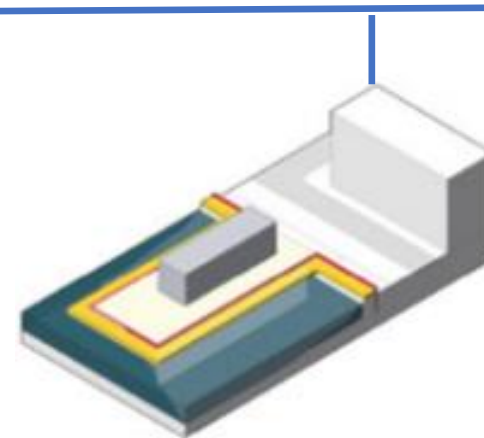
**EXISTING CONDITION -
BUILDING ON BULKHEAD**



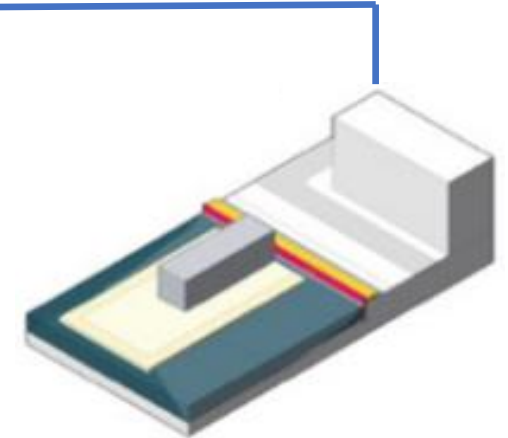
**NEW BULKHEAD &
SIMPLE RAISED**



**NEW BULKHEAD &
STEPPED**



**NEW BULKHEAD &
REDEVELOPMENT**

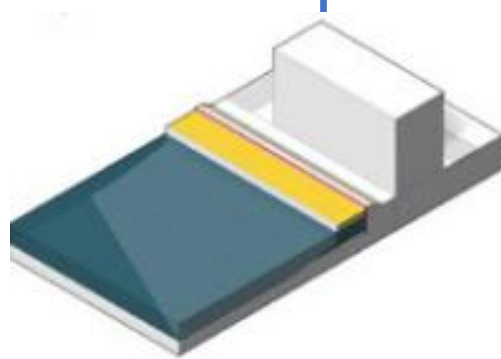
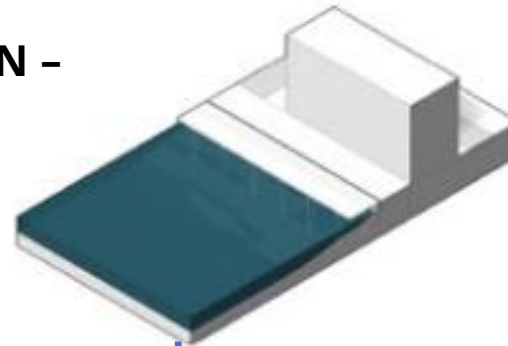


**BUILDING ON
FLOATING PLATFORM**

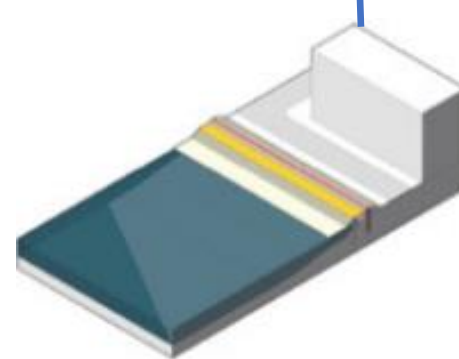
Source: *Climate Resilience Solutions for
Downtown Boston and North End (2020)*

FLOOD RESILIENCY TOOL KIT (PASSIVE)

