



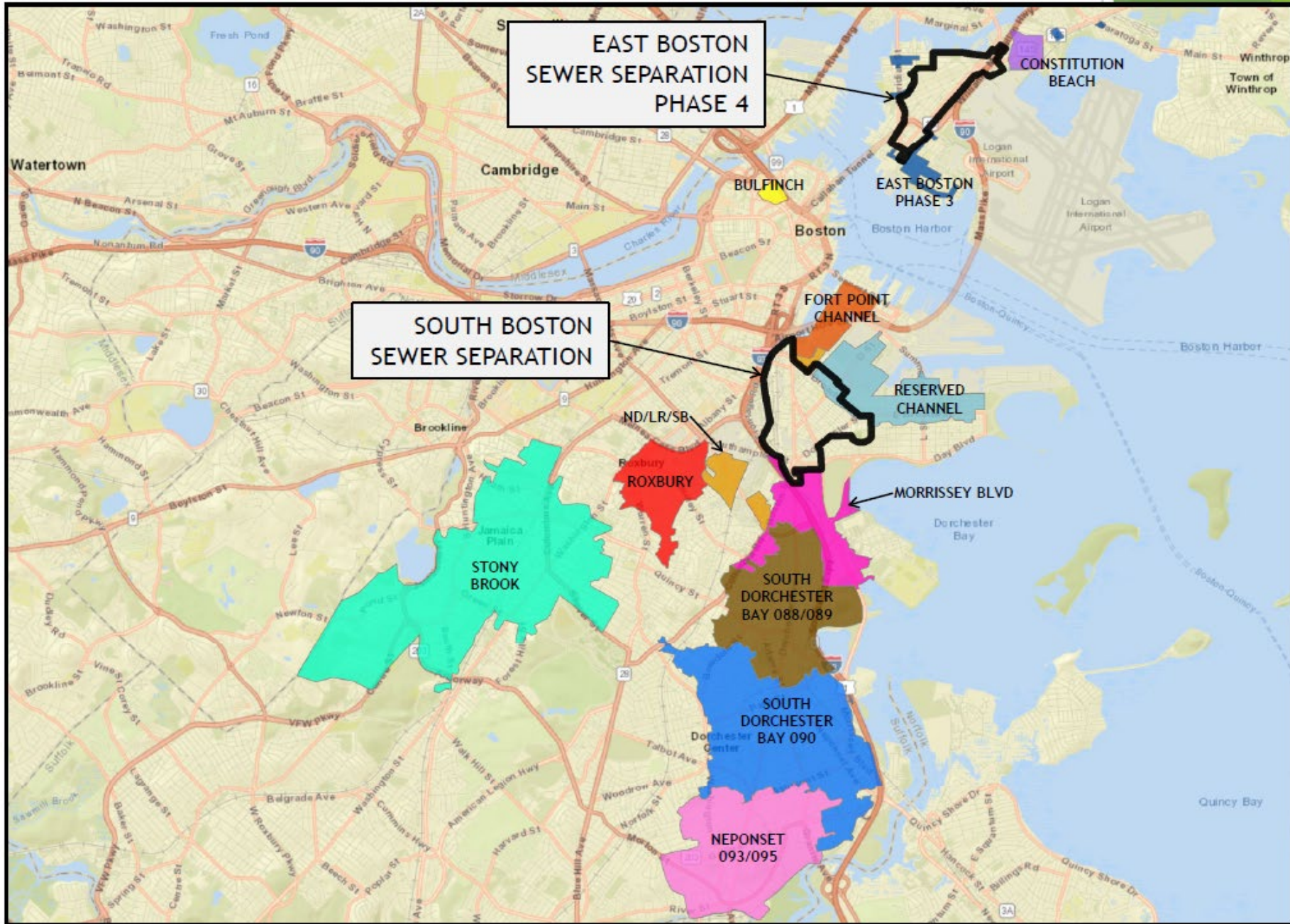
ACEC - State Markets Conference

BWSC's Project Summary

April 13, 2023

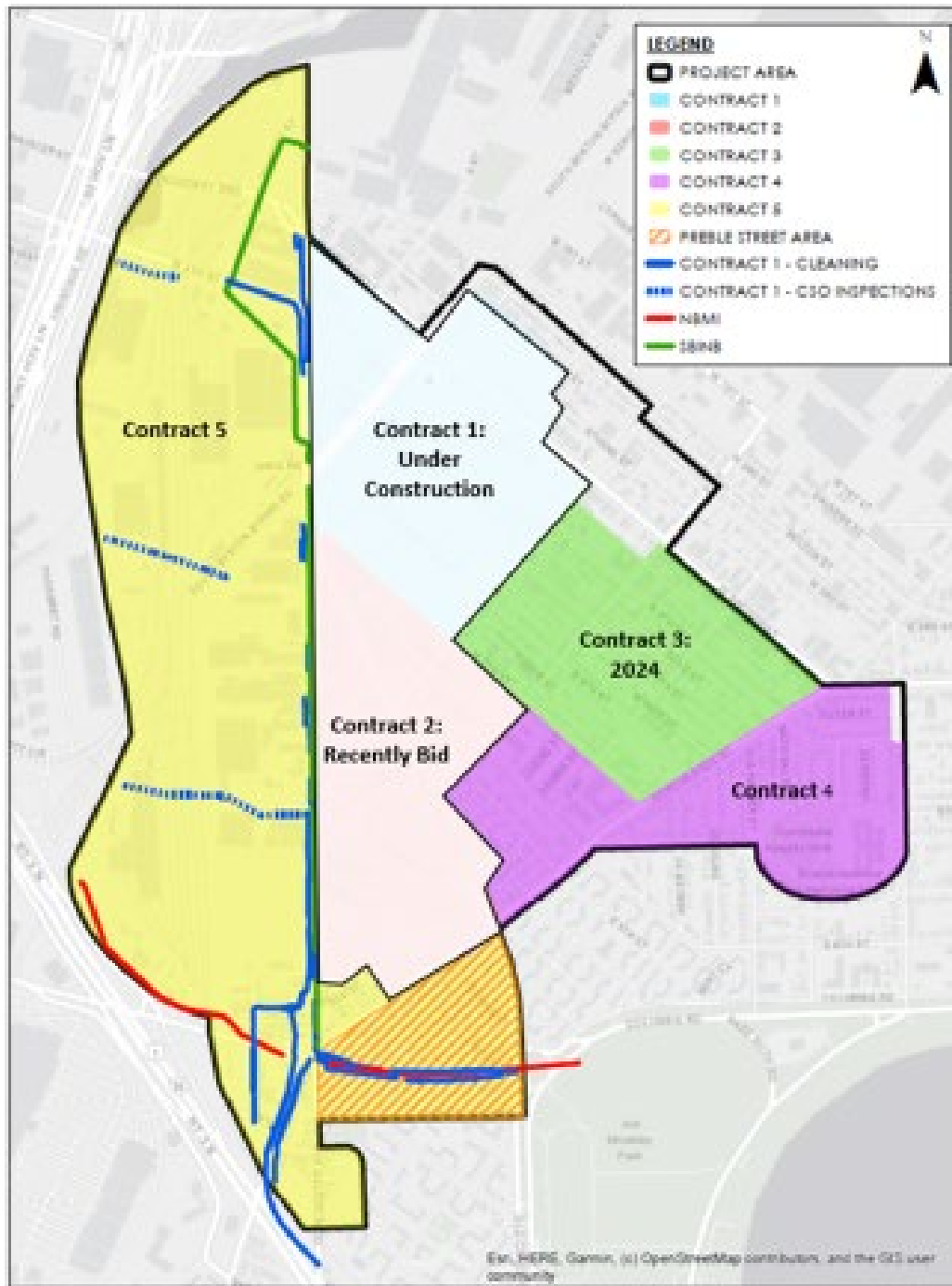
Charlie Jewell
Director of Planning and
Sustainability

Separation Projects - CSO



South Boston Sewer Separation

Contract Packaging



South Boston
Sewer Separation
Water Main

Water Main Replacement

Size	Length (LF)
8"	19,300
12"	20,200
16"	6,700
20"	4,300
30"	2,500
TOTAL	53,000

South Boston
Sewer Separation
Sewer

Sewer Improvements

Size	Length (LF)
10"	18,100
12"	10,600
15"	7,200
18"	3,500
24"	2,900
TOTAL	42,300

- 21,600 LF of Sewer Rehabilitation

South Boston
Sewer separation
Storm Drain

Storm Drain Improvements

Size	Length (LF)
12"	18,900
15"	4,500
18"	4,400
24"	1,400
30"	2,700
36"	2,100
42"	1,100
48"	200
60"	700
TOTAL	36,000

