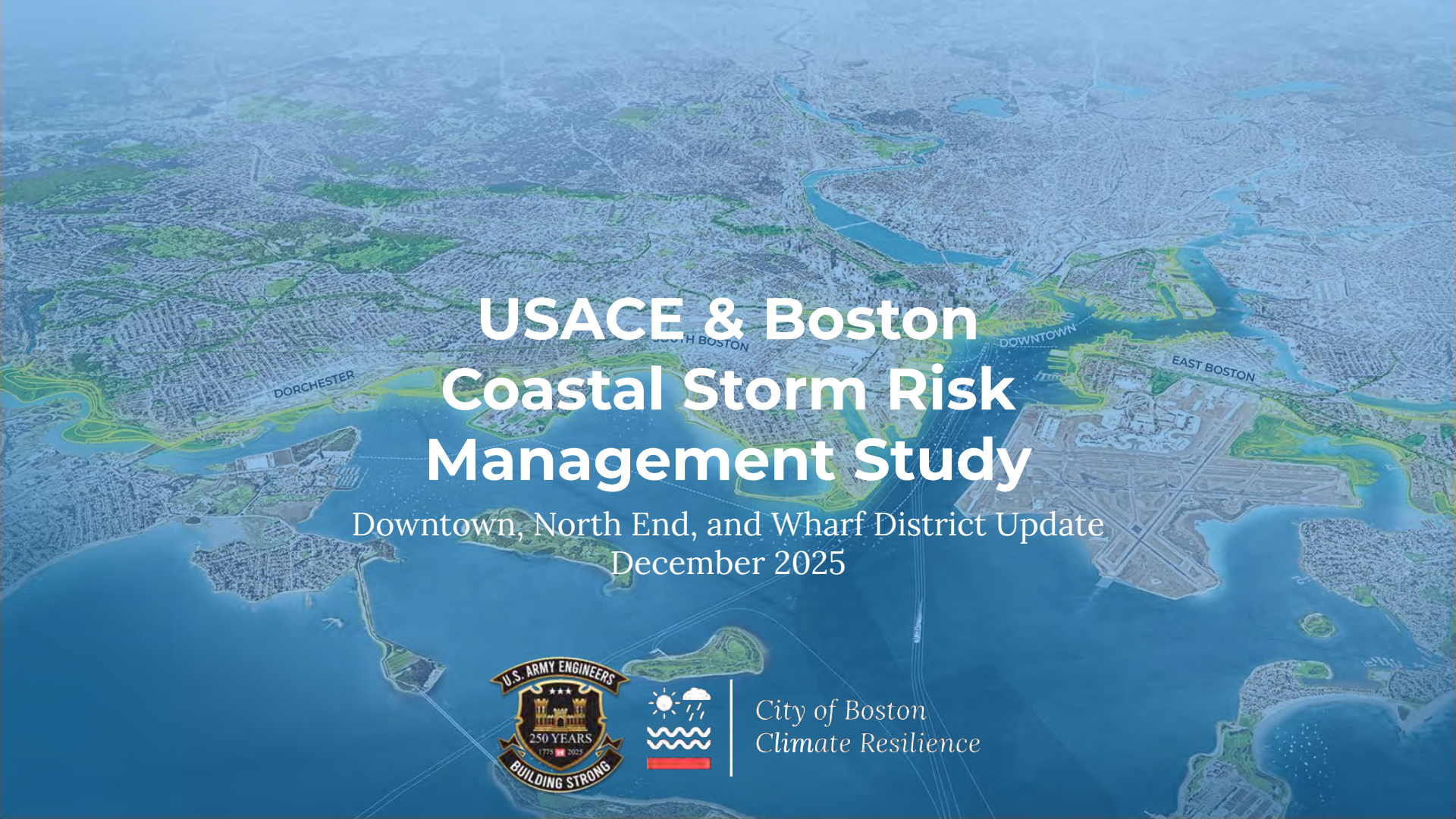

USACE & Boston Coastal Storm Risk Management Study

Downtown, North End, and Wharf District Update
December 2025

U.S. ARMY ENGINEERS
250 YEARS
1775 2025
BUILDING STRONG

City of Boston
Climate Resilience

Goals

- *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*

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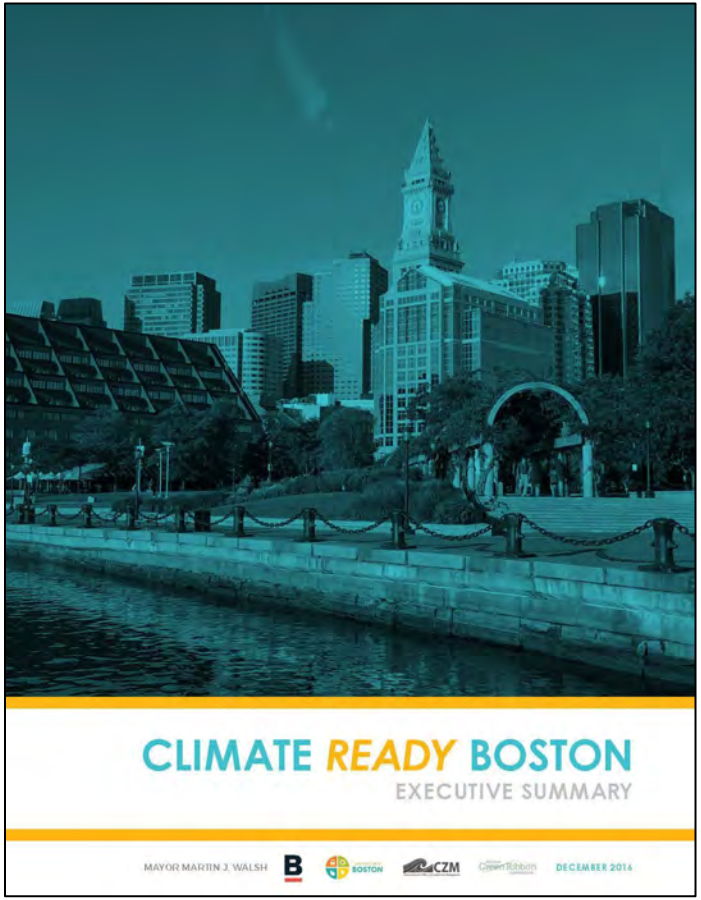