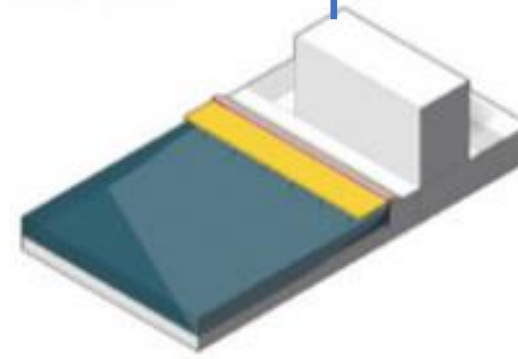
EXISTING CONDITION -
HARBORWALK



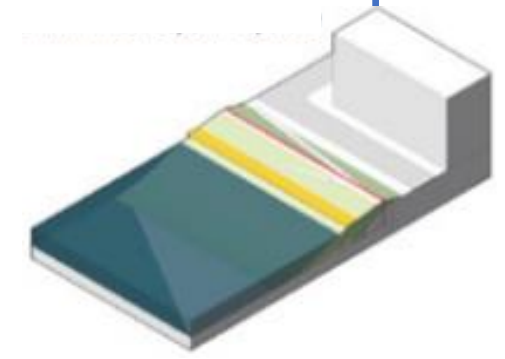
SIMPLE RAISED



SOCIAL / STEPPED



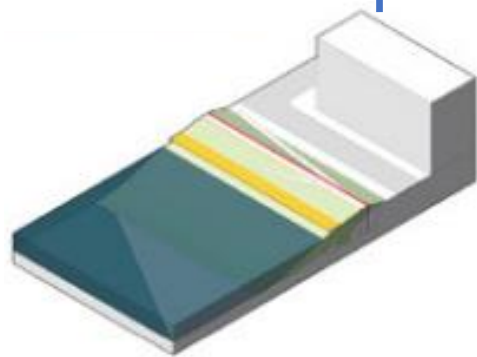
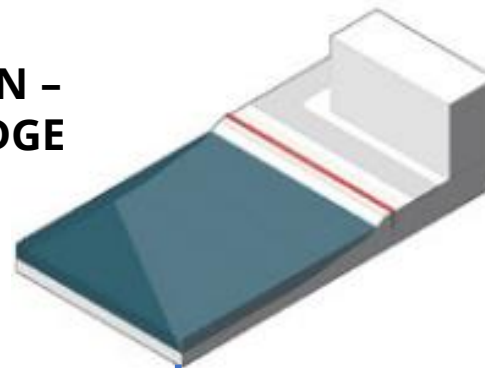
OVER WATER



ELEVATED OPEN SPACE

FLOOD RESILIENCY TOOL KIT (PASSIVE)

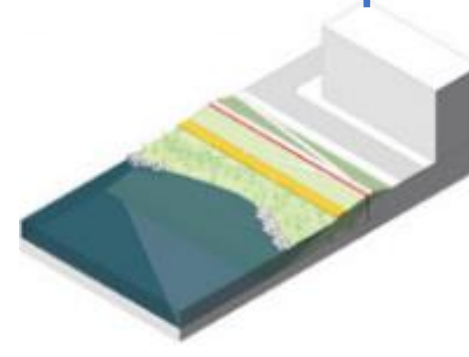
EXISTING CONDITION - LIMITED SPACE AT EDGE



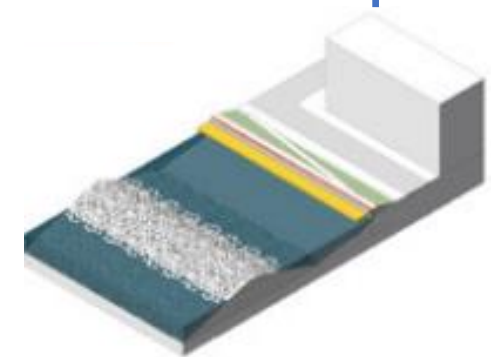
CONSTRUCTED LAND



ROCKY SHORE



LIVING SHORELINE



BREAKWATERS

FLOOD RESILIENCY TOOL KIT (ACTIVE)