- 7,700 LF of Combined Sewer Conversion
- 8,300 LF of Storm Drain Rehabilitation

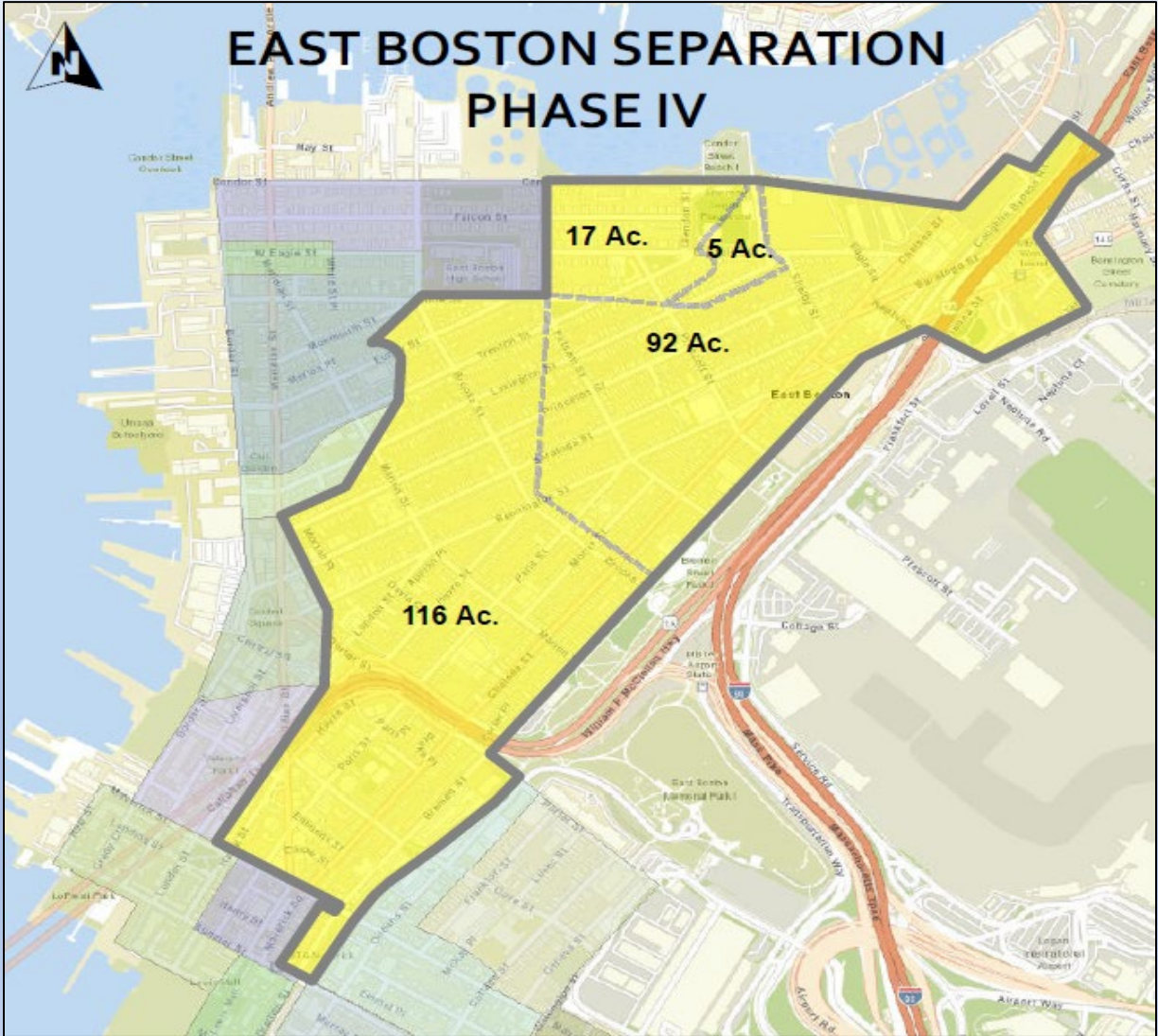
Construction Schedule

Phase	Start Date	End Date	Duration (Months)	2021	2022	2023	2024	2025	2026	2027	2028
South Boston Sewer Separation	7/1/2021	7/1/2028	84								
Construction Contracts	7/1/2021	7/1/2028	84								
Contract 1	7/1/2021	6/1/2023	23	XXXXXXXXXX UNDER CONSTRUCTION							
Contract 2	6/1/2023	8/1/2025	26	XXXXXXXXXX RECENTLY BID							
Contract 3	4/1/2024	7/1/2026	27								
Contract 4	4/1/2025	7/1/2027	27								
Contract 5	4/1/2026	7/1/2028	27								
SBINB	4/1/2026	7/1/2028	27								
NBMI	10/1/2022	11/1/2023	13	Phase 2 & 3 - Pending							

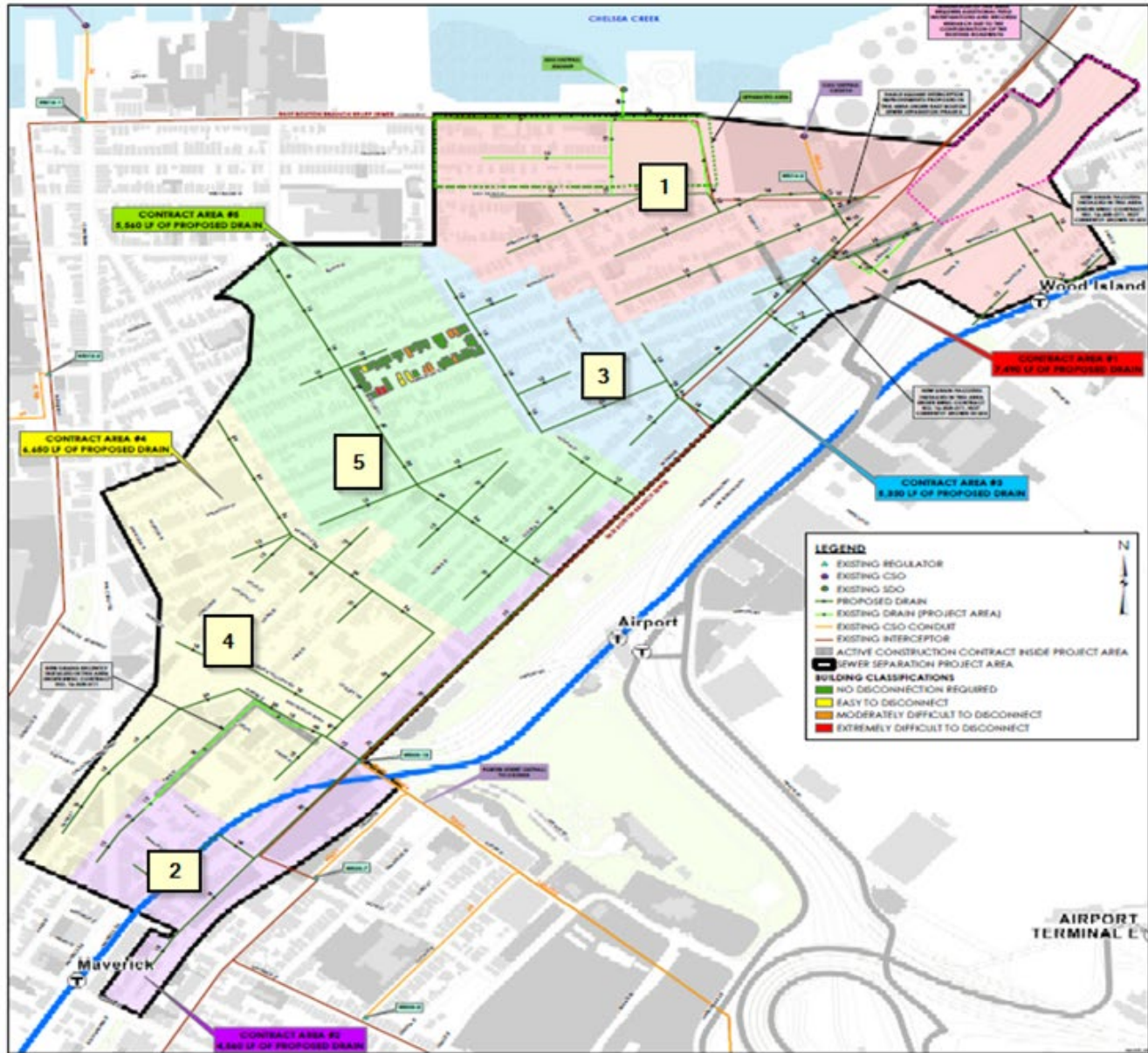
East Boston
Sewer Separation

Planned
Separation Area

Planned East Boston Sewer Separation



Preliminary Contract Areas



Construction Schedule

Phase	Start Date	End Date	Duration (Months)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
East Boston Sewer Separation	4/15/2024	11/15/2031	91			[Blue bar spanning 2024-2031]							
Construction Contracts	4/15/2024	4/15/2030	72			[Grey bar spanning 2024-2030]							
Contract 1	4/15/2024	4/15/2026	24			[Green bar spanning 2024-2026]							
Contract 2	4/15/2025	4/15/2027	24				[Green bar spanning 2025-2027]						
Contract 3	4/15/2026	4/15/2028	24					[Green bar spanning 2026-2028]					
Contract 4	4/15/2027	4/15/2029	24						[Green bar spanning 2027-2029]				
Contract 5	4/15/2028	4/15/2030	24							[Green bar spanning 2028-2030]			
Paving Contracts	4/15/2026	11/15/2031	67					[Grey bar spanning 2026-2031]					
Contract 6	4/15/2026	11/15/2028	31				[Red bar spanning 2026-2028]						
Contract 7	4/15/2029	11/15/2031	31								[Red bar spanning 2029-2031]		

