

# USACE & Boston Coastal Storm Risk Management Study

Downtown, North End, and Wharf District Update  
December 10, 2025



City of Boston  
Climate Resilience

# ZOOM TIPS - MEETING RECORDING

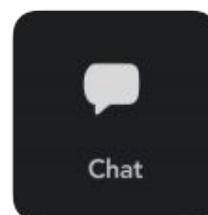
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**At the request of community members, this event will be recorded and posted on the project webpage for those who are unable to attend the Zoom event live:**

[www.boston.gov/usace-study](http://www.boston.gov/usace-study)

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.**





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# Goals

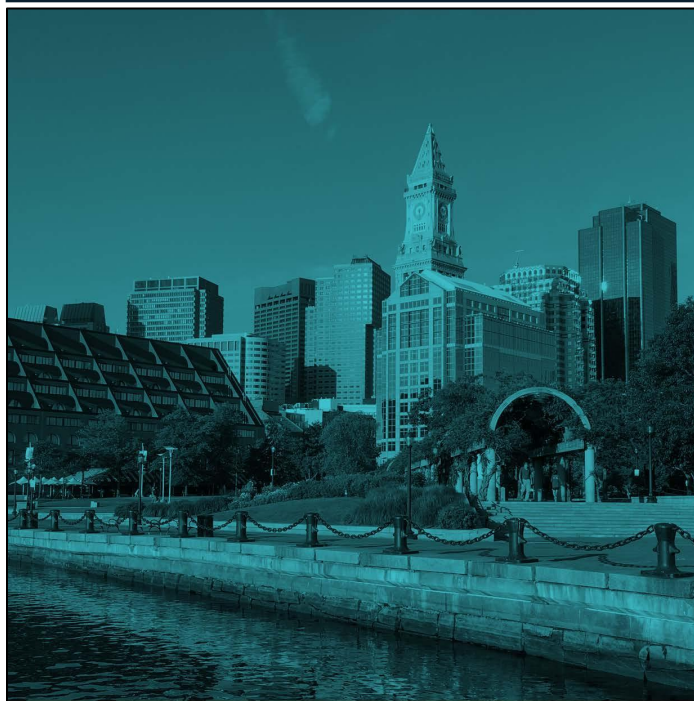
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- Find out what the City is doing to prepare for Today's Storms
- Find out what the City is doing to prepare for storms of the next decade and beyond
- Learn about how the USACE partnership align with the ongoing Boston and partner Projects
- Answer your questions
- Next steps on where you can provide feedback and contact us





# CLIMATE READY BOSTON



## CLIMATE READY BOSTON EXECUTIVE SUMMARY

MAYOR MARTIN J. WALSH



DECEMBER 2014

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.

### EXTREME TEMPERATURE



HEAT WAVES &  
DROUGHT

### EXTREME PRECIPITATION



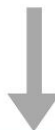
STORMWATER  
FLOODING

### SEA LEVEL RISE



COASTAL & RIVERINE  
FLOODING

### COASTAL STORMS



# RESILIENT HARBOR VISION



DORCHESTER

SOUTH BOSTON

DOWNTOWN

EAST BOSTON



RESILIENT BOSTON HARBOR



= FLOOD ADAPTED BUILDINGS



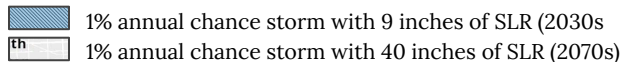
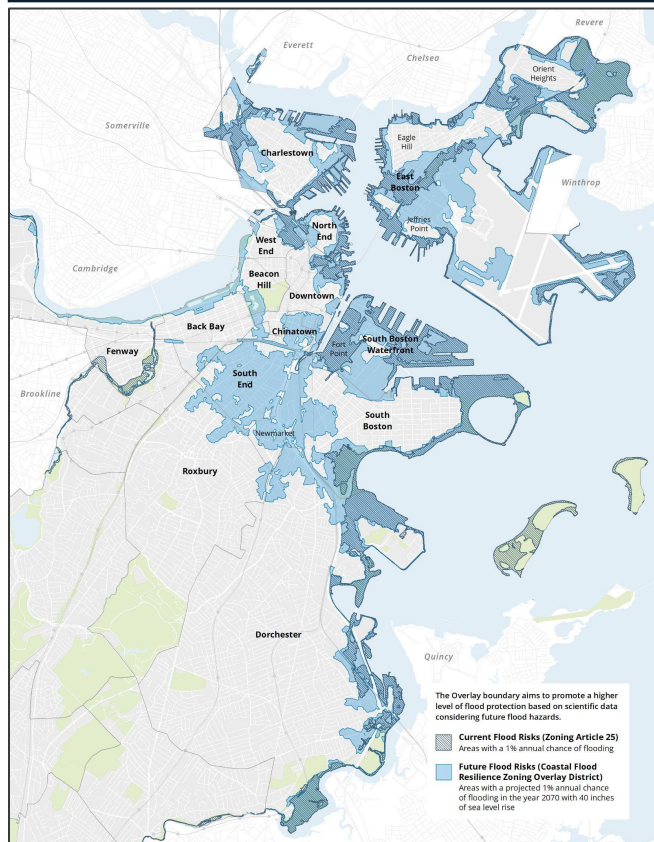
= ELEVATED LANDSCAPES



= CONNECTIONS AND ACCESS



# NEIGHBORHOOD COASTAL RESILIENCE PLANS



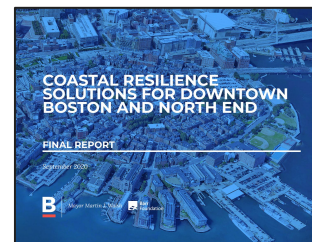
Between 2017-2022, the City completed neighborhood-level coastal resilience plans for all 47 miles of Boston's coastline.



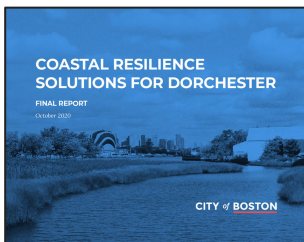
**East Boston  
& Charlestown  
Phase 1 (2017)**



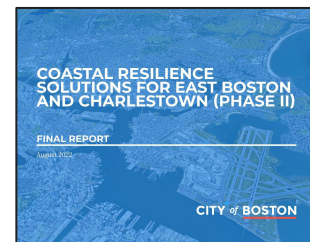
**South Boston  
(2018)**



**North End &  
Downtown  
(2020)**

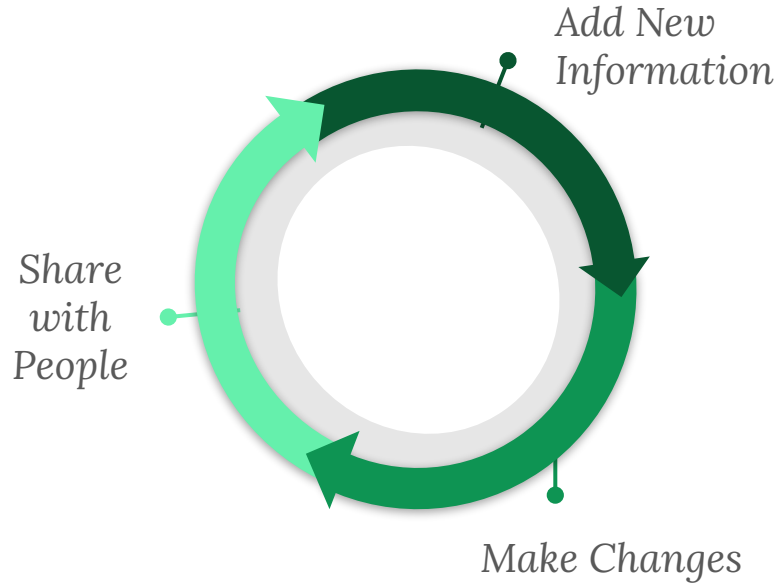


**Dorchester  
(2020)**



**East Boston  
& Charlestown  
Phase 2 (2022)**

# THE PROCESS CAN FEEL LIKE A SPIRAL STAIRCASE...



Construction,  
Operation and  
Maintenance

Final Design  
and Permitting

Preliminary  
Design

Conceptual Plan

Vision





# COASTAL FLOODING IN BOSTON IN 2018 - 2024



Flooding along Atlantic Avenue in Downtown Boston  
(Source: Alison Brizius, January 2024)