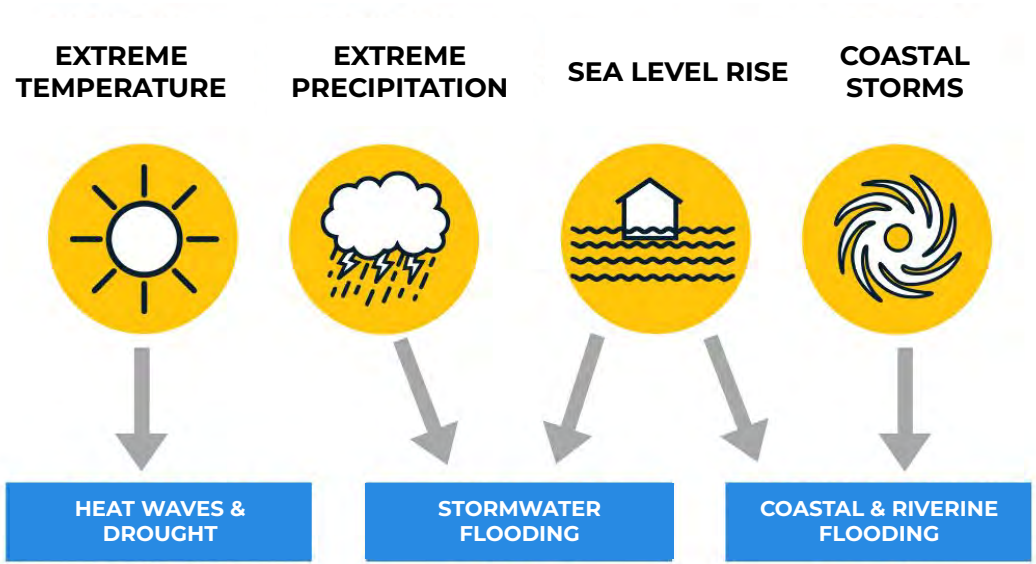
US Army Corps of Engineers

CLIMATE READY BOSTON

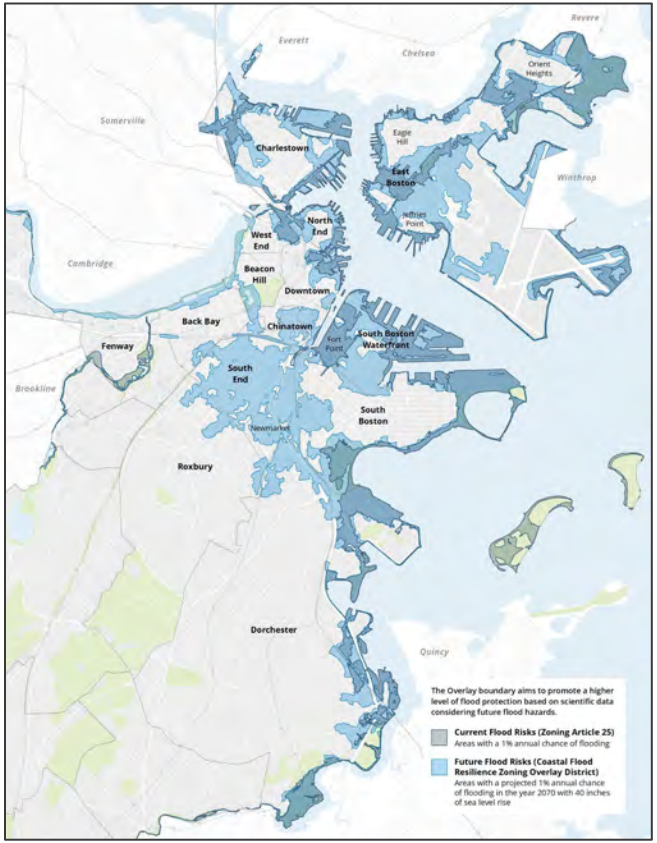


In 2016, the City of Boston released the *Climate Ready Boston* report, which included a comprehensive vulnerability assessment of current and projected risks associated with each of three climate hazards under a low, medium, and high greenhouse gas emissions scenario.