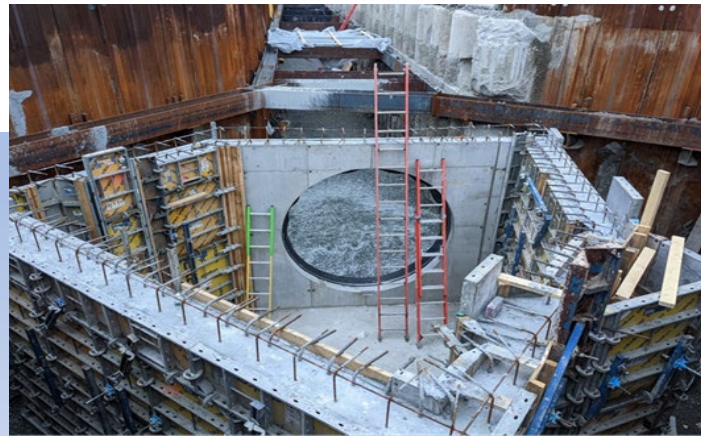
Upcoming Water Main Replacement Work

Contract Number	Neighborhood	Water Length	Sewer/ Drain Length	Estimated Cost	Advertise Date
22-308-001	City Proper	8,065	500	\$12,900,000	March 2023
20-308-001	South End	8,775	240	\$16,000,000	May 2023
19-308-002	Charlestown	10,830	6,250	\$7,800,000	June 2023
19-308-004	Beacon Hill	8,000	2,500	\$9,000,000	September 2023
20-308-002	South End	7,780	2,390	\$10,000,000	October 2023
	TOTAL	43,450	11,880	\$55,700,000	

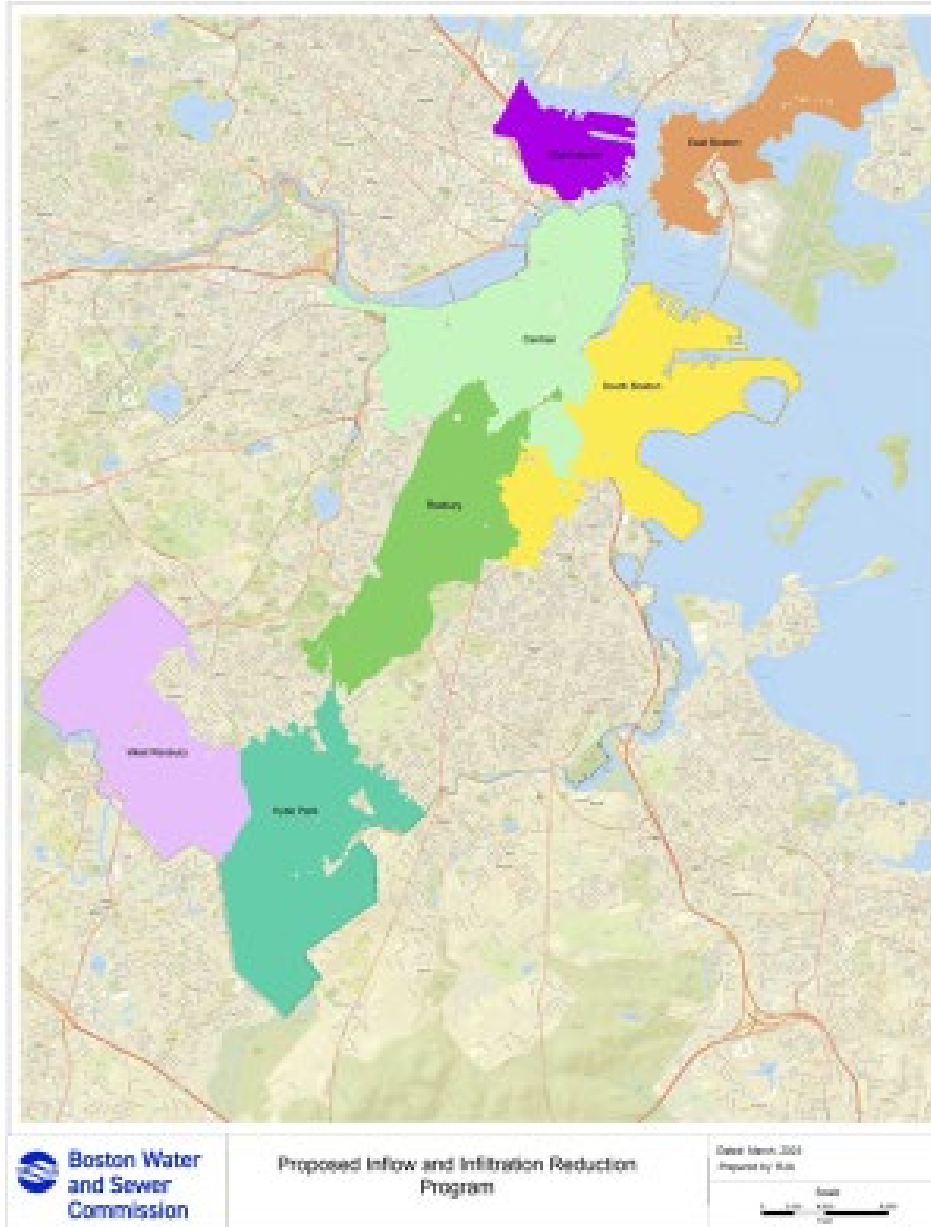


Upcoming Sewer and Drain Work

Contract Number	Neighborhood	Sewer/ Drain Length	Water Length	Estimated Cost	Advertise
20-309-004	Mattapan	20,800	0	3,607,000	April 2023
19-309-001	Tide Gate Installations	0	0	\$4,000,000	May 2023
18-309-003	Roslindale	6,735	7,386	\$8,670,000	June 2023
20-309-007	Allston/ Brighton	3,880	870	\$4,500,000	July 2023
23-309-008	City Wide Illicit Removal	0	0	\$2,100,000	July 2023
22-309-001	West Roxbury/ Roslindale	47,250	1,000	\$4,000,000	August 2023
23-309-013	Regulator Modifications	0	0	\$7,100,000	September 2023
22-309-003	Roxbury	9,345	2,375	\$5,000,000	September 2023
22-309-002	City-Wide	8,300	750	\$6,000,000	December 2023
	TOTAL	153,325	12,381	\$44,977,000	



Inflow and Infiltration Reduction Program



SSES Project Schedule:

- Dorchester complete
- Roslindale complete
- Allston/Brighton complete
- Mattapan complete
- Jamaica Plain in progress
- Charlestown in progress
- West Roxbury 2023
- Hyde Park 2024
- Roxbury 2025
- Central 2026
- South Boston 2027
- East Boston 2028

Special Structures



- Completed a contract that produced 34 3D depictions for 62 structures and 22 video animations
- Contract to develop depictions for about 50 more structures.
- RFP Early Summer
- \$250,000

Coastal Stormwater Discharge Analysis Project

Tributary Area Coastal Flood Vulnerability

If street elevation > 100-year tropical storm peak flood elevation in 2070 the tributary area is classified as "low flood vulnerability"

Low Flood Vulnerability

Flood Vulnerable Area



Rain Event

Flood Barrier

2070
100 Year Storm
Sea Level:
~13.8 ft NAVD88

Tide Level

Outfalls

Tide Gates



What can we help you find?

Public Notices

BWSC Bonded Contractors

Water Main Flushing Central Boston

MWRA Temporarily Halts Fluoridation of Area Drinking Water

See All Notices

Water Billing Rates

Look up a Project

Report a Problem or Emergency



Important Information About PFAS ("Forever" Chemicals)

Tests of water from reservoirs that are the source of Boston's water show no more than trace amounts of PFAS. The sum of the regulated PFA compounds was **zero**, below the new MassDEP standard of 20 ng/l.



Coastal Stormwater Discharge Analysis Project

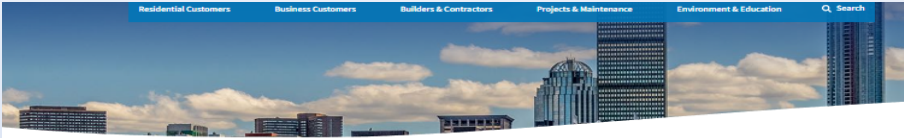
Boston to develop Coastal Resilience Neighborhoods focusing on the impact of Sea Level Rise and Storm Surge.

Lead & Your Water

Permits & Forms

Careers

WWW.BWSC.ORG



Coastal Stormwater Discharge Analysis Project

Share Print

All BWSC News > Coastal Stormwater Discharge Analysis Project

02/03/2023

Boston, through Climate Ready Boston, has been conducting studies of coastal areas of Boston to develop Coastal Resilience Neighborhoods focusing on the impact of Sea Level Rise and Storm Surge.

The Boston Water and Sewer Commission's storm drain system relies on gravity to discharge stormwater to receiving waters. As Sea Level Rise increases it will become more difficult for the City's storm drainage system to function as designed. Stormwater will have a more difficult time overcoming higher tides. The Commission studied the impact of future predicted Sea Level Rise and Storm Surge on the drainage system and developed possible solutions that, in conjunction with proposed coastal protections under Climate Ready Boston, would allow discharge of stormwater during extreme tide events.

The Coastal Stormwater Discharge Analysis Report provides a summary of the overall project and provides conceptual ideas for projects that can be examined in more detail to address this evolving issue.

Media Contact

Contact our Communications & Community Services Department if you have any questions or concerns.