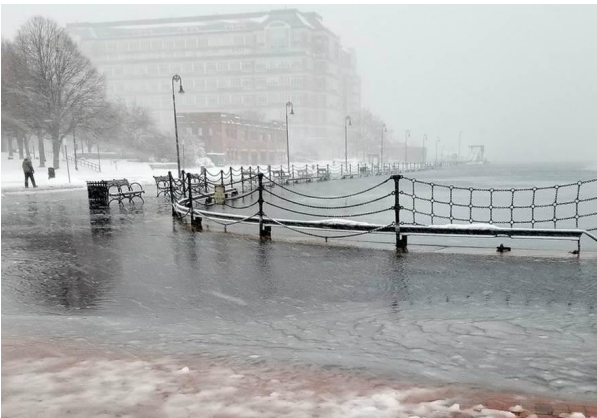
Flooding along the Harborwalk in Downtown Boston  
(Source: Alison Brizius, December 2022)



Flooding from during Winter Storm Riley in Boston's North End  
(Source: Matt Conti, Winter, 2018)



Man kayaks along surface streets near Lewis Mall in East Boston  
(Source: Steve Holt, Winter 2018)



Flooding along the Harborwalk in the Charlestown Navy Yard  
(Source: Gerry Angoff, Winter 2018)



Flooding beneath the Evelyn Moakley Bridge in South Boston's Fort Point Channel (Source: Alison Brizius, December 2022)

# COASTAL RESILIENCE IMPLEMENTATION: THREE CONCURRENT STRATEGIES

## TODAY'S STORMS

**Key Goal:**  
Strengthen our response  
to today's flooding

### How?

Educate residents about emergency preparedness, strengthen protocols for preparing for and responding to extreme weather, and operationalize deployable barriers

### Key City Agencies:

Office of Emergency Management  
Office of Climate Resilience

## THIS DECADE'S STORMS

**Key Goal:**  
Address 2030 flood  
pathways

### How?

Advance near-term priority projects identified in coastal resilience plans from conceptual design to construction

### Key City Agencies:

Office of Climate Resilience  
Planning Department  
Parks & Recreation Department

## BEYOND 2030

**Key Goal:**  
Transform our 47 miles  
of coastline

### How?

Through an ongoing partnership with the U.S. Army Corps of Engineers, advance mid- and long-term priority projects from conceptual design to construction

### Key City Agencies:

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Planning Department,  
Boston Water & Sewer  
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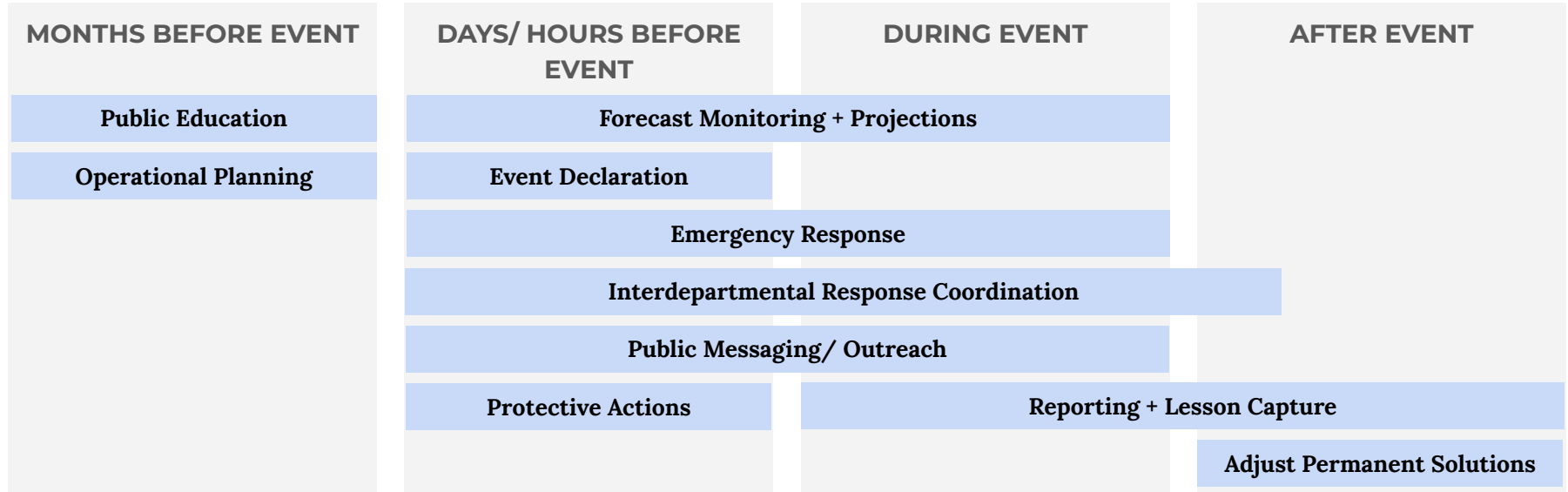
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# TODAY'S STORMS