RESILIENT HARBOR VISION

NEIGHBORHOOD COASTAL RESILIENCE PLANS



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

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)

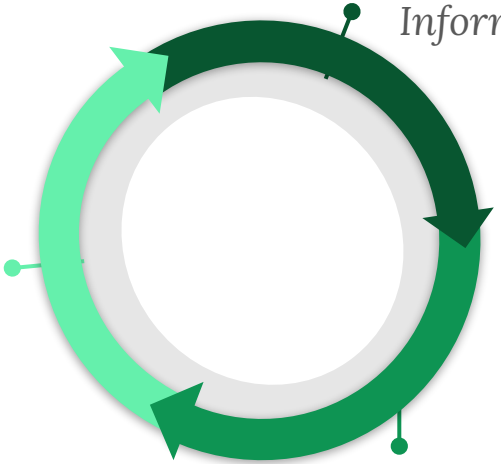
South Boston (2018)

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

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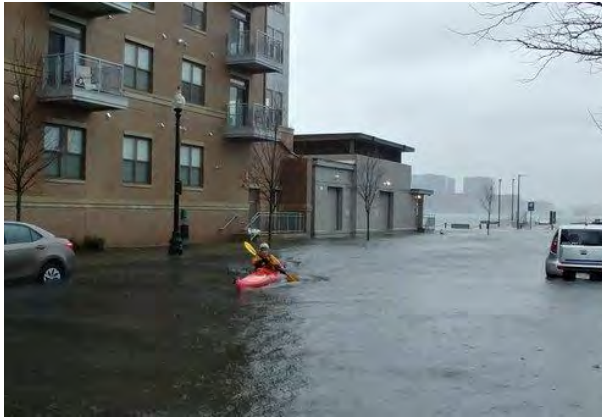
US Army Corps of Engineers.

COASTAL FLOODING IN BOSTON IN 2018 - 2024

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

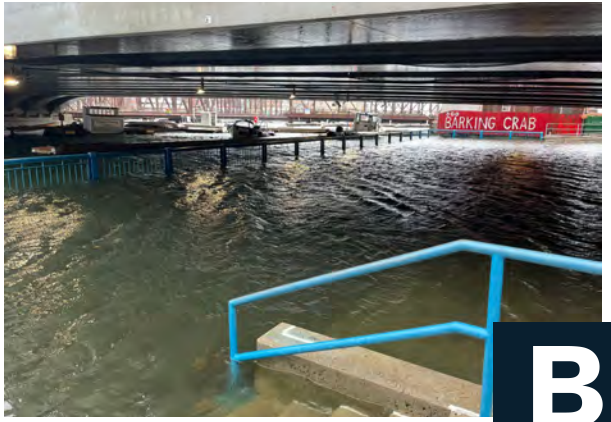
Flooding along the Harborwalk in Downtown Boston
(Source: Alison Brizius, December 2022)

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,
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COASTAL RESILIENCE IMPLEMENTATION - DOWNTOWN/NORTH END

Langone Park & Puopolo Playground
Constructed in 2020

Christopher Columbus Park
Design initiating

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?

- *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.*

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US Army Corps of Engineers

WHERE ARE WE IN THE USACE PROCESS?

What We've Done (Before 2025)

Defined the risk of inaction

Where We Are (2025 - 2027)

Define <u>where</u> and <u>what</u> to build

What's Ahead (2028 & Beyond)

2028: Submit report to Congress

2028+: Get Federal funding for projects

2030+: Refine designs and build

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CSRM Process:

Coastal Storm Risk Analysis and Management 101

HOW DOES USACE DEFINE COASTAL STORM RISK?

COASTAL HAZARDS:

SEA LEVEL *CHANGE*

Permanent rise in ocean level relative to land

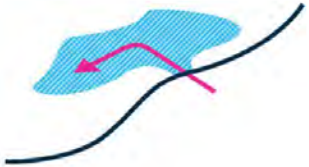
STORM SURGE

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

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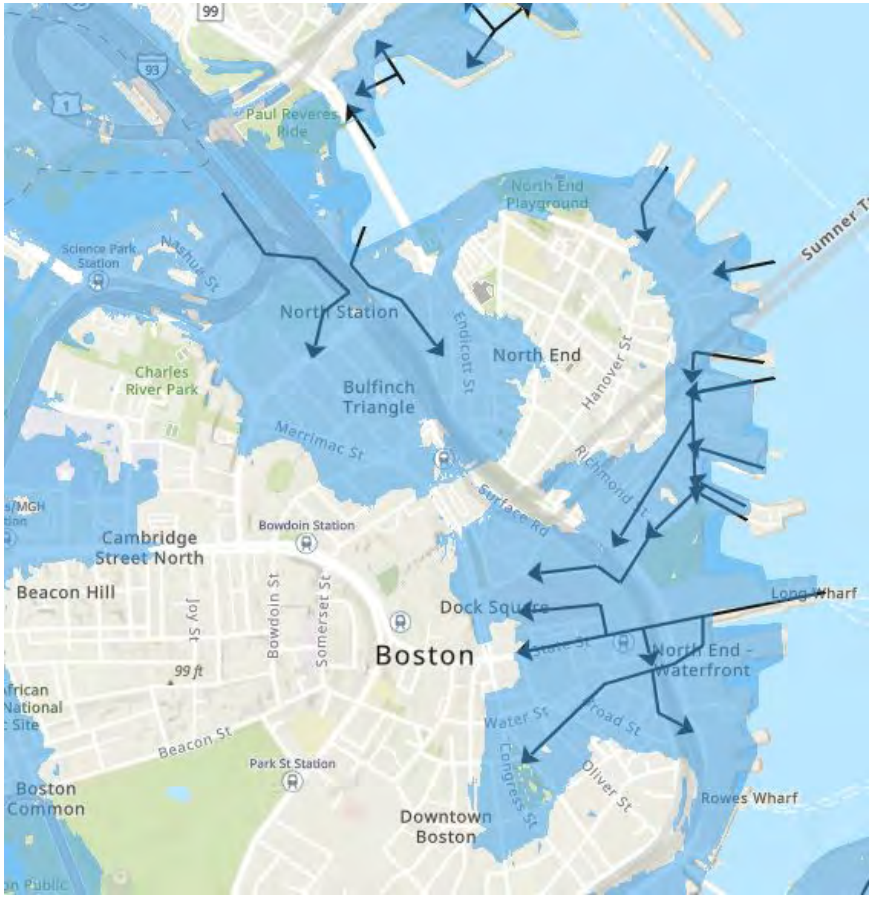
COASTAL STORM RISK MANAGEMENT: HOW IS THIS DIFFERENT FROM CLIMATE READY BOSTON?