617-889-7996

BWSC Coastal Stormwater Discharge Analysis - Executive Summary

BWSC Coastal Stormwater Discharge Analysis - Final Report

BWSC Coastal Stormwater Discharge - Appendices

BWSC Coastal Stormwater Discharge - Implementation Timeline - Appendix E

Airport Pump Station

Charlestown Pump Station

Columbus Park Pump Station

Constitution Beach

Davenport Creek Stormwater Park

Dorchester Bay Basin

East Boston Greenway

East Boston Waterfront

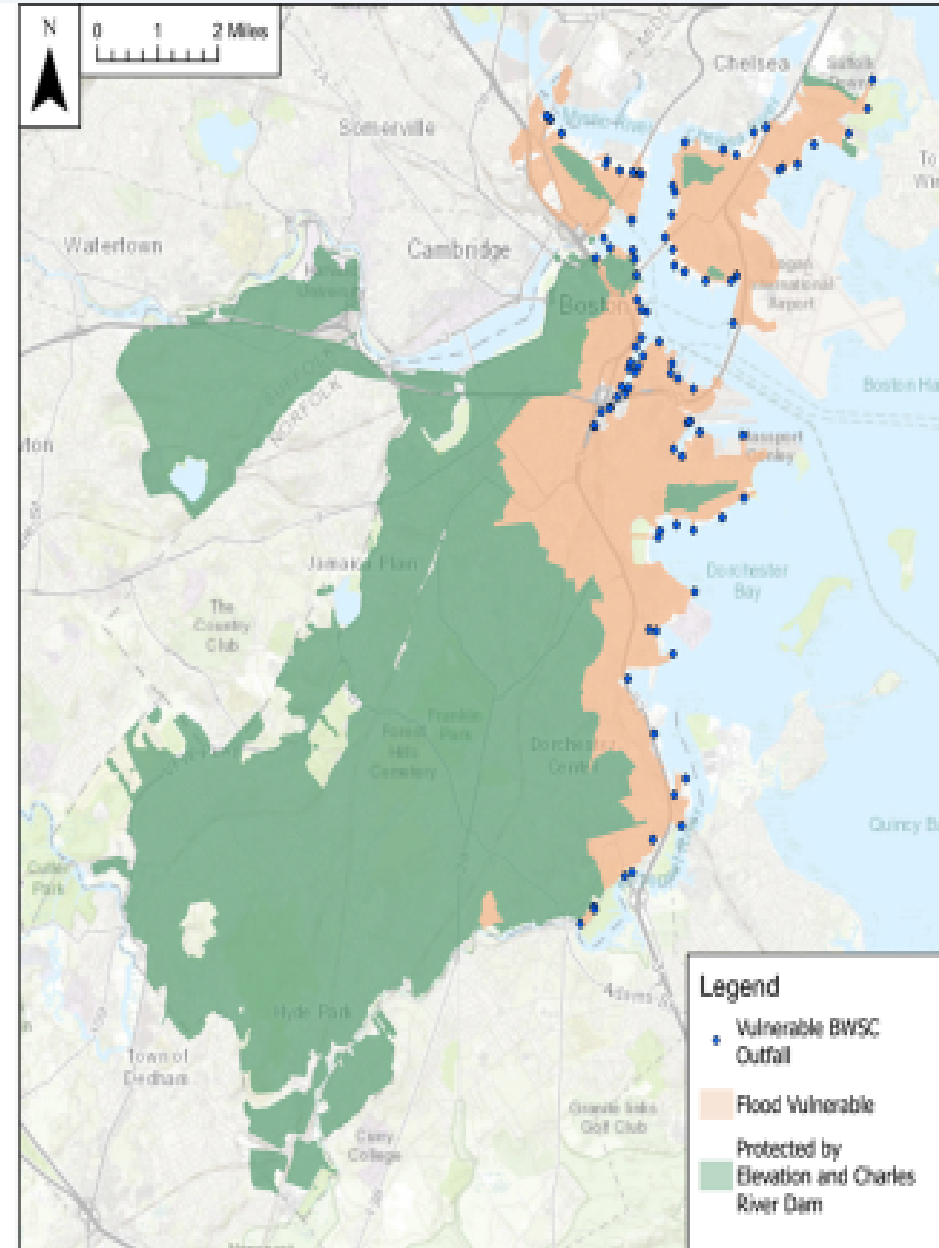
Fort Point Channel Storm Surge Barrier

Joseph Finnegan Park

Old Harbor Park Pump Station

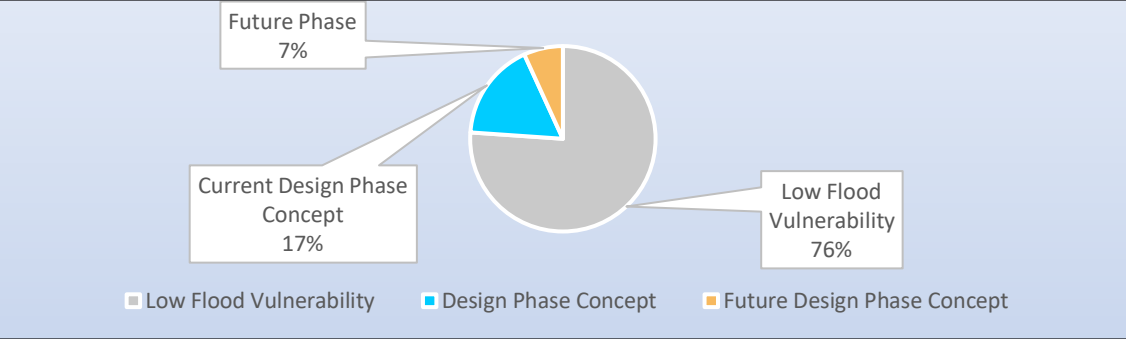
Coastal Flood Vulnerability In Boston

- Approximately 76% of Boston has low coastal vulnerability flooding due to sea level rise and storm surge
- Approximately 24% of Boston is at lower elevations and more vulnerable to flooding
- Approximately 100 BWSC owned outfalls provide drainage in coastal flood vulnerable areas
- The City of Boston's *Climate Ready Boston* initiative is designing shoreline protection projects to prevent coastal flooding
- BWSC has undertaken the Coastal Stormwater Discharge Analysis to develop a strategy to adapt stormwater infrastructure to higher sea level
- Development of plans and concept designs to adapt almost 100 BWSC outfalls

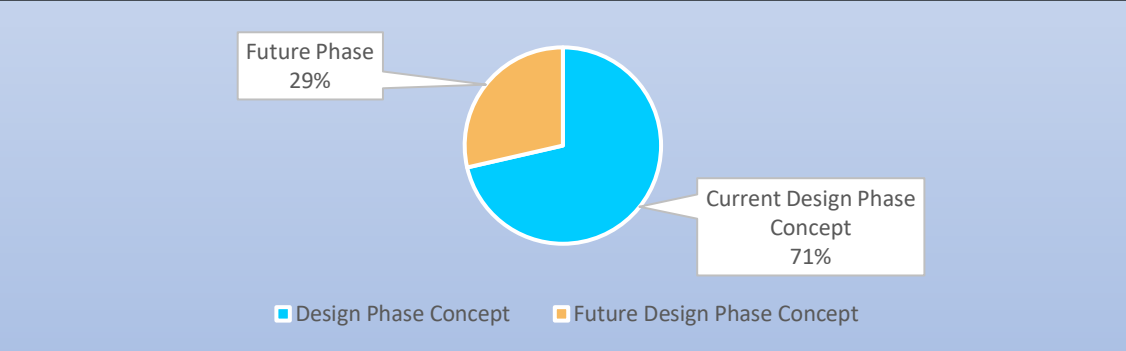


Citywide Coastal Flood Vulnerable Drainage Area Progress

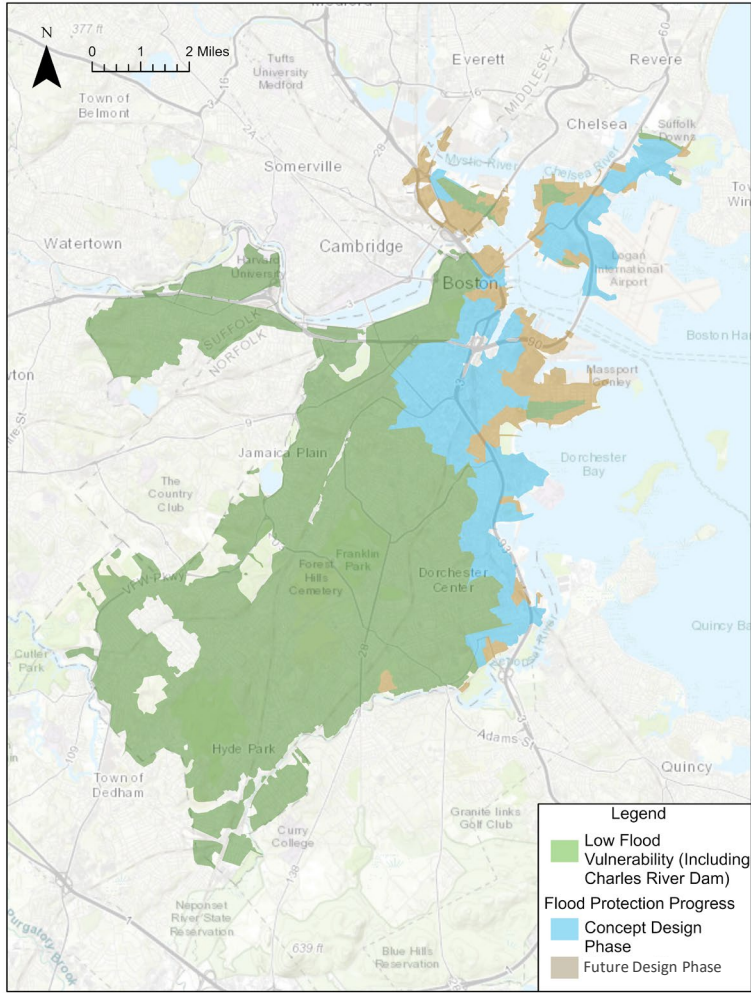
Citywide Drainage Area by Coastal Flood Vulnerability