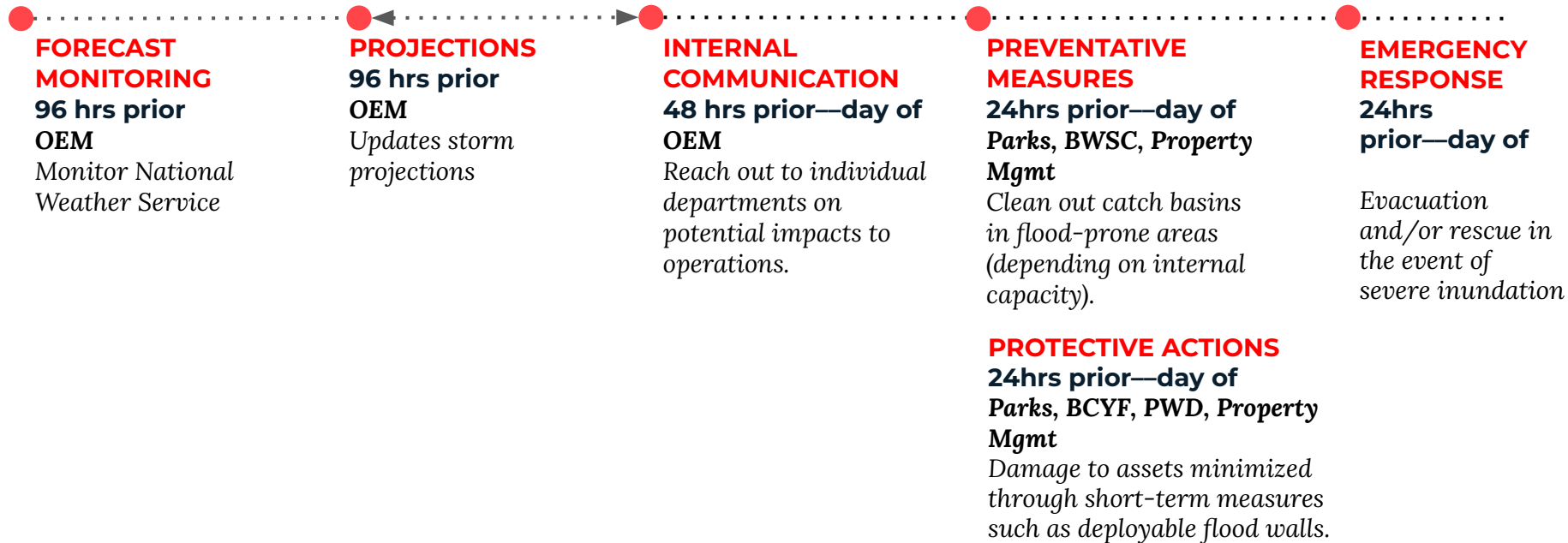
# EDUCATION AND OUTREACH

- “Know Your Zone”
  - Raise awareness of evacuation zones
  - Inform residents of their specific hurricane evacuation routes
  - Encourage residents to plan and prepare for evacuation scenarios
- Deployables Day
  - Free Demonstration and Resource Fair at City Hall Plaza
  - See Deployables in action (private + City deployables)



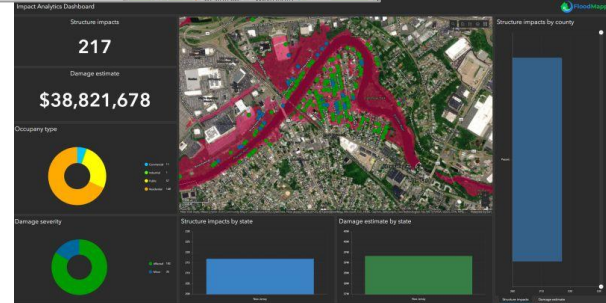
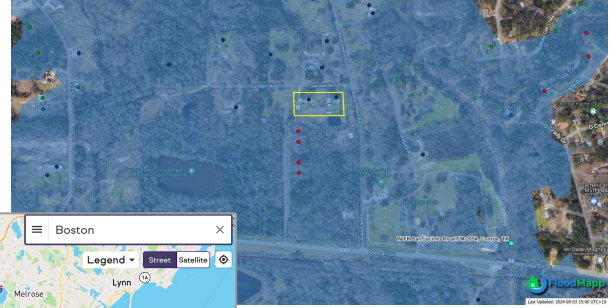
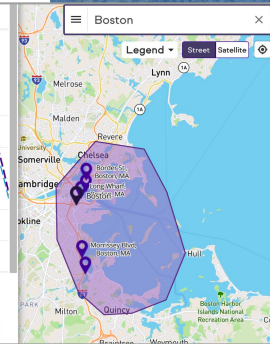
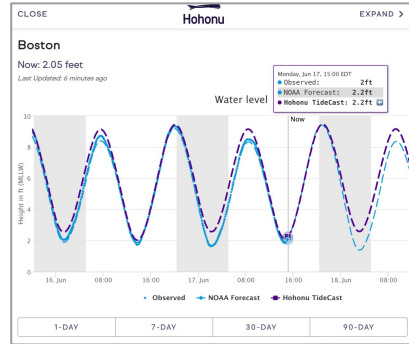
# STORM RESPONSE

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# IMPROVING THE RESPONSE CYCLE

- Expanding the City's network of flood sensors
- Developing tools for:
  - Emergency response
  - Damage assessment
  - Recovery efforts





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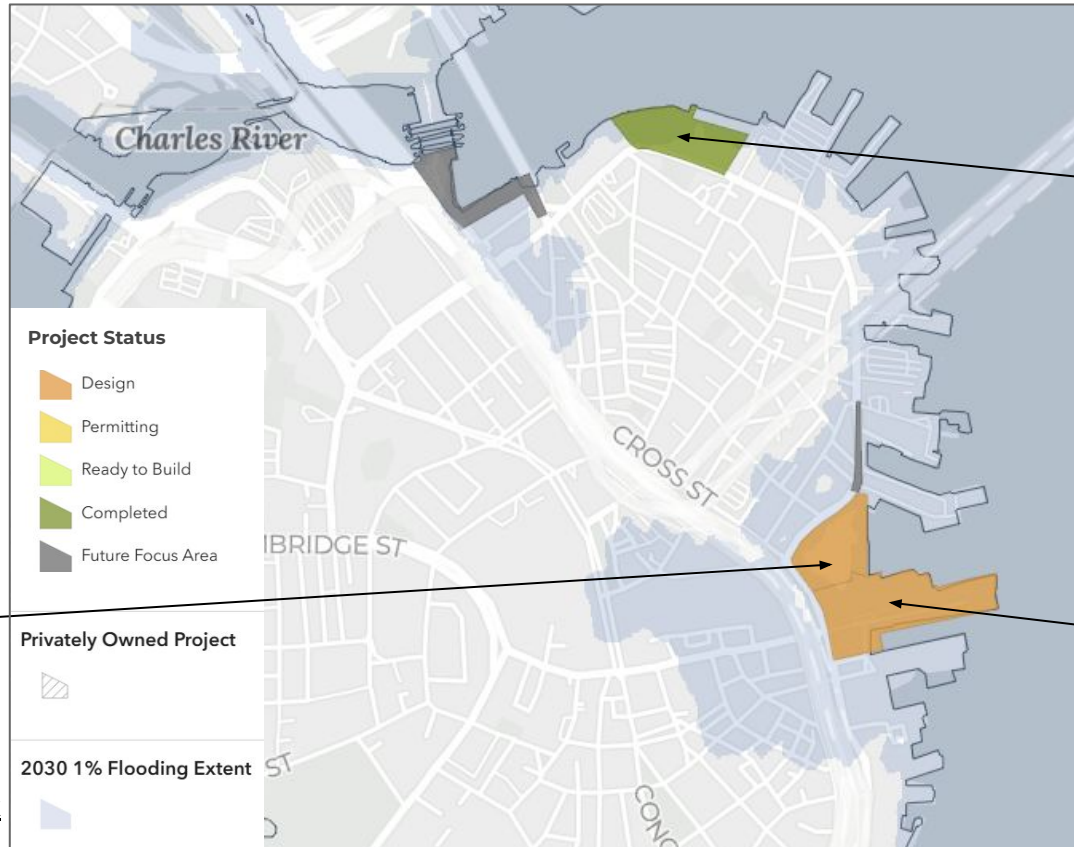
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# COASTAL RESILIENCE IMPLEMENTATION - DOWNTOWN/NORTH END



**Christopher Columbus Park**  
Design initiating



**Langone Park & Puopolo Playground**  
Constructed in 2020



**Long Wharf**  
Design in progress

The map displays extents of flooding produced from the Massachusetts Coast Flood Risk Model (MC-FRM), which is the Commonwealth of Massachusetts' adopted flood projection model. The flooding shown accounts a 1% annual chance storm with 2030 sea level rise projections.