LEGEND

CHS Inundation Layers

CHS 1% Inundation 2090 High SLC

Flood Pathways

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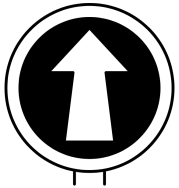
HOW DOES USACE DEFINE “FEDERAL INTEREST”?

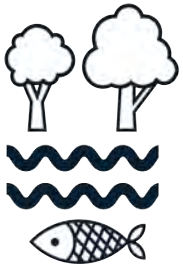
Protection of Housing



Protection of Evacuation Corridors

Protection of Critical Infrastructure

Protection of the People



Protection of Natural Resources

Protection of Critical Transportation

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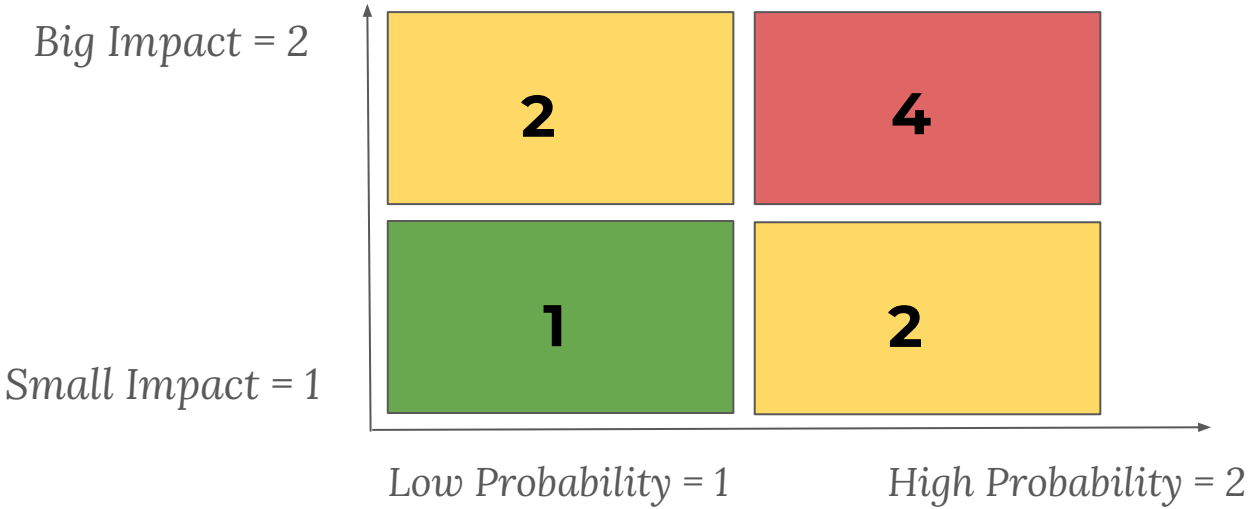
HOW DOES USACE MANAGE STORM RISK?

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



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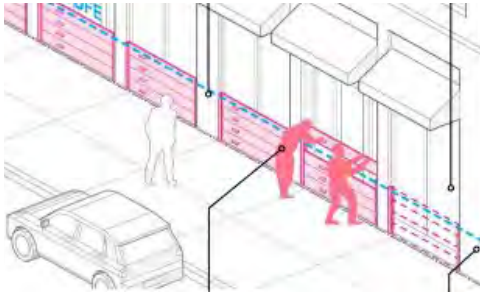
HOW DOES USACE ADDRESS STORM RISK? PICK THE RIGHT TOOL