Coastal Stormwater Discharge Analysis – Protection of Coastal Flood Vulnerable Drainage Areas



- Current design phase concepts protect 71% of coastal flood vulnerable drainage areas in Boston
- Potential solutions identified at remaining outfalls for future design phase



Current Project Progress

- Current Concept Design Phase: 34+ outfalls
 - Solutions address most vulnerable outfalls with greatest Citywide impacts
 - Concept level designs that can be replicated in future design phases
 - 2D Flood Modeling to evaluate effectiveness
 - CRB adaptations considered for consistency
- Implementation Plan – Future Design Phase: 50+ outfalls
 - Vulnerable outfalls aligned with CRB phases identified
 - Replication of current design phase concepts based on feasibility
- Remaining BWSC owned outfalls have low coastal flood vulnerability
- ***Other outfalls that are privately owned or owned by other agencies are not included***

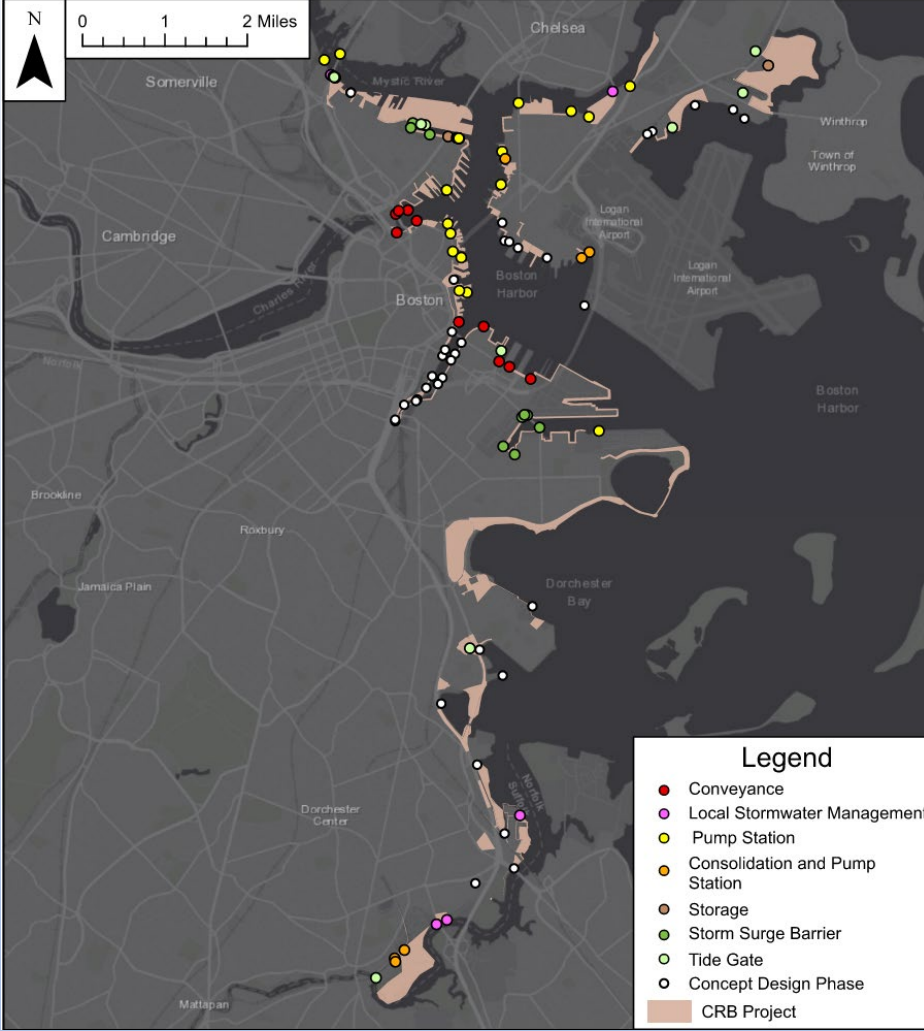
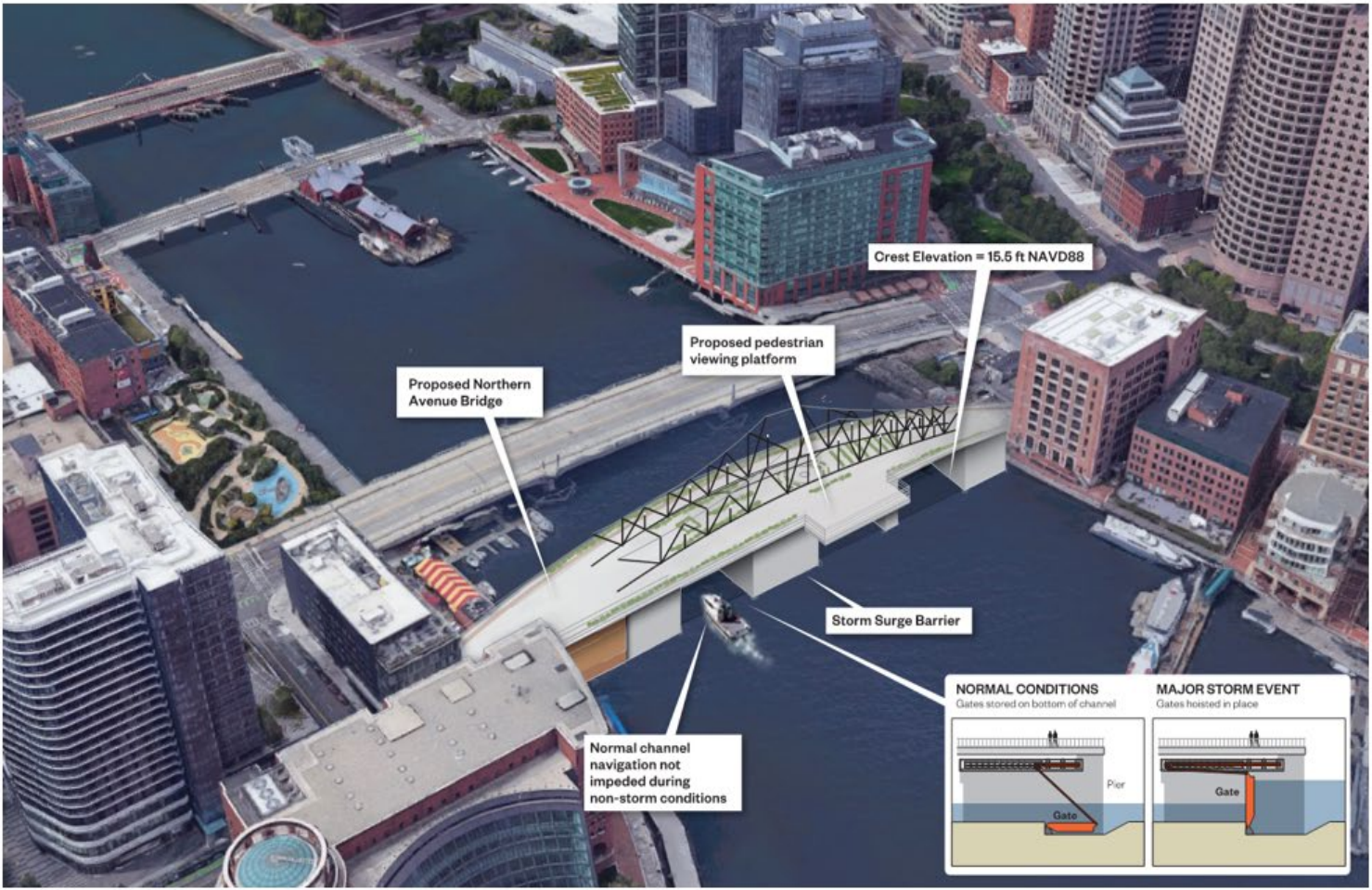
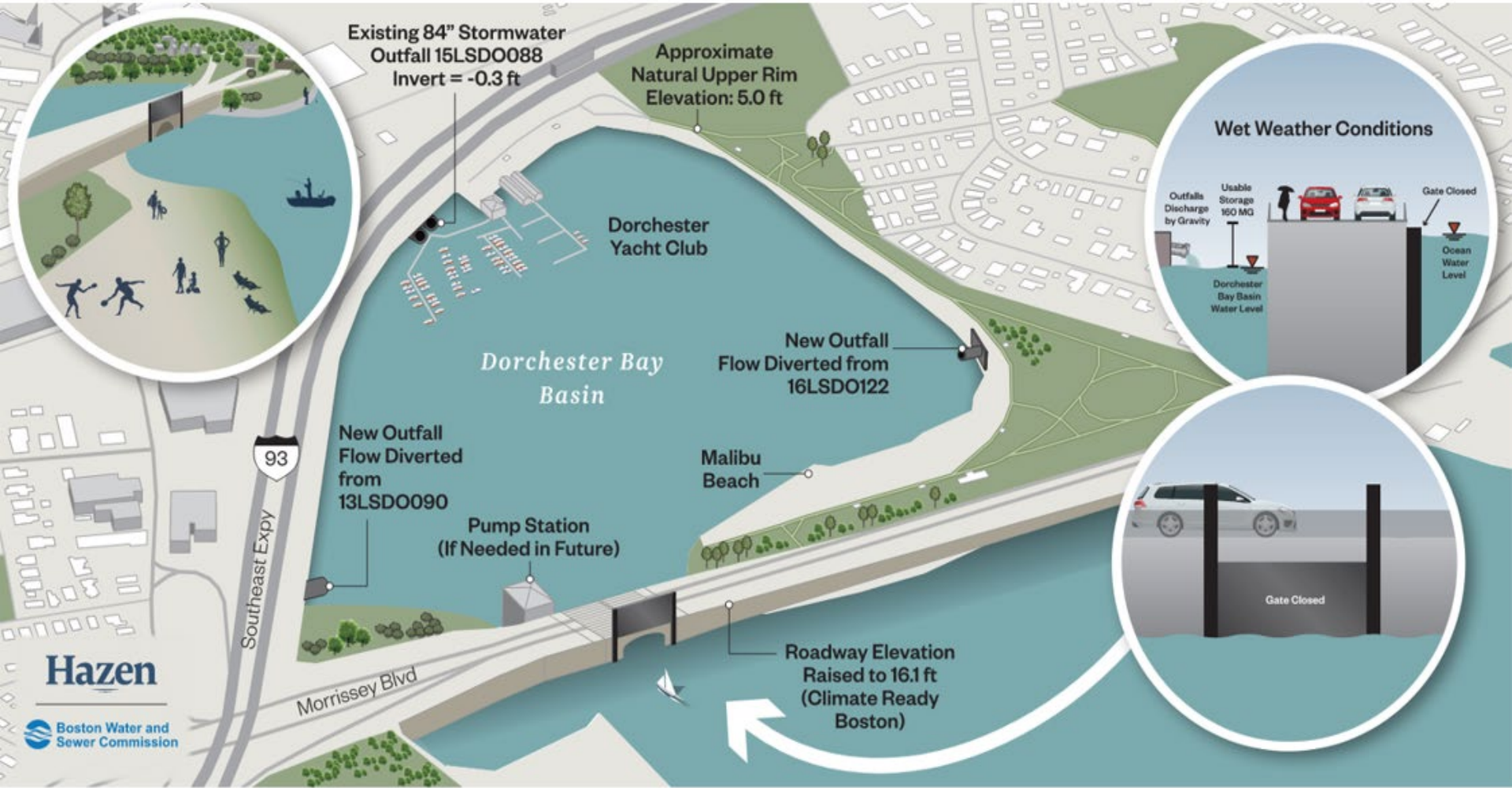