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# WHY NOW AND WHY USACE?

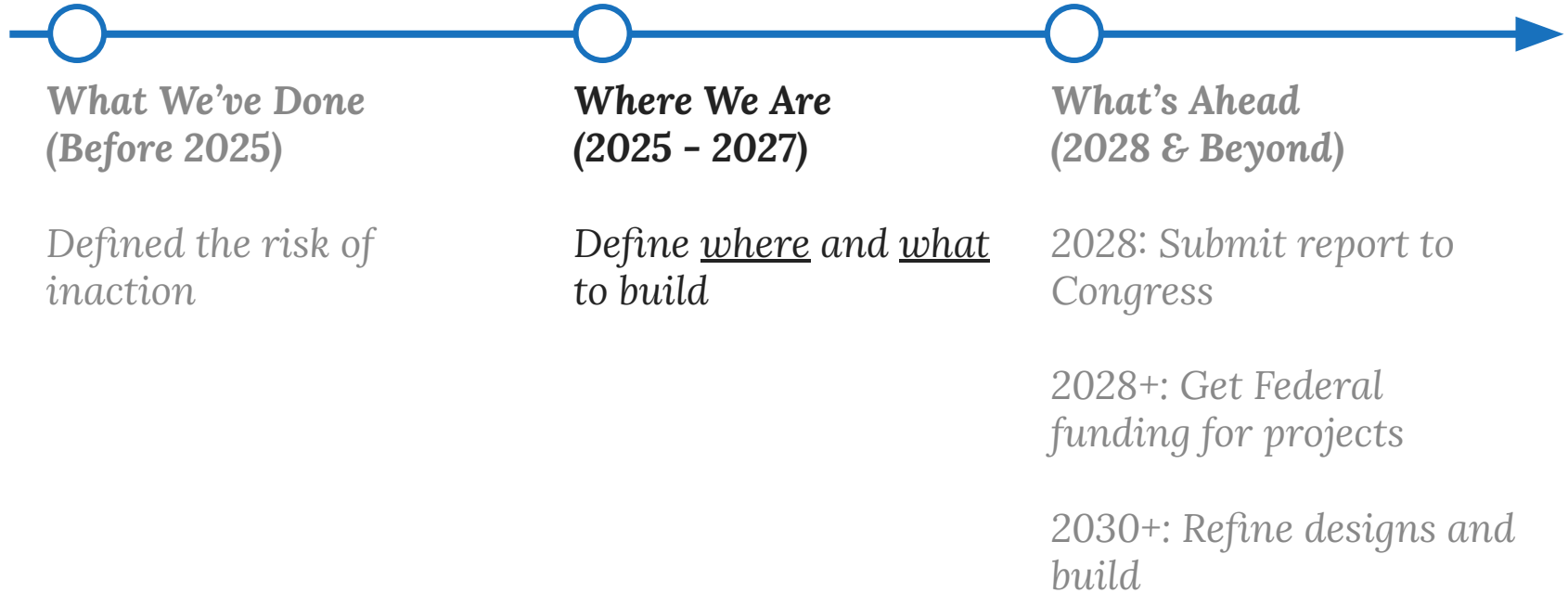
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- USACE has a specific charge for proposing coastal resilience solutions that are **effective in mitigating risk to the Federal Interest**;
  - We have shared interest in **protecting homes, critical infrastructure, and evacuation corridors**;
- USACE **follows a specific process** in designing, evaluating and selecting projects.
  - They can provide **up to 65% of the cost** to build these structures.



# WHERE ARE WE IN THE USACE PROCESS?

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# CSRM Process:

Coastal Storm Risk Analysis and Management 101

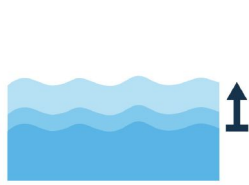




# HOW DOES USACE DEFINE COASTAL STORM RISK?

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## COASTAL HAZARDS:



### SEA LEVEL CHANGE

Permanent rise in ocean level relative to land



### STORM SURGE

Temporary rise in ocean level during a storm event



### WAVE ACTION & EROSION

Gradual reduction in the coastline as waves carry away sediment

## CLOSING LONG-TERM FLOOD PATHWAYS:



### FLOOD PATHWAY

Impacts inland areas when water enters through a low-lying area on the waterfront



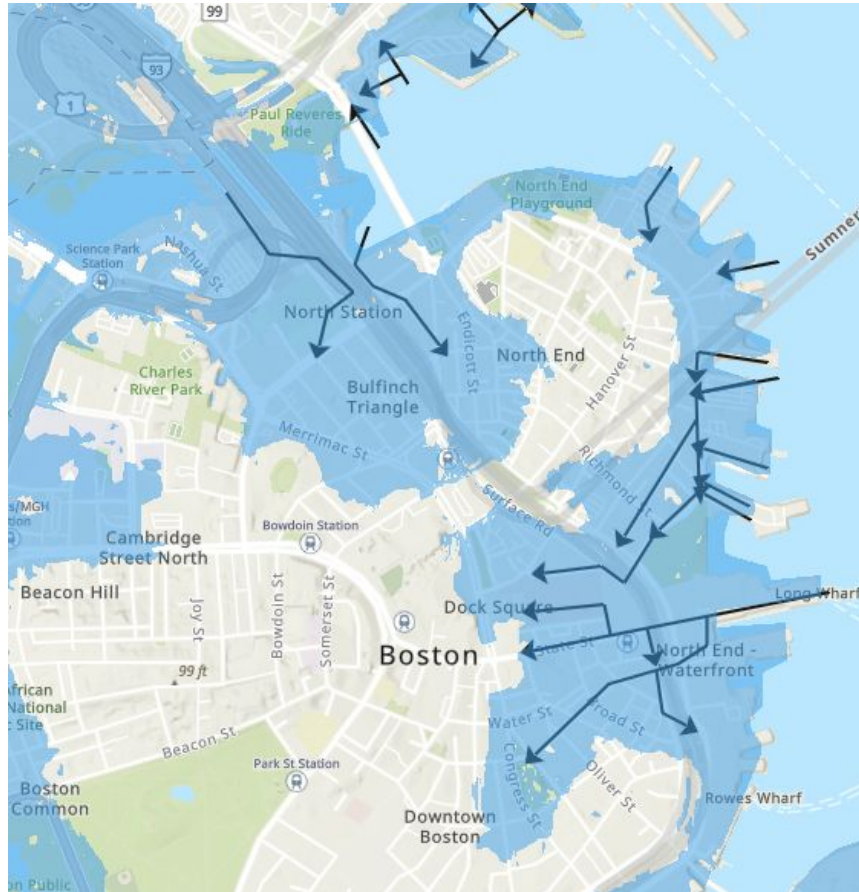
U.S. ARMY



US Army Corps  
of Engineers



# COASTAL STORM RISK MANAGEMENT: HOW IS THIS DIFFERENT FROM CLIMATE READY BOSTON?



## LEGEND

CHS Inundation Layers

CHS 1% Inundation 2090 High SLC



Flood Pathways



U.S. ARMY



US Army Corps  
of Engineers

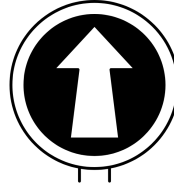


# HOW DOES USACE DEFINE “FEDERAL INTEREST”?

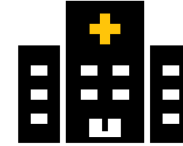
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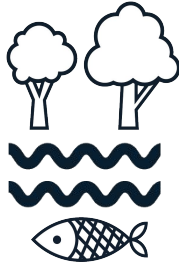
Protection of  
Housing