1st Drawer: PROTECT

Structural

2nd Drawer: ADAPT or ACCOMMODATE

Non-Structural, Physical



3rd Drawer: MANAGE

Non-Structural, Non-Physical

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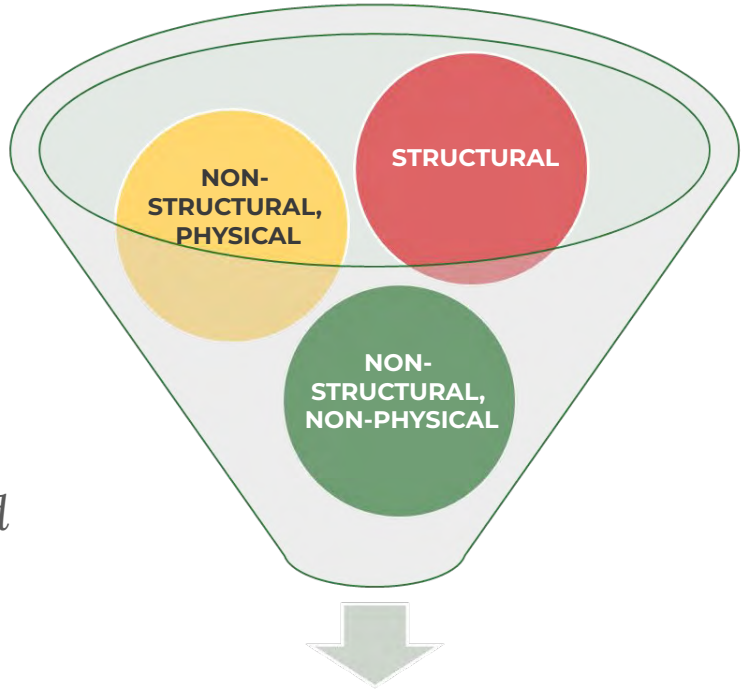
HOW DOES USACE SELECT TOOLS FOR BOSTON?

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



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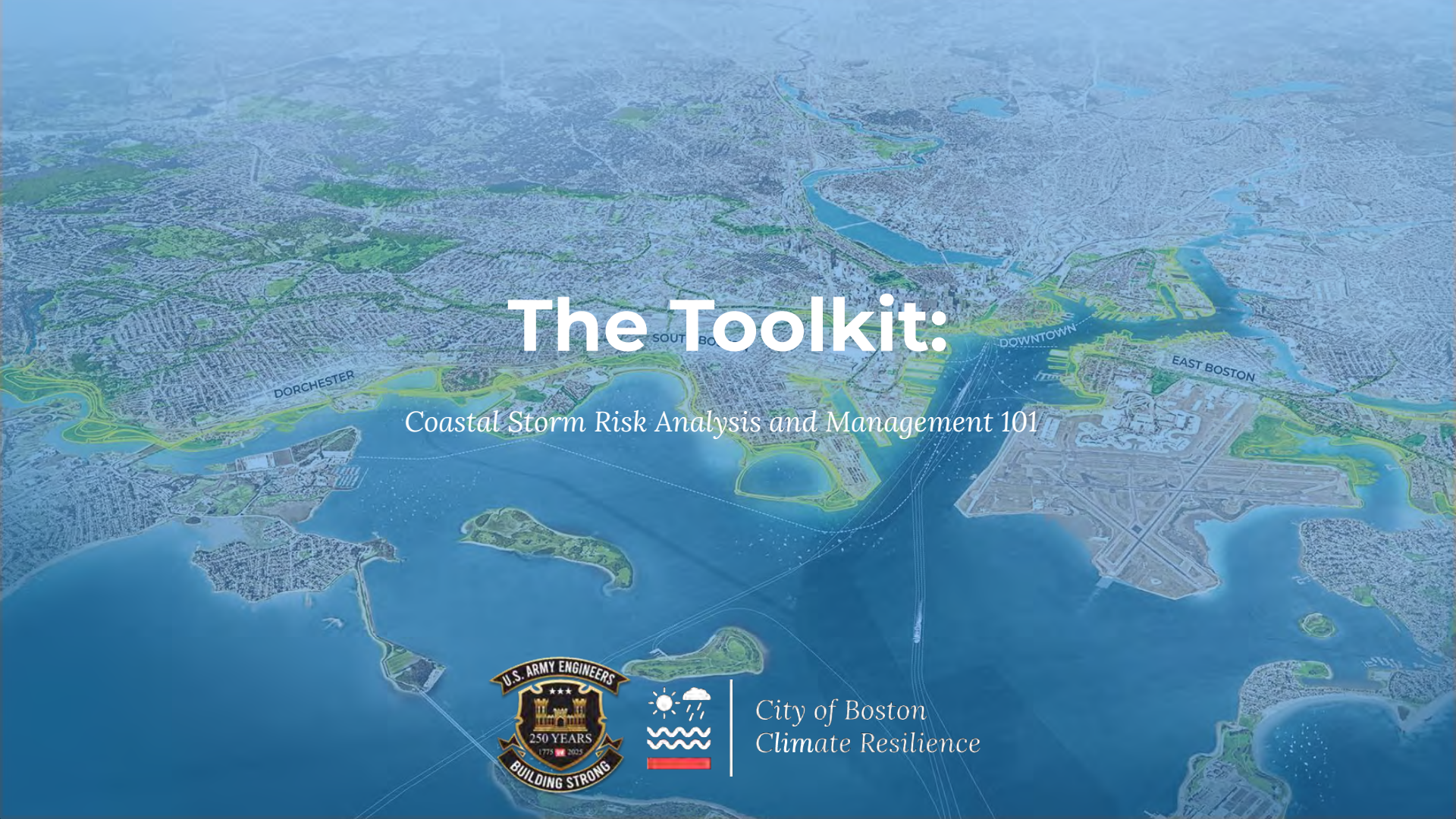