Illustration of Possible Northern Ave Bridge with Barrier

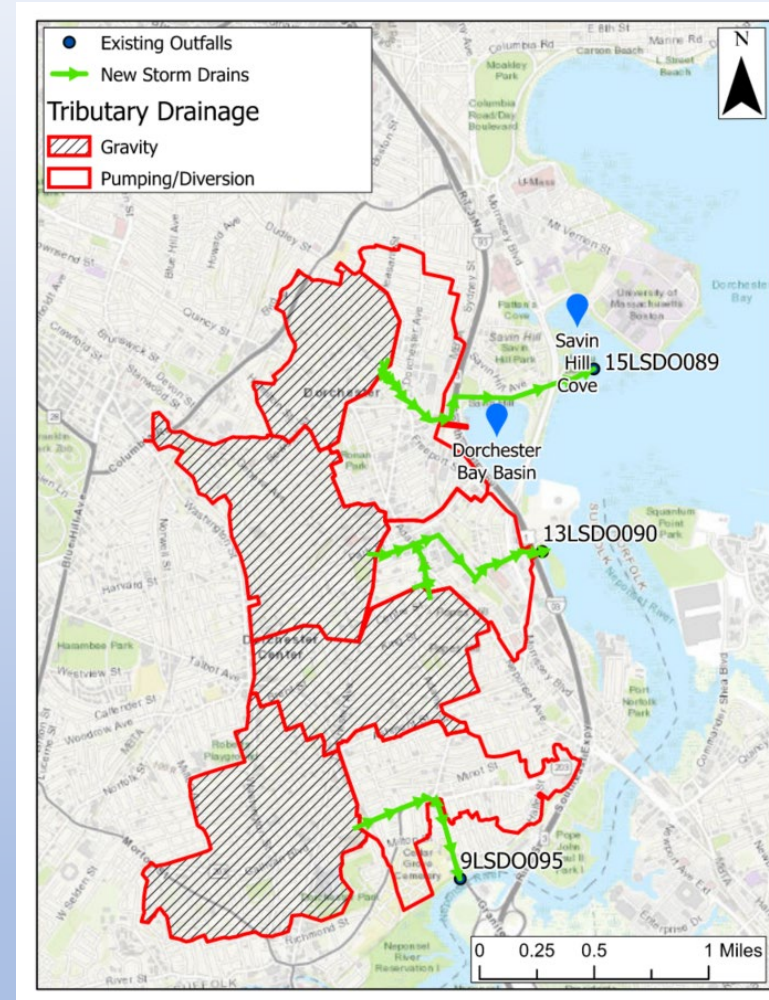


Dorchester Bay Basin Regional Solution – Preliminary Illustration



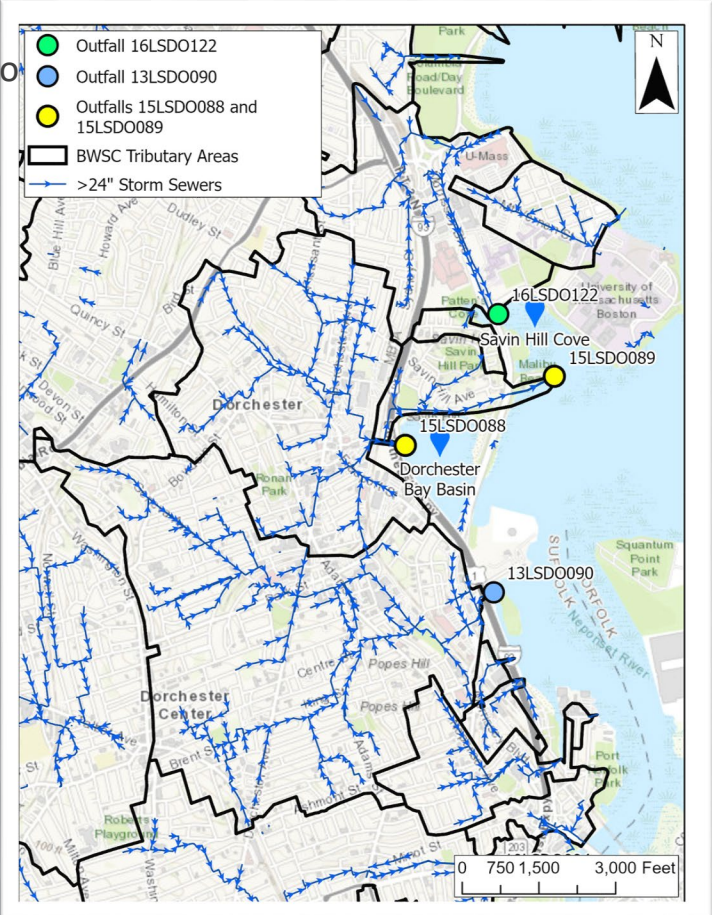
Draining Tributary Areas by Gravity

- New storm sewers would allow the shaded regions to drain entirely by gravity
- Regulator structures to direct flow (active or passive)
- *Drainage of high elevation areas by gravity can help reduce or eliminate pumping at Dorchester Bay Basin*