Protection of  
Evacuation Corridors



Protection of Critical  
Infrastructure



Protection of Natural  
Resources



Protection of the People



Protection of Critical  
Transportation



U.S. ARMY



US Army Corps  
of Engineers

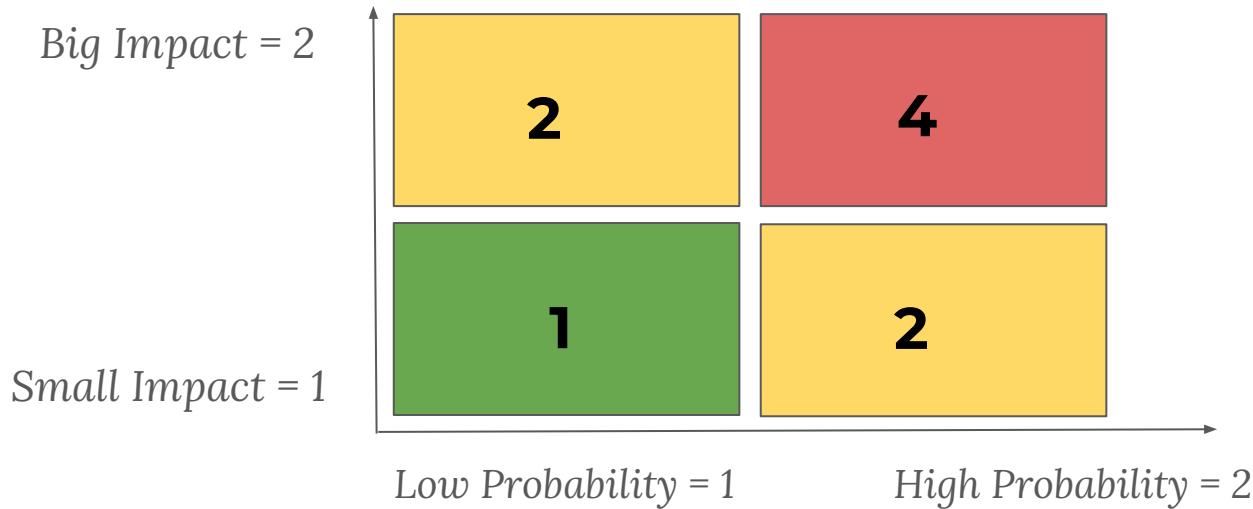




# HOW DOES USACE MANAGE STORM RISK?

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- Storm Risk is the possibility of a bad storm happening in a specific area
  - Level of Probability multiplied by Level of Impact



# HOW DOES USACE ADDRESS STORM RISK? PICK THE RIGHT TOOL



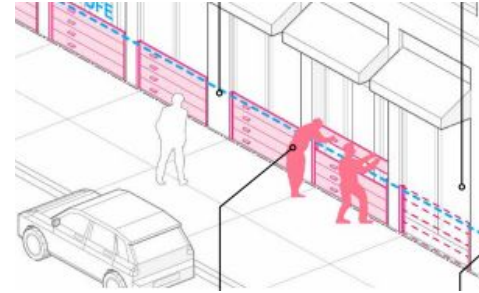
**1st Drawer: PROTECT**

*Structural*



**2nd Drawer: ADAPT or ACCOMMODATE**

*Non-Structural, Physical*



**3rd Drawer: MANAGE**

*Non-Structural, Non-Physical*



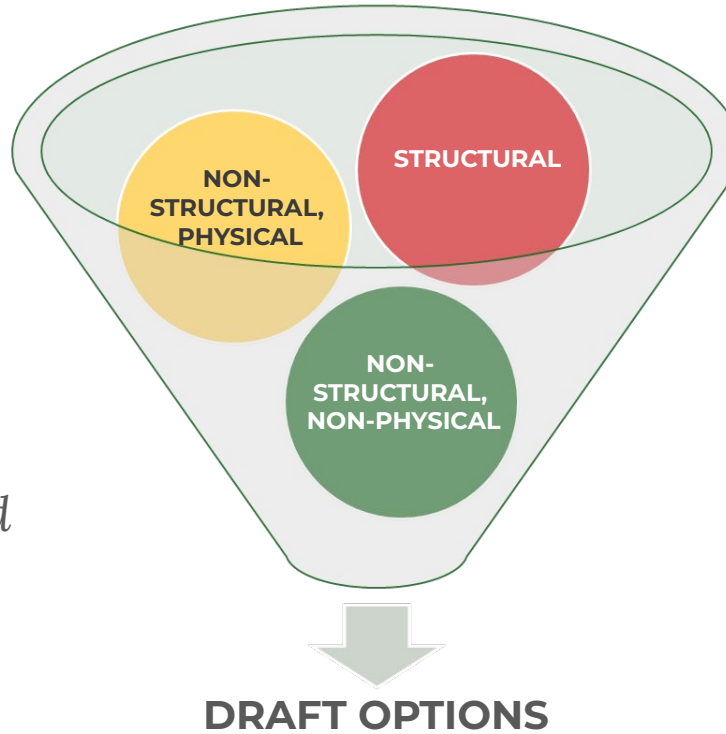
**US Army Corps  
of Engineers**



# HOW DOES USACE SELECT TOOLS FOR BOSTON?

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- *What provides maximum protection?*
- *What is possible to build?*
- *What is the best fit for Downtown, North End, and Wharf District?*





# The Toolkit:

Coastal Storm Risk Analysis and Management 101



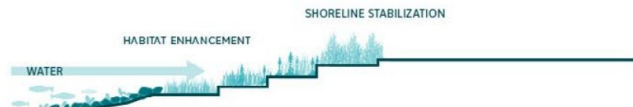
City of Boston  
Climate Resilience

# REFRESHER: CLIMATE READY BOSTON TOOLS

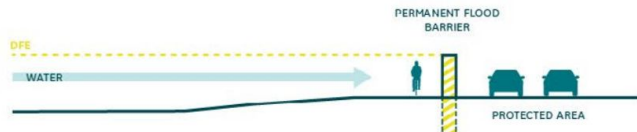
## RAISED HARBORWALK / RAISED PARK SPACE