The Toolkit:

Coastal Storm Risk Analysis and Management 101

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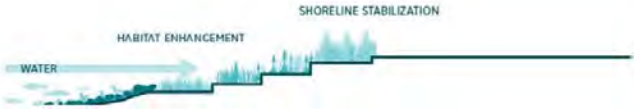
Climate Resilience

REFRESHER: CLIMATE READY BOSTON TOOLS

RAISED HARBORWALK / RAISED PARK SPACE

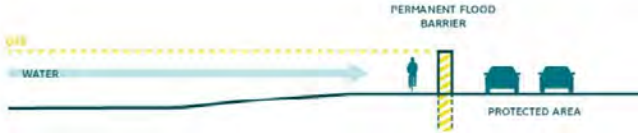
RAISED BERMS AND DUNES

NATURE-BASED SOLUTIONS

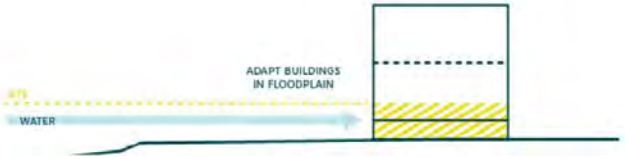


RAISED ROADWAYS / MEDIAN FLOODWALLS

VERTICAL FLOODWALLS



ADAPTED BUILDINGS AND STRUCTURES



EXAMPLES OF LOCAL AND USACE APPLICATIONS

RAISED HARBORWALK / RAISED PARK SPACE

Built: Martin's Park

Photo Credit: Robin Lubbock, WBUR News

RAISED BERMS AND DUNES

USACE Example: New Bedford, MA

Photo Credit: Peter Pereira, The Standard-Times

EXAMPLES OF LOCAL APPLICATIONS

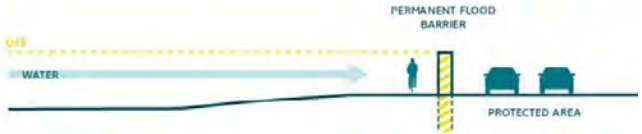
Langone Park and Puopolo Playground, North End

Photo Credit: Weston & Sampson

Harbor Towers

Photo Credit: Harbor Towers and Weston & Sampson

VERTICAL FLOODWALLS



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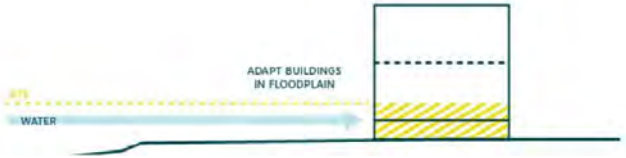

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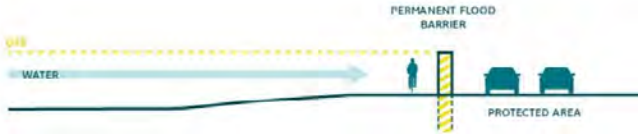

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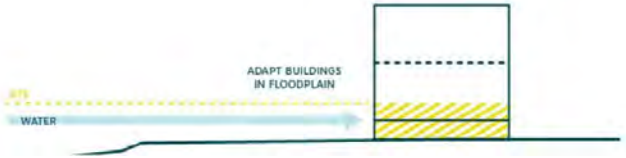

ADDITIONAL USACE TOOLS

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:

- *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?*

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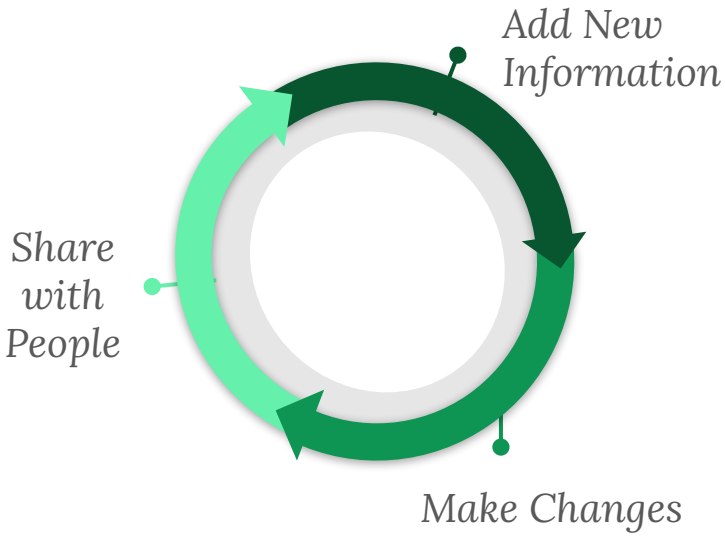
WHAT WE WILL DO NEXT:

- *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)*



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COASTAL RESILIENCE IMPLEMENTATION - DOWNTOWN/NORTH END

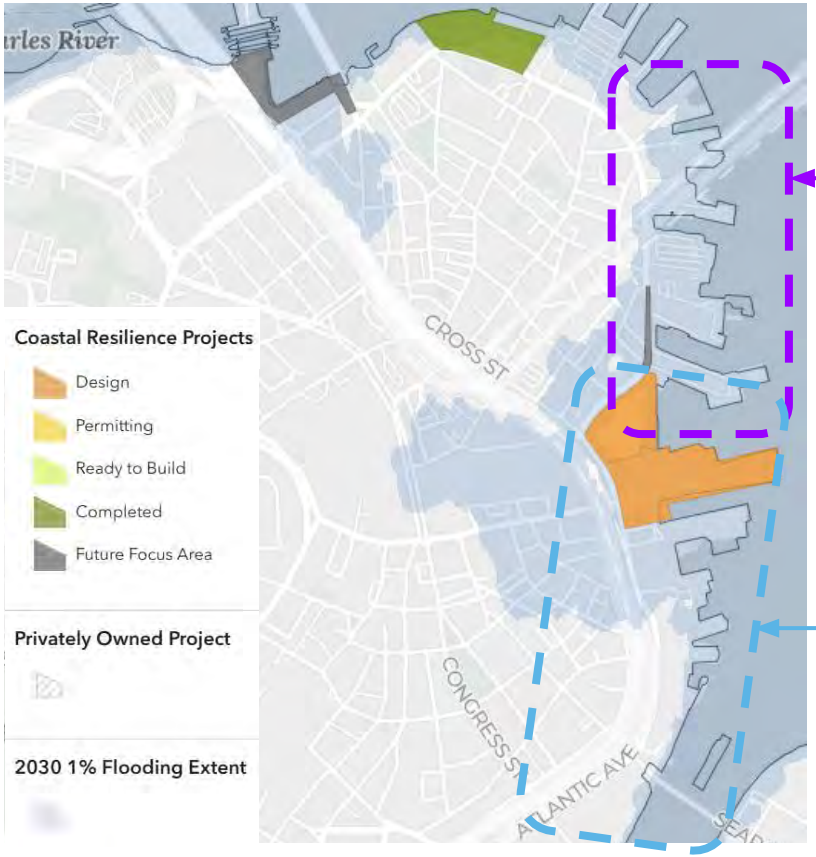
Langone Park & Puopolo Playground
Constructed in 2020

Christopher Columbus Park
Design initiating

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.

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



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

Wharf District Council
District Protection & Resiliency Plan,
2023

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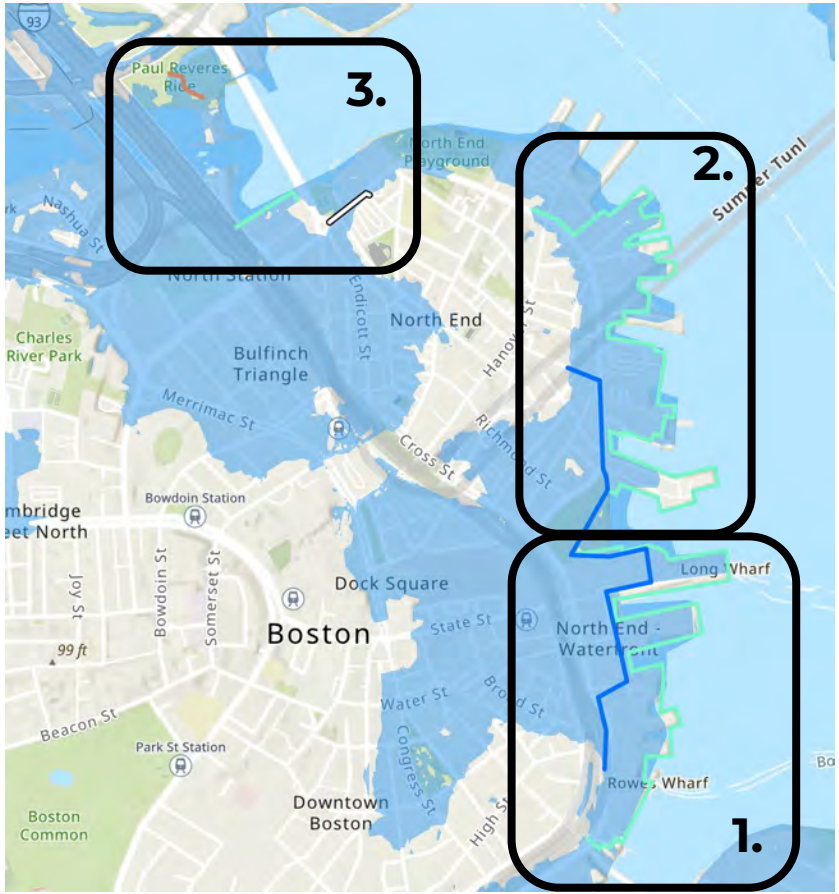
PRELIMINARY DRAFT STRUCTURAL LOCATIONS OVERVIEW



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*

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1). From Evelyn Moakley Bridge to Long Wharf