DROP-IN FLOOD PANELS



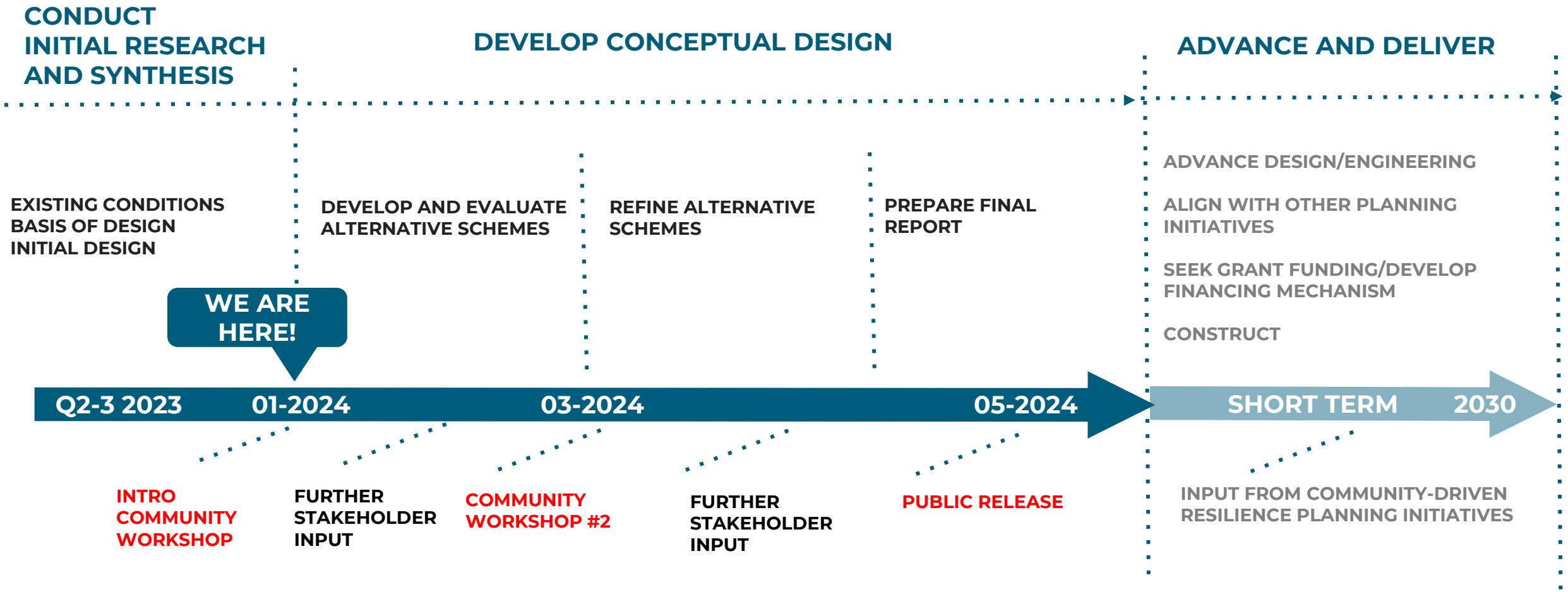
SLIDING FLOOD GATES

- **ACTIVE MEASURES ARE USED TO SUPPLEMENT PASSIVE MEASURES**
- **MINIMIZE USE OF FLOOD BARRIERS THAT NEED TO BE ACTIVELY DEPLOYED**
- **TIME AND MANPOWER NEEDED TO DEPLOY**
- **NEED TO STORE DEPLOYABLE FLOOD BARRIERS**

An aerial photograph of a city waterfront, likely Boston, showing a dense cluster of buildings, a harbor with many boats, and a large green park area. The image is overlaid with a semi-transparent blue filter.

NEXT STEPS

IMPLEMENTATION TIMELINE – NEXT STEPS



LET'S DISCUSS! – POTENTIAL TOPICS

- How can Long Wharf improve and continue to serve as a public destination for a diverse population?
- How do the water transportation services and gateway to the Harbor Islands adapt?
- How does the City protect and promote its historic assets and context while promoting flood resilience?
- How does public connectivity through the Harborwalk, Greenway and the city's pedestrian and bicycle network remain seamless with grade changes necessary to protect the city from flooding?



THANK YOU!

**TO SUBMIT ADDITIONAL QUESTIONS OR
COMMENTS, PLEASE CONTACT:**

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(BPDA)
Dolores.Fazio@boston.gov**