## NATURE-BASED SOLUTIONS



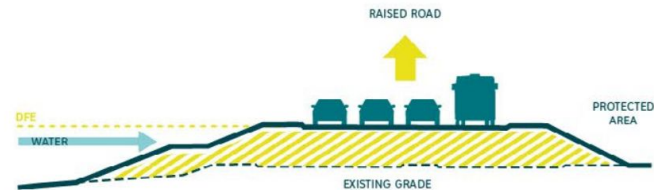
## VERTICAL FLOODWALLS



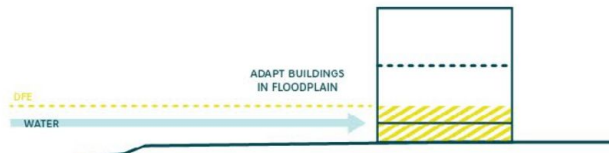
## RAISED BERMS AND DUNES



## RAISED ROADWAYS / MEDIAN FLOODWALLS



## ADAPTED BUILDINGS AND STRUCTURES





# EXAMPLES OF LOCAL AND USACE APPLICATIONS

## RAISED HARBORWALK / RAISED PARK SPACE



## RAISED BERMS AND DUNES



Built: Martin's Park



Photo Credit: Robin Lubbock, WBUR News

USACE Example: New Bedford, MA



Photo Credit: Peter Pereira, The Standard Times



# EXAMPLES OF LOCAL APPLICATIONS

*Langone Park and Puopolo Playground,  
North End*



Photo Credit: Weston & Sampson

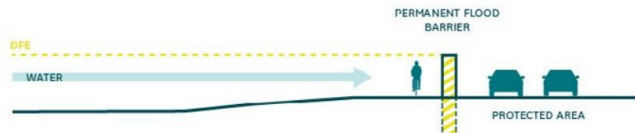
## VERTICAL FLOODWALLS

*Harbor Towers*



Photo Credit: Harbor Towers and Weston & Sampson

## ADAPTED BUILDINGS AND STRUCTURES



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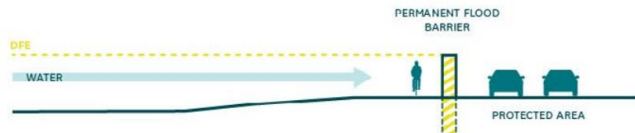
## VERTICAL FLOODWALLS

*Harbor Towers*



Photo Credit: Harbor Towers and Weston & Sampson

## ADAPTED BUILDINGS AND STRUCTURES



# ADDITIONAL USACE TOOLS

*Outboard Floodwall Construction,  
Charleston, SC*



*Photo: Henry Taylor/Staff, Post & Courier, 2022*

*Fox Point Hurricane Barrier,  
Providence, RI*



*Photo: Barry Chin, Boston Globe, 2023*



# Preliminary Locations:

*Draft Alignments for Downtown, North End, and Wharf District*





## HOW YOU CAN HELP TODAY:

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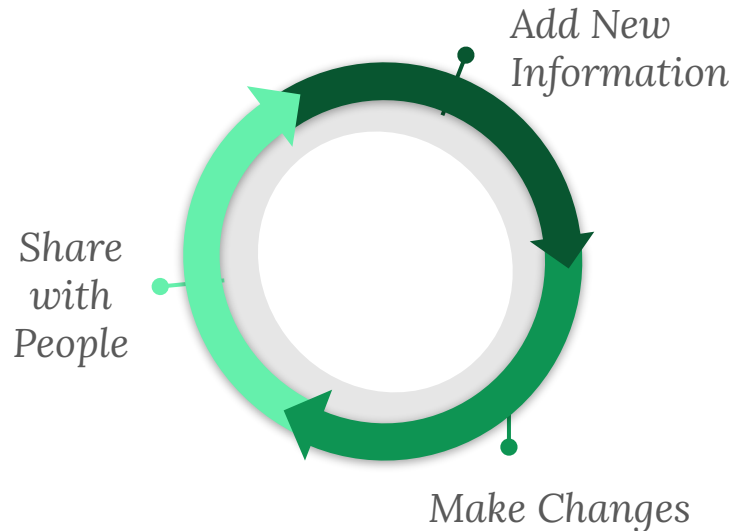
- *Ask us questions*
- *Share your concerns*
- *Help us answer these questions:*
  - *Did we miss any areas with coastal risk?*
  - *Did we miss any areas we need to protect?*
  - *What is important to you that we know about the tools or the locations for draft USACE structures?*
  - *How can we make the process more accessible to you?*



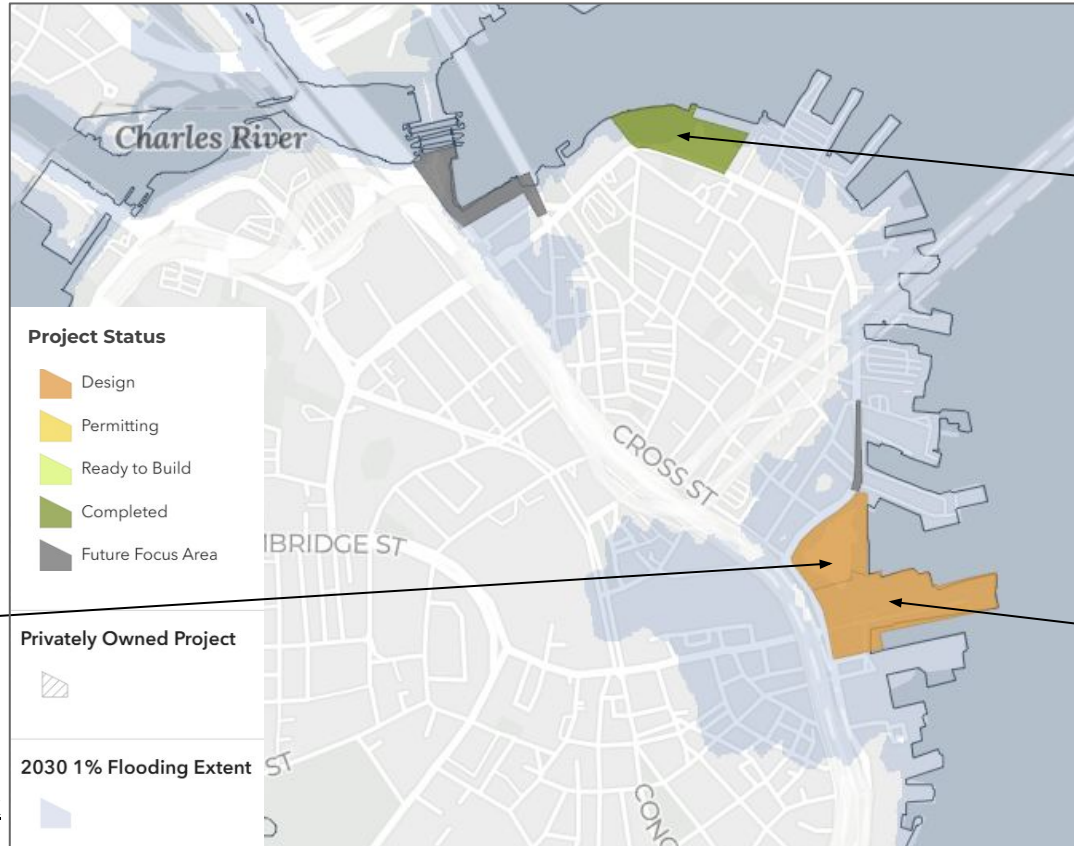
## WHAT WE WILL DO NEXT:

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- Give you answers, as best as we can
- Send you these presentation slides
- Meet you in person to hear more about your concerns and questions
- Report back with a What We Heard presentation (January 2026)