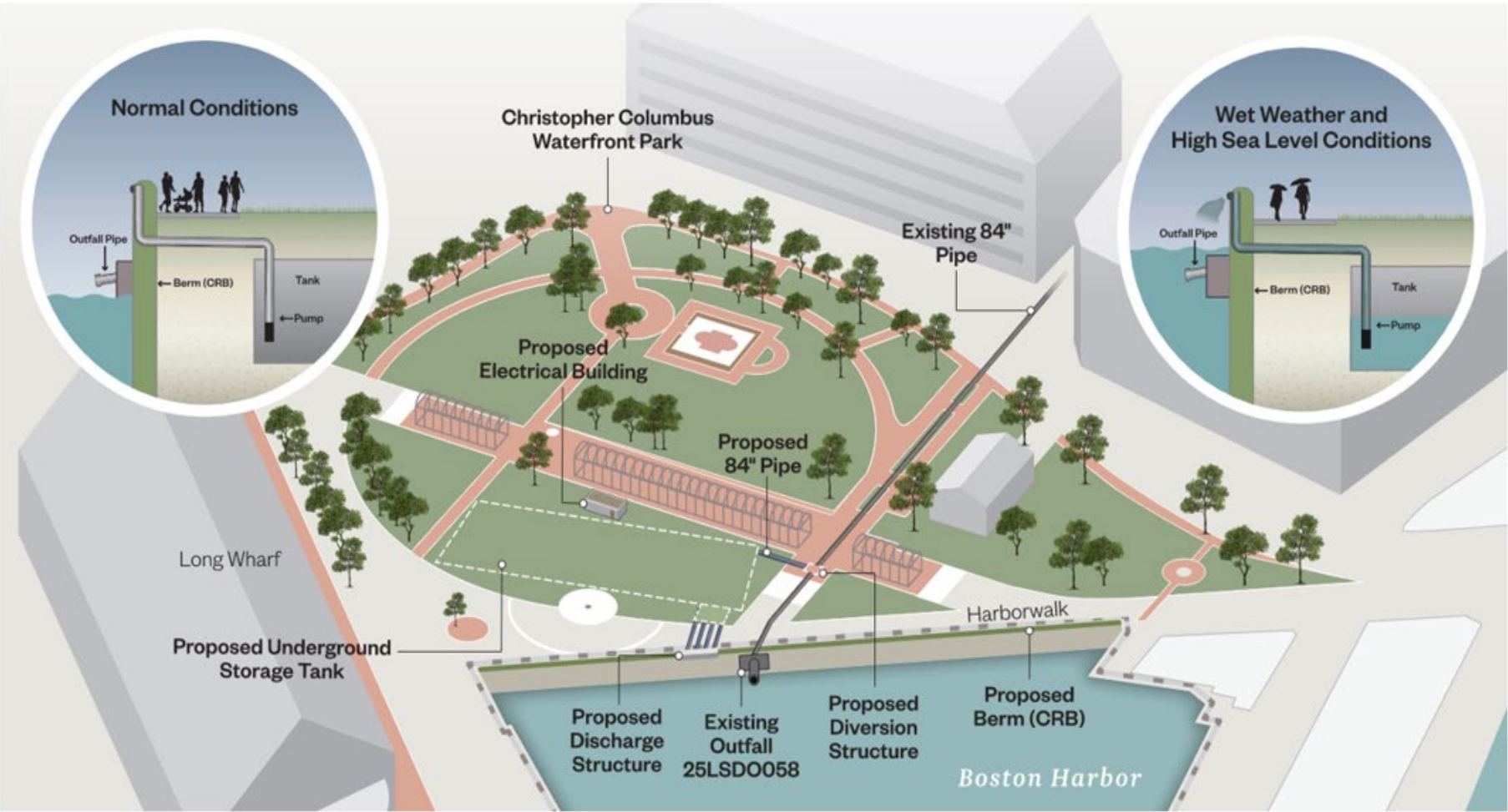


Dorchester Bay Basin - Regional Stormwater Storage Solution

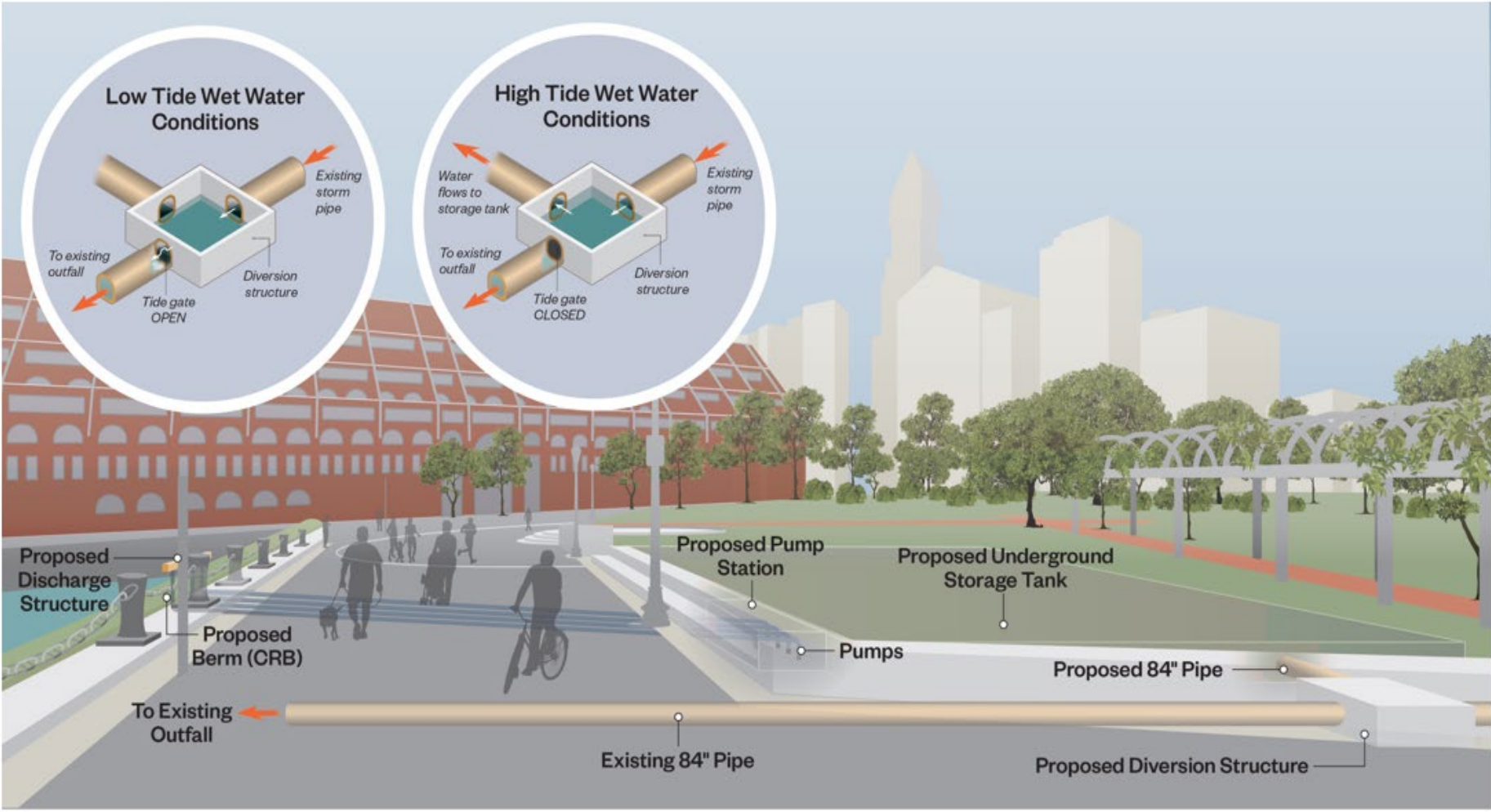
- Several outfalls in the vicinity could be partially or completely diverted to the DBB during storm events