2 Alternatives

KEY

Flooding from 2090 1% storm

Floodwall, on land

Floodwall, next to land

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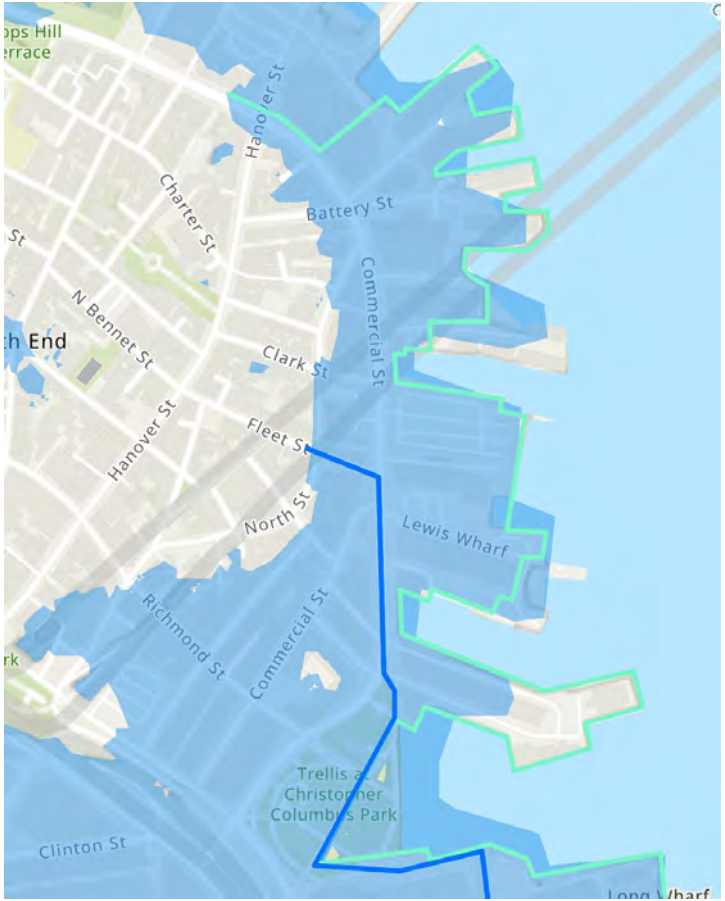
2). From Christopher Columbus Park to Battery Wharf



2 Alternatives

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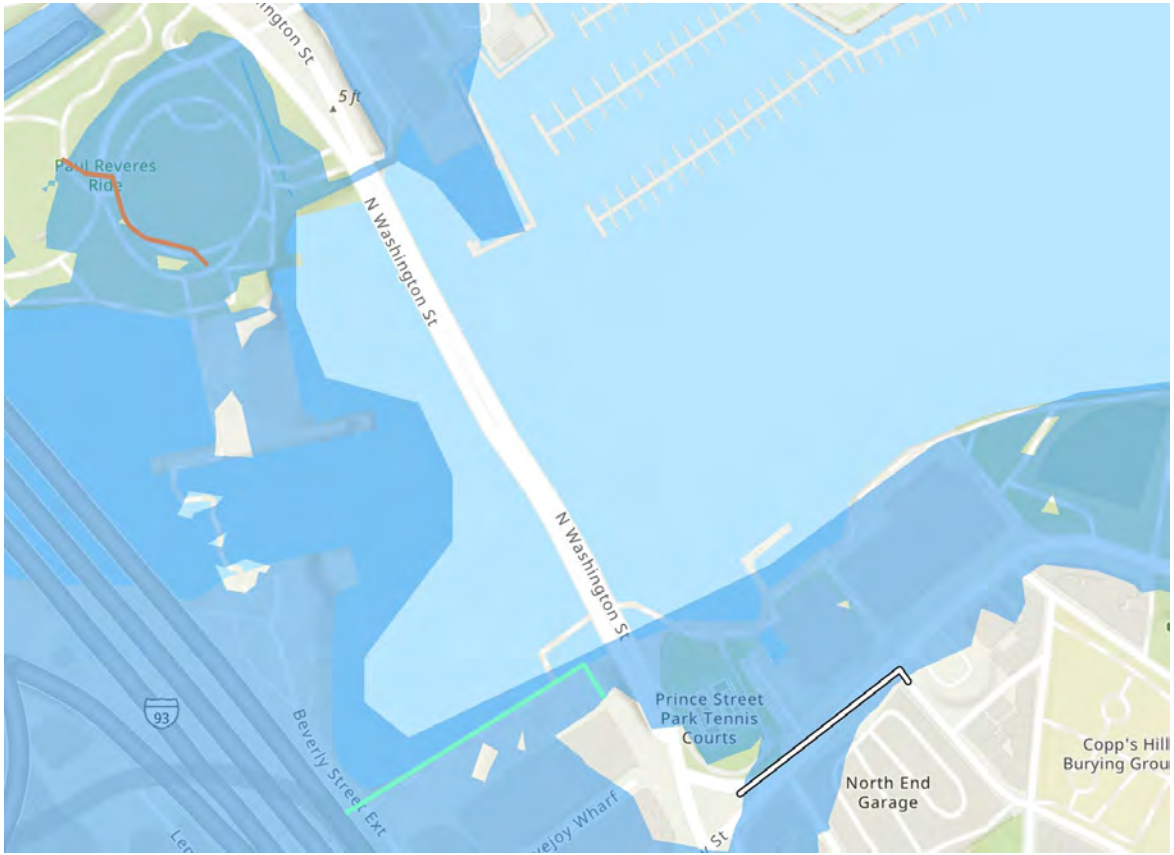
3.) PAUL REVERE PARK, LOVEJOY WHARF, AND PRINCE STREET PARK



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Summary

- *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)*

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How to Provide Feedback: *boston.gov/usace-study*

Submit Comments Online

Book an Appointment

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