# COASTAL RESILIENCE IMPLEMENTATION - DOWNTOWN/NORTH END



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Design initiating



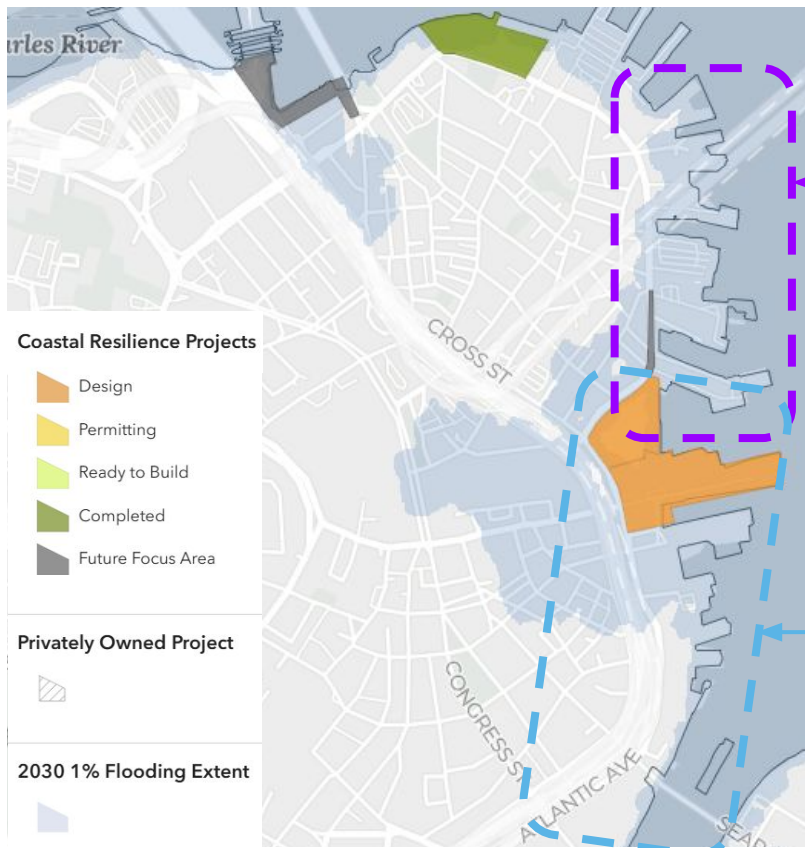
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The map displays extents of flooding produced from the Massachusetts Coast Flood Risk Model (MC-FRM), which is the Commonwealth of Massachusetts' adopted flood projection model. The flooding shown accounts a 1% annual chance storm with 2030 sea level rise projections.

# COMMUNITY-LED PLANS: DOWNTOWN, NORTH END, and WHARF DISTRICT



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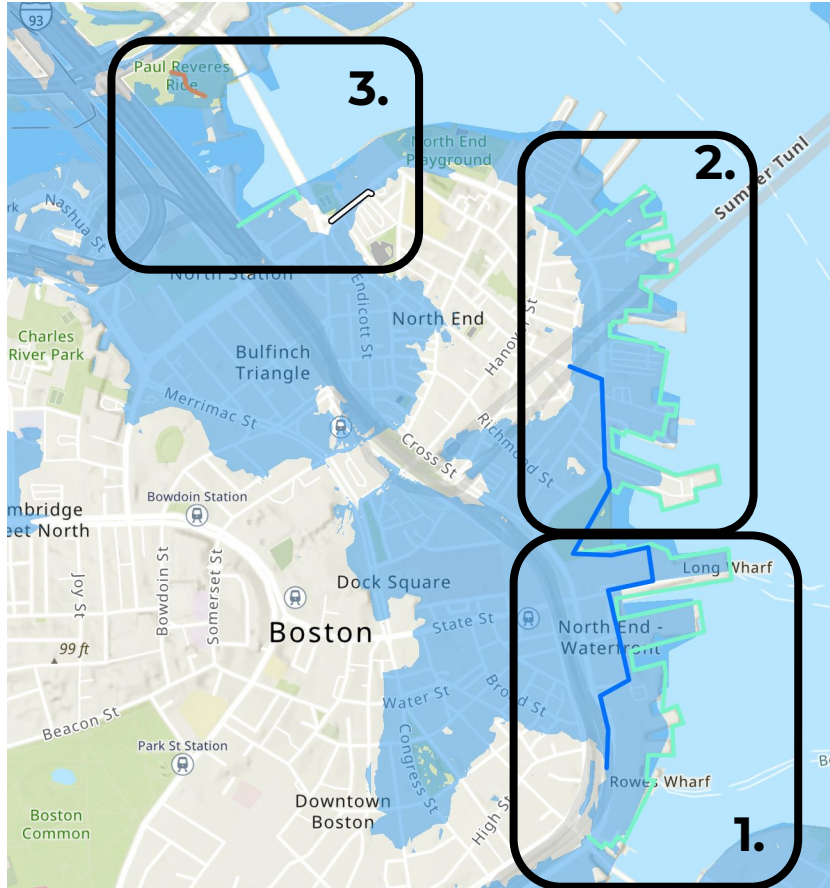
**North End Waterfront Climate Alliance**  
*North End Waterfront Resiliency Plan  
Draft - 2025*



**Wharf District Council**  
*District Protection & Resiliency Plan,  
2023*








# PRELIMINARY DRAFT STRUCTURAL LOCATIONS OVERVIEW



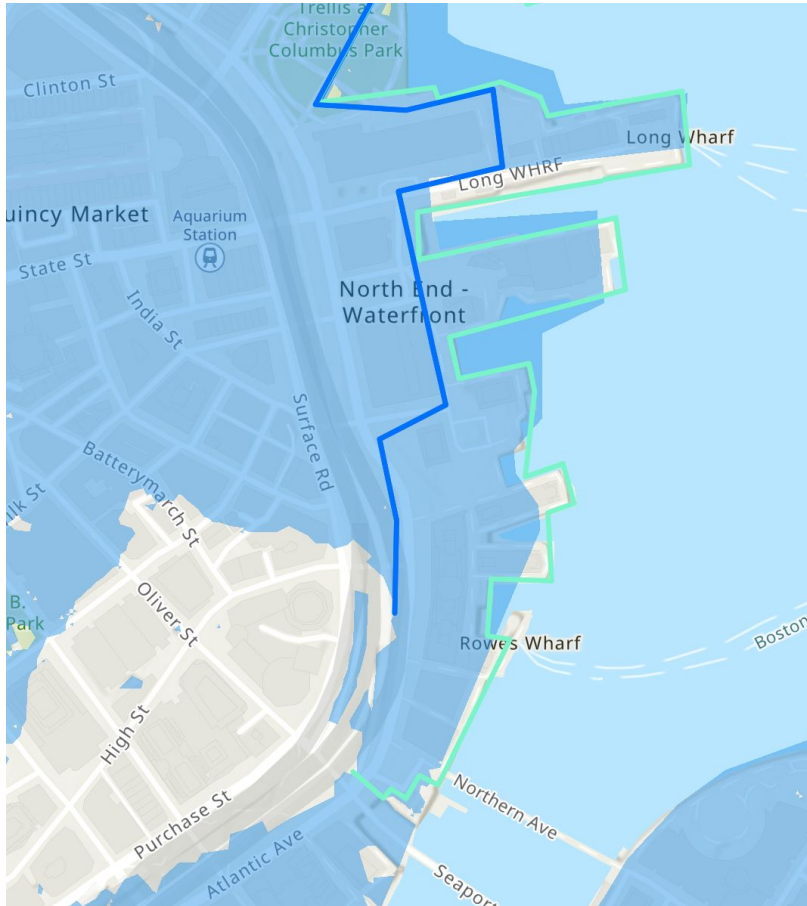
1. From Evelyn Moakley Bridge to Long Wharf
2. From Christopher Columbus Park to Battery Wharf
3. Paul Revere Park, Lovejoy Wharf, and Prince Street Park