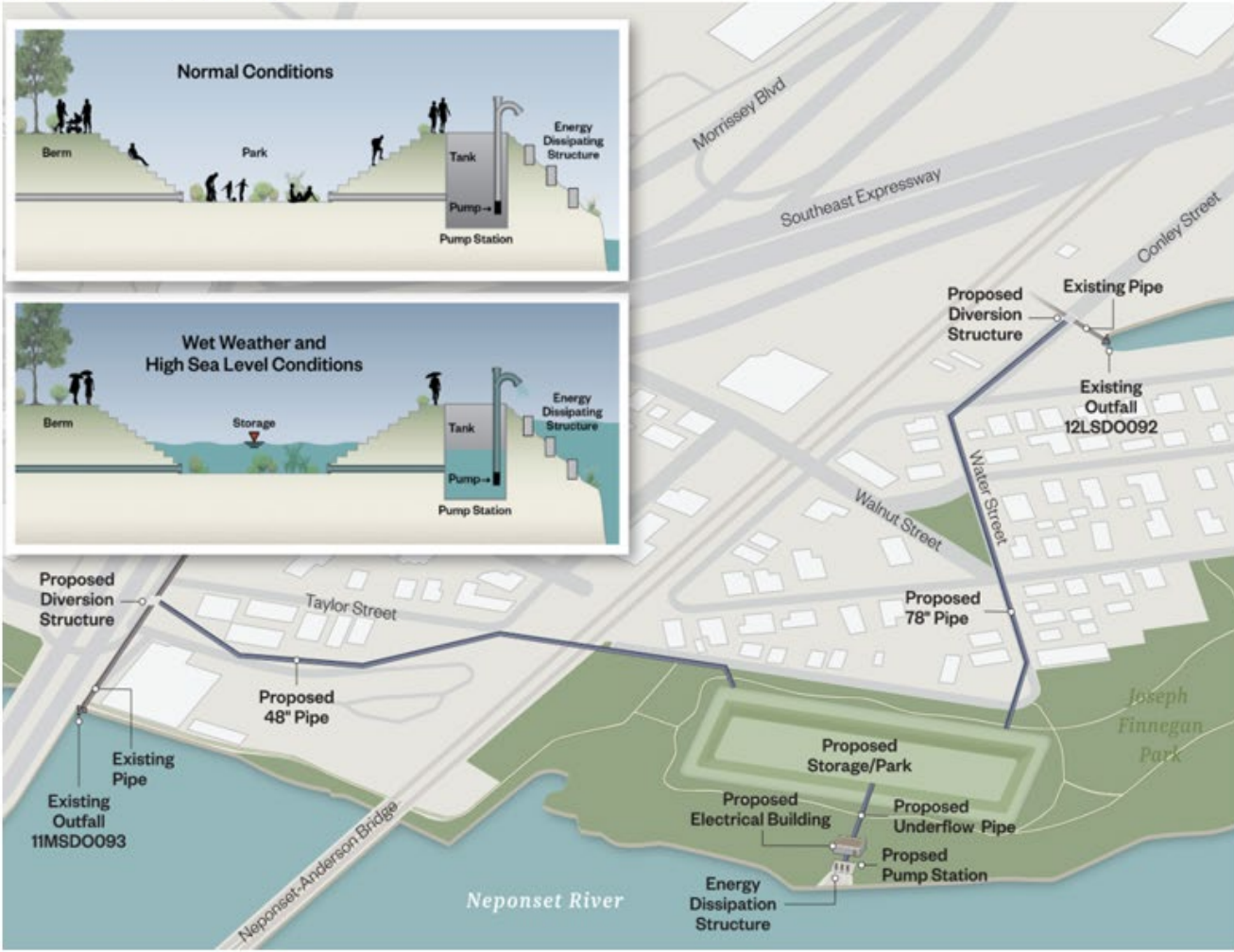
Christopher Columbus Park Pump Station



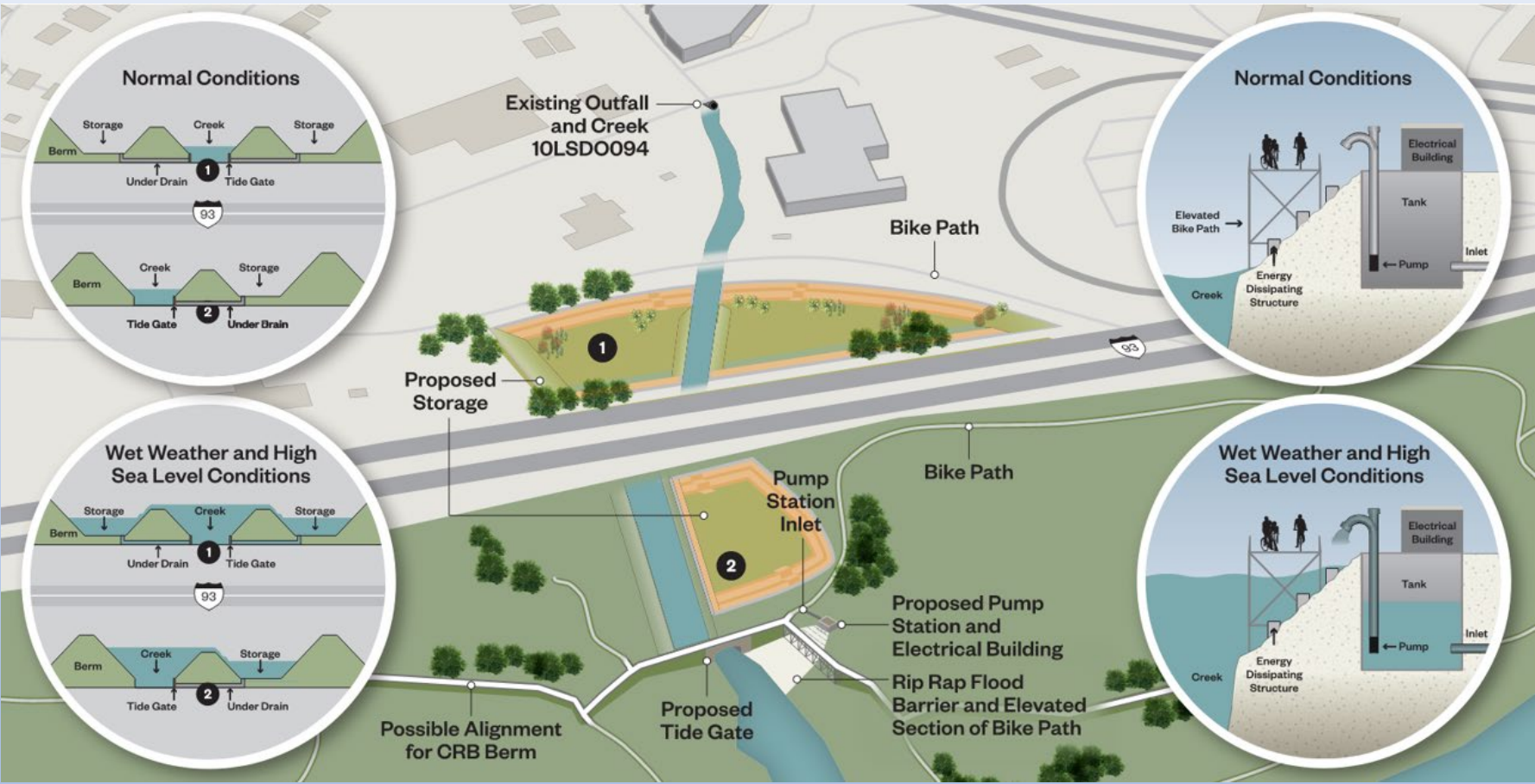
Christopher Columbus Park Storage Tank



Finnegan Stormwater Park



Davenport Creek Stormwater Park



COASTAL RESILIENCE SOLUTIONS

This image shows different ideas for Charlestown's waterfront. The ideas are long-term projects that would protect and support a thriving neighborhood. All images are courtesy of Kleinfelder-Stoss.

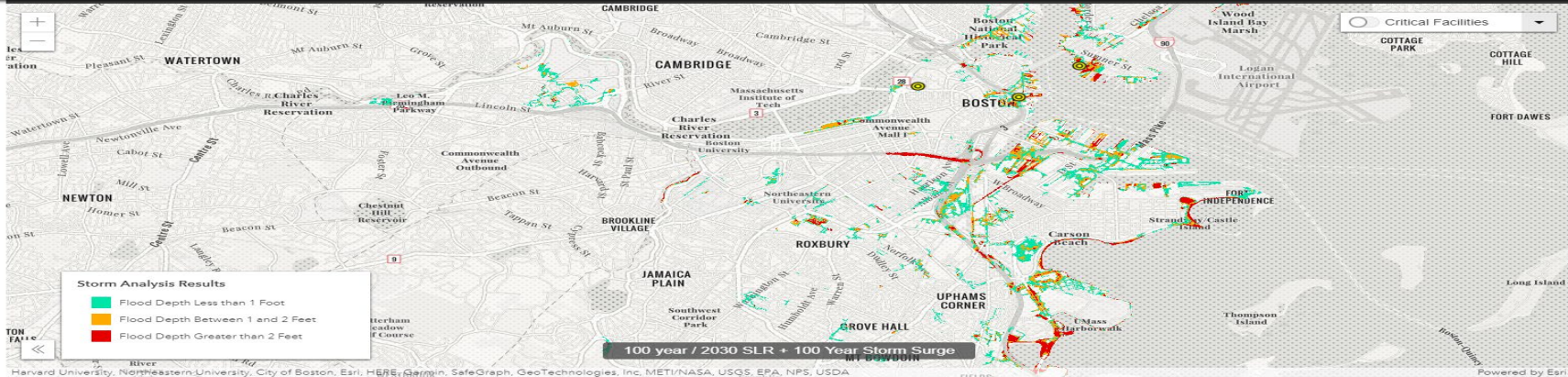
[READ THE REPORT](#)



City of Boston Inundation Model

Boston Water and Sewer Commission

City of Boston Inundation Model



1 Extreme Weather Event

T-storm

Nor'easter

Tropical

Frontal

2 Amount of Rainfall

10 year 100 year 500 year

5.84 in 9.58 in 13.9 in

(over a period of 48 hours)

3 Sea Level Rise (SLR) and Storm Surge from Baseline Condition

4.5 ft 7.0 ft

2030 SLR 2070 SLR

+ Storm Surge + Storm Surge

100 Year Storm Surge

Compare 2030 & 2070

4 360 Tour

Click on Map

5 Impact Forecast

School	Health Facility	Police Department
46	28	8
EMS/ Fire Station		META Station
13		18

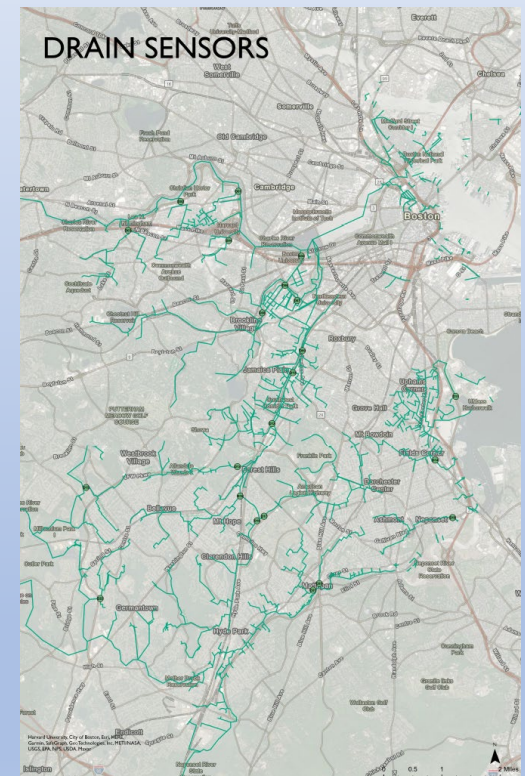
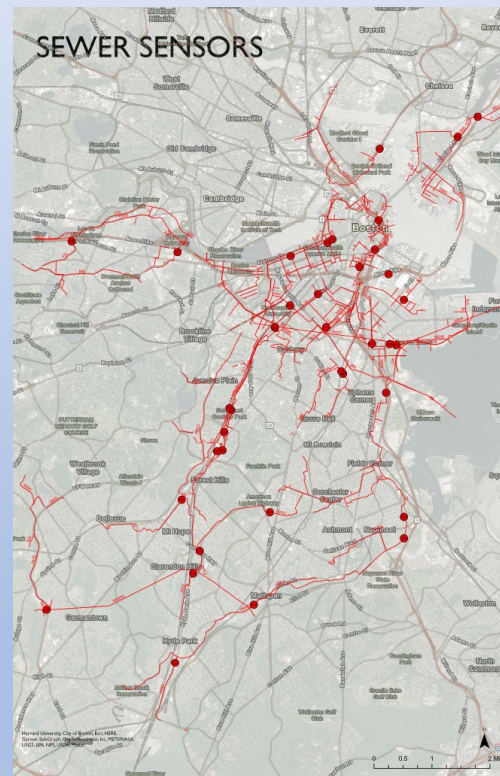
Sewer and Drain System Sensor Project

Sensors installed – 60
Sewer System Sensors - 38
Storm Drain Sensors - 22

Available as we get more insight –
15

Rain Gauges

Gather Information - AI



Questions

JewellC@bwsc.org