## KEY

-  Flooding from 2090 1% storm
-  Berm/Levee
-  Floodwall, on land
-  Floodwall, next to land
-  Road Grading



# 1). From Evelyn Moakley Bridge to Long Wharf



## 2 Alternatives

### KEY



Flooding from 2090 1% storm



Floodwall, on land



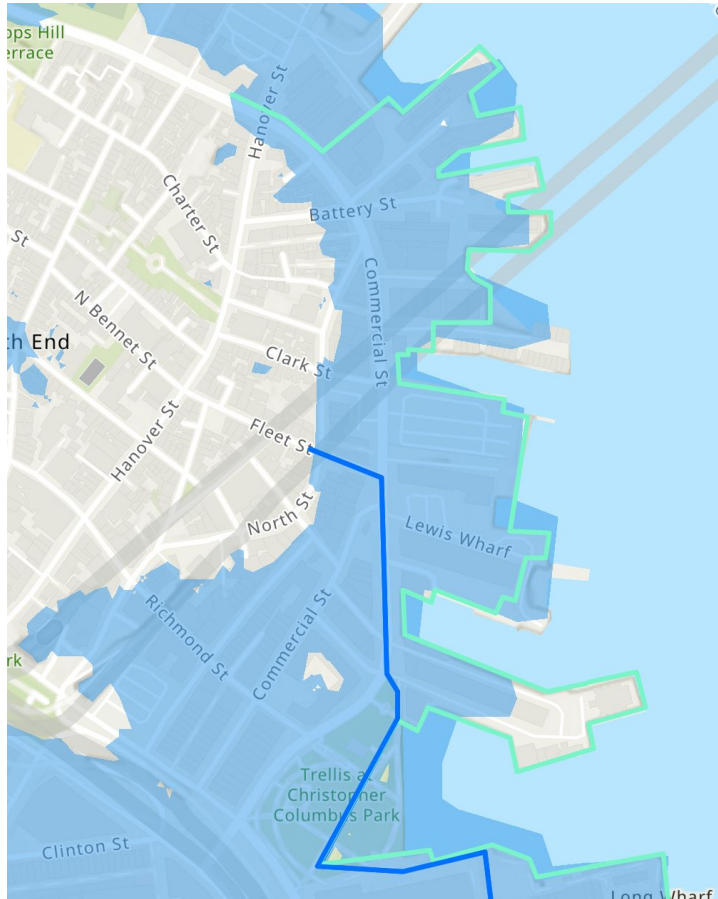
Floodwall, next to land



US Army Corps  
of Engineers



## 2). From Christopher Columbus Park to Battery Wharf



### 2 Alternatives

#### KEY



Flooding from 2090 1% storm



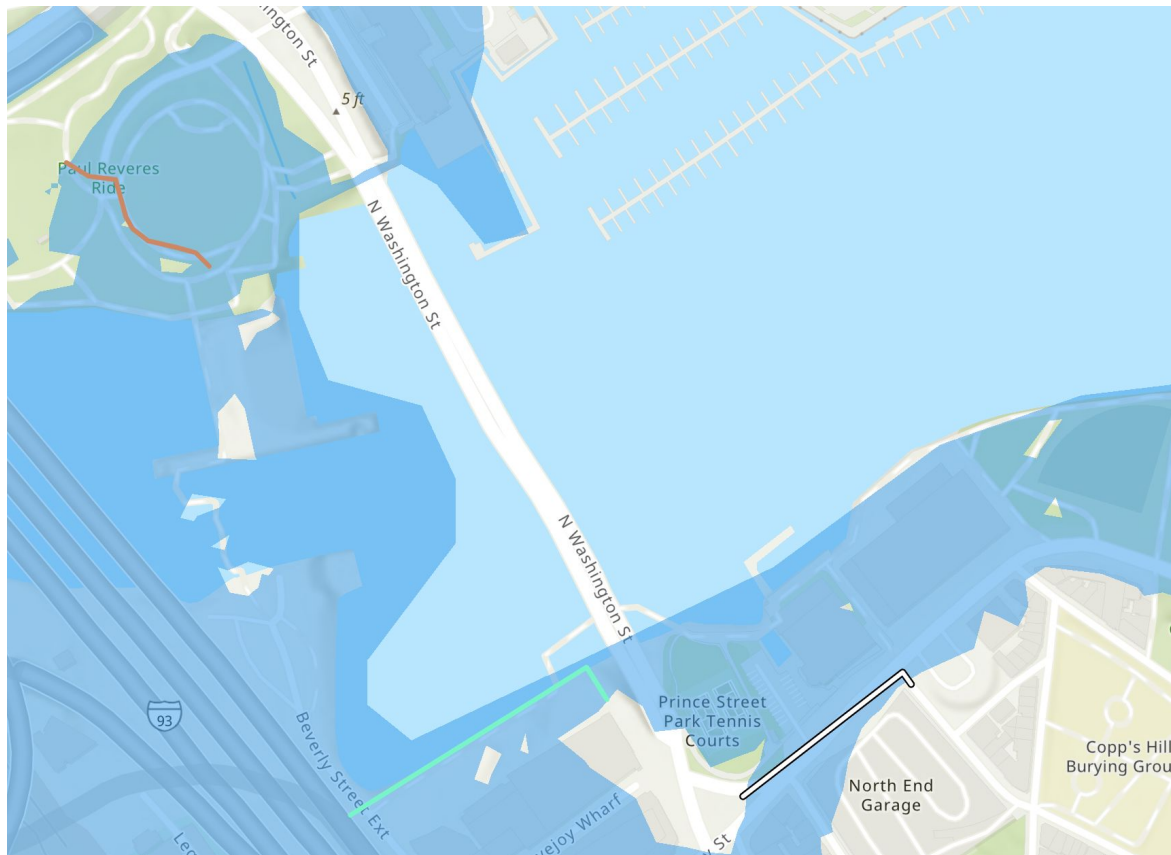
Floodwall, on land



Floodwall, next to land



### 3.) PAUL REVERE PARK, LOVEJOY WHARF, AND PRINCE STREET PARK



#### KEY



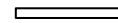
Flooding from 2090 1% storm



Berm/Levee



Floodwall, next to land



Road Grading



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US Army Corps  
of Engineers





# Summary

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- *Long Term Projects to Address Long Term Risk*
- *Current Focus on Getting Questions on Process and Areas of Focus*
- *Subsequent Feedback on Designs (and construction alternatives)*



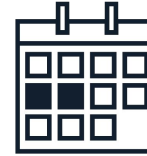
## How to Provide Feedback:

*boston.gov/usace-study*

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**Submit Comments Online**



**Book an Appointment**



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US Army Corps  
of Engineers



# Question and Answer Session



City of Boston  
Climate Resilience

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**Book an Appointment**



U.S. ARMY



US Army Corps  
of Engineers.







B